

Melinde Coetzee *Editor*

Thriving in Digital Workspaces

Emerging Issues for Research and
Practice

 Springer

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Editor
Melinde Coetzee
Department of Industrial and Organisational
Psychology
University of South Africa
Pretoria, Gauteng, South Africa

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This book is dedicated to scholars and practitioners in the field of applied psychology who are pioneering new thinking and practice to ensure optimal human thriving in unprecedented times of evolutionary change

Preface

This book collection proffers some initial thoughts and narrative discourses on the extent to which the technological revolution will impact human thriving. The collection of chapters serves as a bird's-eye view of the mindset shifts required, and the psychological foundations and preconditions of human thriving in digital workspaces. The concept of thriving is revisited in terms of new emerging issues that potentially may arise for research and practice as a result of the digital revolution. The book proposes future directions for research and practice and contributes novel insights towards creating the conditions for facilitating individual and organisational thriving amidst the turbulence, complexities and velocity of agility and learning that are required by organisations and workers. The primary audience for this book is advanced undergraduate, graduate and post-graduate students, as well as scholars and practitioners in applied multidisciplinary psychology settings. In addition, organisational decision-makers, human resource managers and professionals, wellness counsellors and public policy-makers will have an interest in this book. This book is useful for employees themselves in order to better understand their psychological experiences and roles in adapting to digital workspaces. Employees, managers and practitioners will also gain a better understanding of the demands, challenges and possibilities of the digital era workplace for human and organisational thriving, development and success.

We acknowledge that our understanding of the construct of human thriving has been shaped by forerunners in the field who offered various meritorious conceptual debates and research on human thriving. As authors, we regard human thriving and flourishing as essential concepts and way of functioning in modern-day organisations. We endeavour to build in this book collection on the extant knowledge and theory on human thriving. We offer new knowledge and insights by positioning the construct in the rapidly emerging Industry 4.0 space of work. We are therefore also grateful to the scholars and practitioners who are breaking new ground by their exploration of the impact of smart and digital technology on human well-being in workplaces of the Fourth Industrial Revolution era. We acknowledge that we are at this stage just starting to tap into the tip of the so-called iceberg of the technological revolution. The chapter contributions in this book offer emerging insights,

narratives and probabilities of the factors and conditions to consider in facilitating human thriving in workspaces that will be continuously transformed by smart digital technology. As Editor, I salute the team of authors for their courage in breaking new ground, their quality contributions, hard work and their dedication to the field of human thriving and flourishing.

Note: The manuscript and chapters in this book collection have been independently peer-reviewed before publication. A blind peer-review process was followed. The editor and authors would also like to express their gratitude to the reviewers for their feedback and suggestions for improving the quality of the chapter contributions and the book in general.

Welcome to thriving in digital workspaces!

Pretoria, South Africa

Melinde Coetzee

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Editor and Contributors

About the Editor

Melinde Coetzee (DLitt et Phil) is Professor in the Department of Industrial and Organisational Psychology at the University of South Africa, Pretoria, South Africa. She has extensive experience in the corporate environment on psychological interventions pertaining to organisational development, human capacity and career development and talent retention. Her research interests include issues of organisational psychology, employability, and career and retention psychology in multicultural work contexts. She acted as Chief Editor of the *South African Journal of Industrial Psychology* (2014–2019). She has published in numerous accredited academic journals. She has also edited, co-authored and contributed chapters to scholarly books nationally and internationally on the themes of career psychology, retention and employability. She has presented numerous academic papers and posters at national and international conferences. She is a professionally registered psychologist (cat. industrial) with the Health Professions Council of South Africa (HPCSA) and Master Human Resource Practitioner with the South African Board for People Practices (SABPP). She is Member of SIOPSA, EAWOP and IAAP.

Contributors

Cecile Benade Organisational Development Consultant, Johannesburg, South Africa

Colleen Bernstein Department of Psychology, University of Witwatersrand, Johannesburg, South Africa

Marais Bester PSI International, Dubai, UAE

T. Bondarouk Department of Human Resource Management, University of Twente, Enschede, The Netherlands

Helena Bulinska-Stangrecka Warsaw University of Technology, Warsaw, Poland

Melinde Coetzee Department of Industrial and Organisational Psychology, University of South Africa, Pretoria, South Africa

Gideon (Deon) P. de Bruin Stellenbosch University, Stellenbosch, South Africa

Alda Deas Department of Human Resource Management, University of South Africa, Pretoria, South Africa

M. Habraken Department of Human Resource Management, University of Twente, Enschede, The Netherlands

Nisha Harry Department of Industrial and Organisational Psychology, University of South Africa, Pretoria, South Africa

D. Hoffmann Human Resources, NSG Pilkington, Enschede, The Netherlands

Gaylin Jee 33 Emeralds, Johannesburg, South Africa

Cara Jonker School of Industrial Psychology and Human Resource Management, North-West University, Potchefstroom, South Africa

M. Joseph Sirgy Virginia Polytechnic Institute and State University, Pamplin College of Business, Blacksburg, VA, USA

Kerryn Kohl Fourth Talent, Johannesburg, South Africa

Dong-Jin Lee School of Business, Yonsei University, Seoul, Korea

L. W. P. Lezar Department of Business Support Studies, Central University of Technology, Free State, South Africa

John Ludike Executive Human Resource Practitioner, London, UK

Inmaculada Marín-López Department of Psychology, University of Córdoba, Córdoba, Spain

Claude-Hélène Mayer Department of Industrial Psychology and People Management, University of Johannesburg, Johannesburg, South Africa; Institut für Therapeutische Kommunikation und Sprachgebrauch, Europa Universität Viadrina, Frankfurt (Oder), Germany

Claire P. Monks School of Human Sciences, University of Greenwich, London, UK

Mohammad Faraz Naim BITS Pilani, Pilani, India

Elzabé Nel Department of Industrial and Organisational Psychology, University of South Africa, Pretoria, South Africa

Rosario Ortega-Ruiz Department of Psychology, University of Córdoba, Córdoba, Spain

Gerhard (Gert) Roodt University of Johannesburg, Johannesburg, South Africa

Pieter Rossouw MMI Holdings, Johannesburg, South Africa

Juan Swartz Fourth Talent, Johannesburg, South Africa

Xander van Lill JvR Africa Group, Cape Town, South Africa

Freda van der Walt Department of Business Management, Central University of Technology, Free State, South Africa

Dieter Veldsman MMI Holdings, Johannesburg, South Africa

Izabela Zych Department of Psychology, University of Córdoba, Córdoba, Spain

Chapter 1

Thriving in Digital Workspaces: An Introductory Chapter



Melinde Coetzee

Every company is in the people business. Machines and intelligent platforms in digital workspaces do not replace humans, they are invented by humans to augment human work and customer service in smart, intelligent ways.
—(The Author)

Abstract The introductory chapter provides a brief synopsis of the core intent of the book. The chapter positions human thriving in the digital workplace context and provides an overview of the book outline and the interlink between the chapters. The five sections of the book are presented as co-evolving sections that intersect to facilitate human thriving in a holistic manner.

Keywords Human thriving · Digital workspaces · Positive human functioning · Technological innovation · Industry 4.0

1.1 Introduction: Human Thriving

Thriving in Digital Workspaces: Emerging Issues for Research and Practice builds on the extant work of a wide array of researchers and practitioners on the psychology of human thriving. At the turn of the twenty-first century, the field of psychology witnessed a paradigmatic shift in scientific inquiry predominantly concerned with human pathology to a quest for the scientific understanding of positive human functioning (Brown, Arnold, Fletcher, & Standage, 2017). Pioneers of the positive psychology movement (Seligman & Csikszentmihalyi, 2000) had a vision of a burgeoning of academic inquiry on the psychology of positive human functioning for the twenty-first century that will help build a new positive psychology and interventions that enable individuals and their social contexts to thrive. Thriving alludes to human beings' inherent drive for self-improvement, growth, development and personal fulfilment

M. Coetzee (✉)
University of South Africa, Pretoria, South Africa
e-mail: coetzml@unisa.ac.za

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(Brown et al., 2017). Numerous narratives have been built around the concept of human thriving and the debate on the conceptualisation of the construct continues. A common theme that seems to run through the wide array of conceptualisations involves the context-related manifestation of human thriving at various points of work and life experiences in various domains. An overarching premise is that thriving is a psychological state of positive human functioning involving cognitive and emotional experiences of personal development and success in a specific social context. In organisational context, human thriving can be observed through people's experience of a high level of well-being, a high level of task/work engagement and satisfaction, and a perceived high level of performance (Brown et al., 2017).

It is evident from research (see Brown et al., 2017) that the situational context in which people work either enables or thwarts human thriving. The intersection between the individual and the work environment therefore matters in the scientific inquiry of human thriving. People's interpretations of situational demands and the resources available to positively adapt to and cope with the challenges and stressors of challenging work contexts, and their ability to self-organise and reinvent, are important enablers of human thriving. Individuals need to develop personal enablers (intra-personal and intra-digital attributes) of thriving while organisations need to establish the situational context conditions (inter-personal and inter-digital) that facilitate and optimise human thriving. The advent of Industry 4.0 and the smart digital technologies and intelligence the era of technological revolution will bring to workplaces across the globe pose new situational demands, challenges and opportunities for both organisations and the people that they constitute. However, research on the manifestation of human thriving in the digital workplace is currently lacking. This book is a starting point for stimulating new research avenues for extending the concept of human thriving to the digital workspace of Industry 4.0.

The book proffers some initial thoughts about the extent to which the technological revolution will impact human thriving and the research and practices that need to be considered in creating the conditions for facilitating individual and organisational thriving amidst the turbulence, complexities and velocity of agility and learning required by organisations and workers. In this book collection, it is our view that human thriving remains highly relevant. Human thriving denotes continuous growth, learning and development. Accelerated technology innovations signal the manifestation of the "big brain" inventions of humans to augment their work and to enable them to work smarter in more intelligent, innovative and evolutionary advanced ways. The premise is made that human thriving as a natural inborn endowment results from humans harnessing through their "big brains" their ability to self-regulate and solve the unique challenges and problems stemming from human-technological interactions in order to adjust and become "adaptive fit" in their transactions with an evolving environment created by humans. Apart from the obvious challenge of the stress of agile adaptation to the adoption of new technologies, it is our view that the digital workplace of Industry 4.0 brings new opportunities for human thriving (i.e. exponential learning, development and success). Managers and practitioners who have an understanding of the impact of the digital revolution on workplaces and humans, as well as the factors that influence human thriving in

digital workspaces, may be in a good position to harness new technologies in order to create organisational conditions that facilitate human thriving and organisational success. In this regard, this book collection serves as a bird's-eye view of the mind-set shifts required and the psychological foundations and preconditions of human thriving in digital workspaces.

1.2 Introduction: The Digital Workplace

Organisations of the Industry 4.0 era are rapidly becoming smart networked workspaces as a result of the exponential revolution brought about by technological advancement. Smart organisations are reshaping work practices, physical workspaces, people interconnectivity and communication and leadership approaches to ensure greater productivity in a cyber network of teams. The proliferation of new smart digital tools, automation, artificial intelligence and related software programs continue to impress as they offer managers and workers with exciting and innovative new ways to improve communication and productivity in the workplace. The digital workplace requires managers to combine technology, physical workspace, design, organisational culture, leadership tools and approaches and new work and communication practices in innovative ways in order to build an integrated, customised work environment that facilitate greater productivity and performance (Bersin, 2017, 2019a; World Economic Forum, 2017). While managers are learning how to capitalise on the power of smart digital technology in order to improve business performance, they also need to take heed of the mitigating potential negative impacts on employee well-being, thriving and productivity (Bersin, 2019a).

Accelerated technological advancements exponentially increase the pace of change in business as a whole with organisations and workers needing to adapt and become agile in learning and growing and keeping pace with new challenges, skills and technology (see Kohl & Swartz, Chap. 2; Ludike, Chap. 19). The high growth and learning quotient of digital workspaces intuitively speak to the notion of thriving (i.e. growth, momentum, continuous learning). However, the new transformative dynamics that the smart digital revolution bring to workplaces do not necessarily serve as a means to increase employees' well-being and productivity. On the one hand, digital workplaces provide ample opportunity for learning and growth through upskilling and innovative and smarter ways of working and collaborating. On the other hand, employer surveys show that people are working longer hours and asking employers to provide solutions for well-being, productivity and stress reduction, all of which could point to symptoms of trying to survive the bombardment of constant change and fast pace of digital work (Bersin, 2019a; Deloitte, 2016). Psychological thriving implies that apart from learning and growing in the social context in which people are embedded, they also feel energised and alive as a result of the growth they experience. The integration of a zest for work (i.e. vitality because one is learning and getting better at one's work) and learning and growing (i.e. the acquisition and application of new skills and knowledge) denotes a psychological experience of

thriving, that is, well-being and constructive progress (Porath, Spreitzer, Gibson, & Garnett, 2012).

Employer surveys show that productivity is not increasing at the rate of inflation amidst the adoption of innovative technological tools to work smarter. Companies are seriously focused on organisational designs such as virtual and networked teams, new smart digital tools and analytics to determine the factors that influence people productivity (Deloitte, 2016). One of the solutions is to utilise digital technology to enhance the employee experience across best human resource practices such as performance management, feedback and communication, learning and development and career development. Learning experience platforms, virtual reality learning systems, micro-learning tools and plenty of learning in the flow of work are introduced, so workers can develop themselves at any time of the day. However, employer surveys also show that employee commitment, engagement, well-being and development remain fundamental to productivity and business growth and success (Bersin, 2019a; Deloitte, 2016).

Companies acknowledge that the human resources function remains important because employees' experiences and psychological thriving are directly related to customer satisfaction. Thriving employees are generally happier than those who are merely surviving; they build better products; they innovate more and deliver a higher-quality service (Bersin, 2019b). This book collection shows that enhancing employees' thriving experience in the company requires supportive organisational practices and conditions that help workers feel psychologically safe to share information, reinvent themselves through upskilling, and remain inspired and aligned to the business goals, while the organisation undergoes digital change in products and services. The thriving digital workspace is a workplace that is irresistible to people (i.e. they feel energised and experience constructive growth progress).

This book collection further shows that thriving in digital workspaces is also about creating irresistible workplaces that take care of the collective well-being of the company. The chapters explore the manner in which Industry 4.0 influences workers' experiences of thriving, flourishing and general well-being. The concept of thriving is revisited in terms of new issues that potentially may arise for research and practice as a result of the digital revolution.

1.3 Outline of the Book

The chapter contributions are clustered into five overlapping sections as shown in Fig. 1.1. The five sections give an overview of different factors and ingredients that ought to be considered in digital era research and practice aimed at understanding and enhancing human thriving at work. We regard the five sections not as absolute distinctive domains, but rather as co-evolving sections that intersect to facilitate human thriving in a holistic manner.

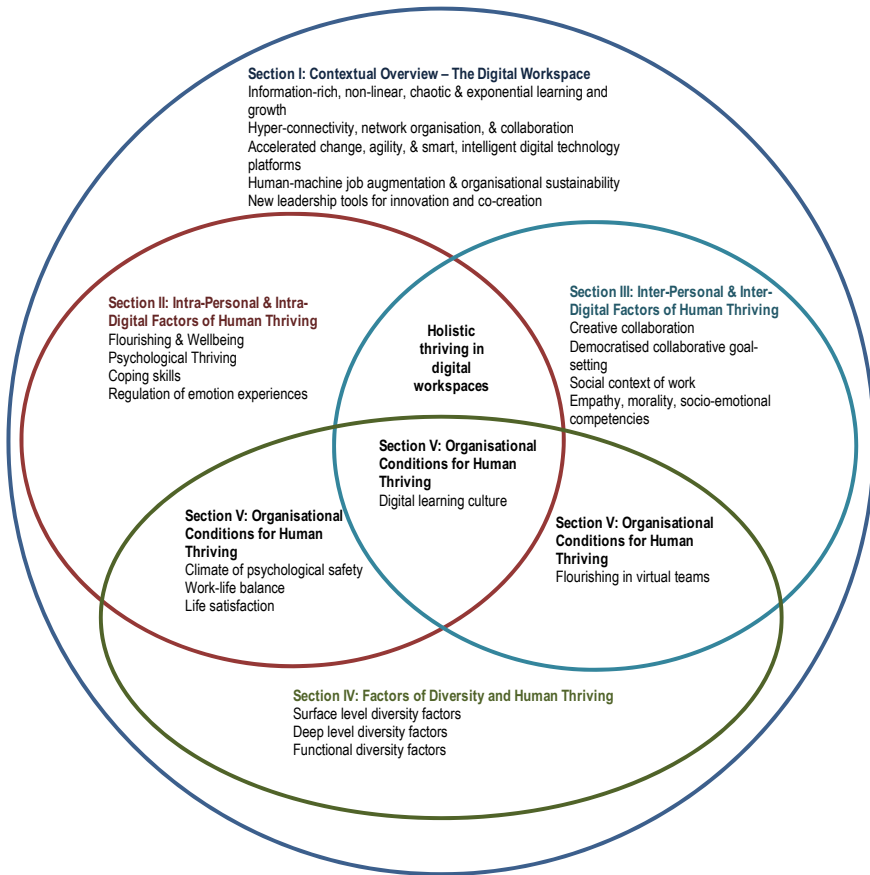


Fig. 1.1 Co-evolving intersection of digital workspace context, personal, team and diversity issues to consider in Industry 4.0 thriving research and practice (author’s own work)

1.3.1 Contextual Overview—The Digital Workspace

Part I of the book collection offers novel narrative discourses on the contextual characteristics, demands and challenges of the digital workspaces of Industry 4.0. The roles of individuals, organisations and leaders in adapting to the digital workspace are also explored. The section further provides a synopsis of the current and probable future conceptualisations of human thriving.

Kohl and Swartz (Chap. 2) set the contextual frame of mind for this book collection. The authors build a novel narrative discourse around the shift towards rapid reskilling, exponential, nonlinear, chaotic and digital learning, hyper-connectivity and collaboration, and intelligent platforms that will enable organisations to match the scale and growth we see in technology and to embrace the increasingly rapid pace of evolutionary change. They provide interesting views on the digital workspace by

talking about the “new breed of organisation”, “new breed of worker” and “new breed of learner” that help create thriving organisational cultures. The chapter elaborates on the key shifts and competencies needed by organisations, workers and learners for facilitating conditions for individual and collective thriving in intelligent technology contexts. Valuable new insights are offered in the form of an Industry 4.0 competency framework. The framework elucidates the link between humans and the digital world and the personal transformation required by humans in order to thrive in digital workspaces.

In Chap. 3, Veldsman et al. expand the narrative discourse on the digital workspace context factors to consider for human thriving. The authors provide an insightful synopsis of the foundation of the concept of human thriving. The authors further elucidate the human-context intersection of holistic thriving by introducing the concept of the thriving organisational ecosystem and its impact from both a macro- and micro-perspectives. The chapter provides recommendations to both organisations and individuals for the building of thriving workplaces where individuals can flourish.

The chapter by Lee (Chap. 4) makes a novel contribution to the contextual section of this book collection. The author sets the scene for a paradigm shift from a ‘compete’ to a ‘create’ economy, the implications for the psychological contract, and also provides fresh perspectives on development and thriving at work rather than just surviving at work. The author further explores the important new role of leaders in digital workspaces and novel methods and approaches for leaders to assist workers and teams to thrive at work. Valuable insights on a broad range of intelligence at work, including systems and spiritual intelligence as enablers of thriving at work, are proffered in the chapter.

1.3.2 Intra-personal and Intra-digital Factors of Human Thriving

Part II of this book collection addresses the intra-personal (cognitive, affective, psychological) and intra-digital (personal experiences of technology) aspects of human thriving. The section highlights the psychological well-being and experience of emotional aspects of human thriving.

Van der Walt and Lezar (Chap. 5) provide insights based on empirical research on flourishing and socio-emotional well-being as antecedents of psychological thriving. Based on their empirical findings, they conclude that supporting employees’ psychological well-being will enable digital workplaces to promote thriving at work, and consequently mental health, which has the potential to create a competitive advantage in the digital era of the Fourth Industrial Revolution. They emphasise the agency role of individuals to take responsibility for their own growth and development, rather than relying on organisations to provide them with support structures that will enable them to thrive at work.

Chapter 6 by Harry explores the call centre environment as a high-stress intra-digital workspace. The chapter offers insight (in the form of an empirically derived coping profile) into psychological constructs that are related to individual well-being (i.e. sense of coherence, emotional intelligence and burnout) and resiliency (i.e. career adaptabilities and hardiness). The author outlines suggestions for thriving practices in the call centre workspace.

In Chap. 7, Jonker touches on the intra-digital experience of individuals and highlights the importance of individuals' ability to regulate and manage their intra-personal emotional experiences in order to function optimally in digital workspaces such as virtual teams. The author illustrates her views by means of a real-life case study of the intra-personal emotional experiences and management of virtual team members (intra-digital experiences) within an information technology work environment.

1.3.3 Inter-personal and Inter-digital Factors of Human Thriving

Part III of this book collection addresses the inter-personal (social relatedness) and inter-digital (inter-digital human interaction and collaboration) aspects of human thriving. The section highlights the factors influencing human collaborative interaction through smart technological platforms.

Chapter 8 by Mayer offers a novel discourse narrative on the art of human collaboration, a key characteristic of digital workspaces. The premise is made that the inter-digital interactions require creative collaboration that embrace the diversity of humans. Selected examples are discussed taking present collaborative challenges on global and local levels into account, such as growing intersections of nationality, culture and gender, the transformation of negative experienced emotions and the importance of collaborative behaviour during the breakthrough of the Fourth Industrial Revolution. The chapter sets the scene for future discourses on creativity in inter-digital human collaborative interactions.

In Chap. 9, Van Lill et al. continue the discourse on inter-personal and inter-digital collaboration and add the role of leaders in inter-digital interaction with workers. The authors elucidate the impact of a deliberative goal-setting style on goal commitment as an aspect of human thriving and flourishing. The premise is made that facilitating deliberative processes in face-to-face forums could become a demanding task for managers. The authors give consideration of the potential of online forums and big data methods to facilitate discussions and analyse large amounts of textual data based on more deliberative forms of goal setting. The authors present a realistic view of the pitfalls of these inter-digital platforms and critically evaluate the unwanted influence of demagoguery and misapplications of big data methods that could negatively impact human thriving.

Chapter 10 by Habraken et al. critically evaluate the pervasiveness of Industry 4.0 inter-personal and inter-digital interactions in the workplace. They emphasise that big data, Internet of things and digital augmented reality have shifted the social context of work. The authors present an analysis of developments that can be observed with respect to the social context of work as a result of Industry 4.0. Findings from thirteen interviews conducted in four different organisations at two levels suggest that social interactions will not give into digital options. More importantly, they provide a wake-up call regarding the adoption of Industry 4.0 and highlight ways in which it influences the social context of work and human thriving.

Marín-López et al. (Chap. 11) address the important role of social and emotional competencies, morality and empathy in informal inter-personal, face-to-face communication and in inter-personal interactions online (inter-digital collaboration). The authors emphasise that these competencies may play an important role in prosocial versus antisocial interaction online. The authors outline review studies focused on social and emotional competencies, morality and empathy as related to cyberspace. Similarities and differences between face-to-face and online interactions are reviewed. The authors offer implications for policy and practice and future avenues for research.

1.3.4 Factors of Diversity and Human Thriving

Part IV of this book collection highlights compositional differences among people and collectives that need to be considered for thriving interventions in digital workspaces. The section explores factors of surface-level diversity (e.g. differences in experiences relating to gender, age, race and generational groups) as these pertain to issues of deep-level diversity (i.e. group-level differences in terms of intra-personal or psychological attributes relating to thriving and flourishing). Factors of functional diversity in terms of the variety of backgrounds and experiences of members in societal context are also explored in this section of the book.

In Chap. 12, Deas undertakes a narrative review of psychological contract research, focusing on former conceptualisations and empirical results specifically focusing on the expectations and obligations of different generational cohorts, including the emerging digital natives, as aspects of their thriving in Industry 4.0 workplaces. The author offers directions for future research, especially pertaining to psychological contract issues and thriving of digital natives in the workplace.

In Chap. 13, Naim and Bulinska-Stangrecka examine the relationship between workplace use of social media, collaboration, psychological need satisfaction and Millennial employees' affective commitment. They proffer that different workplace patterns of social media application offer opportunities to enhance collaboration and facilitate the fulfilment of employees' psychological needs; leading to an increased affective commitment. They offer propositions for future research on millennials' psychological needs satisfaction in digital workplaces.

Nel in Chap. 14 evaluates research-based well-being-related issues of diversity in higher education as a digital workspace. The premise is made that person-centred characteristics such as race, tenure and job position affect how diverse employees flourish at work (i.e. how they approach work, how they engage physically, emotionally and socially at work, how they find meaning and purpose and how satisfied they are with their work, relationships and life in general). The chapter provides meaningful insight for practitioners to implement positive psychological interventions targeting multiple well-being components that satisfy basic needs such as the need for autonomy, engagement, competence and positive relationships.

Bernstein in Chap. 15 undertakes a narrative discourse on factors of functional diversity (i.e. gender, race, education and class status) that could serve to thwart thriving in South African-based digital workspaces. The author proposes possible interventions that could mitigate these factors and promote human thriving within South African Industry 4.0 workplaces.

1.3.5 Organisational Conditions for Human Thriving

Part V of the book collection provides an overview of important organisational conditions that need to be established for human thriving and flourishing in Industry 4.0 workplaces. These organisational conditions pertain to the intra-personal/intra-digital and inter-personal/inter-digital dimensions of holistic human thriving.

In Chap. 16, Coetzee opens up a novel discourse on psychological and organisational factors that need to be considered in the design of organisational conditions that support workers' adoption of and interaction with new technologies. The author introduces the notion of a psychological climate of safety and proffers a conceptual framework supported by propositions of conditions for a psychological safety climate in the digital workspace context. The author reviews current research on the psychological demands of new digital mobile and information technology on individuals in modern workplaces and proposes practices towards fostering human thriving through an organisational climate of psychological safety.

Chapter 17 by Bester explores the theoretical elements of flourishing in virtual teams. The author reviews a wide array of theoretical frameworks for understanding the concept of flourishing in virtual teams. The author proffers recommendations on creating organisational conditions that assist virtual team members to flourish.

Chapter 18 by Lee and Sirgy addresses issues of thriving pertaining to the intersectional boundary between the human–environment workspace and personal life satisfaction domain needs. The authors give a theoretical model of work–life balance specific to organisational conditions such as schedule flexibility and telecommuting as elements of the digital workspace. The authors offer novel inter-domain strategies people could use to enhance (or preserve) overall life satisfaction—behaviour-based strategies (role engagement in multiple domains, role enrichment, domain compensation, and role conflict management) and cognition-based strategies (whole-life perspective, positive affect spillover, value compensation and segmentation).

Chapter 19 by Ludike concludes the book collection and this section on organisational conditions that influence thriving in digital workspaces. The chapter is a novel narrative discourse on how digital disruption in the form of social, mobile, analytics, artificial intelligence, data analytics, the cloud as well as Internet of things is impacting the learning domain of human thriving. The author highlights the importance of a learning culture as an organisational precondition for sustaining human and organisational thriving. The author discusses the organisational conditions and learning capabilities, competencies and learning culture that will enable not a race and battle against the smart machines, but rather a constructive collaborative augmentation which will enable sustainability despite massive automation, deskilling of knowledge work and redefinition of professions.

1.4 Conclusion

To conclude, *Thriving in Digital Workspaces: Emerging Issues for Research and Practice* is a collection of narrative discourses on human thriving research and practices as contemplated from the perspective of Industry 4.0. The authors are scholars and practitioners who work in a wide array of domains and settings, and therefore, their interpretations of thriving in digital workspaces are diverse. It is important to note that some of the chapters build on current research and conceptualisations of thriving, while others proffer potentialities of new practices that may support human thriving in the fast-emerging digital workspace.

As authors, we acknowledge that we are at this stage just starting to tap into the tip of the so-called iceberg of the technological revolution and its implication for human thriving research and practice. The focus of the book is therefore on emerging issues for research and practice, rather than confirmed, evidence-based research and practice. Just as we approached our fellow scholars and practitioners in the applied organisational psychology field to contribute to this book collection, we also would like to extend an invitation to readers of this book to continue working in this niche of positive human functioning research and to add new dimensions to the concept of human thriving. Obviously, just as our understanding, experiences and observations of human thriving in digital workspaces will grow over time, so will research and practices evolve. The smart digital era will bring new evolutionary and innovative ways to research and the measurement of human thriving and bring innovative technology-supported psychological interventions that are appropriate and suitable to the digital workspace. We do hope, however, that proffering our notions of human thriving in the digital workspace will encourage much needed collaborative research and sharing of practices by scholars and practitioners across the hyper-connected globe. We stand at the cusp of new innovations in human thriving research and practice. Let us take this debate further and bring new knowledge and theory that enhance positive human functioning in evolutionary, smart and intelligent ways!

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Part I

Contextual Overview—The Digital Workspace

Part I of the book collection offers three novel narrative discourses (*see* Kohl and Swartz, Chap. 2; Veldsman, Benade, and Rossouw, Chap. 3, and Lee, Chap. 4) on the contextual characteristics, demands and challenges of the digital workspaces of Industry 4.0. The roles of individuals, organisations and leaders in adapting to the digital workspace are also explored. The part further provides a synopsis of the current and probable future conceptualisations of human thriving.

Key Emerging Issues for Research

- Research on the relevance of the fourth quadrant competency framework (Kohl and Swartz) for human and organisational thriving.
- Impact of smart, digital intelligent learning platforms on human thriving and performance.
- Utilising artificial intelligence to measure and assess human thriving against predetermined Industry 4.0 relevant attributes and competencies.
- Extend research on human thriving to include future skill sets required for individuals to learn and grow in agile and exponential ways.
- Research on characteristics of thriving network (digital) organisations and teams
- Research on the influencing role of spiritual, cognitive, emotional and social capital in facilitating human thriving.
- Research on Industry 4.0 relevant leader development, styles and tools for facilitating thriving in the digital workspace.

Key Emerging Issues for Practice

- Create a digital learning culture for accelerated, hyper-personalised learning and development.
- Equip learners with intelligent platforms that allow them to take the guesswork out of learning.

- Practices that help workers understand what competencies they are working towards developing, know the extent of their learning gap and have access to quality content accurately curated against predetermined competencies.
- Practices that support performance enablers of human thriving.
- Adopt possibility-centred approaches fed by human creativity for cultivating thriving.
- Creative, innovative leadership practices that facilitate human thriving.

Chapter 2

Building Industry 4.0 Talent



Kerryn Kohl and Juan Swartz

Abstract This chapter builds a novel narrative around the shift towards rapid reskilling, digital learning, connectivism and exponentiality that will enable organisations to match the scale and growth we see in technology and to embrace the increasingly rapid pace of change. For organisations to reinvent themselves into the Fourth Industrial Revolution fit organisations, they need to focus on becoming self-driven, agile, data-driven, learning organisations, or what we refer to as the SADL organisation. The SADL requires a new breed of organisation, new breed of worker and new breed of learner in order to create thriving organisational cultures. The chapter elaborates on the key shifts and competencies needed by organisations, workers and learners for facilitating conditions for individual and collective thriving in intelligent technology contexts. An Industry 4.0 competency framework is explored. The framework elucidates the link between humans and the digital world and the personal transformation required by humans.

Keywords Artificial intelligence · Industry 4.0 talent · Industry 4.0 competency framework · Self-driven · Agile · Data driven · Learning organisations · Digital quotient · Fourth talent · Exponential organisation · Rapid reskilling · Digital learning revolution

2.1 Introduction

Throughout the centuries there were men who took first steps down new roads armed with nothing but their own vision. —Ayn Rand, the Fountainhead

The world has shifted, times have changed, and we continue to move rapidly into an unprecedented and unpredictable future. Although still in the early stages, Industry 4.0 will continue to impact every aspect of our lives. What makes Industry 4.0

K. Kohl (✉) · J. Swartz
Fourth Talent, Johannesburg, South Africa
e-mail: kerryn@thecoachinghouse.co.za

J. Swartz
e-mail: juan@4thtalent.com

significantly different is both the extent and pace of change it brings, driven by the convergence of the Internet of things, big data, cloud computing, machine learning and artificial intelligence. These trends are demand driven for hyper-connectedness and hyper-personalisation. This is giving rise to a *new breed of organisation*, a *new breed of worker* and a *new breed of learner*.

2.2 Chapter Objective

The chapter elaborates on the key shifts and competencies needed by organisations, workers and learners for facilitating conditions for individual and collective thriving in intelligent technology contexts. An Industry 4.0 competency framework is explored. The framework elucidates the link between humans and the digital world and the personal transformation required by humans.

2.3 A New Breed of Organisation

This accelerated pace requires organisations to become increasingly agile and embrace disruption. For organisations to reinvent themselves, they need to focus on becoming self-driven, agile and data-driven learning organisations, or what we refer to as the SADL organisation. In order to do so, there are four critical shifts that need to take place:

- **Shifting towards a Self-Driven culture:** For organisations to embrace this model of reinvention and benefit from the development of their talent, they need to encourage, enable and empower their people. They can do this by developing their “self-directedness”. The potential to be self-directed exists within us; however, the capability to be self-directed must be developed and enabled. The development of self-direction is often stifled within organisations, especially traditional, linear, hierarchical ones. Therefore, organisations must focus on allowing their people to develop this capability and enable it through true empowerment practices and enabling technologies.
- **Adopting an Agile Philosophy and Mindset:** The criticality of agility and adaptability as core competencies is directly related to the pace of change. Agility in this context is about how fast we are able to adjust our paradigms and behaviours in response to changes in our environment. Meaning, the ability to, learn, unlearn, and relearn ... at a rate of knots.
- **Embracing Data-Driven Insight:** Organisations need to become data fluent, which means they understand the value of using data to gain deeper insight into organisational complexities ahead of making transformative decisions. The benefits of increasing an organisations’ data fluency include increased efficiency, better

decision-making, enhanced cross-functional communication and the deepening of a learning, insight-based culture (Schuermann, 2014).

- **Cultivating a Learning Culture:** Learning is the game-changer when it comes to building the future-fit organisation. Having a strong learning culture enables organisations to continuously and rapidly develop their people and supports cycle of learning, un-learning and re-learning that is so critical to thriving in Industry 4.0. A true learning organisation takes the time to create, acquire and share knowledge, and use it to transform their behaviour (Garvin, 1993).

2.4 A New Breed of Worker

Essential for the new breed of worker is a flexible, collaborative, meaningful and unconstrained workspace that provides an abundance of opportunities to learn. With the advent of social media, the need for social networking in the workplace has decreased. The vast amount of communication and collaboration tools furthermore enables remote and flexible interactions. There is, therefore, a move towards making a meaningful contribution within a virtual workspace, rather than a focus on the place I work or the workforce I belong to.

This new breed of worker stems from the changes in the socio-economic climate in which jobs for life are a thing of the past and a current reality in which people feel time bankrupt and long for better work–life balance and the flexibility to explore and pursue a multitude of interests.

The Industry 4.0 workforce expresses a desire for increased autonomy, wanting to decide for themselves what they work on, where they work and when they work. From the plethora of engagement studies that have been conducted, we now know that autonomous and engaged workers are far more productive than those who have these parameters set for them. Accenture recently estimated that contingent workers make up between 20 and 33% of the workforce in the USA alone.

People are focused on finding “Gig’s” (jobs) that utilise their unique set of skills and continue to develop their experience while being able to maintain control over their work–life balance. In the spirit of the abundance mindset, organisations should start thinking about having fewer people committed full time and then upscaling temporarily to meet additional needs arising through strategic and operational projects. Deloitte (2016) argues that when it comes to meeting heightened talent needs, top HR organizations must increasingly learn to integrate and leverage the part-time and contingent workforce. More than seven out of ten executives and HR leaders (71%) ranked the trend as important or very important (Deloitte Global Human Capital Trends, 2016).

The new breed of worker provides organisations with on-demand talent and expertise in areas where there is often a shortage of skills. The new breed of worker provides a solution to the looming talent crises by offering a flexible workforce able to bridge the talent gap at a competitive price. According to Mike Ettling, President of

HR Line of Business at SAP, “winning the Talent War requires a fundamental shift in HR strategies. Companies must seek new ways to find the right talent, develop skills, and share expertise”. This flexible workforce is becoming increasingly attractive to organisations as they transform themselves to harness the power of talent on demand. Eighty-three (83) percent of executives indicate they are increasingly using contingent workers—at any time, on an ongoing basis (Oxford Economics and SAP Success Factors, [2014](#)).

2.5 A New Breed of Learner

Forrester Research predicts that today’s youngest workers will hold twelve to fifteen jobs in their lifetime. How do we keep pace and ensure that we stay relevant? The answer to this lies in learning to learn, unlearn and re-learn. Welcome to the age of rapid reskilling! To keep pace and stay relevant, organisations need to focus on developing and enabling lifelong, self-directed learners that are able to take charge of their own skill development. In order to do this, it is imperative to stay abreast of the changes in industry and the impact these will have on jobs. It is important for organisations to understand to what extent they are predicted to be disrupted and what is the extent of automation that they can expect. Maintaining the balance between the competencies that are required to increase current performance and beginning to develop those competencies that will be necessary a step-change in future are critical.

A shift towards this new breed of learner can already be observed. Learners are becoming increasingly autonomous, supreme multitaskers, expecting feedback and service to be immediate and want learning to be on-demand and just in time. Everything we need to know needs to be one click away!

The future world of work will be defined by sudden and continuous disruption, multiple careers and fast-paced advancements. In this environment, unlimited, unrestricted access to learning is the game-changer. However, before we can truly embrace and benefit from unrestricted learning at an organisational or individual level we need to develop our “self-directedness” and we need to be empowered to do so.

Self-directed learners must be developed and enabled. This is easier said than done, and we need to understand the amount of change needed for it to be successful at organisational scale.

We need to realise that people need time to learn; we need to cultivate an organisational culture that empowers and reveres self-directed deep learning by providing access to high-quality content and the exposure of learners to experiences where they can test knowledge, build skills and enhance performance. And, we need to enable learning through intelligent platforms. To build a learning fit organisation, people need to know what competencies they need to learn and develop, they need some mechanism by which they can assess their learning gaps and determine their learning needs independently, and they need to be able to measure their personal progress. For the rising Industry 4.0 adept organisation to be realised and make the necessary

shifts, they need to focus on transforming three core aspects, namely their structure, function and insight.

Firstly, they need to structure themselves in such a way as to embrace the ebb and flow of disruption. They do this by opening themselves up to new ways of work and the new breed of worker. Secondly, to reinvent themselves they need to understand the impact that our constantly changing landscape has on talent from a competency development perspective and figure out ways to rapidly re-skill their people to keep pace. They do this by honouring the new breed of learner. And finally, they need to root their learning and decision-making in insightful analytics and a combination of theoretical fields such as behavioural economics, digital ethnology and consumer psychology. Enriching this combination by including principles and frameworks from design thinking, agile, network and chaos theory would not hurt either.

Industry 4.0 is expected to have a significant yet dichotomous impact especially within in the talent landscape by creating jobs whilst obliterating others, widening skill gaps and raising unemployment just as the need for talent is intensifying, creating greater opportunities for learning and development but at the same time increasing the risk of sudden skill irrelevancy (World Economic Forum, [2018a](#), [2018b](#)).

2.6 The Rise of Artificial Intelligence (AI)

What we do know for sure is that the world has shifted. A major shift is not only how we see the world, how we interact with it but also how we see ourselves (World Economic Forum, [2017a](#), [2017b](#)). It raises questions that we have never had to grapple with before. Questions like: What makes us uniquely human? Can you programme this human essence and if you can then what makes us uniquely human? Will being human be valued in the future? What work will humans do? And of course, the ultimate question, will we be wiped out by a super-intelligent race that we gave birth to?

Although we are seeing and feeling the exponential advancement of AI, its development began back in 1950 when the link between human intelligence and machines was first observed. AI was conceptualized (not yet named) based on Norbert Weiner's theory of all intelligent behaviour being the result of feedback mechanisms and that these mechanisms could be simulated by machines. The term AI was coined six years later (1956) by John McCarthy, during the Dartmouth summer research project on artificial intelligence, a conference he organized in order to bring together the minds needed to brainstorm machine intelligence. Shortly after that several AI research centres were established to focus on creating systems that could solve problems and systems that could learn. However, 10 years prior to AI being founded so to speak, machine learning was already a topic of interest, especially for a group of cybernetic and electronic researchers in Britain. One of these researchers from this group Alan Turing was interested in asking the question "Can machines think?" However, after careful consideration of the implications of having to first define "intelligence" in order to answer the question, he changed his question to "Can machines do what we

(as thinking entities) can do?” The result of this question is what’s known today as the “Turing test” (Epstein, 2009 edition, 2007).

The Turing test was an inquiry into the ability of the machine to exhibit intelligent behaviour equivalent to, or indistinguishable from, that of a human. The Turing test proposed that a human evaluator would judge natural language conversations between a human and a machine designed to generate human-like responses.

Since the onset of chatbots, the perception has been created that these criteria outlined in the Turing test have almost been fulfilled. A chatbot is a computer program that conducts conversations through text or through voice-to-text analysis. In 2016, the Washington Post reported that a Georgia Tech professor hired Jill Watson as Teaching Assistant that answered questions online for students throughout the semester, thereby relieving the professor’s overworked teaching staff. Only after the students’ final exams were handed in, was it revealed that Jill was, to the amazement of the students, an artificial intelligence bot (McFarland, 2016).

However, Jill is still limited to answering only those questions that have been paired with specific answers; thus, we have to ask, whether Jill and all other artificial intelligence solutions marketed today are truly artificial intelligence.

Artificial intelligence, according to the English Oxford Living Dictionary is: “The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making and translation between languages”. Merriam-Webster defines it as “the ability of a machine to imitate intelligent human behaviour” and the Encyclopaedia Britannica defines it as “the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings”. Puresh however insists that true artificial intelligence is a machine that exhibits self-awareness. Artificial consciousness defines the aspects “that which would have to be synthesized were consciousness to be found in an engineered artefact” (Aleksander, 1995). It is this version of the definition of artificial intelligence that Elon Musk warns about. A machine that possesses self-awareness might lead to self-preservation, and it is these aspects that drive the science fiction inspired fear. However, most people have a much more immanent and realistic fear and that is the fear of losing their jobs to a machine.

2.6.1 The Difference Between Machine Learning, Augmented Intelligence and Artificial Intelligence

Defining artificial intelligence is a challenge, as there are multiple definitions between the major players in this space and even between leading dictionaries. The challenge arose due to the underlying assumption of what artificial intelligence represents. Today marketing material widely uses artificial intelligence as a description of a specific solution, program or robot. The challenge in understanding what artificial intelligence is, becomes, a lot simpler if you think of it as a field of study. And as with

any field of study, there are more pure illustrations of the theory and sub-branches related to it.

As stated, the purest view of artificial intelligence is a machine that exhibits consciousness and the resultant self-awareness and potentially self-preservation. Achieving this level of artificial intelligence requires immense processing power and, in all likelihood, requires the onset of quantum computing to even be a possibility.

Quantum computing uses quantum mechanics theories, such as superposition to derive more advanced processing power. The theory of superposition is realized into quantum computers through qubits. Classical computers use bits, 0 and 1. Quantum computers augment the bits with a qubit that can be either a 0 or a 1 as a probabilistic model. Where classical computers can only be in a single state, either 0 or 1, quantum computers can be in 2^n states— n being the number of qubits in the system.

Other definitions related to artificial intelligence are less stringent, but still, require the machine to imitate intelligent human behaviour. Chatbots like Jill Watson, in general, use question–answer pairing, rather than being able to imitate intelligent human behaviour on a pure conversational basis. The complexity of the conversations that the chatbot can have depends on the complexity and extent of the tagging of information in the program. If you deploy a chatbot in a contact centre environment that receives thousands of enquiries on a daily basis, each of which being tagged with an expert answer, then the level of conversations that chatbot can handle related to the subject matter at hand will become extensive overtime. This however still does not imitate intelligent human behaviour on a broader domain and the machine will make mistakes in a different way to humans. The selection of answers to the enquiries is still binary with the integrity and complexity of the answers being dependent on the data tagging.

To avoid the above complication, the term augmented intelligence is used instead, as it refers to the effective use of machines in augmenting human intelligence. This is a more accurate definition of the above-mentioned contact centre chatbot, where the chatbot facilitates the transfer of information between the client and the agent. On enquiries that are fully programmed into the system, the augmented intelligence solution will seem like it can imitate human behaviour, but for “unscripted” responses the agent will step in. In a lot of cases the bot assists the agent internally to augment their understanding.

Machine learning is a subset of the field of Artificial Intelligence which denotes machines that are able to “learn” through statistical algorithms without being specifically programmed. Bots use machine learning to learn the appropriate response to an enquiry that is being tagged.

2.6.2 What Exists Today

In the purest definition, Artificial Intelligence does not exist today and based on what we know now, it is unlikely to exist until fully-fledged quantum computers are

being produced to enable the complex neural networks required to get close to the enhanced processing needed for a machine to develop consciousness.

Fully-fledged quantum computers that are quantum in all regards are still very basic and only available at a very few advanced research laboratories. In fact, not even Microsoft has one yet. The couple of quantum computers in development by those few advanced research centres use the principles of qubits, but from a hardware perspective are still considered to be classic computers in most regards and are being deployed mostly for research purposes and not general commercial use (Giles, 2017).

Notwithstanding this, Artificial Intelligence is widely used in the industry, which should refer to the field of study, rather than the purist definition of an Artificial Intelligence solution.

Most solutions in play today that are categorised as artificial or augmented intelligence, extensively use machine learning as the basis for their solution.

Augmented intelligence is relevant where these solutions use advanced elements over and above machine learning, such as voice recognition, visual perception, and complex decision-making.

True quantum computing might still be decades off, and although the threats foreseen by the musings of Musk's of the world may not yet ring true, the risk of job displacement due to the rapid advancement of AI is very real.

Although quantum computing is not yet a scalable reality, we are increasingly incorporating and deepening our dependence on AI or at least machine learning in our everyday lives, and the machines are getting smarter and more useful as a result of this, in a non-sentient way.

Box 2.1 illustrates examples of AI in use today. To think that "Alexa" only came into being three years ago, how did we start our days without "her"? These days it is almost impossible to imagine what life was like pre "Siri" or "Alexa".

Box 2.1 AI Examples in Use Today

Siri—Apple's Personal assistant. Siri is a pseudo-intelligent digital personal assistant. She uses machine-learning technology to get smarter and better able to predict and understand our natural-language questions and requests.

Alexa—based on Amazon's cloud-based voice service. Alexa can decipher speech from anywhere in a room. She can help you to find web-based information, shop, schedule appointments, start your day and power your smart home (Adams, 2017).

But the use of AI in our daily lives extends beyond the voice-activated personal assistants and shapes our interaction with the world and our consumer behaviour. With applications such as Netflix driving the high "on-demand" personalized trends, we are seeing by offering a predictive technology that makes personal recommendations to their customers based on their previous reactions and films' choices. Amazons transactional AI is a perfect illustration of how using refined algorithms to predict

purchases on the basis of online behaviour translates directly into financial gain, for Amazon at least (Adams, 2017).

2.6.3 AI in Talent Management

Through our extensive research, we can conclude that up to now the use of AI in talent management has predominantly been in the tedious, volume-based, error-prone areas such as recruitment, - or payroll. “An IBM survey highlights that 46% of employees believed AI would transform their talent acquisition capability and 49% believed that it would transform their payroll and benefits administration” (HR Technologist, 2017).

However, we believe that to truly benefit from the power of AI in talent management, our focus needs to shift from the routine and mundane and into the space of hyper-personalisation and employee experience. This notion is supported by Jeanne and Meister (2016) in her book *The Future Workplace Experience*, in which she states that an AI strategy for HR helps to create a personalized employee experience, which helps organisations understand and deliver on the real needs of employees. Although theoretically there is much talk around the potential application of AI in talent management, we are not seeing its application.

This is why we feel that it is important here to share with you a little more detail around the applications we have developed and successfully implemented, to demonstrate how AI can be used to enrich the employee experience and deliver on the promise of hyper-personalisation.

2.7 The Fourth Talent AI Talent Management Solution

For us, to deliver on this promise of hyper-personalisation meant building Artificial Intelligence (AI) solutions in the talent management space, with a specific focus on learning and development and career mobility space. Hyper-personalised learning and career management to be exact.

Our AI solution known as 4th Talent makes an intelligent decision based on objective information taken from research over the last 60 years. This has been integrated into a decision-making hierarchy that measures the learning gap between the optimal performance profile and the individual’s profile. By integrating the theories of different fields of study into a non-contradictory decision-making hierarchy, we can identify reliable and valid constructs that underpin performance within multiple environments. For example, this could be multi-tasking and emotional management for a contact centre environment or strategic decision-making and problem-solving for an executive.

The key constructs are determined by an analysis of the tasks as well as the contextual corporate culture as they pertain to each role. We ensure validity and

reliability of results by only leveraging research from the top global institutions, in other words, institutions recognised for their peer review rigour.

Then, we further corroborate our solution by integrating only those constructs found to be predictors of performance or retention through studies from a multitude of top institutions across various fields of study. Lastly, we understand and consider that every client's environment is unique, meaning that we practically and statistically validate our customised solution for every client by testing and continuously improving our model utility (meaning the level of predictability of our model) within each client environment.

Fourth Talent applied this in the following ways:

1. Learning and Development—4th Learner™ Platform

This platform enables hyper-personalised learning by providing an automated learning gap and proficiency level assessment and automated feedback report against a pre-determined set of skills. Based on the assessment outcomes different 'baskets' of curated content, matching the learner's proficiency level, are made available to the learner for selection. This results in the learner being able to fully customise their learning path. Cyclical reassessment allows for a continuous personalised developmental loop. This encourages and reinforces a self-directed, agile, digital, learning culture. Learners are also able to rate and add to content creating a dynamic learner-centric curatorship of a personalised developmental curriculum.

2. Career Mobility and Progression—4th Career™ Platform

This AI solution automatically and scientifically tests, tracks and matches employees based on their competencies, characteristics, capabilities, faculties, experience, learnings and skills; with all potential future career paths, requirements measure. These assessments will determine the gap between the individual's current profile and the optimal profile for the ideal future career path. This will generate automated, individualised career development plans designed to narrow the gap between the individual's profile and the competencies, faculties, capabilities, skills, and learnings required to maximise career performance. This individual career development can refer to generic interventions, or it can refer to learning modules whose learning outcomes are matched to the skills requiring development.

3. Agile Workforce—4th Workforce™ Platform

We use AI to scientifically and automatically assess, match, structure, deploy and quality control a project in a fully virtual consulting environment. We leverage advancements in scientific assessment techniques and sophisticated crowdsourcing technologies to identify resources with the right competencies, capabilities, faculties, traits and skill sets, on-demand. These resources are then scientifically structured into a project team and matched to the right templates, models and theoretical frameworks to optimise the potential outcomes of the project, taking into consideration the unique characteristics of the project, as well as the corporate cultural dynamics.

The above illustrates how AI can be successfully implemented right now and we are excited to share this with you in the hope that it inspires collaboration and spurs on innovative development and application in this space.

2.8 Building an Industry 4.0 Competency Framework

Power is competence—Jordan Peterson

Blockquote in It seems as though Industry 4.0 has the majority of us caught like deer in headlights, staring at this blinding change almost in awe of it, but not knowing if we should run towards, bury our heads in the sand and hope it passes, or turn and run. Automation has a fear-based immobilizing grip on a lot of us at present. We know we have to act, but the question is how?

What the fear mongers would have us believe is that automation will replace humans, leading to massive job displacements. In reality, though, automation is in fact currently capable of performing half of the tasks that we currently pay a human to fulfil. However, the research also shows that only 5% of these jobs are comprised of tasks that can be fully automated. This points to job augmentation as a result of automation rather than complete displacement. McKinsey estimates that this job augmentation will impact at least 60% of occupations and that each of those affected occupations will need at least a one-third augmentation (McKinsey & Company, 2017). Thus, the challenge we are facing is not how do we deal with job displacement, but how do we address the complexities associated with job augmentation.

The transformational impact of Industry 4.0 means that employees will need to adapt on every front. According to Loina Prifti, “Industry 4.0 will influence our working environments significantly. For example, it will change processes in purchase, production, manufacturing, sales or maintenance by including concepts as smart manufacturing, smart maintenance as well as a high degree of automation and integration in all enterprise processes. It will have far-reaching implications on business value creation, business models, downstream services, and work organization. As a consequence, employees will be confronted with transformed work processes and business models as well as with new technologies. The model of work organization will transform due to the disruptive nature of emerging technologies and modified structures for communication and collaboration. Processes will become interconnected and more complex. The technical, organizational and social spheres of work activities will overlap. The way we work will be one of the most affected changes in Industry 4.0. Industry 4.0 will not only affect technology and production but the way we will work in all its dimensions (Loina Prifti, 2017).

Due to these transformational impacts to adapt and flourish, employee’s competencies need to adapt and evolve. The World Economic Forum predicts that by 2030, 210 million people globally will have changed occupations and more than 800 million people will be at risk of labour disruption due to the impactful and disruptive forces characteristic of the Industry 4.0 (World Economic Forum, 2018). If we look

at the research presented below, put forward by the WEF in their future of jobs report and included in their recent online article titled: “We have the tools to reskill for the future. Where is the will to use them?” (World Economic Forum, 2018), we see that 35% of the job skills required across industries will have changed by 2020.

This rapid pace of change in job skills means a growing demand from employers and employees to be enabled and empowered to update their skills. Already one in four adults in The Organisation for Economic Cooperation and Development (OECD: see Box 2.2) countries are reporting a mismatch between the skills they have and the skills they need for their current job. This is according to the World Economic Forum in their report titled “Accelerating Workforce Reskilling for the Fourth Industrial Revolution” (World Economic Forum, 2017a, 2017b).

Box 2.2 The Organisation For Economic Cooperation And Development (OECD)

Established in 1960 for the purpose of collecting and using a wealth of information on a broad range of topics to help governments foster prosperity and fight poverty through economic growth and financial stability. The OECD helps to ensure the environmental implications of economic and social development are considered.

The OECD is currently comprised of 35-member countries. <http://www.oecd.org/about/whatwedoandhow/>.

In their new vision for education report, the WEF states that “To thrive in today’s innovation-driven economy, workers need a different mix of skills than in the past. In addition to foundational skills like literacy and numeracy, they need competencies like collaboration, creativity and problem-solving, and character qualities like persistence, curiosity and initiative” (World Economic Forum, 2016a, 2016b). Effectively, this means that not only do we need to build new skills, but we have to do this at pace. Welcome to the age of rapid re-skilling!

2.9 Rapid Reskilling

It is critical to firstly define the competencies that we need to develop to stay relevant in the future. Both organisations and individuals have to place greater emphasis on continuous skill development. Thus, putting added strain on already stretched talent management resources as talent management and career mobility practices will need to undergo their transformation to keep pace. As individuals, we will also feel increased pressure as we will continuously be asked to do more with less as organisations continue to downscale to remain profitable in stormy economic seas, while at the same time placing an increased focus on our learning and development as we strive to keep ourselves relevant.

Developing a different mix of skills has huge implications for our current workforce as the demand for people with higher education will continue to grow whilst labour-intensive work declines due to increased automation (Loina Prifti, 2017). However, although the term rapid reskilling strikes fear into the heart of any organisation, it is not as terrifying as the Industry 4.0 fear mongers make it out be. This is because when we talk about rapid reskilling, we predominantly refer to the augmentation and extension of skills in response to automation, as opposed to complete overhauls of vocational training.

This, however, does mean that employees in some cases will need to develop different sets of competencies. It is important to mention that although we are seeing a rise in the importance of behavioural competencies, these will not eclipse the functional or more technical skills that will need to prevail. Instead, what we need to understand and consider is the intricate interplay of functional, behavioural and technical competencies that will be required. The combination of knowledge and application becomes even more critical in the future.

In the age of rapid reskilling, unlimited, unrestricted access to learning is becoming the game-changer. Access to knowledge and learning content is fast becoming abundant. However, for us to harness the benefits of this unlimited, unrestricted access to learning we need to develop into self-directed, agile, learners with a strong growth mindset. What does add a layer of complexity to the challenge of rapid reskilling is that we are designing competency frameworks for jobs that have yet to be defined. According to the World Economic Forum, “By one popular estimate, 65% of children entering primary school today will ultimately end up working in completely new job types that don’t yet exist. The ability to anticipate and prepare for future skills requirements, job content and the aggregate effect on employment is increasingly critical for businesses, governments, and individuals to fully seize the opportunities presented by these trends—and to mitigate undesirable outcomes” (The World Economic Forum, 2016).

However, this concern for developing future skills and understanding the competencies needed in the future is not only critical for understanding how best to shape and equip our youth but also how to rapidly reskill our adult and ageing population. If we look at a 40-year-old today, taking into consideration the rapid advancements in medicine and technology and the amplification of these when combined and add positive advancing socio-economic factors, their life expectancy is pegged at an average of 107 years. Given this, it means that today’s 40-year-old will be far too young to retire at 65, thereby making the case for organisations having to find a way to rapidly reskill at all generational levels (Dixon, 2015). The onus, therefore, rests both internal and external to the learner, i.e. with the individual and with the organisation. The individual is responsible for developing his/her ability to rapidly learn, unlearn and relearn. The responsibility to identify and define the right mix of Industry 4.0 competencies falls on the organisation.

2.10 Identification of the Right Competencies

You cannot develop what you cannot identify or define. Therefore, the first step towards learning and career development for Industry 4.0 is to define those future competencies that will be critical to each industry, job family, and task. There are some general behavioural competencies, such as complex problem solving, critical thinking and creativity that have already become a core area of focus. But to develop a robust Industry 4.0 talent management approach, a deeper industry and job family specific view needs to be taken.

Let us take the development of a competency framework for a virtual branch as a working example. In a virtual branch where an agent works alongside bots to address customer enquiries, neither complex problem solving nor critical thinking is key future competencies. Instead, multitasking and emotional labour are more critical in such a context.

This is because, multitasking, which refers to the ability to rapidly switch between multiple tasks and remember information, whilst under pressure, allows the agent to engage with the customer and the machine simultaneously, enabling the agent to convey key messages and emotive cues. Emotional labour on the other hand, which is a neuroscientific concept relating to the regulation of emotions, feelings, expressions, and communications, is just as critical. This is because an individual with strong emotional labour ability will be able to create a more positive customer experience that is difficult to replicate with machines alone. Ignoring specific contextual requirements such as these could leave the virtual branch agent of the future with a critical skills mismatch. Therefore, it is imperative that we deepen our understanding and definition of future-fit competencies to include contextual key predictors of future performance. To do this, we need to adopt a more scientific approach to defining Industry 4.0 fit competency frameworks. Therefore, when developing a competency framework for an organisation wanting to keep pace with Industry 4.0, we begin with a review of their existing competency frameworks, which apart from competencies and behaviours, typically included a combination of skills, knowledge, practices, and capabilities.

It is important to draw a distinction between these, because they require very different approaches to understanding and defining them. For example, building knowledge of behavioural economics or business acumen, for instance, requires the dissemination and absorption of information. Developing skills such as change management or coaching would require effective training. On the other hand, practices such as a profit mindset are instilled through procedures, systems and cultural cues, whilst behaviours such as great conversations require underlying interpersonal competencies, as well as a conducive culture that rewards such behaviours. In contrast, capabilities, such as innovation, are generally the outcome a complex combination of knowledge, skills, competencies and behaviours.

By following a scientific method to identify the key predictors of performance, both from a theoretical and analytical perspective, and utilising a taxonomic approach, we are able to identify the key future competencies in each job family and

further distinguish them from behaviours, skills, knowledge, practices and capabilities, each requiring specific consideration and a unique approach to development. This leads to a deeper understanding of the competencies identified which enable a more effective learning and development journey.

2.11 Performance Predictors Are the Key Differentiator

This process of identifying performance predictors is illustrated in Fig. 2.1.

The whole premise behind a competency framework is that these competencies, when attained, will increase performance. It is, however, this link that is often missing in the process of building competency frameworks. The reason for this is that being able to predict performance is complex and difficult. Being able to convert these predictors into a competency framework brings more complexity. Then there is the further problem of being able to assess these competencies to determine the prevalence in your organisation.

To determine what predicts performance, you need to understand what performance means first. This, in turn, requires a clear understanding of what tasks employees need to perform in. There are some competencies that are good to improve in general, such as problem solving or interpersonal relationships. These can increase performance across the spectrum when improved across the company but will not increase performance on a vast array of specific tasks being performed in the company. There is therefore a requirement to enter a more detailed level of analysis.

The first point of call would be to understand the specific tasks being performed by each job family. Once this is determined, the competencies that increase performance

Emotional Labour

AFFECTIVE EMOTIVE DISPLAY

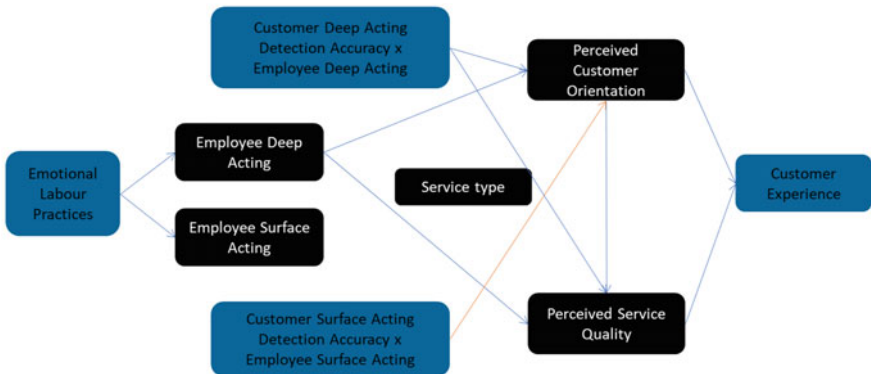


Fig. 2.1 Fourth talent—parsing process of performance predictor identification (authors’ own work)

can be focused on. To determine what these competencies should be, statistical analyses of the correlations between competencies and performance will indicate which of the competencies increase performance. The challenge, however, is that you require knowledge of what competencies to assess to determine their validity as predictors of performance. To determine what competencies could increase performance, you can either consult experts, workshop or conduct research.

Each task requires different competencies to perform. This is however not just based on the characteristics of the task, but also the environment within which the task is being performed. In a contact centre environment at a telecommunications' company that focusses on the cost of serving the customer through measures such as average handling time and first call resolution, detail orientation, multitasking and problem solving might be the best predictors of performance. However, if this company moves away from a low cost-to-serve model to a model that drives customer satisfaction and Net Promoter Scores, then the key predictors of performance might be emotional regulation, emotional labour, interpersonal skills, and empathy.

The tasks being performed remain the same, but the definition of performance has changed through the deployment of different key performance indicators, which will impact the appropriate competency framework. So even though each task being performed has a unique set of competencies that increase performance, the relevance of these competencies will change in different environments. And it is not just important to understand the competencies, but also to understand the extent of the predictive power of each competency. This will be a key indicator in determining which competency to focus on as part of a learning and development initiative.

The level of proficiency required on a specific competency for a specific job is also essential to determine learning and development needs. Both the predictive power and the proficiency level of a competency as part of a predictive model are essential. The challenge with establishing a predictive model to drive your competency framework is that it is difficult to determine what competencies could potentially predict performance. The only way to ensure that all potential competencies are considered is to do extensive research into what competencies predicted performance in similar cases or on similar tasks.

2.12 Identifying Future Competency Themes

The World Economic Forum listed people management as a competency becoming more prominent for leaders in 2020 and beyond (World Economic Forum, 2016). Within this generic competency, "people management" using our scientific approach illustrated above in Fig. 2.1, we were able to identify that it is specifically the ability to establish, improve and maintain beneficial working relationships that are the critical requirement within people management. In addition, within an agile environment, this definition needs to be broadened to include the managers' ability to find mutually beneficial solutions that maintain integrity, trust and positive relationships among all parties. High-performing teams will also require the competency to 'lead

a team towards achieving extraordinary results by providing a vision, strategy, and goals, while leveraging each individual's unique set of expertise'. This is a critical prerequisite to the creation of an environment for innovation to flourish in.

Thus, a generic competency such as "people management" alone will not suffice. Industry 4.0 will demand leaders to also become effective mentors and coaches that can provide high-quality feedback that recognizes good performance and encourages improvement. This is because management must guide group discussions to gain opinions, develop ideas and design solutions to identified problems. Also, the ability to make highly effective judgements in complex situations under pressure will become even more critical. This will require resilience to manage complex change under pressure, whilst supporting teams towards achieving their goals. All these requirements talk to the agility of management and the ability to use new ways of managing change.

Similarly, for junior staff, the ability to build trust through acute attention, incisive questioning and individual appreciation will be critical for Industry 4.0. Emotionally the ability to identify, assess, control and guide emotions in oneself and others through self-awareness, self-regulation, motivation, empathy, and social skills will be required. Employees will be expected to thrive in fast-paced, changing and challenging environments where it is necessary to navigate complexity without rigid work structures. This in return requires the ability to acquire, understand, remember and interpret information, which the World Economic Forum alluded to within the concept of cognitive flexibility. The World Economic Forum also identified creativity and complex problem solving as key future competencies (The World Economic Forum, 2016).

The integration of these two competencies will, however, be expected of employees as they will be required to source new ideas, devices or methods to solve business problems and to achieve better customer outcomes. In this environment of constant change, employees will have to learn to structure their environment to suit them and therefore need the ability to design, build and maintain these structures and networks that can channel the flow of information and tasks in a way that enables them to manage stress and perform. This process of understanding the make-up of each competency at a performance predictor level is illustrated in Table 2.1. Therefore, to accurately identify future competencies, we need to follow a parsing approach and develop a much deeper understanding of the constructs that underly each competency and of course the intricate interplay between them.

We developed the 4th Quadrant Competency Framework (see Fig. 2.2) to address this need for a more detailed approach and a much deeper understanding of the constructs that underpin each competency and the intricate interplay between them. This is because as discussed above, it is the construct rather than the generic competency that predicts and drives performance.

Through extensive research into the current frameworks addressing competency development for Industry 4.0, we noticed that all of them identified extensive competencies within the intrapersonal and interpersonal quadrants, and almost without exception, none of them spoke to the competencies that we believe to be critical to thrive in Industry 4.0, namely the intradigital and interdigital quadrants. We say

Table 2.1 Fourth talent—identification of future competencies and their constructs

Future Competencies	Underlying Future Competencies
Complex Problem Solving	Lateral Thinking; Reasoning; Working Memory
Critical Thinking	Critical Thinking
Collaboration / Teamwork	Emotional Intelligence and Communication plus Interpersonal Relationships
Relationship Building	
Emotional Intelligence	Emotional Regulation; Emotional Labour
Communication	Communication
Adapt to change	Complex Problem Solving and Emotional Intelligence plus Emotional Resilience; Concept Formation; Inquisitiveness
Entrepreneurship	Complex Problem Solving, Critical Thinking, Cognitive Flexibility, Emotional Intelligence, Interpersonal Relationships, Communication, Emotional Resilience, Concept Formation and Inquisitiveness
Technology Know-how	Digital Affinity;
Cognitive Flexibility	Complex Problem Solving, Critical Thinking and Inquisitiveness plus Context Switching / Cognitive Agility
Continuous Learning	Complex Problem Solving plus Concept Formation; Emotional Resilience; Inquisitiveness

Source Authors’ own work—Illustrative example

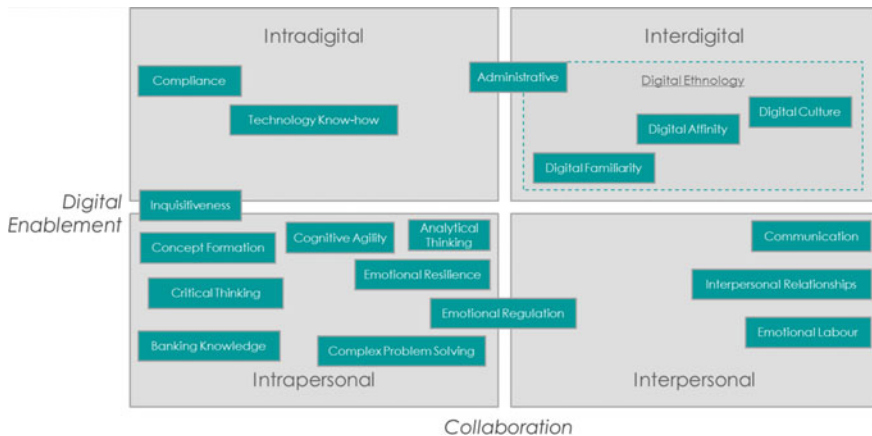


Fig. 2.2 4th quadrant competency framework: Banking specific (Authors’ own work—Illustrative)

almost without exception as the World Economic Forum does elude to what they call “technology know-how” (The World Economic Forum, 2016). For us, this mention of technology know-how does not adequately address the depth of skill that needs to be developed in this domain to remain relevant in the future.

The development of these two quadrants, namely interdigital and the intradigital quadrants, is embedded in the field of digital ethnography, which is the study of the relationship between humans and the digital world. Some of the competencies and their impact on performance included in the framework are by now common knowledge like complex problem-solving for example. However, some of them like emotional labour or digital affinity are a little less well known. The key to developing a robust framework is to define them exclusively; through this process, we can accurately understand their impact but also how to develop them. In the table below, we

present the definitions of each of the eighteen competencies making up the banking specific 4th Quadrant Competency framework in Table 2.2.

2.13 Critical Learning Gaps

Through our ongoing engagements with clients, we see the emergence of key themes that are shaping the learning and development conversation. Across the board, junior staff are lacking the digital familiarity required to cope with future demands on their roles. Therefore, improving digital familiarity is critical in assisting them to adapt to new tools and solutions that will increasingly become a day-to-day requirement across all job families. Compounding the problem, junior staff also lacked the level of resilience, adaptability, and agility required to adapt to the digital future. Relationship management and interpersonal skills also needed attention, which points to a social rather than an analytical uptake of digital change.

Management, on the other hand, requires much higher abilities for collaboration and coaching than what they showed. This was mainly due to an underlying need to further develop emotional intelligence, which was also identified by the World Economic Forum as a key future competence. A specific focus area lies in the domains of emotional labour and the resilience in dealing with emotional shocks that constant change might bring about. This speaks to the need to develop a more personalized approach if we want to see the benefit of learning and development.

2.14 The Need for a Hyper-personalised Approach

In a new digital, hyper-connected world, we will have an abundance of information and sources of truth, routine tasks are automated, and we have an increased focus on creativity and problem-solving. In this world, standardized training alone is no longer a viable option. Instead, we need to adopt a hyper-personalised approach, underpinned by an accelerated learning methodology, delivered through a digital learning platform. Through our engagements, we have been able to identify a few critical themes, which are capable of informing a future skills-based learning strategy. Our key finding is a greater need for a hyper-personalised learning and career management approach when it comes to developing talent for Industry 4.0. Although there are themes shared by groups of employees, the extent to which each person needs to develop and the importance of each of these competencies within their roles differ. Hyper-personalised learning and career management provide the agility and focus needed to develop the future competencies needed by each employee, based on their unique profile in the context of the proficiency requirement of their future career.

Accelerated learning methodology is about adopting a systemic approach that speeds up and enhances both the design process and the learning process. Our potential as natural learners is unlocked through this whole brain; whole person; whole

Table 2.2 4th quadrant competency framework

Competency	Definition
<i>Quadrant 1: Intrapersonal</i>	
Concept formation	Concept formation is the ability to build cognitive categorizations of objects, events, observations or ideas that have a non-contradictory set of features that can be logically linked
Critical thinking	Critical thinking is the ability to critically evaluate information by making inferences, evaluating arguments and drawing conclusions
Banking knowledge	Banking knowledge is the attainment of general knowledge of the banking industry, concepts and terms
Cognitive agility	Cognitive agility is the ability to rapidly switch between different cognitive functions whether that is required for maintaining engaging conversations of multi-tasking
Analytical thinking	Analytical thinking is the ability to use mathematical algorithms and concepts to solve analytical problems. It is the ability to make sense of numbers in a one context and apply that principle to other problems
Emotional resilience	Emotional resilience is the ability to cope under pressure and stress related to meeting deadlines, strenuous workloads, managing change or engaging with customers, suppliers, colleagues or management
Emotional regulation	Emotional regulation is the ability to manage and regulate emotions enough to remain in control under various emotionally charged situations, including dealing with customer interactions that are tedious or aggressive in nature, a stressful or frustrating work environment and onerous or substandard deliverables. Many roles require conflict resolution and managing delivery, which requires effective management of your own emotions
Complex problem-solving	Complex problem-solving is the ability to rationally analyse information to reach a logical conclusion
Inquisitiveness	Inquisitiveness is the curiosity, eagerness and inclination to learn, investigate, research and inquire with a purpose to attain deeper knowledge
<i>Quadrant 2: Interpersonal</i>	
Interpersonal relationships	The ability to build good, effective, sustainable interpersonal relationships with colleagues, subordinates, supervisors and customers requires knowledge of the appropriate response to specific situations taking into the consideration the archetype of the people involved, the situation and the type of relationship between the parties
Emotional labour	Emotional labour relates to the display of emotions. Being able to display the appropriate emotive professional disposition, irrespective of the stress or emotions that you experience at that point in time is essential in dealing with customers and colleagues
Communication	Communication is the ability to effectively exchange information through multiple channels through effective linguistic skills

(continued)

Table 2.2 (continued)

Competency	Definition
<i>Quadrant 3: Interdigital</i>	
Interdigital relationships	Interdigital relationships are the ability to effectively manage interactions with digital solutions and devices from both an emotive and cognitive perspective, while being able to adapt to new technology advancements and developments
Digital culture	Digital culture is the disposition that effectively incorporated the digital world into all aspects of your day-to-day life
Digital affinity	Digital affinity is the tendency to use a digital solution or device as a preferred tool to perform a task
Digital familiarity	Digital familiarity is the ability to effectively use of the latest digital solutions and devices
<i>Quadrant 4: Intradigital</i>	
Technology know-how	Technology Know-how is the knowledge of the applicability and use of the latest technologies
Compliance	Compliance is the tendency to comply with the rules of engagement, policies, procedures, practices and ethical framework required by the banking industry
Administrative	Administrative denotes the competency to efficiently organise and structure tasks; effectively assimilate and disseminate information; and plan, file and arrange work, all while adhering to strict deadlines

Source Authors' own work

system approach. This methodology maximises the four R's of learning: **R**epetition, **R**ecall, **R**eview, **R**einforcement. One caveat is that repetition needs to be varied to promote deep learning with understanding.

When you overlay this methodology with a digital learning platform learning becomes supercharged due to the nature of digital learning that reinforces our natural learning ability. It gives us as learners control over what we learn, how fast we learn, when and where we learn. In essence, Digital Learning overlays, the 4 R's with the 4 P's Preference, **P**ace, **P**lace, **P**ath. This unlocks our potential as it encourages self-direction as a key characteristic of our new breed of learner. Organisations will need to embrace the shifts and migrate swiftly towards becoming the new breed of organisation and as individuals we need to embody the new breed of learner, directing ourselves in the reflexive development of Industry 4.0 competencies (Craig & Kohl, 2014). When it comes to talent management and specifically learning and development, we need to acknowledge that different generations will ultimately respond differently to technology-enabled learning. However, the purpose of a digital learning environment is to create equal opportunity for learning regardless of age.

It is becoming essential that each of us develops our digital quotient or DQ. DQ is a term Mckinsey coined specifically referencing an organisation's digital maturity. However, developing a personal set of digital skills is fast becoming an important

skill. This will require spending time and effort on building the interdigital and intradigital quadrants. The two most important competencies to develop within these quadrants right now are:

- Digital familiarity, understanding the digital world and the tools and technologies that exist, and
- Digital affinity, which refers to the individual preferring to work in the digital world as opposed to reverting back to the physical world. Some examples of this reverting to the physical are someone that owns a tablet, yet takes meetings notes down with pen and paper, or receiving pre-meeting information packs and printing them off to review them ahead of the meeting.

With the increase in automation, it is critical that as organisations we provide our people with as many opportunities as possible to develop their digital skill repertoire. The digital skills gap is growing, and we cannot solely rely on the millennials or what Prensky and Tapscott refer to as the digital natives to close this gap. We need to start empowering ourselves regardless of our “generation” or our “digital immigrancy” to embrace the digital world.

Organisations also have to take on some of the responsibility for the development of digital skills if we want to achieve our organisational digital goals. Organisations don’t shift if people don’t shift! This is highlighted in the McKinsey Quarterly article in which they recognise that to raise your organisations, digital quotient requires four things:

- Firstly, careful and deep thinking around the digital strategy. Not all of our organisations are going to morph into an Uber or a Spotify. So we have to be aware of what we are and what we can realistically grow into when crafting our digital strategy.
- Secondly, they point out the need to strategically invest in the right technology to support their digital maturity journey.

In their third and fourth points, we see that people still lie at the heart of a successful digital transformation.

- “Third, while technical capabilities—such as big data analytics, digital content management, and search engine optimization—are crucial, a strong and adaptive culture can help make-up for a lack of them.
- Fourth, companies need to align their organizational structures, talent development, funding mechanisms and key performance indicators (KPIs) with the digital strategy they’ve chosen” (McKinsey, 2015).

After all it is still people that drive organisations and if their digital skills are low I’m not sure how successful your organisations digital transformation will be. The most poignant question for me now is how can we enable and empower this digital learner in order for them to realise the full potential of this digital learning revolutiondigital learning revolution?

2.15 Embracing the Digital Learning Revolution

We may be digital immigrants, but the use of technology has become part of our daily lives. We have embraced the information age, and we are adaptively learning how to deal with our hyperlinked society, and are continuously looking for creative ways to set boundaries around the way in which we expose ourselves and take in all of the information around us. We are becoming skilled multitaskers able to work with a multitude of content within the connected global village: balancing this with the practice of mindfulness.

We are re-proving the importance of experiential learning through our personal transformation.

This brave new information age we entered did not come with a training guide, no facilitation notes and certainly no e-learning module. But what there has been is the unknown, the openness to asking “big” questions, the willingness to explore and experience a variety of answers. More content is now being written on how we need to shift into creating learning experiences for learners, crafting learning journeys for them composed of knowledge nuggets. We are suddenly talking about this “new breed of learner” with shorter attention spans, who like bite-sized knowledge delivered just in time. But I contest this, haven’t we always been this way? Is it not that before this exponential growth in technology we were forced into an unnatural learning environment?

Sticking people into classrooms and feeding them information almost intravenously is not learning! This unnatural learning system is one that was set up out of convenience—driven by metrics like bums on seats, previously unquestioned by the status quo, in which we were too afraid to try, too afraid to be curious, too afraid to question, too afraid to step out of our comfort zone. But, our comfort zone is not where learning takes place! Learning happens at the edge of chaos, when we grapple with information to regain equilibrium! It is this through this rubbing of old against new world views that new neural pathways are developed, this is literally how we “change our minds”—through changing our neural networks!

2.16 Conclusion

We believe that what is being reflected in the current literature on learning reflects what we have always known: We watch and we learn—we try and we learn—we fail and we learn! As organisations, what we need to equip our learners with, are intelligent platforms that allow learners to take the guesswork out of learning. We need to provide a way for learners to be able to accurately and reliably measure their learning gaps against a pre-defined set of competencies. They need to understand what competencies they are working towards developing, they need to know the extent of their learning gap and they need to have access to quality content accurately curated

against those competencies. It is in this domain of hyper-personalised learning that AI will have the biggest role to play.

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Kerryn Kohl is the Co-Chief Executive Officer and Co-Founder for Fourth Talent. As an organisational behaviourist and learning strategist, she focuses on the interface between human behaviour and the digitally emergent organisation.

Juan Swartz (Ph.D.) is the Co-Chief Executive Officer and Co-Founder for Fourth Talent. He specialises in integrating scientific research and analytics to develop AI platforms in the learning and development space.

Chapter 3

Thriving and Flourishing into the Future: An Ecosystems Approach to Building Sustainable Organisations



Dieter Veldsman, Cecile Benade and Pieter Rossouw

Abstract The VUCA (volatility, uncertainty, complexity, ambiguity) environment has changed the working landscape forever. Agile multidisciplinary work teams, innovative organisational designs, a multi-generational workforce and a digital knowledge economy have become the norm. Amidst this complexity and constant change, employee engagement and functioning is becoming a source of critical competitive advantage as organisations aim to drive sustainability and relevance into the future. Practitioners and scholars have turned their attention to the concept of thriving as a means to better understand the requirements of individuals and organisations to become future-fit. The purpose of this chapter is to explore the concept of the thriving organisational ecosystem and the impact from both a macro- and micro-perspective. The chapter will contextualise the changing landscape of work and discuss the impact on knowledge economy organisations amidst the VUCA environment. The concept of thriving organisations is positioned from both a macro-organisational ecosystem and an individual well-being and motivational perspective to better understand the implications for the organisations into the future. The chapter concludes by providing recommendations to both organisations and individuals in an attempt to contribute towards building thriving workplaces where individuals can flourish.

Keywords VUCA · Thriving · Flourishing · Knowledge economy · Employee engagement · Agile work teams · Ecosystem

D. Veldsman (✉) · P. Rossouw
MMI Holdings, Johannesburg, South Africa
e-mail: dieterveldsman@hotmail.com

P. Rossouw
e-mail: rossouw.pj@gmail.com

C. Benade
Organisational Development Consultant, Johannesburg, South Africa
e-mail: cecile.benade@mmiholdings.co.za

Table 3.1 Paradigm shifts that inform the workplace of the future

Traditional paradigm	Future-fit paradigm
Objectives, plans and standards	Purpose, vision and identity
Local and physical	Global and virtual
Jobs, functions and individuals	Teams, domains and outcomes
Policy and procedure	Culture and ways of work
Face-to-face delivery	Digital products and services

Source Adapted from Veldsman (2013) with permission

3.1 Introduction

Globalisation, the rise of the knowledge economy, innovative business models, closer collaboration between public and private sector organisations, and an increasingly complex consumer landscape are changing the world of work. ‘Innovate or die’ has become the norm, with organisations battling to stay afloat amidst ever-increasing volatility, uncertainty, complexity and ambiguity (VUCA). The VUCA landscape has led to a shift in traditional organisational paradigms, and organisations’ ability to adapt, respond, and reinvent will determine their long-term viability. The table below displays the shift in paradigms that characterise the future-fit workplace (Table 3.1).

These future-fit paradigms call for a re-evaluation of how organisational success and prosperity are measured. Important to note is that there has also been a shift in thinking regarding the factors that will enable organisational systems to remain relevant and function optimally in this new world of work. The now-famous McKinsey report on the ‘war for talent’ (Chambers, Foulon, Handsfield-Jones, & Michaels, 1998) hailed a new chapter, with organisations continuously citing talent capacity as a crucial success factor to operate in this new world (Beechler & Woodward, 2009). People effectiveness has become synonymous with success, and various C-suite roles in organisations have prioritised organisational culture, employee experience, employee engagement and data-driven people analytics as keys to a successful future. In essence, a burning question at the heart of this evolution relates to how organisations could not only survive but thrive (Coetzee & Veldsman, 2016).

3.2 Chapter Objective

The purpose of this chapter is to explore the concept of the thriving organisational ecosystem. To better understand the concept of thriving organisations, the chapter will start by comparing the current literature to define and better understand the concept, before applying an individualistic lens to the concept. The chapter will also explore the concept from a broader organisational context, in an attempt to better understand what thriving from an organisational ecosystem perspective encapsulates.

3.3 Defining Thriving as a Construct

The notion of *thriving*, or rather the failure to do so, can be traced back to paediatric child-development and gerontological literature (Bundick, Yeager, King, & Damon, 2010; Newbern & Krowchuk, 1994). Chapin (1915) described symptoms of listlessness and rapid weight loss among infants in institutions, which represented a condition referred to as ‘failure to thrive’. In a similar scenario, Bakwin (1942, 1949) observed similar symptoms of physical illness among infants and found that the failure to thrive had an important relationship with emotional deprivation in cases where infants were separated from their mother. Among older adults, failure to thrive has been observed in the progressive degeneration of overall health and functioning, despite the absence of clear physical or illness-related reasons (Bergland & Kirkevold, 2001; Haight, Barba, Tesh, & Courts, 2002; Newbern & Krowchuk, 1994; Verdery, 1995). These references to a lack of thriving found in child-development and gerontological literature played an important role in establishing a connection to growth and development as key indicators of the construct and its relevance to the domain of organisational psychology. Scientific inquiry into the construct of thriving continued, and, over time, more indicators of thriving emerged in various disciplines.

In psychology literature, the themes of growth and development continued to be representative of the meaning of thriving as evident in the domains of resilience, youth development, and thriving at work (Carmeli & Spreitzer, 2009; Carver, Scheier, & Weintraub, 1989; Carver, 1998; Jarret, 2013; O’Leary & Ickovics, 1995; Poorman, 2002; Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005; Spreitzer & Porath, 2014; Theokas et al., 2005). More indicators of the construct have also been identified in the context of performance, where thriving has been associated with indicators such as wealth, success, accomplishment and prosperity (Bakker, Van Veldhoven, & Xanthopoulou, 2010; Jackson, McDonald, & Wilkes, 2011; Losada, 1999; Sarkar & Fletcher, 2014).

To this end, it is important to acknowledge that scientific inquiry into thriving aligns well with the agenda of positive psychology, which emphasises a movement away from a focus on pathology towards a focus on understanding the positive dimensions of life goals and experiences (Bundick, Yeager, King, & Damon, 2010; Seligman & Csikszentmihalyi, 2000a). Furthermore, the construct of thriving has been firmly established in the domain of positive psychology, where several other constructs related to growth, development and performance also exist.

The observation that thriving has been examined across different domains demonstrates that thriving is applicable and relevant to multiple domains and stages along the developmental continuum. As will be seen from a review of a few definitions of the construct, this can be highly problematic, for two reasons. Firstly, conceptualisations and operational definitions differ across contexts. Therefore, the meaning of the construct relies heavily on the context in which it is studied (Benson & Scales, 2009; Brown, Arnold, Fletcher, & Standage, 2017; Spreitzer & Porath, 2014). Secondly, the conceptual boundaries of the construct are unclear, as it overlaps with several other

salient growth- and development-related constructs in positive psychology (Brown et al., 2017).

To provide more clarity regarding the nature of the construct and its position relative to other constructs, consider the definitions of thriving in Table 3.2.

Before we continue to discuss the definitions of thriving or failure to thrive provided above, note that the above definitions neither represent an exhaustive analysis of all thriving definitions nor do they convey the full extent of the conceptual debate surrounding the construct of thriving. These definitions only serve to introduce some of the indicators associated with the construct and point to a few of the challenges

Table 3.2 An overview of definitions of thriving

	Definition	Domain and Context
1	<p>“...the psychological state in which individuals experience both a sense of vitality and a sense of learning at work” (Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005, p. 538).</p>	<p>Work- and occupational well-being: Thriving at work</p>
2	<p>“A ‘failure to thrive’ diagnosis is denoted by an acute lack of growth and is manifest in listlessness, immobility, apathy, and lack of an appetite” (Bakwin, 1949, cited in Spreitzer & Sutcliffe, 2007, p. 75).</p>	<p>Health: Failure to thrive (infants)</p>
3	<p>“...a progressive, functional deterioration of a physical and cognitive nature; the individual’s ability to live with multisystem disease, cope with ensuing problems, and manage his/her care is remarkably diminished” (Haight, Barba, Tesh, & Courts, 2002, p. 4).</p>	<p>Health: Failure to thrive (elderly)</p>
4	<p>“...any physiological changes brought about as a result of facing stressors that leave one with greater physiological resilience than she or he had before facing adversity” (Epel, McEwen, & Ickovics, 1998, p. 303).</p>	<p>Resilience: Adaptive responses to stress</p>
5	<p>“...the dynamic relationships among nutrition, weight, and psychosocial functioning across the life span, with positive and negative consequences for health” (Walker & Grobe, 1999, p. 152)</p>	<p>Health: Nursing</p>
6	<p>“...a higher level of functioning in some life domain following a stressful encounter” (Park, 1998, p. 269)</p>	<p>Coping: Adaptive responses to stress</p>
7	<p>“Thriving can be broadly defined as the joint experience of development and success” (Brown, Arnold, Fletcher, & Standage, 2017, p. 168)</p>	<p>Thriving as a global construct: No field in particular</p>

involved in the conceptual and operational clarity of the construct. For a thorough analysis of these and other challenges, please see Brown et al. (2017).

- **Debate 1: Contextual and temporal variance**

The contextual variance in definitions of thriving is clearly recognisable in how each definition is specific to the context in which thriving was examined (except for definition 7, provided by Brown et al. (2017), where no context was provided, given the authors' clear intent to provide a unified, robust definition that is free from contextual and temporal specificity). The temporal variance across definitions is equally obvious when noting that thriving has been defined and conceptualised in relation to different processes across the life span. For example, in definition 3, thriving was studied in relation to ageing adults, and in definition 4, in relation to infants. In definition 6, no specific developmental stage is mentioned, and in definition 5, thriving is specified to occur at any stage across the life span. Also note that definitions of thriving can be expressed in either positive or negative terms. For example, in definitions 2 and 3, (lack of) thriving is negatively expressed by the absence of growth or the presence of illness. In definitions 1, 4, 6 and 7, thriving is expressed in positive terms, such as success, vitality, learning and growth. In each instance, thriving is also expressed by different indicators, which across the definitions, may have little in common.

- **Debate 2: Thriving is multifaceted**

Different definitions of thriving involve different indicators, and, as such, the construct is considered to be multifaceted (Brown et al., 2017; Spreitzer et al., 2005). For example, in definition 1, Spreitzer et al. (2005) define thriving in terms of the affective (vitality) and cognitive (learning) dimensions of psychological experience. Abid and Ahmed suggest the addition of a behavioural dimension by arguing that, in addition to the vitality and cognitive dimensions, feeling energised and learning at work are also associated with positive behavioural outcomes such as punctuality and working faster.

- **Debate 3: Conceptual distinctiveness from other salient constructs in positive psychology**

As a multifaceted construct, it is to be expected that *thriving* shares conceptual similarities with other constructs. In this regard, thriving has been discussed in terms of its conceptual similarities and differences with regard to constructs such as prospering, resilience, flow, subjective well-being, self-actualisation and flourishing (Brown et al., 2017; Spreitzer et al., 2005). Using definition 7, formulated by Brown et al. (2017), as a point of reference, *prospering* is considered conceptually different from thriving, given its exclusion of a developmental component (Brown et al., 2017). *Resilience* on the other hand differs from thriving, as thriving is not just an adaptive response to adversity, but may occur in the absence of negative experiences (Brown et al., 2017; Spreitzer et al., 2005). *Flow* is distinguished from thriving in that individuals can be in a state of flow without actually learning anything (Spreitzer et al.,

2005). *Subjective well-being* denotes a general sense of an individual's overall positive condition, whereas thriving is more specific in individuals' evaluation of their sense of vitality and learning (Spreitzer et al., 2005). *Self-actualisation* culminates in the fulfilment of all the needs in the process of achieving one's full potential, and it is speculated that only 2% of individuals are truly self-actualised (Maslow et al. 1998). Whilst thriving also involves the development of one's full potential, it is, by comparison, considered a far more prevalent phenomenon in the workplace (Spreitzer et al., 2005). Lastly, *flourishing* most closely resembles the concept of thriving, but remains conceptually distinct, given its inclusion of physical, psychosocial and emotional well-being as core characteristics (Brown et al., 2017).

In this regard, the operationalisation and measurement of thriving have proven to be problematic, given the lack of consensus regarding the construct's dimensionality and conceptual clarity (Brown et al., 2017).

● Debate 4: A state, a trait or a process?

The conceptualisation of thriving is often marked by a lack of consensus regarding its presentation as a trait, state, or process, or a combination of these (Brown et al., 2017). According to Spreitzer et al. (2005), thriving should be viewed as a temporary state, rather than an enduring trait. To this end, thriving is not a dichotomous state, but rather a fluctuating state that exists along a continuum where people thrive more or less at any given point in time (Spreitzer et al., 2005; Spreitzer & Sutcliffe, 2007). In contrast, Theokas et al. (2005) consider thriving a construct that denotes individual functioning across time and place. Therefore, thriving can be considered as a process or change, but not as a static trait (that cannot vary over time and place) and not as a state (which represents individual behaviours at one specific point in time and place).

In the previous section, our discussion of the emergence of the concept of thriving and its relevance to a variety of domains highlighted some of the critical conceptual debates that continue to energise scientific inquiry, but which also challenge scientific progress in the field. This discussion aimed to develop a view of the scope of what it may mean to thrive at an individual level, and, as such, a key observation from this discussion was that an answer to the question—*What is thriving?*—necessitates the inquirer's consideration of the context in which the concept is examined.

One of the products of the various contributions made in the theoretical and practical domains of thriving research is the identification of several personal and contextual variables that may enable thriving in a given scenario (see Brown et al., 2017, for a synthesis of personal and contextual enablers and the potential processes that underpin thriving across different domains). For clarity, the term *personal enablers* refers to the affective, cognitive and behavioural aspects of individuals that may facilitate thriving, and the term *contextual enablers* refers to those characteristics of the environment that interact with personal enablers to facilitate the process of thriving (Brown et al., 2017; Carver, 1998; Spreitzer et al., 2005). Therefore, a meaningful understanding of thriving at an individual level requires consideration of the different personal and contextual enablers that may facilitate thriving, the indicators associated with thriving in a given context, and, lastly, an understanding of the processes underlying thriving in the given context (Carver, 1998; Spreitzer et al., 2005).

As evident from the definitions of thriving across different domains and with respect to different stages of development, thriving means different things in different contexts. However, the question regarding the applicability of conceptualisations of thriving to an organisation as a unit of analysis requires us to consider the construct of thriving in the context most closely related to an organisation: the workplace.

3.4 Viewing Thriving in the Context of Employees Within the Workplace

Employees' thriving is of critical importance to organisations in their pursuit of sustainable growth, adaptability and innovation (Spreitzer & Sutcliffe, 2007; Spreitzer et al., 2005), as the creativity, energy, ideas and knowledge of employees make substantial contributions to the success of the organisation (Spreitzer, 2008). Thriving employees demonstrate greater degrees of engagement and resilience to stress and burnout, as well as enhanced performance, job satisfaction and innovative behaviour (Carmeli & Spreitzer, 2009; Porath, Spreitzer, Gibson, & Garnett, 2012; Spreitzer et al., 2012).

In terms of their socially embedded model of thriving at work, Spreitzer et al. (2005, p. 538) define thriving at work as 'the psychological state in which individuals experience both a sense of vitality and a sense of learning at work', where *vitality* refers to individual feelings of energy and positivity, and *learning* refers to the acquisition and application of knowledge and skills. In this regard, thriving, expressed as the experience of vitality and learning, represents a key indicator of human growth at work (Spreitzer & Porath, 2014). According to Spreitzer et al. (2005), individuals' degrees of thriving result as a response to the particular work environment in which they find themselves, and, as such, it is postulated that individuals are more likely to thrive in work environments that support decision-making discretion, broad information sharing, and a climate of trust and respect (Spreitzer et al., 2005). In response to these features of the work environment, individuals may then behave more agentically, that is, with more action and purpose (Bandura, 2001), which, in turn, promotes the experience of thriving (Spreitzer et al., 2005).

Thriving of individuals at work is a vital component to achieving individual and organisational performance, ultimately leading to organisational sustainability (Spreitzer, et al., 2012). It has been reported that thriving employees perform better, show higher organisational commitment, experience higher levels of satisfaction and display lower levels of burnout (Spreitzer et al., 2012; Spreitzer & Porath, 2012). Employees have also been found to experience better general health and well-being, less strain and lower levels of burnout when they thrive at work (Porath et al., 2012).

Spreitzer et al. (2012) make the point that, in order for employees to thrive, levels of both learning and vitality need to be high and suggest three strategies for self-regulating vitality and learning: (1) taking a break, (2) finding ways to craft work to be more meaningful and impactful and (3) looking for opportunities to innovate in order

to learn or grow. Ensuring that individuals have the opportunity to grow and develop at work is a crucial enabler of thriving. Acquiring new skills and knowledge, challenging the status quo, and being able to seek out opportunities to develop all contribute to learning experienced by an individual. The three dimensions of self-determination theory—autonomy, competence and relatedness—have also been found to explain a significant amount of variance in thriving (Spreitzer & Porath, 2014).

In a study conducted by Abid, Sajjad, Saman, Farooqi and Nisar (2018), it was found that both prosocial motivation and civility are important contributors to individual thriving at work. This implies that a workplace characterised by a desire to help or contribute (*prosocial motivation* according to Grant, 2007) allows employees to experience a sense of vitality and learning. Thriving is further enhanced in a workplace that embraces shared norms of politeness, respectful behaviour and positive connections (*civility* according to Ferriss, 2002; Pearson, Andersson, & Porath, 2000). When employees experience the aforementioned at work, it impels energy, increases motivation and contributes to employees' ability to learn and apply new skills and knowledge in a work environment (Abid et al., 2018).

Organisations play a key role in creating a workplace that enables employee thriving. Various factors have been identified as increasing the potential for employees to thrive at work. Such factors include enabling discretion for decision-making, sharing information about the organisation and its strategy, lessening incivility, giving performance feedback, and creating a climate that promotes diversity (Spreitzer et al., 2012; Spreitzer & Porath, 2012). Leaders can play a critical role in creating an organisational culture that promotes thriving through empowering employees and setting the tone of the culture. Providing social support, enhancing autonomy and ensuring that intrinsic and extrinsic rewards are proportionate to employees' perceived contributions are some of the approaches listed by Davenport (2015) to help leaders shape the culture. Spreitzer and Porath (2014) also highlight the negative impact of environmental turbulence on thriving and underline the role of the leader in mitigating the volatility inherent in organisational change.

A positive relationship has also been found between thriving and employee engagement (Abid et al., 2018), suggesting that higher levels of energy (vitality) and greater opportunities to acquire and use new skills and knowledge will lead to greater employee engagement. Employee engagement is described in literature as a positive and fulfilling work-related state of mind that is characterised by vigour, dedication and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Considering these findings within the context of the Job Demands–Resources Model (Bakker & Demerouti, 2007) highlights the effect of the motivational process, which shows how abundant resources impact positive organisational outcomes (e.g. organisational commitment) via work engagement (De Beer, Rothmann Jr., & Pienaar, 2012; Schaufeli & Bakker, 2004). Job resources have also been found to play a motivational role, as they nurture employees' learning and development. According to the model of thriving by Spreitzer, et al. (2005), resources enable thriving, but are also produced by the agentic behaviours of thriving employees. Thriving and work engagement have a conceptual overlap, as both concepts include available energy (referred to as *vitality* or *vigour*, respectively) as a main component; however, work

engagement does not explicitly require experiences of learning, as it is more strongly related to experiences of dedication and absorption (Spreitzer, Lam, & Fritz, 2010).

3.5 Individual Thriving in the Digital Workspace

The world of work continues to evolve, and technological disruptions and characteristics of digital workspaces are becoming more evident (Gruen, 2017; Kaivo-Oja, Roth, & Westerlund, 2017). The questions remain, however, do we really understand the impact of digital workspaces on thriving of employees, and are we prepared for it? In exploring the impact of artificial intelligence on work in an evidence review prepared for the Royal Society and the British Academy, Frontier Economics listed the following as points to consider in response to the question ‘What work will look like in 2030’: How much work will be done, what type of work will be done, what skills will be required, how will work be organised, how will all of this affect people’s well-being, and how quickly will these changes happen? These are critical questions to consider in exploring the impact of digital workspaces on the thriving of individuals.

It is important, however, to understand that the demand for people is not in decline. Pissarides and Thomas (2018) discuss the concept of *augmenting human work*, which refers to changing our perception from technology that replaces human work to the development and dispersal of technology that augments human work. Automation allows for the creation of new meaningful and complex tasks that could lead to the creation of new jobs (Gruen, 2017). The formation of new tasks and jobs through advances in technology highlights a critical need for the development of new skills for the workforce of the future. Neumeier (2012) states that thinking needs to shift from static and linear to dynamic and holistic and suggests five meta-skills (feeling, seeing, dreaming, making, and learning) for achieving this.

The above highlights potential opportunities, as well as potential hindrances, related to thriving in the workplace. New skills being required should provide numerous opportunities for individuals to learn and grow, which could positively impact the learning dimension of thriving. Challenge stressors such as learning demands have been found to have a positive total effect on learning (Prem, Ohly, Kubicek, & Korunka, 2017). It could be expected that the digital workspace of the future is likely to present various challenge stressors, such as learning demands. It is frequently referred to in literature that employees will be required to learn a variety of new skills to remain relevant in the workplace of the future. The rapidly changing skills need to increase the risk of a mismatch and shortage of skills, which could result in substantial economic costs (OECD, 2017).

Collaboration, global awareness, knowledge construction, skilled communication and self-regulation are just some of the skills that have been identified as critical to prepare and equip employees to deal with demands and challenges in a knowledge-based and technology-driven globalised environment (Levy & Sidhu, 2013). The challenge would probably be to ensure that support and opportunities are made

available for employees to embark on a learning journey to acquire these new and relevant skills. It will also be important to ensure that governments, organisations and learning institutions are geared towards teaching the new and different skills required to work in a digital workspace (OECD, 2017).

The need to acquire new skills in order to remain relevant in the workplace of the future is likely to also impact competence as a nutriment of self-determination, which has been found to facilitate thriving (Spreitzer & Porath, 2014). *Competence* refers to feeling capable to attain certain outcomes (Deci, Vallerand, Pelletier, & Ryan, 1991) and highlights the importance of having the capability necessary for the task at hand (Ryan & Deci, 2008b). Feedback becomes a key enabler in building competence in the digital workspace. Spreitzer and Porath (2012) identified feedback as a mechanism that contributes towards creating conditions for thriving, as it reduces feelings of uncertainty and creates opportunities for learning. It will be important to ensure that leaders are skilled in the art of giving feedback to build competence and contribute towards a thriving workforce.

It is also important to consider the two remaining dimensions of self-determination theory—autonomy and relatedness, and how they are likely to be impacted in the future digital workspace. It has been hypothesised in literature that work is likely to be organised differently in the workplace of the future (Frontier Economics, 2018), with a much larger component of the workforce working remotely, with flexible working hours, or only being employed for the delivery of certain tasks. This way of work will significantly impact traditional opportunities for connections in the workplace. Relatedness, which is described as experiencing a sense of belonging and connectedness within one's community (Deci & Ryan, 2000), is likely to decline if new platforms and networks to facilitate connections are not created. Online collaboration was identified in the Google work culture as one of the most important skills of future employees (Moore, 2016).

Knowledge work environments will need to foster an increase in social connections through stronger empathy, in order to create workspaces in which collaborators care about each other's work and well-being (Moore, 2016). Autonomy is the third psychological need included as part of self-determination theory and is described as the extent to which a sense of choice is experienced concerning one's behaviour (Ryan & Deci, 2008a). In a work environment characterised by flexible work arrangements, including choices pertaining to work hours and the location where the work is performed, employees are likely to experience greater autonomy (Spreitzer & Porath, 2014), which is positively related to thriving. Understanding, however, that the three psychological needs described above (competence, relatedness and autonomy) do not function in isolation is of critical importance—the very working conditions of a future workspace responsible for facilitating greater autonomy might create obstacles to experiences of competence and relatedness.

Another important component to consider is the creation of meaningful work in digital workspaces. Spreitzer et al. (2012) identified crafting of meaningful and impactful work as a strategy to enable thriving. It is well documented in literature that the nature of work is likely to change as organisations move into an era of digitalisation (Burtch, Carnahan, & Greenwood, 2018; Kaivo-Oja et al., 2017). Routine or

robotic work is more likely to be displaced than non-routine, creative work (Gruen, 2017; Neumeier, 2012). This brings along opportunities to relook the manner in which jobs are designed, and to ensure that all roles created allow for an opportunity to contribute in a profound and meaningful manner. Meaningful work is described in literature as the experience that one's work has significance, that it enables personal development and contributes to the greater good (Steger, Dik, & Duffy, 2012). Previous research studies have found significant correlations between intrinsic motivation and meaningful work (Duffy & Dik, 2013; Steger et al., 2012).

Creating sustainable digital workspaces that enable thriving of individuals will most likely require a partnership between employees and organisations, all contributing in different ways, but to one clearly defined outcome—creating a workplace where every individual is able to grow, develop and, ultimately, thrive.

3.6 An Ecosystemic Approach to Organisational Thriving

Returning to the question regarding the applicability of conceptualisations of thriving to an organisation as a unit of analysis, Spreitzer and Sutcliffe (2007) conceived two conceptualisations of organisational thriving. The first conceptualisation views organisational thriving as a function of the number of thriving individuals in the organisation. This idea is problematic, as a one-to-one correspondence between individual and collective thriving is not plausible, given that individuals can thrive at work whilst the organisation at large may not (Spreitzer & Sutcliffe, 2007).

The second conceptualisation of organisational thriving shifts the focus from individual thriving and considers organisational thriving as the extent to which an organisation has established collective capabilities that promote vitality and learning in response to an unpredictable environment (Spreitzer & Sutcliffe, 2007). This approach postulates that organisations themselves cannot thrive, but, rather, can create an environment with the relevant levers so that individuals can thrive. In this chapter, we want to build on and speculate about the second approach, as we believe that the VUCA landscape calls for more integrated ways of understanding the complexity of organisational systems. We want to speculate that organisations as living systems (Wheatley, 2011) can invest in becoming a thriving enterprise by building different types of capital that, in turn, will enable organisational thriving to occur. For us to explore this perspective, we have to state the assumption that we subscribe to the approach that an organisation is, in itself, an ecosystem that can change and adapt, and that it has specific characteristics that make it unique. This approach aligns with research in the domains of organisational identity (Seidi, 2016) and organisational development (French & Bell, 1999), and views the organisation as a living ecosystem.

As a starting point, we reviewed the literature of models aimed at understanding organisational systems, such as the work of Burke and Litwin (1992), Weisbord's Six-Box Model (1987) and the Congruence Model (Nadler & Tushman, 1980). We found that these models fundamentally view the organisation as a system that needs

to be 'fixed', and the ultimate goal is optimal functioning, not thriving as defined earlier in this chapter.

Our view is that these models are useful, but lack the forward-looking approach required for organisations to be able to invest in becoming a thriving organisation. We also have to acknowledge that the models were not created for this purpose, but were designed to understand the organisational system and drive improvements to optimise functioning through various levels or balance.

Given this context, it seems as if a new theoretical model of understanding organisational thriving is required if organisations are to remain relevant in this ever-changing world of work.

3.7 A Theoretical Dimension-Based Model of Organisational Thriving

The development of any theoretical model involves a certain amount of speculation that needs to be proven empirically, but should nonetheless draw from current literature and empirical findings to inform the basis of the theory. The model below draws strongly from the field of organisational and work psychology, with a specific focus on the domains of work engagement, organisational development and people effectiveness. We also build upon the literature and conceptual debates regarding thriving as a construct and thriving at an individual level, as explored earlier in this chapter, to guide our thinking regarding how organisations can become thriving ecosystems. From a theoretical perspective, the authors want to position the following perspectives, which will be explored below:

- Perspective 1: Organisations can invest in becoming thriving enterprises by accumulating four types of capital required to thrive.
- Perspective 2: Capital can be obtained by the presence or enablement of certain facets that are within the control of the organisation.

3.7.1 Positioning the Different Types of Capital Required to Thrive

We believe that thriving organisations need to invest in four types of capital if they are to thrive in this new world of work. *Spiritual capital* refers to the ability of the organisation to clearly state and live a meaningful purpose that transcends the immediate self, and also to focus on contributing towards the society within which it operates. Spiritual capital can only be attained by being connected and socially embedded within the broader context in which the organisation exists and having a purpose that stretches beyond the lifetime of the current organisational members.

We believe that, for organisations to invest in spiritual capital, clarity pertaining to organisational identity, defined as the enduring and ever-lasting characteristics that shape who the organisation is, is critical (Veldsman & Veldsman, 2019). This implies the achievement of congruence between elements of identity such as strategy, culture, values and behaviours that are shared and believed in by all organisational members. This approach is in line with the perspective of Zohar (2010), who describes spiritual capital as the wealth, power and influence gained from deep values through the achievement of a higher purpose.

The second investment needs to be made in cognitive capital. *Cognitive capital* we define as the ability of the organisation to invest in the required organisational architecture that can operationalise the purpose of the organisation. Organisational architecture, in this instance, is defined as the processes, ways of work, and building of internal knowledge to sustainably strive towards the achievement of the organisational purpose over time. At an organisational level, this refers to the ability to clearly define organisational capabilities required, i.e. what we need to be good at to achieve our purpose, and having ready access to these capabilities through internal and external strategies. Cognitive investment also refers to the continuous availability of resources required to execute on organisational goals to ensure sustainably into the future. *Resources*, in this context, refer to factors such as financial stability, tools and equipment.

Cognitive capital has been widely researched in the fields of organisational design, continuous improvement and knowledge management (Hislop, Bosua, & Helms, 2018; Flynn, 2015). We build upon these fields by incorporating the connection of organisational design—'How we do things'—and purpose—'Why we do things'. We also bring in the perspective of an organisation that has the ability to harness knowledge to ensure its sustained success, independent of its current organisational members. The ability of the organisation to learn has been cited by Santa (2015) as a critical element in enabling the energy and growth required to build a thriving environment and is an important factor in enabling performance within the organisation.

Emotional capital refers to the provision and availability of organisational support to ensure the continuous well-being of the organisational system. *Organisational support* refers to the perception that organisational members have in terms of whether the organisation cares about their well-being and values their contributions (Els, Mostert, & Van Woerkom, 2018). Investing in emotional capital entails the creation of work environments conducive to achieving high states of work engagement. Even though work engagement is influenced by more than just emotional capital, we firmly believe that a causal relationship exists between emotional capital and states of work engagement. Various research studies have found a strong causal relationship between factors such as employee well-being, organisational support and work engagement (Carmeli & Spreitzer, 2009; Porath et al., 2012; Spreitzer et al., 2012), showing its relevance. Coetzee and Veldsman (2016) describe various factors, referred to as *performance enablers*, that influence the organisation's ability to invest in emotional capital. Some examples are provided in Table 3.3.

Furthermore, we believe that social capital plays a critical part in building a thriving organisation. *Social capital* refers to the value of networks that the organisational

Table 3.3 Performance enablers that enable investment in emotional capital

Dimension	Definition	How this contributes to emotional capital
Manager credibility	<ul style="list-style-type: none"> ● Extent to which managers are able to connect employees psychologically to the organisational purpose by treating them in a respectful, fair, and consistent manner, and to establish a trusting relationship 	<ul style="list-style-type: none"> ● Trust in work relationships has important implications for job performance, organisational citizenship behaviour, organisational commitment and job satisfaction ● Helps create a psychologically and morally safe work climate in which innovation and risk-taking can be facilitated
Appreciative feedback	<ul style="list-style-type: none"> ● Perceived meaningfulness of performance discussions and the extent to which employees receive feedback on their performance and strengths 	<ul style="list-style-type: none"> ● Enhances employees' organisational commitment ● Enhances employee self-efficacy, problem-solving behaviour and motivation
Strategic connection	<ul style="list-style-type: none"> ● Perceived connection between the organisational goals and the expected contributions of employees 	<ul style="list-style-type: none"> ● Alignment of organisational and team goals and values and the employees' performance goals ● Crucial for psychological identification and engagement with the work and the organisation
Intrateam effectiveness	<ul style="list-style-type: none"> ● Extent to which the employee perceives co-workers as competent, feels treated with dignity and respect, and feels supported by members of the team in achieving goals 	<ul style="list-style-type: none"> ● Positive team interactions and relations relate to stronger psychological identification with the workplace, the job, co-workers, and the organisation as a whole
Enabling environment	<ul style="list-style-type: none"> ● Extent to which the employee perceives the policies, procedures, and physical environment in the organisation as enabling work performance 	<ul style="list-style-type: none"> ● Perceived proper implementation and management of HR policies and procedures have been shown to increase organisational commitment and low turnover intention
Individual congruence	<ul style="list-style-type: none"> ● Employee's perceived fit between his/her strengths, competencies, and skills and the requirements of the job 	<ul style="list-style-type: none"> ● Work–role fit and the sense of being able to master one's work are associated with positive work experiences and positive individual and organisational outcomes

Source Authors' own work

system maintains with parties on which it is dependent, e.g. internal relationships with colleagues, external relationships with consumers and relationships with relevant governing bodies that influence the operating landscape. Social capital has been extensively researched as a multidimensional concept, and various definitions of the term exist (Dubos, 2017). Broadly speaking, we see social capital as an integral investment in thriving, due to its nature of ensuring the continued existence of the organisation.

Lastly, we believe that investment in these four types of capital, i.e. spiritual, cognitive, emotional and social, can only occur within the contextual parameters of the organisation. This reinforces the perspective that capital can only become relevant if seen within the context within which the organisation operates. This means that the investment in capital needs to be seen within the context and with consideration of external environmental factors that will influence the operations of the organisation.

In summary, we believe that organisations need to invest in spiritual, cognitive, emotional and social capital within a certain context of operations to become a thriving organisation. Giving the changing VUCA landscape, especially related to the digital world of work, we believe that these investments are becoming increasingly crucial to ensuring a continued and thriving existence for the organisation. Figure 3.1, below, highlights the various forms of capital, as well as potential facets that will influence each form of investment, as discussed earlier in this chapter. The outer level of the model contains the facets that contribute to the existence of capital in that domain, whilst the inner circle contains the different capital types that contribute to thriving organisational systems. Further exploration is required in order to understand whether all forms of capital are equally important or relevant to all organisations,



Fig. 3.1 Investment in thriving organisations (Authors' own work)

but, as the purpose of our chapter was to explore a conceptual model of a thriving organisation, we believe that this provides a solid foundation for further research into the value and applicability of the model to knowledge economy organisations.

3.8 Insights on Thriving

The purpose of this chapter was to explore the concept of the thriving organisational ecosystem. The chapter started by comparing the literature on thriving, in an attempt to define the concept, before exploring thriving in the workplace. Next, the chapter investigated thriving from an individual perspective and touched on thriving in a digital workspace. The chapter also explored the concept from a broader organisational ecosystemic approach and identified various forms of capital that are required for organisations to invest into ensure thriving in the future. The following insights can be obtained from this chapter.

- **Insight 1:** Various definitions of thriving exist, but there seems to be agreement that thriving is a multifaceted concept that needs to be seen from various perspectives and within many domains.
- **Insight 2:** Conceptual debates regarding thriving have been articulated and still require further exploration to resolve.
- **Insight 3:** Thriving is an applicable concept in the working environment and leads to higher productivity and organisational performance.
- **Insight 4:** Thriving in digital workspaces requires an understanding of future skill sets required for individuals to learn and grow.
- **Insight 5:** Organisations can invest in thriving by investing in spiritual, cognitive, emotional and social capital.
- **Insight 6:** Various facets contribute to the existence of capital, and organisations can put these in place to build capital to thrive.

3.9 Conclusion

The digital world of work is increasingly challenging the current perspectives of thriving and its relevance to the new world of work. Given the insights gained in this chapter, the authors conclude that thriving is becoming an increasingly important concept for organisations to better understand what will be required to remain relevant and sustainable in the future world of work. Investing in various forms of thrive capital will enable the organisational system to be able to respond and thrive in a world of volatility, uncertainty, complexity, and ever-increasing ambiguity, whilst creating an environment in which individuals will prosper, perform and, ultimately, thrive.

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Dieter Veldsman (Ph.D.) is a registered work psychologist with the HPCSA with a key focus on organisational development, people analytics, people effectiveness and organisational design. He is currently the Head of People and Organisational Effectiveness at MMI Holdings, a multinational financial services provider with a footprint in Africa, the UK and India. He has consulted across various industries and has completed numerous global consulting assignments across Africa, Europe and Asia. He is a regular speaker at international conferences on the topics of employee engagement, human capital metrics and organisational development. He has also lectured part-time at the University of Johannesburg and is involved in a variety of other academic institutions as moderator and research associate.

Cecile Benade (Ph.D.) has worked in the financial services industry since 2008 in the field of human resources management and organisational development. At present, she works as an Organisational Development Consultant whose areas of focus include establishing an optimal organisational culture, driving employee engagement, leadership development, team effectiveness and talent management.

Pieter Rossouw is Consumer and Market Insights Manager at MMI Holdings—a multinational financial services provider with a footprint in Africa, the UK and India. Following a career in human capital management and psychometric test development, he turned his focus to Consumer and Market Research. As a research consultant at various global and national research agencies, he assisted businesses across various industries to develop meaningful business insights and a deep understanding of consumer behaviour. With a keen interest in motivation and the psychological foundations of financial behaviour in particular, he has changed his focus to the financial services industry in 2014. He is a regular guest lecturer at VEGA Brand Innovation School and presenter on topics related to Financial Consumer Education. Pieter is currently completing his Ph.D. (Psychology). His research focuses on the motivational underpinnings of financial capability in adolescents.

Chapter 4

Thriving in Digital Workspaces: *From Compete to Create—Exploring New Tools*



Gaylin Jee

Abstract The chapter builds a strong case for creative, possibility-centred approaches that are required to proactively navigate complex and uncertain futures. These approaches replace the structured and linear models of the past. This chapter seeks to explore the shift from a ‘compete’ to a ‘create’ economy, the implications for the psychological contract, and also provides fresh perspectives on development and thriving at work rather than just surviving at work. Perspectives presented include conscious business practice and the conscious leadership that orchestrates better working and thriving futures. The latter focuses on developing a broad range of intelligence at work, including systems and spiritual intelligence as enablers of thriving at work. Research into the DNA of Game Changers and Game-Changing Teams is also considered. Practical interventions at work, with novel methods such as Lego Serious Play and The GC Index®, an instrument used for profiling and team interventions developed on the back of the Game Changer research, are also presented as part of new interventions to assist humans and teams to thrive at work.

Keywords Game changers · Conscious leadership · Conscious business · Fourth industrial revolution · Thriving · Flow · The GC index® · Lego® serious play®

4.1 Introduction

It is not possible to predict the future with much accuracy (Taleb, 2001). As rates of change accelerate and technologies advance, increased exposure to unfamiliar situations is one of the few certainties of future workspaces. While complexity provides uncertainty and anguish for some, even more stressful than predictive negative consequences according to de Berker et al. (2016), it appears to offer opportunity for others. This variation in response to unfamiliar demands, which defeats some individuals and encourages others to thrive, is important for individual and collective success. As the familiar jobs of today are taken over by machines and become

G. Jee (✉)
33 Emeralds, Johannesburg, South Africa
e-mail: Gaylin.jee@gmail.com; gaylin@thirtythreeemeralds.com
URL: <https://thirtythreeemeralds.com/>

obsolete, human energy can be freed to solve important challenges and to engage in more purposeful work. The challenge is to prepare for a digital age and to focus on the human contribution within this age of machines.

Schlesinger (2016) argues that new thinking is required for this complex digital era. Possibility-centred, collaborative, human-focused and iterative approaches to solving challenges are preferable in new and complex contexts (Glinska, 2015). Enabling human thriving amidst increasing change and complexity cannot be grounded in the traditional linear, structured, deductive thinking styles of the past. Fresh perspectives, methods and practical tools are required. These approaches rely on human contributions such as the ability to create or make better, and to make decisions. Paradoxically, the success of interventions that celebrate deeply human contributions is enhanced by time spent away from or uninterrupted by devices of the digital age, allowing individuals time to think, to identify and link their contributions to a larger outcome or purpose, and to reactivate mental play and flow states.

Psychologist, Mihayli Csikszentmihalyi, pioneered the flow state. His research into the roots of happiness revealed that happiness is an internal state of being and that happiness takes committed effort to be manifested. People were found to be most creative, productive and happy when they are in a state of flow, which occurs when skill level and challenge at hand are balanced. Colloquially referred to as 'being in the zone', Csikszentmihalyi (1990) concluded that flow is essential for productive and content employees; it is a deeply involved state of being; individuals find the experience so enjoyable that they will continue to do it even at great cost, for the sheer sake of doing it.

New thinking, methods and tools are emerging to assist in identifying, surfacing and connecting uniquely human contributions and reactivating flow states. A selection thereof is presented later in this chapter. The task ahead is to lay the foundations that nourish a diversity of contribution to outputs that are good for all humans and for the systems in which they exist (Fioramonti, 2017). As Taleb notes, the goal is to build more than resilience, as the resilience takes shocks but stays the same. The aim is to become what he terms 'antifragile', as the antifragile get better (Taleb, 2014).

4.2 Chapter Objective

The chapter builds a strong case for creative, possibility-centred approaches that are required to proactively navigate complex and uncertain futures. These approaches replace the structured and linear models of the past. This chapter seeks to explore the shift from a 'compete' to a 'create' economy, the implications for the psychological contract, and also provides fresh perspectives on development and thriving at work rather than just surviving at work. Perspectives presented include conscious business practice and the conscious leadership that orchestrates better working and thriving futures. The latter focuses on developing a broad range of intelligence at work, including systems and spiritual intelligence as enablers of thriving at work.

4.3 Defining Human Thriving and the Personal and Contextual Enablers for Human Thriving

Get excited about who you are, what you are, what you have and what can still be for you. Tune into your own wisdom. Your responses to the events of life are more important than the events themselves.

– Virginia Satir

Brown et al. (2017) view thriving as the simultaneous experience of *development* and *success* and distinguish three core psychological needs as prerequisites for thriving, namely autonomy, competence and relatedness. Furthermore, they contend that human thriving is affected by psychosocial variables such as personal and contextual enablers.

4.3.1 Personal Enablers of Human Thriving

Personal enablers include psychological resilience, social competence, spirituality, intrinsic motivation, positive perspective, positive personality, and knowledge and learning (Brown et al., 2017). The human drive for learning, as identified by Maslow (1965) in the form of seeking out self-improvement and growth, predisposes humans to situations that present unfamiliar demands. Responses to these new demands vary from person to person. One response is to manage and merely survive the situation. A second is to succumb to the overwhelming challenges inherent in the situation and give in. The third response is neither to manage down nor to give in. This response involves approaching the unknown with curiosity and positivity, akin to what Dr. Carol Dweck (2006) describes as a *growth mindset*. Individuals with a growth mindset grow through the challenges presented in new scenarios, viewing them as a chance to learn. The first and second responses to unfamiliar demands result in the sacrifice of achievement and learning, and opportunities for self-improvement and longer-term growth being missed. The third response, however, is the approach that assists individuals to prosper over time, as learning is harnessed in the present to be applied to future challenges. This ability to learn and reskill is a critical personal enabler for success in work settings of the future (WEF, 2017). A focus on building growth mindsets throughout the career lifespan is thus presented as a key learning and development priority within organisations.

4.3.2 Contextual Enablers of Human Thriving

Contextual enablers of human thriving include a challenge environment (balancing challenge and difficulty, as one finds in Csikszentmihalyi's flow state), colleague and employer support, and attachment and trust. Trust plays a critical role in human

thriving at work—the interpersonal bonds that nourish individuals as they explore are based on attachment and trust.

Furthermore, trust increases in the employee–employer relationship where employees report high levels of learning and vitality in their role (Brown et al., 2017). As the nature of work changes, psychological contracts between employer and employee are shifting. Since violated contracts, where obligations are not met, quickly deplete the trust battery (Morrison & Robinson, 1997), they remain an important focus in enabling human thriving in digital futures. This chapter will present recent findings from the Edelman Trust Barometer, an annual global survey, which sheds light on how the psychological contract may be shifting. Edelman has been measuring trust in the four institutions of government, business, media and NGOs since 2001, with South Africa being added in 2014.

4.4 Changing Demands and the Work Environment

... in an age of ubiquitous technology, it is human skills, creativity and capability that will form the competitive edge for any organization. (World Economic Forum, 2017)

4.4.1 *Reskilling for the Fourth Industrial Revolution*

Industry 4.0 is a leap from Industry 3.0 (Grenacher, 2018). It requires a paradigm shift for every person from the C-suite executive level to factory worker, to transition to Industry 4.0. It will be the era where cyber-physical systems, automation and the ‘Internet of things’ combine, promising scalability and exponential growth for businesses (Grenacher, 2018). A number of factors characterise Industry 4.0 settings, including:

1. Evidence of interoperability meaning machines, people, devices and sensors connect and communicate.
2. Information is contextualised through virtual copies of the physical world.
3. Technical assistance is provided to assist with decision-making and to complete tasks that are dangerous or difficult for humans.
4. Decision-making is decentralised through simple decisions being made by cyber-physical systems (autonomous decision-making) (Marr, 2016).

Additionally, sequential and linear supply chain operations are replaced by interconnected and open systems of supply operations, or a ‘digital supply network’ (Burke, 2017). Companies that can make the leap from the Third Revolution to the Fourth Revolution will outpace their peers. However, the skills and experience required to implement these paradigmatically different systems are severely lacking (Marr, 2016).

The World Economic Forum in their paper, *Towards a reskilling revolution: Industry-led action for the future of work*, January 2019, argue that there is a strong and urgent business case for companies to invest in three areas in preparation for the future of work in a 4.0 environment: reskilling at-risk workers, upskilling the broader workforce and building structures for a learning organisation.

4.4.2 Shifting Jobs, Shifting Contracts and a Resurgence of Purpose

He who has a why to live can bear with almost any how.

– Viktor Frankl

People don't buy what you do, they buy why you do it. A failure to communicate why creates nothing but stress or doubt.

– Simon Sinek

The paradigmatic shift required as the Third Industrial Revolution gives way to the Fourth Industrial Revolution will impact the jobs of today. The changing nature of work will also shift expectations between employer and employee. The psychological contract is the term used to describe the unwritten set of rules and expectations that develop between employer and employee over time (Morrison & Robinson, 1997). These expectations emerge even before the formal employment contract commences. If the expectations of the psychological contract are not met, trust erodes, and this has a profoundly negative impact on levels of employee engagement. Once the psychological contract has been violated by expectations not being met, employees are less likely to give of their voluntary or creative effort. Since creativity is a new currency for organisations, healthy psychological contracts are a priority for future work settings. The 2019 Edelman Trust Barometer reports on a noteworthy shift that is relevant to understanding how psychological contracts may be changing (Edelman, 2019).

The construct of trust started out as top-down, as reported in early Edelman surveys (the first survey was conducted in 2001). Trust then shifted horizontally to peer to peer: 'I trust someone like me'. This dispersion of authority meant that consumers were reported to be more likely to cast those they perceived to be like themselves as credible authority figures, signalling a vote of no confidence in business, leaders, governments and media (Edelman, 2019). However, where trust is placed is shifting again, and rapidly.

The findings of the 2019 Edelman Trust Barometer point to a shift in expectations of business, notably, that development, in the form of reskilling and retraining for digital futures, appears to be falling at the feet of the employer once again. 2019 survey results show that in the face of automation, a significant two-thirds of people are concerned about their future job prospects. Concern is particularly acute in developing markets. The new fear is the fear of robots.

A search for control and for taking back power has led to the dramatic rise in engagement with media, reflected in an increase from 50 to 72 percentage points in one year. Deep involvement in discussion and in the process of sharing news is reported.

Intriguingly, trust is now reported as ‘local’, with people believing it is within their power to influence what happens within organisations and that they can control the relationship with their employers. CEOs are expected to address the issues that fell through the cracks when psychological contracts shifted with the death of the ‘job for life’ in the 1970s and 1980s. These issues include pay, diversity, empowering with information and, critically, retraining or reskilling to allay the rising fears of machine-infused digital futures. With these positive stimuli, employers can expect that their employees will advocate for the organisation, will be loyal to the organisation and will engage broadly in the community for the organisation (Edelman, 2019).

Within this new ‘*trusted work*’ paradigm emerging, employers must additionally ensure that they have a big idea for the company, a social aspiration or a purpose that employees can feel strongly about. Seventy-five percent of people believe that business can make money *and* improve society; this becomes a new mandate for business and leaders, as a further 75% expect CEOs to act and not wait for government, believing that there is a possibility of action through CEOs and that CEOs must stand up and speak out on important issues. Leaders, by their actions, are expected to persuade others that trust can be restored. This finding is particularly noteworthy for South Africa: as trust falls, business is expected to lead (Rittenberry, 2018).

The theme of a larger purpose for organisations, beyond making money and servicing shareholders, has been gaining prominence in recent years. It features strongly in the work of the Singularity University,¹ in the form of their ‘massive transformative purpose’, and in Simon Sinek’s *Start with Why* leadership framework (Sinek, 2009), among many others. There is almost a century of research and thinking in this area. Neurologist and Psychiatrist Dr. Viktor Frankl noted through his experience and study in the 1940s, how it is not the conditions but the response to conditions, and the meaning created, that determine happiness (Frankl, 1946). The 2019 Edelman Survey results suggest that organisations may need to get stronger at identifying, articulating and aligning their efforts to a larger social aspiration, thus allowing for individuals to establish their own congruence with the company’s ‘big idea’, to select in and out on that basis, and to go the extra mile in times that are increasingly complex and changeable.

Additionally, on the point of shifting contracts, during the last ten years, 94% of new jobs have appeared outside of traditional employment (Hyman, 2018). The new ‘gig’ economy is supplied by Web-based workers, working virtually and from anywhere. There are also location-based workers, who work in the physical world via apps (examples of income earners from this second type of work are Uber drivers). The non-traditional jobs offered through digital economies are touted with bene-

¹Singularity University is a global learning and innovation community using exponential technologies to tackle the world’s biggest challenges and build a better future for all. More on their website here: <https://su.org/>.

fits such as increased autonomy and more flexibility. This independence is often lacking in traditional jobs. However, the so-called freedom of non-traditional work signals insecurity and risk for many workers. It also spells a further tear in obligation between worker and employer, with few of the benefits offered by ‘traditional’ employment, such as sick leave, pension and medical aid contribution. One study by the International Labour Organization (Berg et al., 2018) showed how pay for gig work had decreased over a two-year period. Gig jobs are reported as delivering financial returns that barely match minimum wage levels. Economic historian Louis Hyman urges that digital norms and policies must benefit today’s workers and not ‘work’ them over:

For the vast majority of workers, the “freedom” of the gig economy is just the freedom to be afraid. It is the severing of obligations between businesses and employees. Hyman, (2018).

4.4.3 *From Compete to Create, Blue Oceans, Machines Versus Humans*

We do not see the world as it is. We see the world according to our instruments.

—Immanuel Kant

We can be blind to the obvious, and we are also blind to our blindness.

—Daniel Kahneman

Traditional ‘chase-and-imitate’ business models are increasingly limited in their usefulness. Chan Kim and Mauborgne (1999) employ the metaphors of red and blue oceans, with red oceans illustrating saturated markets, bloody with cutthroat competition, and blue oceans illustrating new and uncontested markets. They note that a linear path, using past, current or best practice to do more of the same, is no longer an effective business formula for success into the future. An over-focus of what is extant may come at the sacrifice of imagining what is possible.

According to Chan Kim and Mauborgne (1999), organisations have traditionally competed in red oceans, and their competitive strategy has been characterised by identifying the dimensions of their competitors in attempts to match and beat them. Typical in this approach is the sharing of common views about customers, products and services within an industry. ‘Match and beat’ leads to a competitive convergence, where products and services are not very different from one another, and where competing happens at best through marginal improvements in cost, quality or both. Products become commoditized as competitors continually strive to outperform their rivals to secure or sustain a share of the market. Prospects for growth are reduced as many players compete for limited attention in increasingly crowded market spaces.

In contrast, blue oceans are market spaces that are unknown and thus uncontested. It is easier to make a copy than to make something new, notes Thiel and Masters (2014). However, creating the new, or making something better, taking it from ‘0 to

1', is what potentially transitions organisations into blue oceans where there are no competitors, making these markets extremely attractive.

Playing in unknown markets is only possible if companies are prepared to follow paths that are new and untested (Thiel & Masters, 2014). Uber is one company that moved into an uncontested market space with its provision of taxi services to individuals via the app. They have no cars and no drivers; in the same way that Airbnb has no real estate. Cirque du Soleil is further example of a blue ocean company that created new and superior value (Chan Kim & Mauborgne, 2004). Cirque du Soleil eliminated elements of the traditional circus, such as the animals that were costly to keep and whose welfare was often questioned, and expensive star performers. In their place came anonymous performers from a diverse range of professions, including sport, and more luxurious venues. Cirque du Soleil provides sophisticated shows for an adult audience.

Blue ocean strategy tools are used to assist organisations to follow new paths, making the competition irrelevant through the creation of new markets. In this way, they 'compete' through 'creating' and move beyond their competition in so doing. Thiel and Masters (2014, pg. 35) argues that: 'the more we compete, the less we gain'.

In studying organisations that had already shifted to blue oceans, Chan Kim and Mauborgne (2017) observed that people in those organisations had become more creative and energised. They note three successful components for transitioning from market-competing moves (red ocean strategy) to market-creating moves (blue ocean strategy):

1. Adopt a blue ocean perspective—raise fundamentally different sets of questions to see new opportunities and risk in fresh and innovative ways.
2. Apply practical tools for market creation.
3. Adopt a humanistic process, or a 'humaneness' in the process—inspire and build people's confidence to own and drive the process for effective execution.

The red ocean, blue ocean motif is also useful for exploring current employee experience. As Grant (2016) reports, psychologists have long recognised that there are two routes to achievement—the first is through conformity, and the second is through originality. The first maintains the status quo, while the second champions novel ideas that go against the grain but ultimately make things better. It is proposed that employees in organisations competing in red oceans are more likely to be conforming more than being original, while blue ocean organisations are forced to recognise the contribution of employees to make things better, unlocking opportunities and forming new market spaces through their purposeful and creative drive.

Amidst Gallup's growing, global disengagement figures,² the question is posed as to how many of the characteristics of personal or contextual enablement for human thriving feature for conforming individuals in red oceans.

²According to the Gallup State of the Global Workplace report of 155 countries, 85% of employees are not engaged or are actively disengaged at work www.gallup.com.

They give you their time, but not their best effort nor their best ideas. They likely come to work wanting to make a difference — but nobody has ever asked them to use their strengths to make the organization better.

Jim Harter, Gallup Blog³

4.4.4 *Machines Versus Humans*

Since new technologies do not compete with humans for resources, Thiel and Masters argue that technology is one way to escape competition in a globalising world (Thiel & Masters, 2014).

Humans and machines are categorically different; they are good at fundamentally different things. Humans have intentionality and are good at making decisions in complicated situations. Machines are better at processing large amounts of data.

As machines increasingly perform repetitive, monotonous, difficult and dangerous tasks, human time can be freed up for more creative and purposeful work. Machines and humans, it is argued, will complement each other as machines become more powerful (Thiel & Masters, 2014). By combining new technologies with the uniquely human capacity for innovation, Thiel asserts, humans can ‘work miracles’.

4.5 Creative Economies and Inclusive Definitions of Growth

Sustained economic progress can no longer tolerate the waste of human talent, but must increasingly turn on the full development of each and every human being. Creativity and Prosperity: The 2010 Global Creativity Index⁴

The creative economy is defined by Sung (2015) as a policy that aims to generate new growth through economic operations that promote creativity, knowledge convergence and advanced scientific technology, based on coordinate learning, and consequently creating new markets and new jobs. The creative economic system is underpinned by what Sung refers to as both knowledge and information technology. It is understood to have evolved beyond the ‘chase-and-imitate’ economic model that most developing countries follow and is badged as a driving force for growth and sustainability, by unlocking and promoting overall creativity within societies.

Creative economy policy ideas first developed fully in the UK (Schlesinger, 2016), as a project of renewal designed to improve the country’s competitive position. The

³<https://www.gallup.com/workplace/231668/dismal-employee-engagement-sign-global-mismanagement.aspx>.

⁴Creativity and Prosperity: The 2010 Global Creativity Index, Martin Prosperity Institute, 2011 <http://martinprosperity.org/media/GCI%20Report%20Sep%202011.pdf>.

fundamentals of the creative economy belief system mirror Smith's (1998) work, in that the arts should not be reserved for an elite few but rather for everyone, and that creative talent must be nurtured and celebrated at the heart of the political agenda. For the purposes of understanding the main thrust of this chapter, one might substitute a few words in the last statement. Thus, **creativity** should not be reserved for an elite few but rather for everyone, and **creating meaningful outputs** must be nurtured and celebrated at the heart of the **work** agenda.

The ideas behind the creative economy have now garnered global acceptance. The creative economy has diffused from a mobilising statement, to concepts and ideas including 'creative cities', 'creative innovation', 'creative skills', 'creative education', 'creative ecology' and 'digital creative economy' (Schlesinger, 2016). Schlesinger refers to these 'tropes' as dominating a topic that requires fresh thinking in a complex digital age. Tropes aside, culture-based creativity—the kind of thinking beyond 'production' to, for example, 'experience' as in Virgin's long-haul aviation and that ascended Apple to global design fame—is touted as critical, given that productivity gains at manufacturing level are no longer sufficient to establish a advantage.

Measures such as the Global Creativity Index are now applied to rank nations. The Index uses the three Ts of economic development: technology, talent and tolerance. Introduced in 2004, it also assesses prospects for long-term prosperity. The Global Creativity Index's more narrow initial focus on competitiveness and growth has expanded to include the broader sweep of creativity, prosperity and well-being. In a welcome development, conventional measures of growth feature alongside more holistic and human measures, such as economic equality, human development and happiness.

A 'create' economy cannot run on disengaged employees and severed psychological contracts, when severed contracts negatively impact trust and voluntary effort. Organisations of the future may need to pay more attention to holistic and human measures, such as equality, human development and happiness, as these rise in prominence on the business agenda.

4.6 Fresh Perspectives

In this section, the work of Sisodia and Mackey (2014) on conscious leadership and conscious businesses is highlighted. This is in response to the new mandate for business and leaders—stand up and act where other institutions are failing (2019 Edelman Trust Barometer), and the new 'trusted work' paradigm that expects employers to have a social aspiration or a purpose that employees can feel strongly about. Key findings of the DNA of Game Changers (Ott & Mervin-Smith, 2015) and the DNA of Game-Changing Teams (Ott & Mervin-Smith, 2016) shed new light on the talent needed for Fourth Industrial Revolution settings.

4.6.1 More Conscious Business, More Conscious Leaders

4.6.1.1 Conscious Business

While creating financial wealth for shareholders may have driven much activity in the twentieth century, the twenty-first century will require businesses to rethink their responsibility and their impact in multiple dimensions on many stakeholders, both now and into the future. Generating financial wealth at the expense of intellectual, social, emotional or environmental health may result in a negative net impact on the world. In his work *The Wellbeing Economy*, Lorenzo Fioramonti (2017) argues that development lies not in exploiting human and natural resources, but in improving the human-to-human and human-to-ecosystem interactions, supported by appropriate enabling technologies. ‘Well-being’ is taken to refer to more than personal wellness, but includes broader social and natural expressions of life. A commission of experts chaired by Nobel Prize winners, Economists Stiglitz and Sen, defined well-being to include ‘the full range of factors that influence what we value in living’ (Fioramonti, 2017, p. 13).

There are businesses in operation that give consideration to and measure performance beyond just financial results.⁵ These conscious businesses, encouragingly, are outstripping the financial performance of their more non-conscious peers (Sisodia & Mackey, 2014). Conscious business is informed by the spirit of conscious capitalism, aiming to create value and well-being for multiple stakeholders, financial, intellectual, physical, ecological, social, cultural, emotional, ethical and even spiritual. There are four central tenets to this approach, badged as an operating system, in line with our ethos as evolved beings, namely:

1. Higher purpose and core values
2. Stakeholder integration
3. Conscious culture and management
4. Conscious leadership.

Conscious businesses are designed as vehicles for personal and organisational growth.

4.6.1.2 Conscious Leadership

The leaders of conscious businesses are called ‘conscious leaders’. These leaders demonstrate a servant leadership orientation, stewarding and safeguarding the business for future generations, rather than managing for short-term profit for the benefit of a few.

Developmental Psychologists Kegan and Gardner, through their independent research, have shown that human beings have multiple types of intelligence in differ-

⁵See www.consciouscapitalism.org for example of companies that operate businesses that are ‘good, ethical, noble and heroic’.

ent proportions, shifting how intelligence is perceived and applied in society and at work (Sisodia & Mackey, 2014). Twenty-first-century leaders require more than analytical intelligence (IQ) and emotional intelligence (EQ). Conscious leaders value and develop an additional two types of intelligence, namely systems intelligence, (SYQ), which concerns appreciating how systems come together and interact, and spiritual intelligence (SQ), used to access meanings, values, purpose, higher motivations and the innate ability to distinguish right from wrong. Labelled the ‘transformative intelligence’, SQ allows for the replacement of old paradigms and patterns with new innovations, thereby shifting individuals from lower to higher motivations.⁶ Those with high SQ are open to the discovery of their own higher purpose, and they are also able to align the organisation to a higher purpose. EQ, SYQ and SQ can be enhanced across the lifespan, and conscious leaders strive to do so.

The quality of our leaders affects the quality of our lives, our communities and our environments. A richer understanding and application of multiple types of intelligence may assist leaders, employees and the systems around them to thrive in complex times.

4.7 Inclusive Views of Game-Changing Talent

4.7.1 *The DNA of Game Changers*

A group of talent seldom found within the corporate world is increasingly sought after as the digital revolution presses its ‘create and innovate’ mantra upon business. This group of talent, Game Changers, has been found to differ significantly from traditional leadership in that they possess a capacity to drive and lead paradigm-changing initiatives in organisations, thus countering traditional leadership that plays it safe, is risk-averse and concentrates mostly on incremental, continuous improvement (Ott & Mervin-Smith, 2015). Game Changers ‘see round corners’ and spot opportunities where others do not, and their transformative capabilities are rare and increasingly in demand.

In response to a real business need to drive transformation, researchers set out to better understand and define game-changing talent and to ascertain how they differ from traditional leaders and C-level executives. Results were published into the research report ‘The DNA of a Game Changer’ (Ott & Mervin-Smith, 2015). Using Kelly’s Repertory Grid interview technique (based on Kelly’s Personal Construct Psychology, 1955), business executives from a variety of large organisations across the world were asked to compare and contrast ‘Game Changers’, ‘C-Level executives’ and ‘high potentials’. The following themes emerged:

⁶The SQ Psychometric Assessment measures spiritual intelligence (SQ), the extent to which higher values, meaning and a sense of purpose influence an individual’s decisions and actions. http://danahzohar.com/www2/?page_id=158.

- Big picture thinkers
- Very strategic
- High on vigour
- Creative idea generators
- Passionate about the idea
- Ambitious, driven to succeed
- Strong influencers of people
- Great at articulating vision (Ott & Mervin-Smith, 2015).

Further insight was garnered through quantitative measures carried out in conjunction with Duke University's Corporate Journal (Dialogue, 2014).⁷ Analysis confirmed a statistically significant difference between non-Game Changers and Game Changers, who were found to be great at articulating a vision, had capacity to 'see the bigger picture', had strong strategic ability, generated creative and imaginative ideas, had an obsession for turning ideas into a reality, were ambitious with an obsessive drive to succeed, were compelled to share an idea and possessed an appetite for risk-taking.

The constructs subjects described clustered conceptually under two areas of difference: imagination (capacity for original thought) and obsession (a drive to turn ideas into reality). Game Changers were seen to rank high on both constructs. It is this combination of two dissimilar dimensions that seldom go together, that Professor Adrian Furnham cites as making Game Changers difficult to spot and unleash within the corporate world. Furnham states, 'So, to be both original and dedicated to a practical outcome in business is indeed rare' (Ott & Mervin-Smith, 2015). Game Changers were found to be less concerned with status and ego and not motivated to retain their personal power within an organisation. A self-assurance that their ideas will succeed makes them more comfortable with challenging the status quo and seemingly less deterred by the possibility of failure. Their principal focus is on ideas coming to fruition. While reported as likeable, Game Changers do not strive to be liked. They were more comfortable with risk than traditional leaders, who may make 'safer bets' that place more security around their ascent of the corporate ladder (Ott & Mervin-Smith, 2015). Game Changers bring the ability to drive the transformational change needed to succeed in today's fast-paced digital world. CEOs are searching for this powerful combination of originality and drive (Ott & Mervin-Smith, 2015). They may assist with the shift from 'copying' to 'creating the new', Thiel's 0 to 1, and with the transition from red to blue oceans or uncontested market spaces.

Yet individuals with strong game-changing inclinations reported feeling constrained by bureaucracy, not being taken seriously by management and not free to express themselves (Ott & Mervin-Smith, 2015). A tenacity for realising their novel ideas has also resulted in them earning labels of being 'difficult' and 'eccentric'. The research found that the majority of Game Changers opt out of corporate life; three quarters channel their creative drive into small businesses or into working for themselves (Ott & Mervin-Smith, 2016).

⁷Dialogue Review, 2014 (www.dialoguereview.com).

This research into the DNA of a Game Changers provides a blueprint for a new kind of leadership and directs organisational attention to better understand and explore what may be done to attract, retain, develop and champion game-changing talent.

4.7.2 *The DNA of Game-Changing Teams*

A 2016 study, the DNA of Game-Changing Teams, has focused on how to liberate game-changing talent within organisations (Ott & Mervin-Smith, 2016). Generating a concept that is new and useful is the starting point; however, good ideas must then be turned into reality (Grant, 2016). While Game Changers bring original thinking and a tenacity to translate ideas into reality, it still takes more than one hero innovator to drive new frontiers (Jee, 2017). A team of individuals drives true game-changing impact. The 2015 research study into the DNA of Game Changers presented an understanding of Game Changers as high on imagination and obsession. Further interrogation of the data led to four possible combinations of imagination and obsession:

Scores	Factor
High on imagination and obsession	A factor that described what the researchers termed Game Changers
High on imagination but low on obsession	A factor that described what the researchers termed Strategists
Low on imagination but high on obsession	A factor that described what the researchers termed Polishers
Low on imagination and low on obsession	A factor that described what the researchers termed Implementers

Individuals who fall in the middle of the plot of imagination and obsession, with no dominant inclination to deliver tasks or generate ideas, are postulated to offer the potential to facilitate and coordinate action using a consensus-seeking approach. A fifth role or contribution was added to the game-changing team, Playmakers.

Thus, in summary, there are five contributors or roles in teams that secure transformational results that emerged through this work. They are:

- **Game Changers** who transform the future, bringing radical ideas and the obsession to make them a reality
- **Strategists** who map the future, fleshing out the business case
- **Implementers** who build the future, bringing pragmatic energy for getting things done and providing reality checks
- **Polishers** who create a future to be proud of, driving excellence and perfection
- **Playmakers** who orchestrate the future, bringing direction and focus to activity, and getting the best from individuals and teams. They enable others to shine.

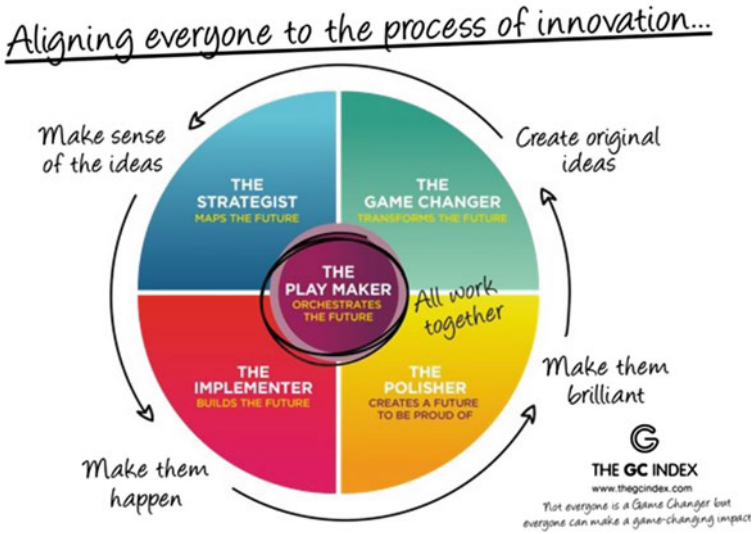


Fig. 4.1 Aligning to the process of innovation, The GC Index, UK, Ltd. (permission to reprint received from The GC Index, UK, Ltd.)

Figure 4.1 illustrates how all roles align and contribute to transformational change, recognising each individual for a game-changing contribution.

The research into Game Changers and game-changing teams present one view of the talent and teams required for the future of work, where innovation-as-usual is likely to be the new normal. It is useful to understand the make-up of Game Changers so that this breed of talent can be included and nurtured within the organisation. It is also important to build game-changing teams where individuals work to their strengths and can locate the role that they play in innovation.

This work challenges traditional organisations investing in innovation hubs, laboratories, processes and programmes in preparation for the future while retaining traditional views of talent and leadership and not noticeably altering business as usual. Creating safe-to-fail and innovation-as-usual cultures requires organisations and their leaders to make changing the game possible at all levels of the organisation. Incremental, sporadic and dislocated innovation is no longer enough. Developing a shared language of impact, based on preferences, where every human is recognised and enabled for their contribution to game-changing outputs, is a useful starting point for approaching the significant paradigm shift that the Fourth Industrial Revolution requires.

4.8 Fresh Interventions

New methods and tools are available to organisations. The GC Index[®] and Lego[®] Serious Play[®] are presented in this section.

4.8.1 *The GC Index[®]*

The GC Index[®] is a digital diagnostic developed to measure an individual's preference when it comes to making contributions and having an impact within a group. The development of The GC Index[®] was driven by a real business need, that of assisting organisations to identify talent and build the teams and 'safe-to-fail' cultures for innovation-as-usual futures. The instrument is underpinned by the research into the DNA of Game Changers and Game-Changing Teams presented above. It identifies preferred ways of making an impact through five roles: Game Changer, Strategist, Implementer, Polisher and Playmaker. No single role is valued above another. Without the diverse contributions of all roles, it is argued, game-changing impact is less likely.

The GC Index[®] provides a leadership dimension with the top two scores, and the profile report provides insights into leadership approach, engaging and influencing, getting things done within organisations and teams, ideal environments and contributions to creativity and innovation. It focuses on impact regardless of gender, personality, race, age or level within the organisation, and in this way seeks to provide a level playing field for growth and impact. The instrument is reliable, valid and scalable. Individuals, teams and organisations can be profiled. The GC Index[®] is used to assist with developing insight into how to make a positive impact in alignment with natural preferences, and to connect the dots between individual input and organisational goals.

The GC Index[®] conceptualises leadership as multidimensional, asserting that there is no perfect leader. The tool is being used to profile and strengthen the contribution and impact of leaders, individuals and teams globally, including South Africa. It brings innovation into the work lexicon, providing a language that allows every individual to identify his or her contribution to innovation and transformational change. While Game Changers may bring original ideas to the business, it is a team of individuals who, together, drive transformation change.⁸

4.8.2 *Lego[®] Serious Play[®]*

Csikszentmihalyi (1990) argues that the best moments in people's lives occur if a person's body or mind is stretched to its limits in a voluntary effort to accomplish

⁸<https://www.thegcindex.com/>.

something difficult and worthwhile. The Lego® Serious Play® method was born out of the desire to set a new, ‘lived’ strategy for the LEGO Company, given that video games were entering the market and the trend of children ‘growing older younger’ was emerging. Despite being in the business of creativity, the way in which LEGO’s strategy was developed was unimaginative, according to Kirk Kristiansen, CEO of LEGO. Professors Bart Victor and Johan Roos from IMD, Switzerland, a business school that had played a role in leadership development for LEGO, had been investigating different ways to create strategy. They shared Kristiansen’s frustrations and belief that the quality of strategy development approaches could be improved, that people are critical for organisational success and that they can, and want to do well, and that strategy should be lived rather than set and filed.

A LEGO subsidiary, Executive Discovery Ltd., was set up and funded to research an approach that LEGO could use inside the company, offering the advantage of academic work being advanced in a real-world setting. After numerous iterations and live-session prototyping with companies, the Lego® Serious Play® process was found to work consistently across different groups in a robust and reproducible way. Significantly, groups were able to see the systems in which they were located, with roles, relationships and culture, and to test those systems with different scenarios. Since release to market in 2001, Application Techniques have been introduced to facilitate the method’s use for a wider range of personal, team and business development topics. In 2010, the method became open source (Kristiansen & Rasmussen, 2014).

Described as a language that connects within and between brains, the Lego® Serious Play® method enhances insights and builds confidence and commitment through a facilitated process of construction where Lego bricks serve as metaphors. Metaphors provide richer descriptions of human realities and help to reveal new possibilities.

4.8.3 *The Method*

Step 1—Pose the question

Step 2—Construction

Step 3—Sharing

Step 4—Reflection.

The defined Application Techniques include building individual models, building shared models, creating a landscape, making connections, building a system, playing emergence and decisions, and extracting simple guiding principles (Kristiansen & Rasmussen, 2014).

Today, many organisations compete or collaborate in complex adaptive systems, which have emergent properties, making it difficult to predict how one change alters the entire system. The Lego® Serious Play® Application Techniques draw on research into complex adaptive systems. One technique is to develop an understanding of

current group identity and what it could be in future, probing how this could change the system and providing a scenario tool for the future and its variants.

Lego® Serious Play® can also be applied to connect personal with organisational purpose. Connecting company and personal goals builds resilience and agility when it is needed most.

The Lego® Serious Play® method is notable within the context of human thriving. The science of flow, researched by Hungarian Psychologist Mihayli Csikszentmihayli, is fully integrated into the method. There is a close connection between learning and flow. Flow states are involved when competence and challenge are in balance with one another, providing the body with positive feelings of accomplishment and deep satisfaction. This balance has been identified as a contextual enabler of thriving (Brown et al., 2017). Too little challenge for competence levels results in boredom, and too much challenge causes anxiety and stress. The flow state further arises when individuals engage with a task that is meaningful to them (Kristiansen & Rasmussen, 2014). Workshops are designed to move individuals and groups through a ‘flow’ corridor, with clear tasks and balanced challenges. Participants report their experiences of Lego Serious Play workshops to be challenging, yet enjoyable, and offering a deep sense of satisfaction.

‘Appealing to the imagination and developing the creative urge and joy of creating are the driving forces in every human being’ (Kristiansen & Rasmussen, 2014, p 28).

Innovation and transformation require individuals to activate their knowledge and find underlying and often surprising patterns (Kristiansen & Rasmussen, 2014). Our workplaces are saturated with competing demands for attention and with disengaged employees. This method creates value by removing people from their distractions and encouraging them to ‘lean in and contribute’. The method unlocks new knowledge and breaks habitual thinking. A core assumption of the method is that wisdom resides within the system. The process of building a model using bricks as metaphors and then sharing the narrative of the model allows individuals to make sense of, extend and share their thinking with others, in their own language. Building shared models connects individual thinking into collective wisdom and can rally teams around a central focus or goal.

The Lego® Serious Play® method has been applied across a wide range of industries and areas, including higher education institutions, with much success. However, there are conditions to which Lego Serious Play is most suited. Firstly, all participants must take part; there should be no observers. There should also be a commitment to allowing the speaking of minds in a safe space. The method works well for complex challenges where there is more than one answer and no obvious solution (Kristiansen & Rasmussen, 2014). Organisations that seek to use the method should have a genuine commitment to unearthing new knowledge and solutions, rather than an agenda of directing to a ‘right’ answer.

4.9 Conclusions

- ‘Chase-and-imitate’ models release increasingly diminishing returns. Thriving in Industry 4.0 settings requires a shift from ‘compete’ to ‘create’, enabled through possibility-centred approaches fed by human creativity.
- A ‘*trusted work*’ paradigm is emerging with a new mandate for business and leaders—aspire a higher, aligning purpose, and stand up and speak out on important issues in society.
- New thinking sheds light on the talent needed to drive transformational change and on conscious business approaches cognisant of long-term prosperity for multiple stakeholders and ecosystems.
- New methods and tools are available to organisations: Lego® Serious Play® integrates the science of flow, secures total participation, unlocks new thinking and breaks habitual thinking. The GC Index® identifies game-changing talent and teams, and builds safe-to-fail cultures.
- Leaders affect the quality of work, environments and communities. IQ and EQ alone may poorly equip leaders for Industry 4.0 settings. Multiple types of intelligence are available for leaders to explore and develop.
- Organisations, in preparation for Industry 4.0 settings, must triply invest in reskilling, upskilling and building structures for a learning organisation.
- As the familiar jobs of today are taken over by machines and become obsolete, human energy can be freed for engaging in more purposeful work. The challenge is to prepare for a digital age and to focus on the human contribution within an age of machines.

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Gaylin Jee uses new thinking and practical tools to shift comfort zones and unleash the creative organisations of tomorrow. With a distinct focus on human thriving and evoking FLOW, her work with leaders and teams drives more innovative business results and the achievement of goals that sit outside of business-as-usual. She has worked with leaders and teams from a range of industry sectors and organisation sizes. Gaylin was a Graduate Member of the British Psychological Society in London and spent over 10 years in UK, latterly managing programmes of research into sustainable performance and leadership for the CIPD (Europe's largest people management and development body). During this time she developed and managed commercial training programmes in the Psychology of Management and project managed the launch of the journal 'Coaching at Work'. She is a Certified Facilitator of Lego Serious Play Materials and Methodologies, and sits on the Advisory Board for Talent Talks Africa. In 2016 she became the first South African to be accredited in the organimetric. The GCIndex®, which identifies and builds game-changing talent and teams. In addition to writing, speaking, coaching and facilitating, you will find Gaylin collaborating around new ideas and offerings with others who share a drive to positively disrupt the world of work, and the role that humans play within it. Twitter: @gaylinjee.

Part II

Intra-personal and Intra-digital Factors of Human Thriving

Part II of this book collection addresses the intra-personal (cognitive, affective, psychological) and intra-digital (personal experiences of technology) aspects of human thriving (*see* Van der Walt and Lezar, Chap. 5; Harry, Chap. 6; Jonker, Chap. 7). The part highlights the psychological well-being and experience of emotional aspects of human thriving.

Key Emerging Issues for Research

- Include both the antecedents and the outcomes of thriving in digital workspaces, in order to gain a more comprehensive understanding of the manifestation of the construct in Industry 4.0
- Research on measuring the impact of accelerated, transformative digital organisational change on flourishing and thriving
- Establish the extent to which context variables influence the psychological well-being and the emotional well-being of employees
- Extend research on human thriving in call centres as unique digital workspaces
- Research on the display rules and norms of emotions in culturally diverse organisations and teams in digital workspace contexts
- Research on emotional display rules and emotional expression in virtual teams as well as the antecedents and outcomes of virtual teams.

Key Emerging Issues for Practice

- Establish organisational conditions that create synergetic collaboration between humans and machines.
- Interventions that help individuals understand their meaning and purpose in life, rather than relying on organisations and work to provide them with this sense of identity and meaning and purpose.

- Interventions that help workers take responsibility for their own growth and development, rather than relying on organisations to provide them with support structures that will enable them to thrive at work.
- Leader development interventions that enhance understanding of the complex processes involved in coping with the challenges and demands of career development in the Fourth Industrial Revolution, especially in a digital workspace such as customer service employment.
- Interventions that assist individuals to recognise their personal strengths as well as the other positive psychosocial resources that are required for adjusting to the changing digital contextual circumstances which affect their working lives.
- On-boarding processes and training interventions that expose employees to work in different cross-cultural virtual teams to improve emotional understanding and communication.

Chapter 5

Flourishing and Thriving for Well-Being



Freda van der Walt and L. W. P. Lezar

Abstract Industry 4.0 holds major implications for employees, and, as such, it is necessary that organisations consider the mental health of their employees. In order to cope with and find meaning in this major transformation, which is looming, employees need to flourish and thrive at work. The purpose of the chapter was to establish whether flourishing and thriving at work are related by means of a quantitative empirical study that involved 283 employees. The findings of the study indicated that flourishing influences thriving to a great extent. By supporting employees' psychological well-being, digital workspaces will be in a position to promote thriving at work, and consequently mental health, which has the potential to create a competitive advantage in the very unstable and unpredictable external environment characteristic of the Fourth Industrial Revolution. However, it seems that individual employees will need to take responsibility for their own growth and development, rather than relying on organisations to provide them with support structures that will enable them to thrive at work.

Keywords Flourishing · Thriving · Thriving at work · Well-being · Digital workspaces

5.1 Introduction

Industry 4.0 is likely to severely affect the mental health of employees. Unfortunately, many employees are not even aware of the potential impact of this major transformation on their personal and working lives (Harari, 2018), and consequently their mental health. This is cause for concern, because mental health is negatively influenced by organisational change, and, in particular, changes in the psychosocial working

F. van der Walt (✉)

Department of Business Management, Central University of Technology, Free State, South Africa
e-mail: fvdwalt@cut.ac.za

L. W. P. Lezar

Department of Business Support Studies, Central University of Technology, Free State, South Africa
e-mail: llezar@cut.ac.za

environment (Bamberger et al., 2012). It is anticipated that digital workspaces will transform the psychosocial working environment, and, as such, organisational leaders need to be concerned with the mental health of organisational members, due to the benefits that it holds for organisations. For example, mental health increases the health and the happiness of the workforce, and it increases productivity and reduces costs (Carmichael, Fenton, Pinilla-Roncancio, Sing & Sadhra, 2016). Mental health is defined as ‘a state of well-being in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community’ (World Health Organization, 2014). The concept of mental health includes the presence of positive qualities, such as high levels of emotional, psychological and social well-being (Perugini, De la Iglesia, Solano & Keyes, 2017). This complete state of mental health is referred to by Keyes (2002, 2005) as flourishing. Keyes (2007) asserts that anything less than flourishing implies a burden and impairment to the individual and society, and consequently workplaces. Therefore, in order for employees to adjust to, and thrive within, digital workspaces, high levels of flourishing are required.

There seems to be some conceptual overlap between the constructs of flourishing and thriving, since both constructs may be regarded as psychological states that include a personal growth (i.e. learning) dimension and an energy component. However, experts in the field (e.g. Bakker, Schaufeli, Leiter & Toris, 2008) assert that flourishing and thriving are two separate constructs. Unfortunately, the relationship between flourishing and thriving at work has not been thoroughly investigated in empirical studies, despite continued interest in these constructs. Having said that, research has confirmed that flourishing employees have been found to be more inclined to have higher levels of life satisfaction and longevity, healthier relationships, and greater job satisfaction, and to learn more effectively (Keyes, 2009; Seligman, 2011, cited in Rautenbach, 2015). Since learning is a key dimension of thriving at work, it is likely that flourishing will impact on employees’ levels of thriving at work. Furthermore, reaching one’s full human potential is also referred to as self-actualisation, which encompasses the personal growth dimension of flourishing. In order to reach self-actualisation, continuous learning (i.e. growth that comes from gaining new knowledge and skills) is required (Spreitzer, Lam & Fritz, 2010), which is also a dimension of thriving at work. Therefore, it is argued that flourishing employees are likely to thrive at work.

It is anticipated that digital workplaces will bring about organisational transformation, which may potentially influence the psychosocial working environment, and therefore the mental health of employees. This situation requires that organisational leaders need to be concerned with employees’ level of flourishing, in order to support contemporary employees to thrive at work. Previous research has not investigated the relationship between flourishing and thriving. Hence, it is appropriate to consider the relationship between flourishing and thriving, and to consider the implications of this relationship within the context of digital workspaces.

5.2 Chapter Objective

The chapter discusses a quantitative empirical study that explored whether flourishing (i.e. emotional well-being, psychological well-being and social well-being) influences thriving at work. It was hypothesised that emotional well-being, psychological well-being and social well-being all have a significant positive influence on thriving at work.

In the following section, the theoretical framework of the study will be discussed, after which a literature review will be presented of flourishing and thriving. This will be followed by a discussion of the findings of the study and their implications for digital workplaces.

5.3 Theoretical Framework

In the late 1990s, Seligman and Csikszentmihalyi (2000, p. 5) recommended a shift from ‘preoccupation only with repairing the worst things in life’ to a more balanced or positive perspective that focuses on the building of ‘positive qualities’. Positive psychology, an organised area of inquiry, thus emerged as an antidote to psychology’s dominant focus on pathology and problems (Rao & Donaldson, 2015). Since the constructs of flourishing and thriving at work may be regarded as being positive qualities, they are likely to enhance happiness and meaningfulness within the context of the workplace. Pennock and Alberts (2016) state that positive psychology creates valuable insights with regard to the experience of a happy and fulfilling life, and that it also provides useful tools, enabling people not only to flourish, but also to cope with difficult times in life, such as the looming Fourth Industrial Revolution.

Seligman (2016) asserts that through happiness, people are enabled to think constructively about the past, gain greater happiness in the present, and have more optimism and hope for the future. This argument is critical for digital workspaces, since flourishing will assist employees to cope and find meaning and happiness during the period of massive transformation of the Fourth Industrial Revolution, and consequently to thrive within this change and uncertainty. It is possible that by developing a positive quality such as flourishing, individuals will be presented with the opportunity to experience greater happiness and meaning in the present, and will thus experience thriving at work. Moreover, flourishing and thriving employees imply positive outcomes for organisations.

5.4 Flourishing and Thriving at Work

5.4.1 *Flourishing*

The construct of flourishing developed from the well-being literature. An individual flourishes when they experience ‘high levels of emotional well-being and function well both psychologically and socially; they show enthusiasm for life and are actively and productively involved’ (Strümpfer, 2013, p. 15). From this definition, it is clear that flourishing consists of three dimensions, namely emotional well-being, psychological well-being and social well-being (Keyes & Simoes, 2012). Emotional well-being developed from the hedonic tradition, and it refers to the degree to which people judge their lives positively, which includes emotional responses and overall or domain satisfaction, such as life, work, family and health satisfaction (Spreitzer, Sutcliffe, Dutton, Sonenshein & Grant, 2005). Psychological well-being and social well-being developed from the tradition of eudaimonia; eudaimonia means ‘the feelings accompanying behaviour in the direction of, and consistent with, one’s true potential’ (Waterman, 1984, p. 16). While hedonic well-being is considered to motivate basic psychological adaptations, eudaimonic well-being is assumed to motivate more complex social and cultural capacities (Fredrickson et al., 2013).

For the purposes of this study, emotional well-being is considered as consisting of three dimensions, namely positive affect, negative affect and job satisfaction. Rothmann (2013, p. 125) states that positive affect ‘relates to the frequency or presence of positive or pleasurable emotions, such as joy and happiness’, while negative affect ‘indicates adverse emotions, such as sadness or feeling dejected’. It has been asserted that when affect is considered and understood, organisational leaders will be in a better position to recognise motivations for sustained performance (Prosser, Tuckey & Wendt, 2013). Thus, affect may potentially influence the vitality component of thriving. Job satisfaction is defined as ‘a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences’ (Locke, 1976, p. 1300). A study conducted by Kern, Walters, Adler and White (2014) found associations between well-being factors and professional thriving, which includes job satisfaction and organisational commitment. Similarly, Porath, Spreitzer, Gibson and Garnett (2012) reported a relationship between thriving and job satisfaction and organisational commitment; their study found that thriving significantly influences job satisfaction and organisational commitment. Thus, it is possible that a reciprocal relationship could exist between job satisfaction and thriving.

Psychological well-being is regarded as consisting of various psychological features which promote positive human functioning (Sagone & De Caroli, 2013). The construct has been measured as consisting of six dimensions, namely autonomy, competence, relatedness, learning, meaningful work, and work engagement. Autonomy refers to ‘self-determination and independence, the ability to resist social pressures to think and act in certain ways, regulation of behaviour from within, and the evaluation of the self by using personal standards’ (Rothmann, 2013, p. 125). Spreitzer et al. (2005, p. 540) assert that ‘when individuals are embedded in unit contexts that

encourage decision-making discretion, broad information sharing, and a climate of trust and respect, they are more likely to respond with agentic behaviours that promote their experience of thriving'. Competence refers to individuals' inherent desires to control outcomes and experience environmental mastery (Janse van Rensburg, Rothmann & Diedericks, 2017). In order to experience environmental mastery, self-development through learning and vitality (which are core components of thriving at work) seems essential and should be promoted, in order to satisfy this psychological need and to promote psychological functioning. Relatedness, or establishing positive relations with others, refers to the importance of experiencing warm and trusting interpersonal relationships and the ability to love (Ryff, 1989). Establishing positive relationships with others is also associated with the ability to express strong feelings of empathy and affection for all human beings, which leads to deeper friendships and better identification with and understanding of others (Sagone & De Caroli, 2013). Learning, or personal growth, refers to being ambitious and aiming to reach one's full potential (Rothmann, 2013). Maslow's (1954, 1970) hierarchy of needs theory states that individuals have a need to grow and develop until they reach the highest level of the hierarchy of needs. This level is referred to as self-actualisation, which is a state in which an individual experiences complete intellectual, emotional and spiritual fulfilment (Quatro, 2004). Although this is not true for all individuals, many people strive to achieve self-actualisation. It has been postulated that in order for employees to reach self-actualisation, having meaningful and purposeful work is important (Mitroff & Denton, 1999). The attainment of meaning and purpose in life is another core dimension of psychological well-being, and it refers to 'subjective judgements people make that their work is significant, worth doing, valuable and purposeful' (May, Gilson & Harter, 2004, cited in Rothmann, 2013, p. 133). If employees experience meaning and purpose in life, they are likely to view their work as important, and they will care about what they do (Rothmann, 2013).

Due to the centrality of work in people's lives, meaning in life may, to some extent, be achieved through a person's work (De Klerk, Boshoff & Van Wyk, 2006). However, this is not a given, and therefore it seems necessary that employees should also experience a sense of connectedness at work. This assumption is confirmed by De Klerk (2005), who argues that the workplace has become the primary social institution where meaning and purpose are found, and therefore contemporary employees seek to experience connectedness, meaning, purpose and hope within the context of the workplace (Kolodinsky, Giacalone & Jurkiewicz, 2008). The dimension of work engagement is defined as a positive, fulfilling work-related state of mind, which is characterised by vigour, dedication and absorption (Schaufeli, Taris & Van Rhenen, 2008). Employees that are engaged in their work have high levels of energy, they enthusiastically identify with their jobs, and they are typically happily engrossed in their work, such that time passes quickly (Miner, Bickerton, Dowson & Sterland, 2015). As such, work engagement is often referred to as an employee's passion for work. Work engagement has two main antecedents, namely job resources and personal resources (Bakker, Albrecht & Leiter, 2011). Job resources refer to supervisory support, innovativeness, information, appreciation, and organisational climate (Rice, 2009). Personal resources refer to an individual's positive psychological state

of development, characterised by having confidence (self-efficacy) to take on challenging tasks and to put in the necessary effort to succeed in them, making a positive attribution (optimism) about succeeding now and in the future, persevering towards goals, and when necessary, redirecting paths to goals (hope), in order to succeed, and when beset by problems and adversity, sustaining and bouncing back, and even beyond (resilience), to attain success (Bakker et al., 2011). As was mentioned earlier, there seems to be some conceptual overlap between work engagement and the vitality component of thriving. However, Porath et al. (2012) assert that thriving at work should be considered as a joint experience of vitality and learning, because the two dimensions together capture the affective and cognitive components of individual growth and development in a work context. In a study conducted by Van der Walt (2018), it was found that a statistically significant relationship exists between work engagement and thriving at work.

Social well-being includes social acceptance, social actualisation, social coherence, social contribution and social integration (Rothmann, 2013). It has been asserted that a person that experiences social well-being is likely to be positive and accepting of diversity in people, believes in the potential of others, finds society and social life meaningful and comprehensible, regards their own daily activities as value-adding to society and others, and experiences relatedness, comfort, and support from community. Heintzelman and Diener (2019) report that people who experience positive affect, or happiness, have a tendency to formulate more positive social interpretations, which is linked to social thriving. Thus, although a direct association between social well-being and thriving at work has not been established, one may argue that the constructs are indirectly related. From the above discussion, one may conclude that multiple dimensions of flourishing are associated with, or related to, thriving at work, or its dimensions.

5.4.2 Thriving at Work

The concept of thriving at work originates from the work of Maslow (1954), Rogers (1961), Alderfer (1972) and Porath et al. (2012). It is an emerging construct, and it is regarded as a psychological state (Spreitzer et al., 2010) referring to individuals' psychological well-being (Xy, Loi, Chow & Kwok, 2016). Thus, thriving is not a stable disposition but a temporary internal property of an individual (Porath et al., 2012; Spreitzer et al., 2005, 2010), which is influenced by the context in which the individual finds themselves. According to the socially embedded theory of thriving at work, thriving is regarded as a sense of progress, or forward movement, in one's self-development (Spreitzer et al., 2005). The construct consists of two dimensions, namely vitality and learning (Spreitzer et al., 2010). Vitality refers to the sense of being alive, passionate and excited, while learning refers to the growth that comes from gaining new knowledge and skills (Spreitzer et al., 2010). Learning (i.e. the personal growth and development component of thriving at work) is enhanced through job resources, such as physical (performance feedback, skill variety, task identity),

psychological (supervisor and co-worker support), social (team climate) and organisational considerations (salary, job security and role clarity) (Rothmann, 2017). It has been asserted that thriving at work will guide employees in goal-directed activities and across changing circumstances, and that it will contribute to positive mental and physical health (Spreitzer et al., 2005). It is also possible that flourishing may enhance the passion and excitement of people about their work, because they will cope much more effectively with change. This is mainly because thriving may assist employees to adjust to their work contexts, and because of this they are better able to assess their own development. Thriving at work cannot, however, be cultivated by merely decreasing stressors in the workplace, but it also requires an increase in the presence of specific psychological states, behaviours, resources and contextual features (Spreitzer et al., 2005). This implies that flourishing, as a psychological state, could promote thriving at work.

5.5 Empirical Study

5.5.1 *Research Participants*

The target population of the study was employees working at selected employers in both the private and the public sectors, in the same geographical area. A convenience sample of $N = 283$ respondents participated in the study (response rate = 74.7%). The sample consisted of 176 (62.19%) males and 104 (36.75%) females. In terms of population groups, 69.96% ($n = 198$) of the sample was African, followed by 22.26% ($n = 63$) white respondents, 1.54% ($n = 19$) Coloured respondents, and two Indian/Asian respondents, who accounted for 0.71% of the sample. With regard to age, 47% of the sample ($n = 133$) had an age range of between 35 and 52 years, followed by 42.47% ($n = 110$) that were 35 years or younger, and 13.78% ($n = 39$) that were 53 years or older. Regarding highest academic qualification, most of the sample had a TVET qualification ($n = 123$; 43.46%), followed by respondents with a Grade 12 ($n = 86$; 30.39%), respondents with a certificate/diploma ($n = 51$; 18.02%), and respondents with an honours/BTech degree ($n = 16$; 5.65%) or a master's degree or higher ($n = 3$; 1.06%). With regard to employment status, the overwhelming majority of the sample ($n = 267$; 94.35%) were permanently employed, followed by 3.53% ($n = 10$) who were employed on a fixed-term contract appointment and 1.77% ($n = 5$) who had temporary employment contracts. Lastly, 36.75% of the sample ($n = 104$) were working in the public sector, and 62.90% ($n = 178$) were working in the private sector.

5.5.2 *Measuring Instrument*

The measuring instrument consisted of three sections. Section A consisted of a self-constructed demographic questionnaire to describe the sample. Section B consisted of a questionnaire developed by Porath et al. (2012) to measure thriving at work. This section of the measuring instrument comprised 10 items consisting of two factors, namely vitality and learning. Response categories were in a Likert-scale format, with responses ranging from 1 ('strongly disagree') to 7 ('strongly agree'). The questionnaire included items such as 'I continue to learn more as time goes by' and 'I feel alive and vital'. Section C consisted of a questionnaire measuring flourishing, which was developed by Rautenbach (2015). The questionnaire comprised 39 items consisting of three factors (i.e. emotional well-being, psychological well-being and social well-being) and ten dimensions. Emotional well-being was measured as consisting of three dimensions, namely positive affect, negative affect and job satisfaction, while psychological well-being was measured as consisting of six dimensions, namely autonomy, competence, relatedness, learning, meaningful work and work engagement. The questionnaire measures the frequency with which respondents experienced specific symptoms during the past month (Janse van Rensburg et al., 2017). Response categories were in a Likert-scale format, with responses ranging from 1 ('never') to 6 ('every day'). The questionnaire included items such as 'How often do you feel that you experience real enjoyment in your work?' and 'How often do you feel that you understand how your work contributes to your life's meaning'?

5.6 Research Procedure and Ethical Requirements

Ethical clearance was granted to the researcher to undertake the study. A self-administered questionnaire was constructed and was personally distributed by the researcher. Questionnaires were only distributed to organisations that had granted permission to participate in the study. The purpose of the study and ethical considerations, such as informed consent, anonymity and confidentiality, were explained in a cover letter addressed to each participant. It was indicated in the cover letter that participation was voluntary, and that participants could withdraw from the study at any time. The questionnaires were collected personally by the researcher at a central point at the participating organisations at a prearranged time on a prearranged day.

5.7 Statistical Analysis

The hypotheses were tested using SmartPLS version 3.2.7. The main reason for using a variance-based structural equation modelling statistical programme, as opposed to a covariance-based structural equation modelling programme, is that the study aimed

to make a contribution in terms of theory building, and not theory testing (Hair, Ringle & Sarstedt, 2011). The recommended two-step approach was followed to test the hypotheses (Hair, Hult, Ringle & Sarstedt, 2017). First, the measurement model (outer model) was assessed for internal consistency and construct validity. Considering that emotional well-being, psychological well-being and thriving at work were reflective–reflective second-order constructs, all first-order constructs were first assessed for internal consistency and construct validity, and then the three second-order constructs together with social well-being were assessed. Assessment of internal consistency entailed calculating the composite reliability (CR) value for each construct. The CR value should be 0.7 or higher. Construct validity consists of convergent validity and discriminant validity. To assess convergent validity, the following measurement model result thresholds must be met. Outer loadings must be 0.7 or higher and must be statistically significant. Also, the average variance extracted (AVE) for each construct must be 0.5 or higher. However, Hair et al. (2017) has noted that outer loadings of between 0.4 and 0.7 can be retained in the assessment of the measurement model as long as the loadings do not threaten the internal consistency and the AVE of the related construct. To assess discriminant validity, the Heterotrait-Monotrait (HTMT) ratio of correlations was used, as recommended by Henseler, Ringle and Sarstedt (2015). Based on the HTMT ratio of correlations, the ratio between a pair of constructs must not exceed 0.85 for evidence of discriminant validity. After assessment of the measurement model, the inner model (the structural model) was assessed (the second step in the process). To obtain *p*-values (two-tailed), bootstrapping (5000 subsamples) was conducted.

5.8 Results

5.8.1 *Internal Consistency and Validity of the Measurement Model*

The results of the modified measurement model that was used to statistically assess the relationships between the independent variables and Thriving at work are reported in this section. Assessment of the measurement model entailed the following two steps. First, the original measurement model as in the questionnaire was assessed for internal consistency and construct validity. Based on the results of the initial assessment, modifications were made to the measurement model to address problematic internal consistency, convergent validity and discriminant validity issues, which are explained in this section.

In Table 5.1, the internal consistency and the convergent validity results of the original measurement model are reported.

The assessment results of the original measurement model, indicated in Table 5.1, show that the CR value for each of the constructs assessed exceeded 0.7, and the AVE for all constructs exceeded 0.5. All outer loadings were statistically significant, but

Table 5.1 Results of the assessment of the original measurement model (first-order constructs only)

Construct	Item	Outer loading	<i>p</i> -value (two-tailed)	CR	AVE
Positive affect	PA1	0.893	0.000	0.877	0.705
	PA2	0.757	0.000		
	PA3	0.863	0.000		
Negative affect	NA1	0.772	0.000	0.848	0.651
	NA2	0.855	0.000		
	NA3	0.792	0.000		
Job satisfaction	JS1	0.871	0.000	0.892	0.734
	JS2	0.909	0.000		
	JS3	0.787	0.000		
Autonomy	AUT1	0.828	0.000	0.864	0.680
	AUT2	0.813	0.000		
	AUT3	0.831	0.000		
Competence	COMP1	0.852	0.000	0.868	0.687
	COMP2	0.870	0.000		
	COMP3	0.761	0.000		
Learning (psychological well-being)	L1	0.893	0.000	0.933	0.822
	L2	0.930	0.000		
	L3	0.897	0.000		
Meaningful work	MW1	0.802	0.000	0.927	0.760
	MW2	0.887	0.000		
	MW3	0.903	0.000		
	MW4	0.890	0.000		
Relatedness	REL1	0.806	0.000	0.863	0.677
	REL2	0.881	0.000		
	REL3	0.779	0.000		
Work engagement	WE1	0.543	0.000	0.898	0.501
	WE2	0.678	0.000		
	WE3	0.465	0.000		
	WE4	0.801	0.000		
	WE5	0.804	0.000		
	WE6	0.758	0.000		
	WE7	0.763	0.000		
	WE8	0.729	0.000		
	WE9	0.751	0.000		

(continued)

Table 5.1 (continued)

Construct	Item	Outer loading	<i>p</i> -value (two-tailed)	CR	AVE
Social well-being	SW1	0.709	0.000	0.924	0.711
	SW2	0.883	0.000		
	SW3	0.908	0.000		
	SW4	0.862	0.000		
	SW5	0.838	0.000		
Learning (thriving)	LEARN1	0.881	0.000	0.911	0.680
	LEARN2	0.926	0.000		
	LEARN3	0.894	0.000		
	LEARN4	0.488	0.000		
	LEARN5	0.854	0.000		
Vitality	VIT1	0.895	0.000	0.886	0.631
	VIT2	0.908	0.000		
	VIT3	0.269	0.003		
	VIT4	0.842	0.000		
	VIT5	0.865	0.000		

Source Own source

not all outer loadings were higher than 0.7. Of the five outer loadings that were lower than 0.7 (i.e. WE1, WE2, WE3, LEARN4 and VIT3), only VIT3 (0.269) was below 0.4. Thus, based on the suggestion of Hair et al. (2017), this item was removed from the measurement model. After removal of VIT3 from the original measurement model, the modified measurement model was assessed for discriminant validity (see Table 5.2 for the results).

The measurement model results indicated in Table 5.2 show that discriminant validity could not be proven between the first-order constructs of learning (thriving) and vitality (thriving), based on the HTMT ratio (0.871 > 0.85). Since calculation of the HTMT ratio is based on correlations, an inspection of the correlations between the items measuring Learning (thriving) and vitality (thriving) was conducted. High correlations between the items measuring each pair of constructs were identified, and items forming part of these correlations were systematically removed from the measurement model up to the point that an acceptable HTMT ratio between Learning (thriving) and Vitality (thriving) could be presented, also keeping in mind maintaining of content validity of the associated constructs. To achieve this, VIT1 and LEARN5 were excluded from the measurement model.

The internal consistency and the validity of the three second-order constructs were calculated using the latent variable scores of the first-order constructs for each second-order construct. Use of the latent variable scores is in line with the notion that the first-order constructs become the indicators of the second-order construct, as explained in Hair, Black, Babin, Anderson and Tatham (2006), and the two-stage approach used when specifying second-order constructs using a variance-based

Table 5.2 Heterotrait-Monotrait ratios of correlations (first-order constructs only)

Construct	AUT	COMP	JS	L	LEARN	MW	NA	PA	REL	SW	VIT
COMP	0.686										
JS	0.749	0.389									
L	0.627	0.458	0.578								
LEARN	0.672	0.447	0.592	0.837							
MW	0.677	0.590	0.562	0.660	0.678						
NA	0.361	0.221	0.339	0.271	0.376	0.258					
PA	0.630	0.520	0.705	0.566	0.561	0.510	0.480				
REL	0.752	0.502	0.561	0.632	0.540	0.652	0.339	0.556			
SW	0.703	0.413	0.594	0.549	0.603	0.671	0.352	0.524	0.742		
VIT	0.664	0.467	0.590	0.678	0.871	0.681	0.439	0.617	0.608	0.712	
WE	0.669	0.674	0.584	0.657	0.718	0.801	0.265	0.524	0.616	0.726	0.742

AUT Autonomy; COMP Competence; JS Job satisfaction; L Learning (psychological well-being); LEARN Learning (thriving); MW Meaningful work; NA Negative affect; PA Positive affect; REL Relatedness; SW Social well-being; VIT Vitality; WE Work engagement

Source Own source

structural equation modelling approach (Becker, 2018). For psychological well-being and thriving at work the CR and the AVE of each second-order construct were above the cut-off values. However, the CR of emotional well-being was 0.502, and the AVE was 0.609. The low CR value of emotional well-being can be explained by the fact that the outer loading of negative affect was -0.614 ($p = 0.000$). For the other two dimensions of emotional well-being, the outer loadings exceeded 0.8 and were statistically significant. According to Hair et al. (2006), the criteria for a second-order construct are that all first-order constructs should influence other nomologically related constructs in the same way, and the second-order construct must meet the minimum conditions for good measurement practice. Both criteria were not met in the case of negative affect as a dimension of emotional well-being. Therefore, negative affect was excluded as a dimension of emotional well-being.

In Table 5.3, the results of the modified measurement model of the first-order constructs are presented after making the modifications explained up to this point. As seen in Table 5.3, the outer loadings of all items are higher than 0.4 and are statistically significant. Moreover, the CR and the AVE of each first-order construct exceed the recommended cut-off values. In Table 5.4, the discriminant validity results of assessment of the modified measurement model of the first-order constructs are presented. All HTMT ratios of correlations are below 0.85.

Considering that adequate internal consistency and construct validity of the first-order constructs can be proven, the measurement models of the three second-order constructs after the modifications were made were evaluated. As shown in Table 5.5, the second-order constructs exhibit adequate internal consistency and convergent validity to continue with assessment of discriminant validity. In Table 5.6, the HTMT ratio of correlations between the second-order constructs and between these constructs and social well-being are presented. All HTMT ratios of correlations in Table 5.6 are below 0.85. These results provide evidence of adequate discriminant validity in the measurement of the second-order constructs.

5.8.2 *Assessment of the Structural Model*

From the data presented above, it is clear that the measurement model has sufficient internal consistency and validity to test the research hypotheses. This implies that the structural model can be used with confidence to conclude on the research hypotheses. In Fig. 5.1, the results of the hypothesis testing are presented.

The information presented in Fig. 5.1 indicates that the predictive accuracy of the model is good ($R^2 = 61\%$). As seen in Fig. 5.1, the influence of psychological well-being on thriving is the strongest (0.590; $p = 0.000$ [two-tailed]), followed by emotional well-being (0.167; $p = 0.006$ [two-tailed]). The results show that social well-being does not influence thriving (0.095; $p = 0.122$ [two-tailed]).

Table 5.3 Results of the assessment of the modified measurement model (first-order constructs only)

Construct	Item	Outer loading	<i>p</i> -value (two-tailed)	CR	AVE
Positive affect	PE1	0.889	0.000	0.877	0.705
	PE2	0.767	0.000		
	PE3	0.858	0.000		
Job satisfaction	JS1	0.871	0.000	0.892	0.734
	JS2	0.909	0.000		
	JS3	0.787	0.000		
Autonomy	AUT1	0.828	0.000	0.864	0.680
	AUT2	0.813	0.000		
	AUT3	0.831	0.000		
Competence	COMP1	0.852	0.000	0.868	0.687
	COMP2	0.870	0.000		
	COMP3	0.761	0.000		
Learning (psychological well-being)	L1	0.893	0.000	0.933	0.822
	L2	0.930	0.000		
	L3	0.897	0.000		
Meaningful work	MW1	0.802	0.000	0.927	0.760
	MW2	0.887	0.000		
	MW3	0.903	0.000		
	MW4	0.890	0.000		
Relatedness	REL1	0.806	0.000	0.863	0.677
	REL2	0.881	0.000		
	REL3	0.779	0.000		
Work engagement	WE1	0.543	0.000	0.898	0.501
	WE2	0.678	0.000		
	WE3	0.465	0.000		
	WE4	0.801	0.000		
	WE5	0.804	0.000		
	WE6	0.758	0.000		
	WE7	0.763	0.000		
	WE8	0.729	0.000		
	WE9	0.750	0.000		
Social well-being	SW1	0.711	0.000	0.924	0.710
	SW2	0.883	0.000		
	SW3	0.908	0.000		
	SW4	0.860	0.000		

(continued)

Table 5.3 (continued)

Construct	Item	Outer loading	<i>p</i> -value (two-tailed)	CR	AVE
	SW5	0.837	0.000		
Learning (thriving)	LEARN1	0.907	0.000	0.895	0.690
	LEARN2	0.934	0.000		
	LEARN3	0.889	0.000		
	LEARN4	0.525	0.000		
Vitality	VIT2	0.900	0.000	0.918	0.789
	VIT4	0.884	0.000		
	VIT5	0.880	0.000		

Source Own source

5.9 Discussion of Findings

The findings indicated that emotional well-being positively and statistically significantly influences thriving at work. Although the relationship between emotional well-being and thriving at work was significant, the variance was low, and therefore the relationship may be practically insignificant. The relationship between psychological well-being and thriving at work was moderately positive and statistically significant. The relationship between social well-being and thriving was not statistically significant. The findings of the study indicated that higher levels of flourishing could lead to higher levels of thriving at work. As such, organisations could potentially promote thriving at work by promoting their level of flourishing. However, although both emotional well-being and psychological well-being influence thriving at work, psychological well-being influences thriving at work to a greater degree.

5.9.1 Practical Implications

The findings of the study hold various practical implications for digital workspaces. It was established that thriving at work can be promoted by flourishing or positive mental health. In this regard, Calitz (2013) states that it is through passionate engagement during work (i.e. the vitality dimension of thriving at work) that workers will perform successfully, with the benefit of positive health and emotions. This implies that employees who experience positive emotions and psychological well-being are likely to be more passionate and excited about their work than others, and therefore more inclined to learn and grow and reach their full human potential (i.e. self-actualisation). It is expected that change will accelerate in digital workplaces, and it is therefore imperative that employee learning and growth should be a key priority of organisational leaders. However, this cannot be achieved by using traditional training programmes, because it will not produce the desired results. Furthermore, it

Table 5.4 Amended Heterotrait-Monotrait ratios of correlations (first-order constructs only)

Construct	AUT	COMP	JS	L	LEARN	MW	PA	REL	SW	VIT
COMP	0.686									
JS	0.749	0.389								
L	0.627	0.458	0.578							
LEARN	0.652	0.411	0.604	0.841						
MW	0.677	0.590	0.562	0.660	0.647					
PA	0.630	0.520	0.705	0.566	0.549	0.510				
REL	0.752	0.502	0.561	0.632	0.520	0.652	0.556			
SW	0.703	0.413	0.594	0.549	0.575	0.671	0.524	0.742		
VIT	0.637	0.486	0.590	0.673	0.823	0.676	0.613	0.575	0.697	
WE	0.669	0.674	0.584	0.657	0.694	0.801	0.524	0.616	0.726	0.748

AUT Autonomy; *COMP* Competence; *JS* Job satisfaction; *L* Learning (psychological well-being); *LEARN* Learning (thriving); *MW* Meaningful work; *PA* Positive affect; *REL* Relatedness; *SW* Social well-being; *VIT* Vitality; *WE* Work engagement

Source Own source

Table 5.5 Measurement model results of the second-order constructs

Second-order construct	First-order construct	Outer loading	p-value (two-tailed)	CR	AVE
Emotional well-being	Positive affect	0.882	0.000	0.881	0.787
	Job satisfaction	0.892	0.000		
Psychological well-being	Autonomy	0.784	0.000	0.908	0.622
	Competence	0.701	0.000		
	Learning	0.798	0.000		
	Meaningful work	0.849	0.000		
	Relatedness	0.733	0.000		
	Work engagement	0.856	0.000		
Thriving	Learning	0.928	0.000	0.927	0.865
	Vitality	0.931	0.000		

Source Own source

Table 5.6 Heterotrait-Monotrait ratios of correlations (second-order constructs and social well-being)

Construct	Emotional well-being	Psychological well-being	Social well-being
Psychological well-being	0.650		
Social well-being	0.536	0.713	
Thriving at work	0.601	0.766	0.605

Source Own source

is likely that the twenty-first century employee will be required to play a more active role as far as learning and growth are concerned, because employees will be required to deal with extreme levels of complexity and unpredictability, which requires the construction of new information and holistic business processes, rather than being exposed to formal training and development programmes. This implies that employees should possess, apart from mental health and agility, high levels of cognitive ability, innovation and creativity.

It is further suggested that in order for employees to thrive despite the looming changes implied by the Fourth Industrial Revolution, more emphasis needs to be placed on appreciative inquiry (AI). The reason for this is that AI brings forth ‘what an organisation or individual does well, what works and what is life giving’ (Hollywood, Blaess, Santin & Bloom, 2016, p. 39). As suggested by the aforementioned authors, this requires moving from “a deficit model to an asset model of engagement’, which requires a paradigm shift, from a problem-focused perspective to a strengths-based leadership approach, which will bring about creativity and innovation. Furthermore, and from a holistic mentoring and coaching perspective, AI

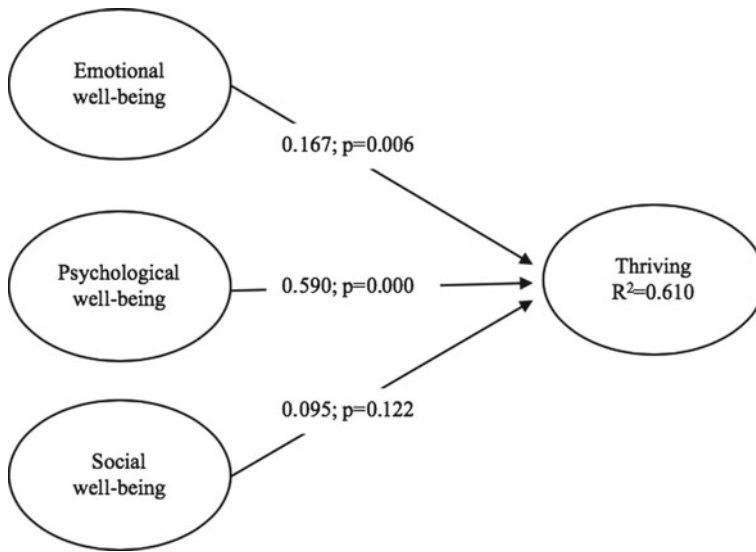


Fig. 5.1 Structural model test results. *Source* own source

includes the four stages of ‘discover’, ‘dream’, ‘design’ and ‘destiny’ (the “4-Ds”) (Ahmed, 2018), which positively contribute to new and better teaching and learning perspectives. These ‘4-Ds’ may be regarded as an antidote to what appears to be the pedagogy of current training programmes, mainly because they shift the focus from ‘what is going wrong’ with a situation to an alternative, strengths-based approach, where one identifies ‘what is going well’ with a situation (Sandars & Murdoch-Eaton, 2017, pp. 9–10). Furthermore, AI also ensures greater potential for organisational innovation, profitability performance and productivity (Hollywood et al., 2016). Due to the uncertainty that the Fourth Industrial Revolution holds, it is important that AI be promoted, in order to embrace opportunities presented by this phenomenon, which may assist employees to thrive at work.

It is also anticipated that digital workspaces will be characterised by increased human–machine collaboration. However, the aim of the Fourth Industrial Revolution is not to replace humans, but to create ‘synergetic collaboration between humans and machines’ (Dombrowski & Wagner, 2014, pp. 100, 102). While employees could previously find social identity and meaning and purpose in the workplace through human collaboration in the form of community structures provided by organisations (Van der Walt & De Klerk, 2014), this social support provided by fellow employees and management is likely to diminish over time. Furthermore, the findings of the study show that social well-being is not related to thriving at work. Therefore, it is suggested that employees, as individuals, should understand their meaning and purpose in life, rather than relying on organisations and work to provide them with this sense of identity and meaning and purpose. Research has also found that self and social identity, and meaning and purpose in life, are considered key elements

in achieving psychological well-being (De Klerk, 2005; Sharma & Sharma, 2010). Finding one's identity and meaning and purpose in living can be advanced through spiritual practices, such as meditation and breathing exercises, and traditional religion. Knowing one's true identity and finding meaning and purpose in living will not only advance psychological well-being, but will also advance human thriving, and consequently thriving at work.

5.9.2 *Limitations and Recommendations*

The study has a number of limitations that need to be noted. Firstly, the external validity of the study may have been compromised, because data were collected once off at a specific location, and a non-probability sampling technique was used. Therefore, the results cannot be generalised to a larger population. Secondly, the self-administered questionnaire used to collect the primary data contained more than one construct, which respondents had to respond to at the same time. As such, common-method variance may have influenced the results. However, despite these limitations, the study holds important implications for digital workspaces that wish to gain a competitive advantage in the very uncertain environment characteristic of the Fourth Industrial Revolution.

Since not much research has focused on the psychological state of thriving at work, it is recommended that future research studies should include both the antecedents and the outcomes of thriving at work, in order to gain a more comprehensive understanding of the construct. Furthermore, organisational change and changes in the psychosocial working environment may negatively influence mental health (Bamberger et al., 2012), and, as such, it is recommended that research should be conducted to measure the impact of organisational change on flourishing and thriving. Van der Walt (2018) asserts that businesses overemphasise profitability, and, as such, workplaces are rife with depleted and unhappy workers, who engage in deviant and unethical behaviour. Therefore, it is necessary to establish the extent to which context variables influence the psychological well-being and the emotional well-being of employees.

5.10 Conclusion

The study contributes to the body of knowledge regarding positive psychology, mental health and understanding psychological states such as flourishing and thriving. Specifically, the study found that flourishing influences thriving, which holds practical implications for digital workspaces. It is necessary that organisational leaders consider the findings of the study in order to assist employees to cope with, and find identity and create meaning and purpose within, the harsh realities of the Fourth Industrial Revolution. By supporting employees' psychological well-being, digital

workspaces will be in a position to promote thriving at work, and consequently mental health, which has the potential to increase productivity and reduce costs, which is necessary to create a competitive advantage in the very unstable and unpredictable external environment characteristic of the Fourth Industrial Revolution. However, it seems that individual employees will need to take responsibility for their own growth and development, rather than relying on organisations to provide them with support structures that will enable them to thrive at work.

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Freda van der Walt (Ph.D.) is a lecturer at Central University of Technology, Free State and is a registered industrial psychologist. Freda lectures research methodology and has successfully supervised a number of postgraduate students. Her focus areas are leadership, spirituality and religion, and individual behaviour in the work context.

Lucien Lezar is a doctoral student and a lecturer at Central University of Technology, Free State. Lucien lectures various modules in business administration and project management. His focus areas are leadership, cultural intelligence, and well-being.

Chapter 6

Employee Well-Being in the African Call Centre Digital Workspace



Nisha Harry

Abstract This chapter examines the fourth industrial revolution and the new world of work, which encompasses new technology, automation and algorithms. Developed countries are changing their geographical base of operations by establishing call centres in developing countries, for example, in Africa, to conduct business. One growth expectation is the leveraging of distinctively ‘human’ skills, such as those required by customer service workers in Africa. The chapter first introduces the human–machine frontier that has been introduced in call centres today to increase customer experience (CX), comprising omnichannels which include virtual assistants, instant messaging, chatbot and mobile apps designed to facilitate interaction. Well-being in these digital workspaces and the accompanying changes taking place are then discussed, illustrating an increase in demand for new roles and difficult transitions. Owing to these unprecedented demands and challenges, some individuals may struggle to adapt, while others thrive and flourish. The focus of this study then turns to the construction of a psychological coping profile. This is done by investigating the relationship between individuals’ wellness attributes (sense of coherence, emotional intelligence and burnout) and their resiliency capacities (career adaptabilities and hardiness). This is an under-researched area, especially in the digital workspace of call centres in Africa. Finally, the findings are reported and interpreted in terms of an empirically derived psychological coping profile, which may assist in the design of wellness interventions.

Keywords Digital workspace · Coping profile · Flourishing · Resiliency capacities · Wellness · Well-being attributes · Call centres

N. Harry (✉)
Department of Industrial and Organisational Psychology, University of South Africa, Pretoria,
South Africa
e-mail: harryn@unisa.ac.za

6.1 Introduction

Previous research on call centres has referred to them in largely pejorative terms such as ‘electronic panopticons’, taylorised service organisations and regimented types of work (Harvey, Cohendet, Simon, & Borzillo, 2015; Holtgrewe, Kerst, & Shire, 2002; Jagasia, Baul, & Mallik, 2015). Until the 1990s, call centre work was more standardised, characterised by order taking and transactions (Harvey et al., 2015; Holtgrewe et al., 2002; Jagasia et al., 2015). However, the stratospheric growth of social media is now more important than ever before in the digital workspace of call centres in Africa (Frost & Sullivan, 2018; Harvey et al., 2015). Cloud communication and virtual agents have come to the fore in the customer service world. Strategic thinking, better analytics, more social media conversations and innovative ways to involve artificial intelligence (AI) have become the order of the day (Frost & Sullivan, 2018). AI assists in streamlining call centre experiences for both customers and agents. Call centre businesses are now trying new ways to differentiate themselves in terms of conducting business, digital transformation, better contact centre analytics, omnichannel communication for all, widespread adoption of cloud communications, more robust customer satisfaction measurements, as well as increasing the number of remote call centre agents, the continued emphasis on self-service documentation and two-way social media conversations (Frost & Sullivan, 2018; Harvey et al., 2015).

Many experts maintain that businesses that involve customer service work should take a more ‘human’ approach, and in view of the fact that call centres are introducing more technology, they risk losing the human connection (Frost & Sullivan, 2018; Jagasia et al., 2015). Creating a human experience in the call centre work environment entails striking a balance between the integration of technology and strengthening human interaction (Frost & Sullivan, 2018).

6.2 Chapter Objective

The chapter examines call centres as digital workspaces and the coping attributes call centre agents require for their thriving, flourishing and overall well-being. The chapter outlines a psychological coping profile based on empirical research conducted in African call centres. This is done by investigating the relationship between individuals’ wellness attributes (sense of coherence, emotional intelligence and burnout) and their resiliency capacities (career adaptabilities and hardiness). This is an under-researched area, especially in the digital workspace of call centres in Africa. Finally, the findings are reported and interpreted in terms of an empirically derived psychological coping profile, which may assist in the design of wellness interventions.

6.3 The Digital Workspace of Call Centres

In the fourth industrial revolution, call centres have become complex work environments (Frost & Sullivan, 2018). Such businesses seek to remain competitive in the modern business environment by introducing strategies such as digital transformation and the application of technologies. Customers are demanding more unified omnichannel and machine-to-machine communication via the Internet of things (IoT). Therefore, a truly digital contact centre redefines the customer experience from start to finish in order to interact fully with customers in call centres, thus enabling customers to leverage the collective intelligence of the whole call centre business (Frost & Sullivan, 2018).

Gone are the days when call centres relied on supervisor skills to get the most out of their agents. Today, call centres rely on analytic programs to build dashboards with statistics that affect customer service work. This advance in analytics can provide a unified communications platform (Frost & Sullivan, 2018). A holistic view of the customer journey through the call centre factors in an omnichannel approach, which highlights a more personal feel in resolutions. Remote call centre agents with a cloud-based Web chat systems are steadily increasing, creating non-traditional office-based call centres (Frost & Sullivan, 2018). More and more remote call agents are becoming a permanent part of the call centre infrastructure. Giving customers information quickly helps reduce call volumes. However, the increase in the amount of social media used by call centres is accompanied by pressure for rapid feedback and instant responsiveness. This online interaction places more pressure on the call centre to rapidly deliver positive resolutions of issues (Frost & Sullivan, 2018).

6.4 The Concept of Human Thriving

Human thriving, according to Diener, Presseman, Hunter, and Delgado-Chase (2017), refers to people's global evaluation of their lives. The literature identifies subjective well-being as stemming from distinct perspectives of human philosophy, hedonia and eudaimonia and the pursuit of emotional euphoria (Carver, Lawrence, & Scheier, 1996; Tatarkiewicz, 1976). The hedonic perspective encompasses a focus on people's positive experiences (Diener, Heintzelman, et al., 2017). Eudaimonia, on the other hand, developed from the Aristotelian idea that the kernel of truly satisfactory life is to actively strive to develop one's potential in accordance with one's personal criteria (Deci & Ryan, 2008). Eudaimonia refers to emotional pleasantness, organisational commitment, job satisfaction and the lack of emotional exhaustion, while psychosomatic well-being describes the absence of psychosomatic symptoms of distress. Burnout is defined as a psychological syndrome of chronic stress stemming from work (Maslach, Schaufeli, & Leiter, 2001). Research has recognised burnout as a grave psychological reaction that leads to deleterious consequences, for example, psychosomatic illnesses.

6.5 Employee Well-Being in Digital Spaces of Call Centres

In Africa, turnover intention in call centres is high. This is influenced by relational variables and the perception of the quality of working life, which can lead to emotional dissonance (Frost & Sullivan, 2018; Mwendwa, 2017; Zito et al., 2018). The fact that call centre work demands that certain emotions may not be expressed is often perceived as peculiar and may influence job satisfaction and turnover intentions, a huge problem faced by these workspaces (Frost & Sullivan, 2018). It is believed the most competent staff are the most productive staff; sadly, many employees in call centres find themselves mired by mundane repetitive work which may lead to a bored and less engaged workforce (Zito et al., 2018).

This emotional dissonance behaviour can impact negatively on customers' experiences with call centres. It has been proposed that ways to resolve such disharmony entail a two-pronged approach which involves investing in more self-service and automation options for customer service (Frost & Sullivan, 2018). However, new technology comes with unprecedented demands which hold challenges for many employees in the call centre infrastructure. This flood of technology has instilled a 'culture' of 'everything now'. Customers expect everything to be at their fingertips with instant gratification. Today, the bar for a digital customer experience has been raised, as over a billion individuals now own android and IOS devices, and many customers expect the same instant experiences from call centres as that delivered by their smart phone (Frost & Sullivan, 2018). Hence, self-service and automated options may create states of emotional dissonance, causing call centres agents to suppress negative emotions and express the positive mood required by such work environments. This can lead to emotional exhaustion (Frost & Sullivan, 2018; Mwendwa, 2017). As highlighted by Bakker, Demerouti, and Schaufeli (2003), well-being orientated research in call centres has identified emotional exhaustion at work and low job satisfaction as the main characteristics of a call centre job.

On the other hand, it is possible for individuals to flourish in such work environments. For example, employees may feel free to spend time on more highly valued tasks such as empowering co-workers by suggesting process improvements and creating more happily engaged employees (Frost & Sullivan, 2018).

6.6 Well-Being Attributes in a Call Centre in Africa

In this chapter, sense of coherence, emotional intelligence and burnout will be regarded as well-being attributes in call centres in Africa.

Human thriving in the fourth industrial revolution encompasses the development of positive human functioning and the achievement of a scientific understanding of producing thriving individuals (Brown, Arnold, Fletcher, & Standage, 2017). Sense of coherence can be seen as part of resilience and the essence of salutogenic theory. Many studies have proven sense of coherence as being linked to health vari-

ables such as psychological well-being and social support. Antonovsky (1979, 1987) regarded salutogenesis as a mechanism for understanding the origins of health. Its basic premise is that stress and difficulties are an integral part of the human condition. According to Antonovsky (1987), wellness and illness should be viewed as the two ends of a continuum; as long as an individual possesses a small spark of life, they also possess a certain degree of health.

Sense of coherence is perceived as the ‘comprehensibility, manageability and meaningfulness of an individual’s current work situation’ (Vogt, Jenny, & Bauer, 2013, p. 1). In this context, comprehensibility refers to the degree to which one makes cognitive sense of one’s work environment, by viewing one’s work role with a sense of job security and an experience of shared values and identifying with a group at work. Although stressors seem ordered, they may still pose demands (Van der Westhuizen, 2018). Manageability is described as the way in which one perceives the resources that are at one’s disposal and the extent to which they are adequate for meeting the demands posed by the stimuli that bombard one (Van der Westhuizen, 2018). Meaningfulness refers to the way in which one makes sense emotionally of whether some problems are worth investing energy in (Van der Westhuizen, 2018).

Various emotional intelligence models have been developed. These include the general mental ability model (Spearman, 1904), the trait model of emotional intelligence (Petrides & Furnham, 2003; Schutte, Malouf, & Bhullar, 2009), the ability models (Mayer & Salovey, 1997; Wong, Law, & Wong, 2004) and the mixed models of emotional intelligence, which are a combination of trait emotional intelligence and ability intelligence (Bar-On, 1997; Goleman, 2001). A synthesis of these models makes it apparent that emotional intelligence is an integral part of human thriving. As seen from the literature, emotional intelligence has an influence on successful performance, happiness, well-being and the quest for a meaningful life (Seligman & Csikszentmihalyi, 2000). The humanistic movement sought to enhance and optimise human growth, as highlighted by the definition of human thriving as the joint experience of development and success (Brown et al., 2017). In this chapter, positive human characteristics and strengths include managing own emotions, perceptions of emotions and managing others’ emotions. In a number of research studies conducted in the past (e.g. Bar-On, 1997; Bar-On, Handley, & Fund, 2005; Bar-On, & Parker, 2000; Bar-On, Tranel, Denburg, & Bechara, 2003), emotional intelligence has been shown to be the ability of individuals to manage emotions and cope with stress. Happiness is regarded as positive motivation that has an impact on ‘intelligent behaviour’. Individuals who display an enhanced sense of well-being possess high emotional self-awareness which is linked to human thriving.

The fourth industrial revolution has brought about social change and transformation in the workplace and has escalated the problem of job burnout. Initial definitions of job burnout were formulated by Freudenberger (1974), who defined it as the feelings of exhaustion resulting from the extensive use of one’s energy, strength and resources. Later, in the early twenty-first century, various definitions emerged, with job burnout being characterised by exhaustion, depersonalisation and reduced satisfaction with performance. Job burnout has been defined by various academics as being a result of chronic stress in the workplace that has not been success-

fully dealt with (Lent & Schwartz, 2012; Schult, Mohr, & Osatuke, 2018; Yürür & Sarikaya, 2012). It is also characterised by exhaustion and depersonalisation (cynicism). Another definition explains it as reduced satisfaction with performance. It is also believed that negative stress probably represents a key phenomenon in the aetiology of burnout. Other definitions include chronic fatigue, loss of energy, withdrawal, resignation, cynicism and emotional distress (Ventura, Llorens, & Salanova, 2015).

Professional efficacy, on the other hand, is the only dimension of burnout that highlights an individual's ability to take action and achieve a given goal (Ventura et al., 2015). Displaying more professional efficacy will allow individuals to challenge demands and experience fewer hindrances. As a result, a person will become more engaged in the demands and thereby lessen burnout (Ventura et al., 2015). Empirical research recognises the moderation effects of professional efficacy on job stress, suggesting it may act as a protective factor against some consequences of job stress, such as turnover, lack of work satisfaction, physical symptoms and anxiety (Freitas, Corrêa da Silva, Damásio, Koller, & Teixeira, 2016; Salanova, Llorens, & Schaufeli, 2011; Schaufeli, Dijkstra, & Vazquez, 2013).

6.7 Synthesis of the Effect of Sense of Coherence, Emotional Intelligence and Burnout on Well-Being

According to Maslach and Leiter (1997), burnout is more than mere emotional stress. It is a psychological syndrome, which is experienced as emotionally draining and depersonalising and leads to low personal adjustment. It tends to occur among individuals who work with people in some capacity. Several studies on emotional intelligence and burnout have shown that individuals have the ability to adapt to life's problems and to manage their emotions in the best possible way (Amdurer, Boyatzis, Saatcioglu, Smith, & Taylor, 2014). However, adverse relationships between the two have also been found, in other words an increase in one can lead to a reduction in another. On the other hand, some studies have revealed a positive relationship between emotional intelligence and self-efficacy (Esmaili, Khojasteh, & Kafipour, 2018; Vlachou et al., 2016)

Sense of coherence, as a broad individual attribute, may stimulate positive coping behaviours such as the acquisition of resources. While sense of coherence does seem to help with successful coping and reduce burnout (Rothmann & Rothmann, 2010; Söderfeldt, Söderfeldt, Ohlson, Theorell, & Jones, 2000; Van der Colff & Rothmann, 2009), research has shown that individuals with a high sense of coherence make greater demands, thus resulting in an increase in burnout (Johnston et al., 2013).

6.8 Evaluation of the Effect of Psychological Dimensions on Sense of Coherence, Emotional Intelligence and Burnout

As Fig. 6.1 shows, the four psychological dimensions are the cognitive, affective, conative and interpersonal dimensions. Sense of coherence includes the dimensions of comprehensibility, manageability and meaningfulness. Emotional intelligence consists of four behavioural dimensions, namely perceptions of emotions, managing own emotions, managing other’s emotions and utilising emotions. Burnout consists of three behavioural dimensions, namely professional efficacy, depersonalisation and exhaustion.

6.8.1 The Cognitive Level

Interpreting an individual’s sense of coherence on a cognitive level relates directly to the dimensions of manageability, comprehensibility and meaningfulness, as depicted in Fig. 6.1. This implies that, on a cognitive level, individuals are inclined to comprehend and perceive stimuli as ordered information to the extent to which they perceive the world as comprehensible (Jakovljevic, 2018). Manageability refers to having the resources available to meet the demands of the environment such that events can

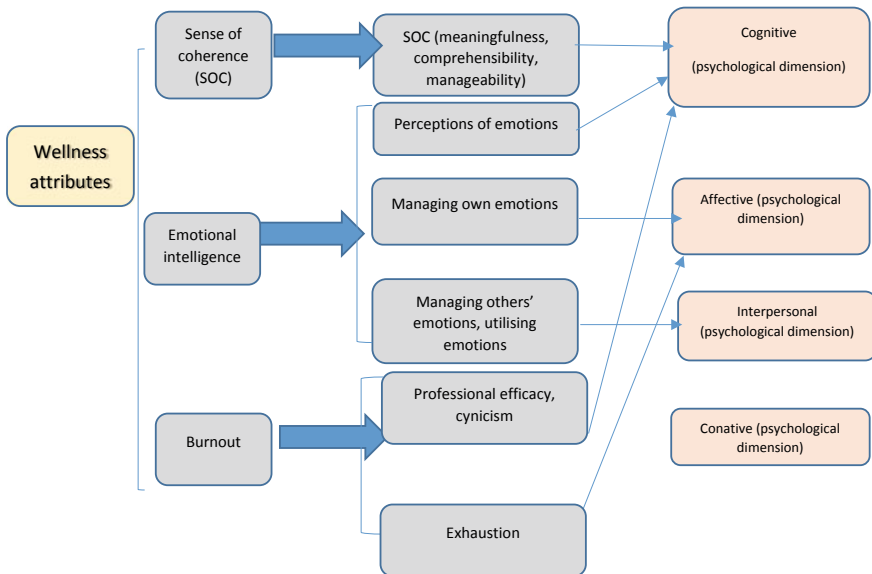


Fig. 6.1 Integration of well-being attributes and psychological dimensions (author’s own compilation)

be managed. Meaningfulness refers to the extent to which an individual perceives demands as challenges that are worthy of investment and engagement (Jakovljevic, 2018). Sense of coherence, as defined by Antonovsky (1979), is a kind of behavioural immunology which leads to health. Coherence refers to beneficial mental capital as the totality of one's cognitive resources. It takes the form of cognitive capability in learning empathy in the face of adversity (Jakovljevic, 2018). Individuals with emotional intelligence recognise on a cognitive level how to understand their own emotions. Having an understanding of one's emotion can assist in effectively negotiating one's working life as well as aspects of one's personal life in general (Faguy, 2012). On a cognitive level, job-related burnout is characteristic of individuals who perceive a reduced level of accomplishment, who display rigidity and inflexible thinking and who tend to stereotype clients. Job-related burnout has been associated with a closed mind (Lent & Schwartz, 2012; Schult et al., 2018; Yürür & Sarikaya, 2012).

6.8.2 *Affective Behavioural Level*

Regarding wellness attributes on an affective level, when individuals are repeatedly exposed to stressors, a sense of coherence increases coping, leading to effective coping with stress as part of their generalised resistance resources (Jakovljevic, 2018). In relation to emotional intelligence on an affective behavioural level, individuals will be aware of their emotions and be able to distinguish between the different emotions (Faguy, 2012). On an affective level, higher levels of burnout will likely interfere with human perceptions and deplete emotional resources, which may reduce individuals' judgement and drain emotional resources (Lent & Schwartz, 2012; Schult et al., 2018; Yürür & Sarikaya, 2012).

6.8.3 *Conative (Motivational) Behavioural Level*

As regards wellness attributes on the motivational level, individuals who are in a state of coherence select resources and manage situations (Jakovljevic, 2018). On the motivational behavioural level, individuals with emotional intelligence will be likely to initiate relevant behaviours (Faguy, 2012). In relation to burnout, individuals with high resources will show increased motivation (Lent & Schwartz, 2012; Schult et al., 2018; Yürür & Sarikaya, 2012).

6.8.4 Interpersonal Behaviour Level

On an interpersonal level, socially connected stressors achieve a sense of coherence. Generalised resistance resources include values, attitudes and interpersonal relationships, as well as macro-sociocultural qualities that will enable individuals to escape stressors (Jakovljevic, 2018). Regarding emotional intelligence, the interpersonal level for individuals is characterised by an expression of how people's perceptions of their abilities carry an importance for their relationships. It is a subjective reality associated with observing emotional states, motives and behaviours, which relate positively to others on the grounds of observations (Mishra & Shrivastava, 2018). In relation to burnout, individuals on an interpersonal level will have a sense of personal efficacy and work well with others (Lent & Schwartz, 2012; Schult et al., 2018; Yürür & Sarikaya, 2012).

6.8.5 The Resilience Capacities of Call Centres in Africa

In this chapter, career adaptability and hardiness are viewed as resilience capacities. According to researchers who introduced the psychosocial construct of career adaptability, it highlights the new and ongoing career-related challenges individuals encounter during their life cycle (Ndlovu, 2017; Savickas, 1997, 2013; Super & Kidd, 1979; Super & Knasel, 1981). These challenges refer to the interaction between the person and their environment. Understanding an adaptive person is a complex and dynamic process, whereby the person is shown to engage both internally and externally with the environment (Ferreira, 2012; Ndlovu, 2017; Savickas & Porfeli, 2012). According to Savickas, career construction consists of building a self-concept. Self-concept emphasises various specific attitudes and beliefs of career construction, namely concern, control, curiosity and confidence. Adaptive individuals are viewed as people who (a) become concerned about their future, (b) increase personal control over their future, (c) display curiosity by exploring future selves and scenarios and (d) strengthen the confidence to pursue their aspirations (Ndlovu, 2017; Savickas & Porfeli, 2012).

Hardiness is a personality characteristic that buffers and protects individuals from negative stress by increasing the resources required to relieve stress (Abdollahi, Talib, Yaacob, & Ismail, 2015; Kobasa, 1979; Smith, 2018). The personality characteristic of hardiness comprises three main cognitive traits, known as commitment, control and challenge (Abdollahi et al., 2015; Kobasa, 1979; Kobasa, Maddi, & Kahn, 1982). The commitment component encompasses a tendency to be dedicated to one's life rather than isolated from one's activity. Individuals with this cognitive trait do not give up easily (Kobasa et al., 1982). The control component entails individuals having control over their life experiences and with this cognitive trait comes a greater resistance to stress (Abdollahi et al., 2015). The challenge component views obstacles and changes as a means for further growth (Abdollahi et al., 2015; Kobasa et al., 1982).

This cognitive trait assists individuals to view obstacles as motivating rather than threatening (Kobasa et al., 1982). In various studies, hardiness has been found to have a positive relationship with variables such as psychological well-being, happiness and personal growth (Smith, 2018). Given this relationship, one may conclude that hardiness is associated with the lowering of stress.

6.8.6 Synthesis of the Effect of Career Adaptability and Hardiness on Well-Being

The link between career adaptability and subjective well-being is well documented in research. Individuals pursue meaningful goals which are central to the development and maintenance of well-being (Brunstein, 1993; Coetzee & Stoltz, 2015). These personal goals can be linked to Savickas's (2002) understanding of how work can facilitate overall life satisfaction and happiness (Hartung & Taber, 2008). Creed, Patton, and Prideaux (2006) found that higher levels of career decidedness were associated with higher levels of career planning/exploration, career decision-making self-efficacy, life satisfaction and self-esteem. Savickas (1997) reported that well-informed expectations are crucial to understanding emerging adults' perceptions in relation to their self-assessments of life satisfaction. It can therefore be concluded that career adaptability may be useful to individuals in pursuing ways of dealing with unanticipated work-related and relational experiences (Savickas, 1997).

Research has shown hardiness to be a buffer against stress and to increase adaptability (Abdollahi et al., 2015; Bartone & Adler, 1999; Kelly, Matthews, & Bartone, 2014). It has also been shown to have a negative relationship to emotional exhaustion which is related to psychological stress. Beasley, Thompson, and Davidson (2003) found that hardiness is the most consistent predictor of psychological stress. It can thus be concluded that hardiness as a personality characteristic acts as a resilience factor in stressful situations and is positively related to adjustment and well-being.

Hardiness and career adaptability are vital constructs that assist individuals to develop relevant psychological strengths to cope in work environments such as call centres (Tolentino, Sedoglavich, Lu, Garcia, & Restubog, 2014; Zacher & Wilden, 2014; Zhou, Guan, Xin, Mak, & Deng, 2016). Hardiness is one of the protective factors that individuals adopt to deal with stressful situations and develop resilience (Abdollahi et al., 2015). Individuals who view themselves as having the ability to develop and implement coping strategies are more resilient when faced with career disruptions (Bimrose & Hearne, 2012; Lyons, Schweitzer, & Ng, 2015).

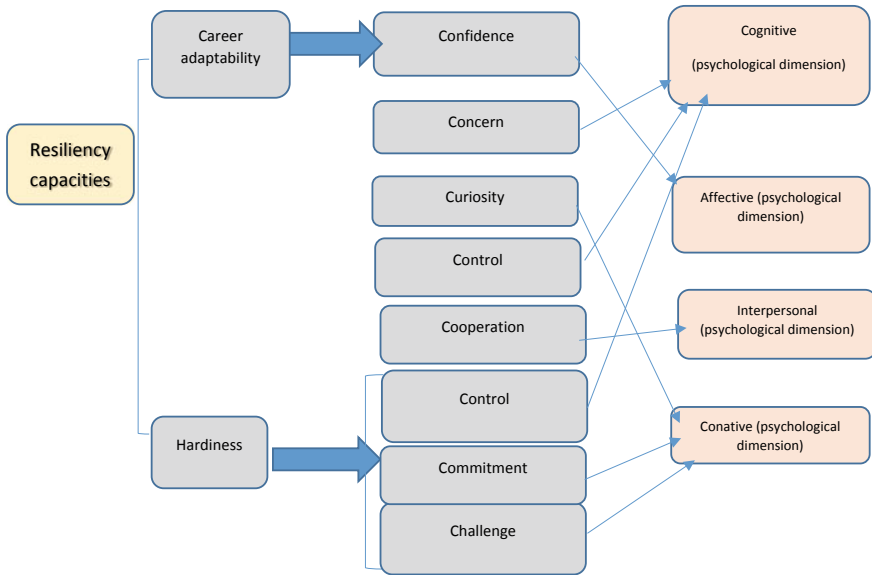


Fig. 6.2 Integration of resilience capacities and psychological dimensions (author’s own compilation)

6.8.7 Evaluation of the Effect of the Psychological Dimensions of Career Adaptability and Emotional Intelligence on Well-Being

As shown in the Fig. 6.2, career adaptability consists of five dimensions, namely concern, control, curiosity, confidence and cooperation. Hardiness, on the other hand, consists of three dimensions, that is, commitment, control and challenge.

6.8.8 The Cognitive Level

Interpreting career adaptability on a cognitive level involves understanding how adults display concern for their future (Konstam, Celen-Demirtas, Tomek, & Sweeney, 2015), which is central to problem-solving strategies and coping behaviours. The more concern they have for their future the more individuals will be prepared to exert control over their careers (Ferreira, 2012; Konstam et al., 2015). Career control entails adaptive individuals increasing personal control over their future and believing that they are responsible for constructing their own careers (Konstam et al., 2015; Savickas & Porfeli, 2012). An individual’s belief in their own power to enact change and influence life’s events by changing their perceptions of

given situations is demonstrated as control—a cognitive type of hardiness (Smith, 2018).

6.8.9 The Affective Behavioural Level

On an affective level, in terms of the resilience capacities, an adult with a high level of career adaptability will explore and consolidate by displaying curiosity and a keenness to explore possible selves and their future (Konstam et al., 2015). Hardiness on this level is viewed as a pathway to resilience and buffers against stress (Smith, 2018). A person with high levels of hardiness will feel actively involved in their experiences rather than feeling estranged from them (Smith, 2018).

6.8.10 The Conative (Motivational) Behavioural Level

At the conative level, adults demonstrate resiliency capacities with high levels of confidence and curiosity in pursuing career aspirations (Konstam et al., 2015; Savickas & Porfeli, 2012). Hardiness is described as responding to adversity, being actively committed in daily living and having the mental toughness to remain loyal to passions by having a purpose in life (Smith, 2018). A hardy person sees the world as interesting and meaningful and is actively involved in various activities of life (commitment) (Smith, 2018).

6.8.11 The Interpersonal Behaviour Level

On the interpersonal behavioural level, adults display career adaptability by cooperating with others and capitalising on social opportunities for career success (Konstam et al., 2015). Hardiness in this regard may be regarded as the consistency between a person's own actions and emotions in response to external events (Smith, 2018)

6.8.12 Synthesis of the Psychological Dimensions with Wellness Interventions

At the cognitive level, interventions should enhance an individual's sense of coherence, emotional intelligence, career adaptability and hardiness by identifying and building resources and perceiving stimuli as ordered and explicable (Faguy, 2012; Jakovljevic, 2018; Konstam et al., 2015; Schult et al., 2018). On an affective level,

interventions could assist adults in managing their exhaustion levels and adopt direct coping. On a conative level, wellness interventions can result in individuals being more curious, thereby leading to self-exploration and, in turn, focusing on exploring personal interests and values (Savickas & Porfeli, 2012). On an interpersonal level, wellness interventions can assist adults to boost their social intelligence by managing both own emotions and those of others.

6.9 Testing a Hypothesised Theoretical Coping Profile of Call Centre Agents

A cross-sectional quantitative study conducted among call centre employees in Africa evaluated the following hypothesised model (Fig. 6.3).

A canonical correlation analysis was conducted to assess the overall relationship between the wellness attributes and resiliency capacities in order to establish well-being in a digital workspace of call centres in Africa. The canonical correlation model displayed eight canonical functions (dimensions), of which the canonical correlations of the first five functions only were statistically significant. The full model r^2 -type effect size (yielded by $1 - \lambda_1 : 1 - .22$) was .78 (large practical effect), indicating that the full model explained a substantial portion—approximately 78%—of the variance shared between the two variable sets. The canonical variables of the first function accounted for 56% of the data variability.

However, in this study only the results of the first canonical function were used because the second function explained an additional 31% only of the variance shared between the two variable sets, the third function 10% only, the fourth function 8% only and the fifth function also 8% only. The wellness-related canonical construct

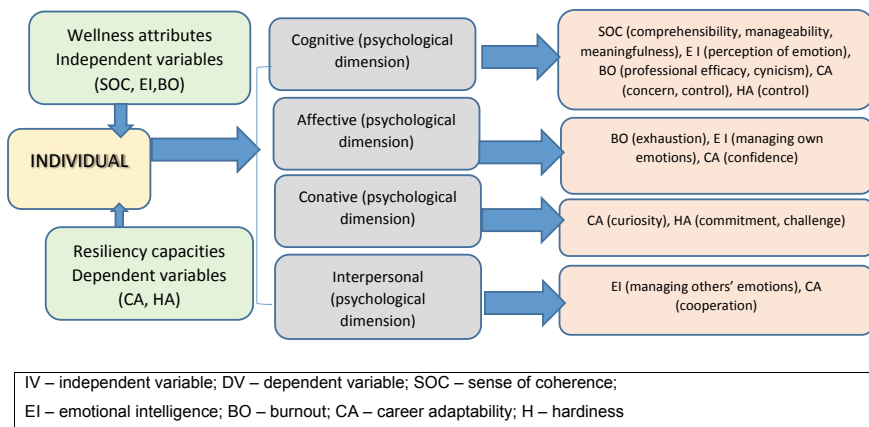


Fig. 6.3 Hypothesised theoretical psychological coping profile for call centre agents (author’s own compilation)

variables accounted for 56% ($Rc^2 = .56$; large practical effect) of the proportion of variance in the resiliency-related canonical construct variables, while the wellness-related construct variables were able to predict only 18% (moderate effect) of the variance in the individual original resiliency-related canonical construct variables.

The wellness-related canonical construct variables contributed significantly in explaining the variance in the eight original resiliency-related constructs (career adaptability and hardiness) variables, namely career concern (35%); career control (35%); career curiosity (23%); career cooperation (19%); career confidence (39%); commitment-alienation (65%); control-powerlessness (68%) and challenge-threat (30%). Managing own emotion ($Rc = .53$) and meaningfulness ($Rc = .51$) exhibited the highest correlation with the canonical resiliency-related construct variate. Managing own emotions ($Rc = .71$) and cynicism ($Rc = -.73$) were the strongest predictors of the canonical wellness-related construct variate. Control-powerlessness ($Rc = .68$) and commitment-alienation ($Rc = .65$) exhibited the highest correlation with the canonical wellness-related construct variate and were also the strongest predictors of the canonical resiliency-related construct variate (control-powerlessness: $Rc = .91$; commitment-alienation: $Rc = .87$). The helio plot in Fig. 6.4 illustrates these results and also the overall relationship between the canonical variate variables of the wellness attributes and the resiliency capacities.

The original variables of the wellness-related construct variables (OLQ, AES and MBI) are arrayed around the perimeter. The left semicircle displays the independent

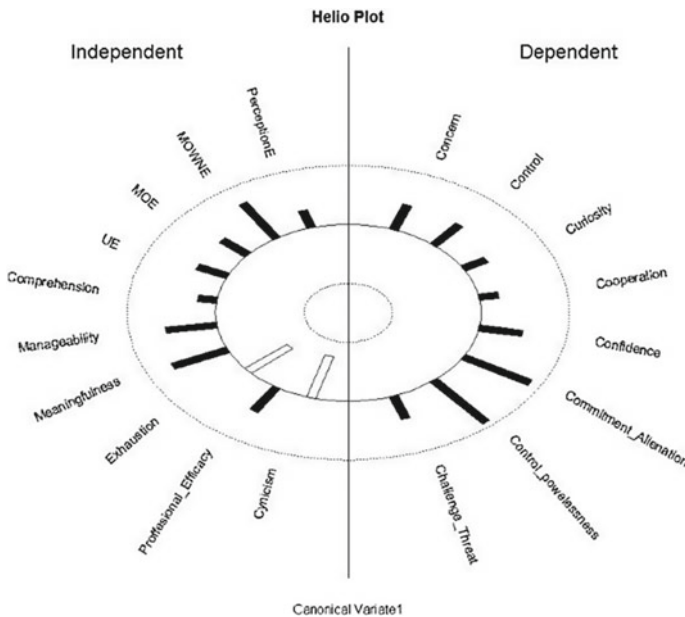


Fig. 6.4 Overall relationships between the wellness attributes and the resiliency capacities canonical construct variates

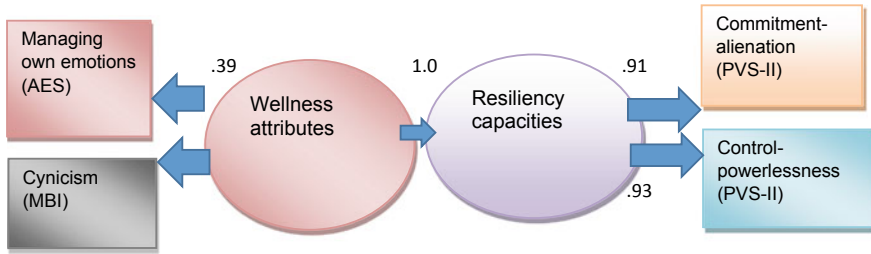


Fig. 6.5 Best-fit structural model linking the significant wellness attributes with the resiliency capacities. *Note* All standardised path coefficient estimates *** $p \leq .001$

(wellness attributes) canonical construct variables, while the right semicircle displays the dependent (resiliency capacities) canonical construct variables (CAAS and PVS-II). The relative size of the correlation structure is indicated by the relative length of the bars extending either towards the circumference (positive correlations) or towards the centre (negative correlations) (Shafto, Degani, & Kirklik, 1997). As also shown in Fig. 6.4, the bars reaching outward represent positive correlations. Negative canonical correlations were observed in terms of the exhaustion and cynicism variables.

On the grounds of the significant relationships indicated between the independent and dependent canonical construct variates, and using the results of the canonical correlation analysis as the baseline measurement model, SEM was performed to ascertain whether there is a good fit with the empirical structural model. The reason for this approach was to validate empirically the psychological coping profile that had emerged from numerous analyses of the interrelationships and overall relationships between the wellness attributes construct variables and the resiliency capacities construct variables. The test statistics and goodness-of-fit indices provided by AMOS 18 (Arbuckle, 2009) were inspected (Fig. 6.5).

6.10 Empirically Manifested Psychological Coping Profile for Call Centre Agents

The variables that were identified in the empirically manifested structural model include specific cognitive, conative, affective and interpersonal behavioural elements that underpin the psychological coping profile. Figure 6.6 provides an overview of the core empirically manifested behavioural elements that underpin the psychological coping profile of call centre agents.

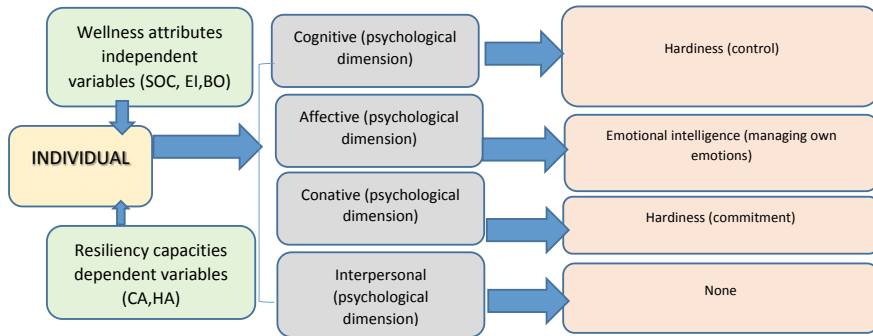


Fig. 6.6 Empirical psychological coping profile for call centre agents (authors' own compilation)

6.11 Insights Relating to Call Centre Agents' Thriving in Digital Workspaces and Implications for the Development of Wellness Interventions

This section will highlight the core insights regarding the flourishing of agents in the digital workspace of call centres in Africa.

1. The empirically tested profile yielded the cognitive (hardiness-control and burnout-cynicism), affective (emotional intelligence-managing own emotions) and conative (hardiness-commitment) behavioural elements. These elements should be considered in the design of organisational wellness interventions for enhanced thriving.
2. Managing own emotions, cynicism, hardi-commitment and hardi-control) appears to be important in the design of organisational wellness interventions.
3. The relationship between the wellness attributes and the resiliency capacities added new knowledge on the psychological coping profile of employees in call centres. This knowledge may well be used to develop wellness interventions for such an environment.
4. When working in the field of employee wellness, practitioners should consider increasing the human experience by striking a balance when using technology to resolve an issue. Organisations need to focus on the full life cycle of a call centre agent, integrating technology where it makes sense and strengthening human interaction.
5. The results of the empirical study provided new insights into the relationship between the wellness attributes (sense of coherence, emotional intelligence and burnout) and resiliency capacities (career adaptability and hardiness). These insights indicate that it would be advisable for organisational wellness interventions to take into account the effects of exhaustion on employees. Individuals working in call centres need to invest in promoting a balance with regard to their workload, expected outputs, targets and deadlines. In addition, individuals need to understand the effects of exhaustion on their health.

6. It is advisable that call centres in Africa should attempt to increase the hardiness of their employees by creating supportive work environments, as well equipping them with the necessary tools and resources to enable them to manage their workloads, especially in the digital workspace of call centres. Highly committed people use emotional resources to cope with excessive workloads. A sense of hardi-control is viewed as an important resource for individuals, while hardi-commitment indicates individuals who are committed to themselves and to their work and who experience a sense of control over their lives (Smith, 2018).
7. It is essential that organisations understand the complex processes involved in coping with the challenges and demands of career development in the fourth industrial revolution, especially in a digital workspace such as customer service employment. In addition, organisations should assist individuals to recognise their personal strengths as well as the other positive psychosocial resources that are required for adjusting to the changing contextual circumstances which affect their working lives (Konstam et al., 2015).

6.12 Conclusion

Call centres are unique digital workspaces which need consideration of coping behavioural attributes for thriving and flourishing. More specifically, it is recommended that organisational wellness interventions should focus on developing both the wellness attributes and the resiliency capacities, as highlighted in the findings of this study. These personal and resiliency resources may likely increase health and well-being, thereby empowering the workforce and leading to individuals displaying intellectual engagements as well as the acquisition of the skills and creativity required to solve problems, which may help enhance their thriving and flourishing.

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Nisha Harry (Dlitt et Phil) is Associate Professor at the University of South Africa, in the Department of Industrial and Organisational Psychology. She is Registered Psychologist and Counselor with the Health Professions Council of South Africa (HPCSA), as well as Affiliate with the Society for Organisational and Industrial Psychology (SIOPSA). Her notable achievements were the Executive Dean’s Achievers’ Award for contribution to the publication and research in higher education in the School for Economic and Management Sciences (CEMS). Her duties include supervising intern psychologists, masters and doctorate students. She has achieved recognition as Researcher by publishing in international and national journals and also has attended conferences and presented at national and international levels. Her research focus areas are employee wellness, positive psychology, career psychology and organisational development.

Chapter 7

Emotion Experiences and Management Within Digital Work Contexts



Cara Jonker

Abstract The emergence of virtual organisations has launched the management of emotions at work into cyberspace. This chapter will firstly provide insight into the role of emotionality within virtual teams and digital work contexts. Secondly, the affective events theory and model of emotion regulation will be investigated and applied as the theoretical framework to investigate emotion experiences within digital work contexts. Thirdly, a suggested conceptual framework for the investigation of emotion experiences within a digital context will be provided. Fourthly, a case study of the emotion experiences and management of virtual team members within an information technology context will be presented. Lastly, practical implications and suggestions for future research on emotion experiences and emotion management in digital workspaces will be discussed.

Keywords Emotions at work · Emotion management · Affective events theory · Emotion regulation · Virtual teams · Digital work contexts

7.1 Introduction

Schwab (2017) framed the Fourth Industrial Revolution as a world where individuals move between the blurred lines of digital platforms and virtual reality, and use technology to adapt and manage their lives. The reality is that we are not waiting for the Fourth Industrial Revolution, but that we are already functioning within it. Advances in information technology (IT) have paved the way for virtual teams, where team members are not in close geographic proximity of each other, and teams are not bound to physical office locations (Ambrose, Chenoweth, & Mao, 2009). Virtual teams also allow for the best talent to be brought together. The context of work has changed immensely, and the acceleration of the change will move faster than the speed of light. Not only is the context of work changing, but also the type of worker and competence needed within organisations.

C. Jonker (✉)

School of Industrial Psychology and Human Resource Management, North-West University,
Potchefstroom, South Africa
e-mail: Cara.Jonker@nwu.ac.za

More than ever, talent will be in the form of sought-after knowledge workers. The type of worker who has the competence to innovate, as well as to strategize and think outside the box will be sought after (Xu, David, & Kim, 2018). This may also lead to a new type of cognitive competence apart from the skill of emotional competence. It entails the competence to adapt quickly to the environment, but also to bridge the gap between anticipating change and generating innovative solutions to solve possible challenges (Xu et al., 2018). Stam and Stanton (2010) state that the *Technological frame of reference work* of Davidson (2006) offers a theory as an explanation to individuals' reaction to IT initiatives and the influence it has on change initiatives. Oleson (2014) concurs with this by stating that this framework should be applied as a framework to investigate resistance to IT change. It stems from the work of Orlikowski and Gash (1994), where their main research interest was on the use of technology. It investigated the *insight, understanding* and *expectations* a person has regarding the use of a new IT strategy. At its core, the use of technology within digital work contexts is emotionally charged and driven (Serrano-Puche, 2015).

The emergence of virtual organisations and digital work contexts has launched the management of emotions at work into cyberspace. Stam and Stanton (2010) therefore urge for emotionality to be included in IT research efforts. They point to the fact that half of all IT strategies fail and that the underlying reason for this is that new IT strategies resemble in itself a *change process* to which employees react emotionally. They conclude their research by stating that the organisational context of the IT changes and the emotional reaction of employees will affect workplace outcomes. Adapting successfully to the environment is an inherent part of being emotionally intelligent (Bar-On, 1997), and therefore, emotional competence and emotion regulation will guide workers in the Fourth Industrial Revolution.

The digital work context is far more emotionally charged than previously, putting the psychological contract in an emotional space. The successful management of an emotional episode at work depends on a shared understanding of what the other party feels and why (Herriot, 2013). Emotional episodes at work will happen more frequently as emotional reactions to the change will be experienced. Top management will have to make quick decisions to adapt to these quick and rapid episodes of change—having to do without emotional reassurance that face-to-face communication normally provides. Emotion competence and emotion management therefore become important for the success of virtual teams, as virtual teams are affected by affective conflict (Ambrose et al., 2009). The management of emotions (emotion management) can enhance team performance, as emotionally intelligent team members become sensitive to cross-cultural emotions and to manage their emotional reactions (Quisenberry, 2018).

Virtual teams and digital work contexts are highly affected by the emotional context within which the team functions (Barsade & Gibson, 2012). As the contexts are changing from individual work to teams, the roles of emotions and norms to display them are also changing. Glikson and Erez (2013) argue that the significant differences of emotional display rules across cultures need to be managed, as it can lead to a depletion of work wellness levels. As work teams develop and go through the phases of relationship building, they form a shared set of emotional display rules.

However, this can only happen after substantial interaction, which *ad hoc* task teams do not have the luxury of. Trust, motivation and effective communication are based on the number of face-to-face interactions (Ambrose et al., 2009).

Embedded in the cross-cultural composition of the virtual team is the use of language and the cross-cultural meaning and understanding of emotions. The efficiency of communication and perceptions of emotional cues pave the way for team success (Hinds, Neely, & Cramton, 2014). As part of the coping strategy of dealing with a multi-linguistic team, team members may avoid tasks, contexts and communication with different language speakers. They may even switch back to their mother tongue in communication with the home team and as a result leave other team members in a communication vacuum. Emotions of *exclusion*, *de-evaluation*, *isolation* and *distrust* can arise (Hinds et al., 2014). Rosen, Harris, and Kacmar (2009) concur with this and argue that emotions play a role in the outcome of attitudes and workplace behaviour, as reflected in the affective events theory (AET).

7.2 Chapter Objective

This chapter will firstly provide insight into the role of emotionality within virtual teams and digital work contexts. Secondly, the affective events theory and model of emotion regulation will be investigated and applied as the theoretical framework to investigate emotion experiences within digital work contexts. Thirdly, a suggested conceptual framework for the investigation of emotion experiences within a digital context will be provided. Fourthly, a case study of the emotion experiences and management of virtual team members within an information technology context will be presented. Lastly, practical implications and suggestions for future research on emotion experiences and emotion management in digital workspaces will be discussed.

7.3 The Affective Events Theory

The affective events theory (AET) provides a framework for the investigation of emotions and emotion experiences at work, and it illustrates the multi-dimensionality and complexity of affective experiences within work contexts (Fig. 7.1). This theory is recommended to explore emotion experiences within digital work contexts as it takes the unique *work environment* into consideration (Stam & Stanton, 2010). The framework states that the work environment has elements that will influence the type of *affective work events* experienced. Depending on the *individual dispositions* within the individual (for example emotion regulation), affective work events will result in *affective reactions* (positive and negative emotions) experienced by employees. These emotions will then result in *affect (emotion)-driven behaviours and work attitudes*.

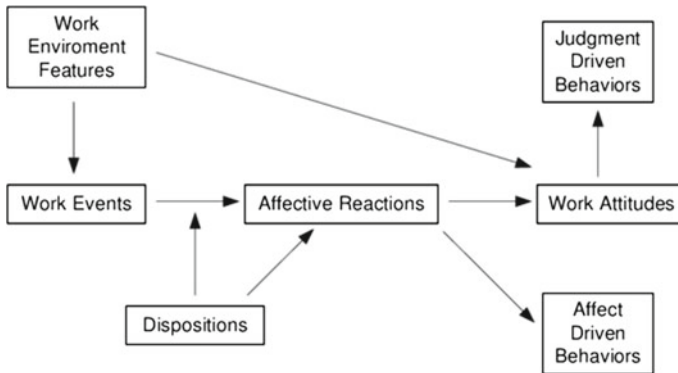


Fig. 7.1 Affective events theory (Weiss & Cropanzano, 1996). Permission to use this figure was obtained from the authors

As an end result of this framework, work attitudes will result in *judgement-driven behaviour*, for example intention to stay (Rosen et al. (2009).

The AET (Weiss & Cropanzano, 1996) has been applied in numerous studies to investigate emotional experiences and brought the importance of research on emotions at work to the fore. The AET was developed by Weiss and Cropanzano (1996) in an attempt to investigate the different elements of emotional experiences in work settings. They acknowledged that the *work environment* in which the employee functions has different features, which, in turn, can lead to those *events* at work that individuals respond to emotionally. These factors can be seen as the antecedents to the emotionally elicited events. Vranjes, Baillien, Vandebosch, Erreygers, and De Witte (2017) describe the work environment part of the AET applied within digital contexts as characterised by the lack of non-verbal cues, anonymity, intrusiveness and viral reach that create a unique set of dynamics. Junc,a-Silva, Caetano, and Lopes (2017) argue that it is the day-to-day experiences at work and the emotions they elicit that will influence work behaviour. The authors distinguish between positive emotional experiences as ‘daily hassles’ and negative emotional experiences as ‘daily uplifts’. Hassles, for example, include lack of supervisor support or quantitative workload, and uplifts, for example, can include positive feedback about receiving support.

He, Sirén, Singh, Solomon, and Krog (2017) conclude, regarding the AET, that affective events trigger two appraisal phases. The first will be regarding the valence of the event (positive or negative), for example how it will influence the employee’s well-being. The second phase will produce the discrete emotion. He et al. (2017) label this as the assessment of the content, causes and consequences of the event, together with an assessment of the individual’s potential for coping with the event. The research of He et al. further showed that exposure to negative events can sometimes be beneficial for learning behaviour in organisations.

The authors also recognised that emotional events lead to outcomes such as decreased performance and negative attitudes. They acknowledge the role that situational and individual factors can play in the emotional experience. This indicates that

although two employees can experience the same emotional event, their emotional reactions to these events may differ. It will also depend on what emotional cues are used by the individual and how they make sense of and attach meaning to emotional experiences. However, this is not often one of the luxuries that virtual teams have, as they sometimes only have text-based communication systems to rely on. Serrano-Puche (2015) states that the comprehensive nature of the AET theory may necessitate some factors in the theory to be made more explicit and to be elaborated upon. The AET has been applied successfully in research within digital work contexts. Wakefield and Wakefield (2016) used the self-determination theory in conjunction with the AET to conclude that technology user passion within the context of meaningful work events facilitates the use of technology within work contexts. In this regard, the AET does not give content on how emotions are regulated and managed. It can be argued that the emotional reactions that affective events at work elicit in the form of organisational behaviour are of importance. The emotion regulation theory of Gross (2002) can be applied to investigate the strategies that employees apply to regulate their emotional reactions at work. Emotion regulation (ER) is an attempt to influence the experience and expression of emotions.

7.4 Emotion Regulation Theory

The emotion regulation (ER) theory (Gross, 2002) proposes emotion experiences as a process model in which five clearly identifiable strategies are used to manage and regulate emotions. Gross and Barrett (2011) expand on the initial ER model of Gross (2002) to state that ER can also be used to either induce or inhibit emotional experiences. Four of the ER strategies suggested can be perceived as strategies to apply before the foreseen affective event, and they refer to these strategies as *antecedent-focused emotion regulation (situation selection, situation modification, attentional deployment and cognitive change)*. The fifth emotion regulation strategy can be classified as a strategy that is applied after or during the affective event, and Gross labelled that *response modulation*. Diefendorff, Richard, and Yang (2008) describe these strategies applied by the emotion regulation theory as follows:

Situation selection is applied to draw near or evade certain people or places in order to regulate emotion events. Within a work context, the employee elects certain situations that will give the most positive emotion experience. *Situation modification* is applied once the situation is selected. The outcome of the situation is altered by the individual, for example choosing not to address or talk about certain topics they know will be upsetting. It can also be seen as an employee trying to change a situation or emotion event. After situation selection, *attentional deployment* is applied. It is also described by Gross (2002) as a choice of where or on what your focus will be in a particular situation. The employee can, for example, distract himself from upsetting work discussions or a total absorption on a particular part of a problem or work challenge.

Cognitive change is used to attach meaning and decrease the emotional response. Gross (2002) regards this as an important strategy and step in the process, because it is here that the response tendency to the affective event is decided upon. For example, the employee's anger towards a workplace bully is turned into pity for the individual. As a last step in the process, *response modulation* is an effort to influence the emotion response that has already been chosen. For example, it may take the form of hiding your anger or shame. In this strategy, the physiological effect of emotions is often managed by taking drugs for anxiety and depression. Employees also often choose to suppress the expression of emotions here. Although these two theories can provide insight into the emotional experiences and management of employees within digital work contexts, research efforts are still lacking to provide content and context to the different features in the affective events theory. Champe, Okech, and Rubel (2013, p. 353) state that '*these emotion regulation strategies are behavioural and cognitive methods by which individuals influence the type, timing, intensity and expression of emotion*'. Grandey (2015) postulates that successful regulation depends on the dynamic relationship between the employee and the context.

Next, the AET will be used as a frame of reference and literature applicable to elements of the theory within digital work contexts (*work environment, affective events, dispositions, affective reactions, affect-driven behaviours and work attitudes*) will be utilised to construct a conceptual model to investigate emotion experiences within digital work contexts (Fig. 7.2).

7.5 An Application of the AET Theory Within Digital Work Contexts

7.5.1 Work Environment

The work environment of the AET resembles the context of the organisation the best. Guenter, van Emmerik, and Schreurs (2014) name a few possible work environment features that can possibly lead to affective events, i.e. team composition, human resource systems, co-worker relationships and information exchange practices. Sarker and Sahay (2004) indicate the level of IT knowledge and competency as a possible challenge for virtual teams and digital work contexts. Virtual team and digital work context leadership are advocated by Ambrose et al. (2009), as digital work contexts require a specific leadership skills set that combines the human management aspect with an IT knowledge base. Glikson and Erez (2013) state that emotions and emotional display rules play an important role in the successful functioning of virtual teams and digital work contexts. However, research on this topic is limited. There should be a set of shared norms as to how emotions and which emotions are commonly expressed and shared and how these are interpreted.

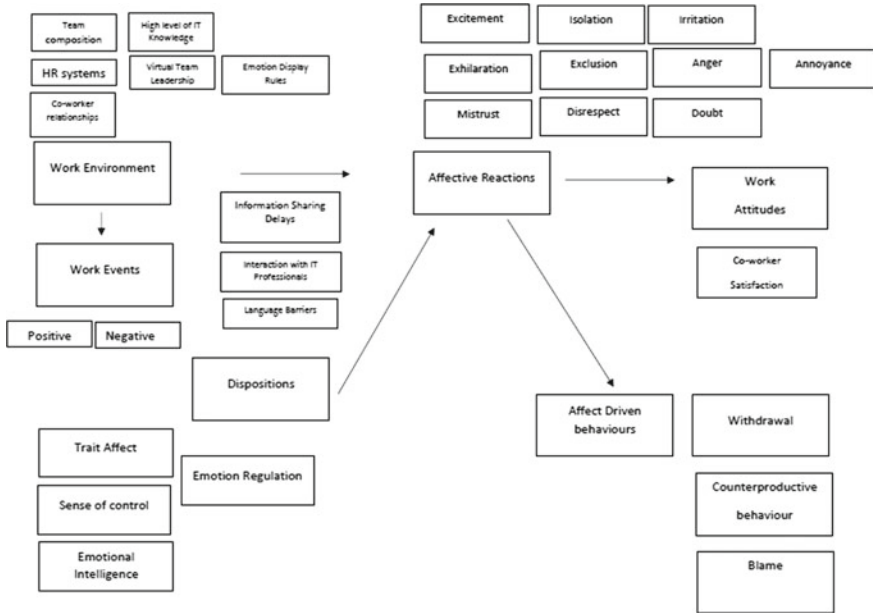


Fig. 7.2 Conceptual model to investigate emotion experiences within digital work contexts (author’s own work—adaptation of Weiss & Cropanzano, 1996). Permission to adapt this figure was obtained from the authors (Weiss & Cropanzano, 1996)

7.5.2 Work Events (Affective Events)

Stam and Stanton (2010) point to the fact that emotional work events are not merely the anti-pole of one another. They are not imaging each other. Positive and negative emotional events will therefore not have an increased or decreased outcome on the same work outcome, for example organisational commitment. Even more, the same event can have positive outcomes for one person, but negative outcomes for the other. Reaction to affective events depends on how the event is interpreted and evaluated (Guenter et al., 2014). Guenter et al. (2014) frame information sharing and delays as affective events, which are evident in virtual teams and technologically advanced environments. Interactions with IT professionals are noted by Stam and Stanton (2010), where *losses of data, productivity and time* were associated with IT professional interactions.

Language barriers have been identified by Tenzer and Pudelko (2015) as an affective event that pertains to multicultural and virtual teams. It can considerably intensify existing friction present in multicultural environments. In itself, emotions are sometimes difficult to communicate within common native tongues. It becomes even more difficult to express and communicate emotions in foreign languages.

7.5.3 *Dispositions*

Guenter et al. (2014) state that an employee's sense of control is an inherent factor within the individual that will influence the response to emotion events that trigger control. Other possible dispositions include trait affect (some employees have more positive or negative states than others do) and time urgency towards information delay events. Emotional intelligence (EI), according to Ambrose et al. (2009), is not a new term or disposition to consider. Ambrose et al. (2009) state that Joseph Weizenbaum (computer scientist) already noted in 1970 that the person in his whole being is important, and skills beyond cognitive skills are needed in an IT-driven environment. Ambrose et al. (2009) conclude their research by stating that emotional intelligence is critical in virtual team functioning. Quisenberry (2018) adds to this, stating that emotional competence can lead to increased performance. Team members with high emotional intelligence (EI) will be able to recognise and manage their own emotions as well as their team members' emotions. Having high EI can also lead to more innovative thinking and positive work environments.

7.5.4 *Affective Reactions*

Guenter et al. (2014) highlight specific affective reactions towards information sharing and exchange delays as ranging between irritation, anger, annoyance and interpersonal tension. The authors note further that the emotions become more intense as the delays are prolonged. Affective reactions are also noted by Stam and Stanton (2010) as feelings of doubting their adaption abilities or feelings of fear or loss of functions that past IT systems displayed. Affective reactions to language barriers include apprehension, anxiety, embarrassment, stress, shame and frustration (Tenzer & Pudelko, 2015). Affective reactions to team members who speak to each other in their common native language include exclusion, disrespect and feelings of isolation. The most intense emotion is distress of not being able to express themselves (Tenzer & Pudelko, 2015). Glikson and Erez (2013) identify emotions that surface during change and downsizing as *anxiety* and *insecurity*, *resentment*, as well as *mistrust* accompanied by *excitement* and *exhilaration*. A further change in the psychological contract can be more work for the same pay, which leaves the door for *cynicism*, *distrust* and *burnout* wide open.

7.5.5 *Affect-Driven Behaviours*

Guenter et al. (2014) name withdrawal, blame, counter-productive work behaviour and workplace violence as outcomes of information exchange behaviours that can be clustered under this part of the AET theory. Tenzer and Pudelko (2015) argue that

team members can feel restricted in communication and therefore also experience decreased job security that can also be classified as a work attitude. The regulation strategies that can be identified here as part of ER theory of Gross (2002) include avoidance of situations requiring them to work with non-native language speakers, or they start to speak in their mother tongue with other members of the team. This regulation strategy in itself becomes an emotion event that leads to negative emotions experienced and affect-driven behaviour, as well as a regulation strategy of leaving the meetings out of protest.

7.5.6 Work Attitudes

Co-worker satisfaction refers to the satisfaction of the quality of relationships with fellow team members or colleagues and can be seen as one of the outcomes of affective responses (Guenter et al., 2014). More research is needed to provide content to this part of the AET.

The above application of literature to the AET in digital work contexts can be summarised as indicated by Fig. 7.2.

Next, a case study will be presented that explores the emotion experiences and management of IT professionals within a digital work context as part of a virtual team.

7.6 Case Study: Emotion Experiences of IT Professionals in a Virtual Work Team

IT professionals (ITP) in this virtual team experienced emotion events that triggered certain emotions. *Methods of communication* in the virtual team included phone calls, e-mails and video conferencing. The ITPs experienced that the use of e-mails triggered *miscommunication* and *work delays*. [*Many miscues, you cannot read the situation*].

They sometimes experienced the use of phone calls to be more efficient, but because there should be evidence of communication, communication was sometimes *duplicated*. The phone calls were recorded in a follow-up e-mail. Keeping a paper trail of conversations was a *work requirement*. The use of e-mails as method of conversation in itself caused *time- and work delays*. This caused *frustration*. [*I thought one e-mail would have been enough, but I think that the e-mail chain was ten or 20 long back and forth*]. Emotions associated were *frustration* that turned into *anger* when over-communication happened.

ITPs experienced that to function successfully in a digital work context required *additional work roles* of relationship building and language use. [*My whole life has just been engineering, math and science, that's all I always focused on, I never*

focused on typing good literature, people relationships, that kind of things wasn't the thing you focused on]. The ITP experienced *language barriers, efficiency and use* as an emotion event that caused uncertainty if messages would be *understood* [*I type in my mother tongue and then translate it on Google translate... English is second language use... Double check my grammar...*]. ITPs experienced disappointment [*Disappointment in myself that I could not communicate the message successfully, you do not have that physical interaction*].

A *difference in technological intelligence* was experienced as an event that caused *annoyance*. ITPs experienced the virtual teams and digital work contexts on their projects as not being on the same technologically advanced level than they were. This resulted in additional *miscommunication* and *time delays*, as skills that they thought were basic took time to explain. Sometimes, this resulted in *hopelessness*, where ITPs gave up on explaining certain tasks that had to be done and they took on *additional workload*. During these emotion events, empathy was seen as difficult to implement [*It's a bit difficult to put myself in their shoes, cause for me it's really a simple thing, but for them it is something new*].

Emotions in these ITPs were regulated and managed in different ways. On an individual level, they tend to cope with frustration by *leaving the situation for short times, reflecting on the situation*. [*I will leave my desk for a bit and drink coffee and think about the problem again*]. In some cases, emotions were suppressed [*I just switch off and I ignore*]. The ITPs reflected on organisation initiatives where they *played games* after work to release emotions in a fun way. Another organisation strategy was to appoint a middle manager who could deal with 'dead-end communication events'. [*Get more organisational support (a middleman) that can help when communication gets stuck... Get a middleman that channels the communication issues*].

Another emotion management strategy was the use of *humour* at work. The use of *visual pictures* over spoken or written language in some instances was experienced as being more successful. Some ITPs made use of empathy in difficult situations and to become part of other's frame of reference in communication [*put myself in their shoes*]. They experienced that *positive attitudes* and *positivity* helped in communication. Other ITPs experienced that being 'nice and positive' put additional strain and stress on them. They viewed the context of the virtual team as too fast paced [*You do not have time to think about being kind*]. ITPs experienced that *deadlines* caused *anxiety* and moments of *panic*. However, some ITPs realised that irritation and the display of anxiety and anger would be negative for future relationships. [*It does not help to yell; it will be bad for the relationship*]. *Excitement* was experienced when goals were reached and problem solving was successful. However, when things went wrong, they experienced *blame shifting* and *hopelessness*.

7.7 Implications for Human Thriving in Digital Workspaces

Apart from all the other challenges that organisations have to face, the Fourth Industrial Revolution has put more pressure than ever before on organisations and their employees to thrive in. It has to be acknowledged that the introduction to new IT strategies and digital workspaces is an escalating change strategy that employees have to face on a daily basis. Previous efforts have taken a more cognitive view to change research, but change and affect are so intertwined that one cannot study the effect of change or adaption of a new IT strategy without recognising the affective process of employees. Technology and emotionality cannot be separated. The importance becomes even stronger as IT initiatives often fail. The conclusion can be drawn that the *context* within which change or digital workplaces are functioning needs to be taken into consideration. It is not only the context that needs investigation, but it is also evident that the *type* of worker who will function best will be those ones who are more innovative and adaptive. Virtual teams make it possible for the best talent and those with the highest competence to be brought together to find solutions that are faster and better. The conclusion can also be drawn that because of the multicultural and multi-linguistic make-up of teams, cultural intelligence will also be a sought-after competency. Even though there are numerous benefits of introducing new IT strategies or working in digital workspaces, there are also challenges, because, at the heart of all IT processes, there is still an employee who will react emotionally. The technological frames theory must be applied to also investigate the experience of having been introduced to new technology.

The affective events theory and the emotion regulation theory are two theories that can be applied to investigate emotional experiences in digital workplaces. The benefit of using these theories is that they can be applied within work settings. The AET recognises that every organisation has its own features. One can also see this as having their own culture and climate. The unique 'face' of every organisation will lead to the experience of affective events. The literature indicated that the work environment is influenced by support structures, for example HR systems and virtual team leadership, but also the level of IT knowledge of its IT professionals and employees. More research needs to be done to investigate work environments and their culture, which will either foster or hinder technological efforts. Work events with affective content, according to literature, can be positive and negative. However, once you investigate different dimensions of emotions, it needs to be taken into consideration that affectivity is not only a valence of positive versus negative, but it can also have a power or unpredictability dimension (Fontaine, Scherer, Roesch, & Ellsworth, 2007). Information sharing, interaction with IT professionals and language barriers are some of the affective events that need more investigation, as well as further research to identify more affective events related to digital workplaces.

Trait affect (for example, having an overall trait of being positive), sense of control and emotional intelligence could be identified as possible dispositions of employees. These dispositions need to be elaborated upon as this will be identified as those skills

and competencies that will make employees thrive in digital workplaces. It is also important to take note of the different affective reactions towards affective events, as these affective events will influence well-being and affective-driven behaviours. Emotion regulation has been offered as a theory to be incorporated with the affective events theory and could be investigated as part of the ‘dispositions’ construct in the AET.

7.8 Conclusion

The importance of investigating emotion constructs within digital work contexts has been established. Research needs to be conducted on the display rules and norms of emotions in culturally diverse organisations and teams. As part of the on-boarding process, employees must be exposed to work in different cross-cultural teams to improve emotion understanding and communication. Emotion display rules and emotion expression in virtual teams as well as the antecedents and outcomes of virtual teams need to be investigated. Even more so, emotion display rules in different levels of ‘virtuality’ need to be researched. The role that emotional intelligence plays in the success of virtual teams needs to be researched (Ambrose et al., 2009). Research is lacking on emotion management and communication effectiveness in virtual teams (Hendon, Powell, & Wimmer, 2017). This chapter provided insight into the emotion experiences and management within a digital work context. It indicated that emotionality and technology are two sides of the same coin. It conceptualised the AET as a framework to investigate emotion management and emotion experiences in digital work contexts and provided a case study where emotion experiences and management of IT professionals in a digital work context was documented.

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Cara Jonker (Ph.D.) is Professor at the North-West University (Potchefstroom Campus) in the School of Industrial Psychology and Human Resource Management. She has a Master's- and Doctoral degree in the field of Industrial Psychology and is a registered Industrial Psychologist. She was also the runner up of the CEO's SA's Most Influential Women in Business and Government: Education and Teaching Sector. She has authored numerous scientific publications on the topic of emotions at work. Her research interests and efforts are focused on emotional intelligence and regulation and how this impact on organisational behaviour.

Part III

Inter-personal and Inter-digital Factors of Human Thriving

Part III of this book collection addresses the inter-personal (social relatedness) and inter-digital (inter-digital human interaction and collaboration) aspects of human thriving (see Mayer, Chap. 8; Van Lill, Roodt, and De Bruin, Chap. 9; Habraken, Bondarouk, and Hoffman, Chap. 10; Marín-López, Zych, Monks, and Ortega-Ruiz, Chap. 11). The part highlights the factors influencing human collaborative interaction through smart technological platforms.

Key Emerging Issues for Research

- Multidisciplinary and transcultural research on the *Art of Collaboration* is needed in future to explore the impact of Industry 4.0 and its speedily changing complexities in the workplaces.
- Further research on employees' initial cognitions, affect, volitions and intentions, as these might be important indicators of employees' motivation to pursue complex goals in digital workspaces.
- Research on personal characteristics and inter-personal factors that influence inter-digital collaborative and goal-setting in teams.
- Research on three social work context-related technology-based developmental streams: (1) factors informing the establishment of connections between devices and/or systems within firms and with external parties; (2) factors influencing the ability to take greater advantage of the value of information; and (3) factors influencing the availability of contemporary (non)physical assets.

Key Emerging Issues for Practice

- Interventions that help employees and organisations to shift on the cognitive level (i.e. transform their view from knowledge to mindful meta-reflections and positive perceptions) in collaborative interactions.

- Interventions that help employees and organisations to shift on the affective level (i.e. develop an increased focus on feelings and emotions to connect to the self and others and transform negative experienced emotions).
- Interventions that help employees and organisations to shift on the behavioural level (i.e. developing behavioural skills and e-mediated intercultural valid communication skills and actions).
- Leader development interventions that develop their levels of consideration (warmth) and reasonability (intellectual competence), and goal-setting practices in digital collaboration contexts in order to maintain employees' internal drive to attain meaningful and satisfying complex goals.
- Interventions that help managers and practitioners upskill themselves in order to design big data projects and to analyse big data using sophisticated techniques, such as word counting and machine learning.
- Practices and conditions that enhance the functioning of self-steering, multidisciplinary virtual teams.

Chapter 8

Key Factors of Creativity and the Art of Collaboration in Twenty-First-Century Workspaces



Claude-Hélène Mayer

It is in collaboration that the nature of art is revealed.
Steve Lacy (1934–2004), US-American Saxophonist and
Composer

Abstract According to the Chinese Admiral *Zheng He*, the *Art of Collaboration* is guided by the principle “Know your collaborators, know yourself”. This principle grows in importance when we take the rapid changes in workplaces—the Fourth Industrial Revolution (4IR)—in global and local contexts into account. In this chapter, it is argued that not only intra- and interpersonal knowledge is needed to collaborate. It is contended that the *Art of Collaboration* in the twenty-first century needs a theoretical foundation which takes the strengths as well as the weaknesses of new ways of collaboration into account. These strengths and weaknesses, in addition, must not be limited to cognitive and experienced-based knowledge, but need to be expanded to the exploration of emotions and collaborative behaviour as well. Creativity, therefore, becomes a key factor in the art of collaboration in the Industry 4.0 workspaces. The positive psychology Wave II (PP 2.0) is viewed as providing a valuable foundation to work together creatively, peacefully and effectively across diverse cultural contexts. In this chapter, key factors of creativity and the *Art of Collaboration* will be reflected on cognitive, affective and behavioural levels. Selected examples will be discussed taking present collaborative challenges on global and local levels into account, such as growing intersections of nationality, culture and gender, the transformation of negative experienced emotions and the importance of collaborative behaviour during the breakthrough of the 4IR. Responses towards these challenges will be discussed. Conclusions and recommendations will be presented

C.-H. Mayer (✉)

Department of Industrial Psychology and People Management, University of Johannesburg,
Johannesburg, South Africa
e-mail: claudemayer@gmx.net

Institut für Therapeutische Kommunikation und Sprachgebrauch, Europa Universität Viadrina,
Logenstrasse 11, 15230 Frankfurt (Oder), Germany

for future discourses on creativity and the *Art of Collaboration* in digital workspaces in the twenty-first century.

Keywords Collaboration · Fourth Industrial Revolution (4IR) · Systemic approach · Creativity · Positive psychology · PP2.0

8.1 Introduction

According to the Chinese Admiral *Zheng He* who lived in China's early Ming Dynasty, the *Art of Collaboration* is guided by the principle “Know your collaborators, know yourself” (Hum, 2011). This principle grows in importance when we take the rapid changes in workplaces—the Fourth Industrial Revolution (4IR)—in global and local contexts into account (Stubbings, 2018). In this chapter, however, it is argued that not only intra- and interpersonal knowledge, as emphasised by Admiral *Zheng He*, is needed to collaborate. Collaboration, as viewed by Steve Lacy, reveals the nature of art when done correctly. Thereby, collaboration is associated with social interaction, leadership principles and management practices and the idea of a revelation of arts which is assumed to be implicit in each and every collaboration (Hum, 2011).

The Fourth Industrial Revolution (4IR) is characterised by numerous, complex and diverse changes in the workplaces (e.g. Morley, 2013; Stubbings, 2018) and questions, including the influence of growing technological processes, automation and artificial intelligence, as well as how and where people will work, the definition of the employee in the automated world and the role of the place of cooperation and social interaction in the workplaces. While there is a strong emphasis in research on exploring the technological progress and its impact on workplaces, it is pointed out here that the situation is more complex. Reflections on the 4IR do not stop when focusing on technologisation and digitalisation: the discourse is complex and needs an in-depth exploration and understanding—less about technological innovation, but rather about how humans in different cultural settings deal with the changes, how they adjust to the changes, how they drive the change and how they shape their socio-cultural interactions within the complex twenty-first-century workspaces. The entire discourse needs deeper reflections on the meaning of work, on existential questions of humankind and its way forward, such as creating meaningful work, dealing with (negative) emotions, such as frustration and aggression, and new visions regarding education, jobs and life (Coates & Morrison, 2016; Johannessen, 2019). These complex discourses and challenges do no longer need linear predications (Stubbings, 2018), but rather complex systemic approaches which prepare humankind and workforces to cope with the complex challenges (Schwab, 2017). That means that discourses on the 4IR need systemic, transdisciplinary discourses and transcultural approaches. They also need positive and constructive ways and positive emotions (Frederickson, 2001) and a focus on international cooperation which promotes a holistic, resilient

view on the rapidly changing world's situation across living contexts (Guerra Guerra, 2019).

With Industry 4.0 come the economic shifts that are redistributing power, wealth, competition and opportunity; the disruptive innovations, radical thinking, new business models and resource scarcity that are impacting every sector, as according to Stubbings (2018) and Schwab (2017). Therefore, leaders need—more than ever before—a clear and meaningful purpose (Mayer, 2011; Wong, 2019), creative leadership and a mandate to attract and retain employees, customers and partners in the decade ahead (Stubbings, 2018). Creativity is deeply connected to issues of the Fourth Industrial Revolution, technology integration, innovation and technological change and provides new contexts and tools for creative output (Palti, 2017). Creative thinking is essential for twenty-first-century success, as societal problems will become more interdependent, global and complex (Henriksen, Mishra, & Fisser, 2016), and leaders are asked to bring up novel, original and compelling ideas (Morley, 2013; Baer & Kaufman, 2006), taking the socio-cultural context (Csikszentmihályi, 2014) and the creative, flexible switch of perspectives (Glăveanu, 2015; Runco, 2015) into account when collaborating in complex workspaces.

Collaboration is defined here in terms of two meanings (Oxford, 2018): 1. the action of working with someone to produce or create something; and 2. the traitorous cooperation with an enemy. This definition includes, on the one hand, the positive aspect of collaboration to create something together and with a common effort and, on the other hand, it refers to the challenging aspects which might need to be transformed, namely the challenge of the cooperation with “the other”, “the potential enemy”.

The term collaboration has therefore a dualistic meaning which includes the light and the shadow sides of human interaction (Dalcher, 2018). The shadow is thereby viewed as the unconscious aspect of the personality which the conscious ego does not identify in itself. Further, the shadow is often associated with negatively judged aspects, such as anxieties, fears, low self-esteem and false beliefs and perceptions (Jung, 2014). This shadow side is not limited to individuals, but it is also vivid in organisations (Dalcher, 2018) and contains all the important activities and aspects that might be unconscious or which might not be identified, discussed or managed within an organisation. The shadow system within organisations might pull the organisation towards chaos, enables diversity of thought and harbours creativity residing in the organisation (Stacey, 2007). The interplay of light and shadow aspects leads to creativity within organisations and engaging the shadow opens up new creative opportunities to overcome dysfunctional cultures, bureaucracies, small powerbases and rigid procedures (Dalcher, 2018). Culture is thereby understood in this chapter as the “the coordination of meaning and action within a bounded group” (Bennett, 2017).

It is argued here that not only intra- and interpersonal knowledge is needed, as described by *Zheng He*, to integrate shadow and light in individuals and Industry 4.0 organisations to collaborate successfully, but that cognitive knowledge needs to be expanded by emotional and behavioural aspects and positive, systemic approaches. That means that the key factors of the *Art of Collaboration*—particularly in a fast-growing and interconnected world—needs to take cognitive, but also affective and

behavioural aspects from positive psychology perspectives and systemic approaches into account. This is specifically the case, when we aim at using the growing intersections of diverse workspaces (including nationality, culture and gender) in a creative manner to collaborate successfully. The *Art of Collaboration* needs to transform negative shadow aspects and emotions, not only in face-to-face and direct communication interactions, but also in global, virtual workspace interactions which are shaped by new technologies and complex challenges. In the Fourth Industrial Revolution in which workplaces, means, ways and boundaries of collaboration change dramatically (Stubbings, 2018), the conscious awareness and self-reflection regarding collaborative behaviour are of critical importance. However, this unconscious aspect of (future-orientated) collaboration stays often unexplored under the surface of the organisation.

It is contended that the *Art of Collaboration* in the twenty-first century needs expanded perspectives including light and shadow aspects on individual and organisational levels, systemic approaches (Mayer & Viviers, 2016) and a theoretical foundation which takes the strengths as well as the weaknesses of collaboration into account. This means that collaboration should be built on a positive psychology perspective that is not primarily focused on the positive aspects only, as in positive psychology PP1.0, but that promotes a balanced view and takes strengths (light) and weaknesses (shadow) into account, as in the new wave of positive psychology PP2.0 (Compton & Hoffman, 2019; Ivztan, Lomas, Hefferon, & Worth, 2016; Wong, 2017).

8.2 Chapter Objective

In this chapter, key factors of creativity and the *Art of Collaboration* will be reflected on cognitive, affective and behavioural levels. Selected examples will be discussed taking present collaborative challenges on global and local levels into account, such as growing intersections of nationality, culture and gender, the transformation of negative experienced emotions and the importance of collaborative behaviour during the breakthrough of the 4IR. Responses towards these challenges will be discussed. Conclusions and recommendations will be presented for future discourses on creativity and the *Art of Collaboration* in digital workspaces in the twenty-first century.

8.3 The Context of the Discourse

When focusing on the *Art of Collaboration* and its key factors, the context, in which this discourse is taken into account, is influential. On the surface level of organisations, both organisations and their employees usually strive for healthy, non-toxic work environments (Mayer & Viviers, 2016; Rothmann & Cilliers, 2007) and mutual cooperation which enhance a sense of well-being and a willingness to share infor-

mation (Chung, Cooke, Fry, & Hung, 2015). Thereby, the focus on stress reduction, individual growth and organisational effectiveness (Biron & Karanika-Murray, 2014; Biron, Karanika-Murray, & Cooper, 2012) has become of major importance in workplaces in the twenty-first century. This is particularly important in the 4IR workplaces, since they experience new complex challenges (Dean & Spoehr, 2018) and a high demand of diversity, and flexibility which can be tackled when well-being and health in terms of a sense of coherence and a high degree of employees' comprehensibility, manageability and meaningfulness (Mayer, 2011) is given within the organisation. Transcultural systemic approaches can then support and foster individual and organisational development towards a greater good (Mayer, 2011). One core question which arises within the discourse of the *Art of Collaboration* is how we define ourselves and how we relate to each other (Schwab, 2017), thereby looking at the individual and systemic changes within the organisations rather from an exponential than a linear pace, tackling the management of new digital technologies (Oeij, Rus, & Pot, 2017), rising inequalities regarding low-skill, low-pay and high-skill, high-pay employees, as well as hybrid conflict potentials which arise in states and organisations, combining traditional and post-modern aspects in organisations and societies (Schwab, 2017).

Schwab (2017) has pointed out that the newly arising systemic challenges in organisations in the 4IR need to be addressed through quintessential human capacities such as compassion and cooperation. Mayer, Surtee, and May (2015) emphasise that time to pause, reflect and engage in meaningful conversation is of major importance for leaders in contemporary organisations. This need will most probably grow in importance within the next decades when workplaces become more digital, technology driven and virtual. Thereby, the value of self-organised cooperation with others through mediated contact with technological devices will heighten and the control over data, lifespan, health, cognition and capabilities, moral and ethical boundaries, and new relationship networks will need to be reorganised (Lee, Bagheri, & Kao, 2015). However, this will not only need to be done with rational and linear thinking patterns (Mayer & Viviers, 2016), but also with an inner attitude of meaningfulness, thoughtfulness, mindfulness and spirituality (Mayer & Walach, 2018) to maintain positive relationships and attitudes.

The new *Art of Collaboration* will need to be based on integrating cognitive, affective and behavioural aspects in collaboration which facilitate resourcefulness (Rosenbaum, 1990). They will have to impact on different systemic levels, such as the individual, the group, the organisation and the society. Thereby, a perspective needs to be emphasised that fosters collaboration and sustainability and should be based on an inner attitude of optimal functioning from a positive (organisational) psychology perspective (Kauffman & Scoular, 2004).

In the following, the *Art of Collaboration* for twenty-first-century workplaces will be reflected and discussed on an intra-, inter- and systemic level to prepare the discourse of the underlying theoretical psychology framework.

8.4 The Creative *Art of Collaboration*

In the following, the three levels of intra-, inter- and systemic connections with regard to the *Art of Collaboration* will be discussed, and their strengths and weaknesses addressed. Thereby, it is assumed that the art of collaboration needs a structured as well as a creative approach which is defined as the ability to formulate and solve problems so as to produce solutions that are relatively novel and of good quality (Sternberg & Lubart, 1995). For creativity to thrive and expand in employees and organisations, it needs a creative environment which is supportive of creative thoughts and extraordinary ideas and solutions, while tolerating ambiguity and task-focused motivation while applying multiple perspectives (Sternberg, 2005). Creativity thereby becomes a skill which is needed to generate ideas and products which are (a) relatively novel, (b) high in quality and (c) appropriate to the task at hand. These ideas will usually find currency among followers and thereby influence the system it is expressed and applied in.

Sternberg (2000, 2005) considers certain creative skills and attitudes as important in leading employees and organisations, such as

- (a) *problem solving*: through new and extraordinary definitions of the challenge and thereby new judgements;
- (b) *problem analysis*: through evaluating whether their solution to the problem is the best one possible;
- (c) *selling solutions*: through realising that one has to decide to sell their ideas and actively facilitate creative thinking; *willingness to take sensible risks*—through recognising to take sensible risks which can lead to success and failure; *willingness to surmount obstacles* and confront anyone who opts to defy the crowd;
- (d) *self-efficacy*: believing into the ability to do the job at hand; *willingness to tolerate ambiguity*—recognising that there may be long periods of uncertainty during which the outcome is not clear;
- (e) *willingness to find extrinsic rewards*: for actions which are intrinsically motivated; and
- (f) *continuing to grow intellectually*: being able to transform leadership patterns accumulate experience and expertise.

The *Art of Collaboration*, particularly with regard to 4IR, needs to take these creative skills and attitudes into account.

8.4.1 *Intra- and Interpersonal Connection*

The *Art of Collaboration* in a changing, highly complex world requires besides creativity resourceful and mindful individuals (Rosenbaum, 1990; Mayer & Viviers, 2016) who are able to connect their intra-individual complexities on cognitive, affective and behaviour levels in an authentic way.

According to Mayer and Viviers (2016), the individual needs to connect on the cognitive level for fostering knowledge, awareness, reflexivity and mindfulness. The fostering of these cognitive qualities will lead to an increased comprehensibility of the complex systemic aspects and interplays. To anchor the cognitive aspects within the self and to cooperate in both, effective and empathetic, mindful and spiritual ways, self-empathy and emotional intelligence (Goldman, 1995) are needed on an affective level. Through a high amount of emotional intelligence, the individuals will be able to connect to their own emotions intensely and increase productivity, build positive relationships to the self and others and gain emotional commitment from human capital (Mayer & Viviers, 2016).

On the interpersonal and organisational levels, the resilience, organisational culture and flexibility will be strengthened (Jonck & Swanepoel, 2015). This will stimulate a culture of trust, the development of synergies and creative acts and actions, as well as innovative responses to complex demands (Lazovic, 2012). All of these aspects are strongly interconnected and contribute to effective leadership (Chaudhry & Saif, 2012). Further, the cognitive and affective aspects of leadership relate to action and communication on the behavioural level, and it has been pointed out previously that—to support continuous empathetic communication in the workplace—emotional intelligence, communication and action need training (Grant, 2007). This training becomes even more important when communicating digitally and technologically. Particularly affective, approachable interrelationships based on emotional awareness, empathy, humanness and spirituality (Mayer & Walach, 2018), are needed to overcome the challenges of virtual, digital, technologically driven long-distance communication. Therefore, a behavioural culture of sharing and connection, communicative abilities and techniques, negotiation, conflict management and interventions are needed (Von Schlippe & Schweitzer, 2010) to develop and continuously drive sustainable, interpersonal long-term interaction in the twenty-first-century workplaces which are founded in diversity and technology. This, however, needs a high degree of awareness, mindfulness, openness and competence of employees and organisations to succeed.

8.4.2 Systemic Connection

The intra- and interpersonal communication in the twenty-first-century workplaces needs to be expanded by a systemic and socio-cultural integrative knowledge which includes cognitive, affective and behavioural aspects and the different systems' layers. According to Ludewig (2005), personal, social, and organisational realities and problems need to be viewed as “one system”. This knowledge and ability of individuals and organisations—to see the different elements and parts of a system as integrated, complex system dynamics—needs to be developed through exploring the socio-cultural dimensions of communication as an open, changeable process (Luhmann, 2001). In this context, networks need to be recognised and transformed from decentralised to distributed networks (Lee et al., 2015), taking as many inter-

linked elements of the system into consideration. For successful collaboration, distributed networks are accepted as a central characteristic in which, for example, decisions are not only made and information shared throughout the control nodes in the system, but are rather shared across multiple nodes and use complete system knowledge. The decentralised system is then a subset of a distributed system in which the system's knowledge is shared equally across the systems' levels.

8.5 New Theoretical Perspectives on the Art of Collaboration in the Twenty-First Century

Having shown that the *Art of Collaboration* needs to take all three connections equally into account, there is a need for theoretically expanded frameworks of collaboration (Mayer, Boness, Louw, & Louw, 2016). This theoretical foundation needs to be integrative, positive and systemic to provide a basis for the aim of collaborating sustainably, peacefully, effectively and creatively across diverse cultural, organisational and contextual systems. Therefore, it is suggested to take the framework of positive psychology Wave I (PP1.0) and positive psychology Wave II (PP2.0) into account (Wong, 2015).

8.5.1 Positive Psychology Wave I

The PP1.0 aims at optimal functioning of the human being (Linley, Joseph, Harrington, & Wood, 2006) and particularly promotes the perspective to focus on positive aspects on individual and organisational levels (Gruman, Lumley, & González-Morales, 2018). It is primarily based on three pillars of PP, namely positive emotions, character traits, character traits and enabling institutions (Seligman, Steen, Park, & Peterson, 2005). The PP1.0 framework was further on expanded to positive relationships by Fincham and Beach (2010). Important in PP1.0 is that the focus is exclusively on the positive aspects which impact on life, work and organisations. Research has highlighted that the focus on positive aspects initiates change in awareness, personal development, positivity of perspective (Idan, Braun-Lewensohn, & Sagy, 2013) and further on increases mental health and well-being across cultural divides (Mayer, 2011). The same research has also shown that a positive framework in organisational contexts and increased subjective health and well-being leads to expanded intercultural competences which contribute to a larger variety of interpretations and actions and thereby to the *Art of Collaboration*. This is particularly true for diverse, global and twenty-first-century workplaces which are driven by technological change, high-speed communication and complexities of diverse global networks. Applying a PP1.0 framework in communication leads to an increase in positive attitude, openness and

positive change (Idan et al., 2013) which contributes additionally to well-being and success within the organisation (Mayer, 2011; Vanderheiden & Mayer, 2017).

During the past years, however, researchers, e.g. Compton and Hoffman (2019), Wong, Ivtzan and Lomas (2017), Ivtzan et al. (2016), Mayer & Vanderheiden (2019) and Wong (2011, 2017) have expanded the PP1.0 framework into the second wave of PP2.0.

8.5.2 Positive Psychology Wave II

The PP2.0, in contrast to PP1.0, does not only focus on the positive aspects, but assumes that to collaborate effectively and healthily, positive and negative aspects need to be taken into account, explored, understood and accepted. Only then, the negative aspects can be transformed into the positive realm (Wong, 2011). Ivtzan and Lomas (2017) refer to the values of PP1.0 and highlight values, such as virtue, meaning, resilience and well-being as core values of PP2.0.

PP2.0 aims not only at improving life and work for individuals and teams in the momentum, but in terms of a long-term perspective across the lifespan (Mayer, Vanderheiden & Oosthuizen, 2019; Vanderheiden & Mayer, 2019). Further, it takes an existential slant into consideration and expands this train of thought and framework in general for humankind (Wong, Ivtzan, & Lomas, 2017; Lomas, 2016, Wong, 2017). Wong (2017) emphasises the importance of meaning and meaningfulness in PP2.0. Meaning will play an extraordinary role in the integrated and complex collaboration in the 4IR due to the fact that work context and impact on the broader society and even the global society can no longer be separated (Wong et al., 2017). Negative aspects in collaboration need to be acknowledged before the positive can flourish. Then positive and negative aspects can be integrated (Wong, 2011). With integrated intra-, interpersonal and systemic levels and a focus on meaning and virtue, 4IR workplaces and collaborations will contribute outstandingly to: (a) the personal development, (b) the identity management of the individual and the system, and the fostering of resilience, well-being and a sustainable global future.

8.6 Collaborating Positively and Constructively in Growing Intersections of Nationality, Culture and Gender

Based on the provided framework and PP2.0 collaborations, individuals and systems need to take the growing intersections of national, cultural and gender diversity into account. In the following, two examples will be given to show how the *Art of Collaboration* can be practised in workplaces which are strongly influenced by the 4IR.

8.6.1 *The Art of Collaboration in Chinese—African Collaboration*

This example is based on research on Chinese-African collaborative interactions in African countries (Mayer, Boness, & Louw, 2017a) in which intercultural collaboration is prevalent in the international collaborations of Chinese and African employees (Hinds, Liu, & Lyon, 2011). In this context, collaboration needs a highly dynamic, systemic and contextualised view and the exploration of culturally and gender-based perceptions (Hinds et al., 2011). The perceptions vary in the different departments of the organisation and in collaboration with the headquarters in China and the subsidiaries in different African countries. Chinese-African collaboration brings challenges based on lack of intercultural competences (George, Khayesi, & Haas, 2016; Mayer et al., 2017a, 2017b), as well as based on the imbalances—experienced by the employees’ national, language, gender and cultural background—regarding technological knowledge, educational levels and system dynamics. These are all culturally biased and the speed with which decisions are made, and progress is driven is extraordinary.

Research within the company at hand has shown that an increase in collaboration between the Chinese-based headquarter and within the intercultural teams in African countries is needed in terms of strategy, structure and decision-making, management styles, employment, qualification and training, knowledge-sharing, motivation and incentives, working conditions and atmosphere, environment community, government and trade unions (Mayer et al., 2017a). One major challenge which traverses all the other challenges in collaboration is the fact that the African employees are not trained to deal with the technological developments within the organisation. One Chinese employee comments:

We have an open e-learning platform which carries all types of knowledge and information you want which is related to your work. There is all the information from different countries and project experience or specific technology training material. Everything. We share it in one database and one platform. Any staff can use their ID and just log in the office platform.

Chinese employees foster an individualised perspective of technological knowledge-sharing and collaboration, combined with knowledge and information-based relationship-building which mainly takes place on e-platforms, in organisational chat rooms and Intranet forums. The focus of communication is mainly on close global collaboration via technological advancements with rather a global collaborative perspective than a local one.

The African employees highlight that there are certain technological tools in use within the organisation. However, they do not have access to these tools. Systems are not integrative, but prioritising Chinese employees throughout all challenging areas of collaboration. Trainings for African employees are not offered, and self-learning pro-activity is expected. For the African employees, however, the relationship-based perspective on collaboration and local knowledge-sharing is more important than the global networking and the face-to-face communication is key to success in their point of view. They believe that the *Art of Collaboration* lies in the interpersonal

knowledge-sharing and face-to-face communication which includes aspects of guidance by the superior rather than self-initiative. This is different from the Chinese employee perspectives.

8.6.2 *The Improved Art of Collaboration*

Based on the research of perceptions of collaboration, improving the *Art of Collaboration* in this organisational setting includes the acknowledgement of negative emotions and perceptions towards “the other” and the will to transform these emotions. Further, positive relationships can be expanded by firstly analysing the challenges and by, secondly, enhancing the collaboration towards optimal functioning of the human being (Linley et al., 2006). Further, the employees need to focus on the positive aspects with regard to the intra-, inter- and systemic (organisational) level (Gruman et al., 2018). Shadow work, as well as a PP2.0 perspectives will be supportive in transforming the collaboration and contributing to see it as an art.

On the intra-personal level, positive relationships can be enhanced by overcoming language barriers, communication on e- and face-to-face levels, discourses on values, virtues and meaning of work. Emotions which relate to mutual existent negative perceptions need to be recognised, explored and finally transformed to contribute to the *Art of Collaboration*. Particularly in complex systems, this needs a strong ability to reflect on cognitive and emotional levels, as described in the concept of emotional intelligence by Goleman (1998).

The organisation can support the fostering of the collaboration while aiming at contextualising the organisations’ tasks and aims with regard to seeing “the bigger picture”. Further, the interplay of diversity criteria and their positive impact in the organisation need to be recognised. Since the negative impact of diversity in the organisation is constantly (re-)narrated in interpersonal interactions, the narration paradigm within the organisation needs to change towards the positive and therefore towards the greater good of the employees, thereby impacting positively on emotions, individuals and positive relationships, organisational culture and the enabling of institutions (Fincham & Beach, 2010; Seligman et al., 2005). Only then, the systemic perspective can change and the organisational culture can turn into of PP2.0 culture which will provide a great base for dealing with 4IR issues.

The following second example will provide a different perspective into the *Art of Collaboration*.

8.6.3 Collaborating to Transform Negative Emotions in 4IR Workplaces: The Example of Shame

Negative experienced emotions in the workplace can impact negatively within organisational systems, on the employees, the success and on the effectivity. Shame has often been highlighted as a negative emotion (Hilgers, 2013), and it has been described as hindering effective work collaboration and diminishing the quality of work. Vanderheiden and Mayer (2017), as well as Mayer and Vanderheiden (2019), have emphasised, based on a PP1.0 and PP2.0 perspective, that shame can be transformed through different techniques and methods. Mayer (2017) has presented how shadow work, for example, can help transforming shame into a resource of mental health and well-being (Mayer, 2017). When shame is experienced as a resource, it can improve collaboration, flourishing and flow (Seligman & Csikszentmihalyi, 2000). Then, shame can turn into a transformed experience which leads to increased self-sufficiency, the ability to adapt, general coping and optimised personal potential. If this is the case for employees, the organisation will gain in terms of positive climate and culture. This might become extremely important in 4IR workplaces which are digitalised, technologised and automated and which therefore need strong and resourceful competences of employees to deal with negative emotions—not only on a face-to-face level, but also through mediated communication. Negative emotions then are transformed into resourceful emotions which can lead the individuals into personal growth and strengths.

When negative emotions in organisations thrive, as, for example, toxic shame, the emotions need to be transformed actively, for example, into healthy shame. Through this transformational process, failure, mistakes and errors can be recognised and communication can be developed. To transform toxic shame a certain process may be applied:

1. Create awareness of the feeling (of shame)
2. Explore the feeling (of shame) within self and others
3. Acknowledge and analyse the feeling on all levels of self, organisation, society
4. Acknowledge and analyse the feeling on cognitive, affective and behavioural levels (source)
5. Work through the shadow of shame (negative implications on self and others)
6. Transform the shadow parts through focus on PP1.0 and PP2.0 aspects
7. Define meaning (of shame) contextualised from relevant perspectives
8. Define the learning from the situation, the feeling and the experience
9. Develop a strategy to deal with the experience
10. Develop solutions for similar future situations
11. Define the greater good of the shameful situation and its transformation for the organisation
12. Define the systemic impact on societal levels and its meaning not only on an intra- and interpersonal level of collaboration, but also on a systemic organisational and societal level and even for humankind.

Transforming shame to enable positive and constructive workplaces (Mayer & Tonelli, 2017) can be managed through individual transformation and supported through coaching, mentoring, and organisational programmes and structures to develop employees and organisational systems (Mayer, 2017).

Transforming negative emotions in organisations becomes primarily important in 4IR workplaces (Grandey, Diefendorff, & Rupp, 2013; Lerner, Li, Valdesolo, & Kassam, 2015) to influence work relationships, work culture, quality of work and creativity and meaningfulness. Positive experienced emotions contribute to meaningfulness (Wong, 2019) and are of importance to create future workplaces which focus on sustainability and the *Art of Collaboration*. To transform from negative to positive experienced emotions, creativity and creative skills, such as problem analysis, problem solving, selling solutions, willingness to taking sensible risks, willingness to surmount obstacles, self-efficacy, willingness to tolerate ambiguity and finding extrinsic rewards—while creating the motivation to continuing to grow intellectually (Sternberg, 2000, 2005)—can support individuals in organisations to develop further and use the positive potential to expand the *Art of Collaboration*.

The creative act of acknowledgement, analysis and transformation should most possibly be framed within the PP2.0 framework. This framework can provide guidance to acknowledge the negative and the shadow and transform it towards the positive and the light. To collaborate artistically and creatively, the influences on different levels (intra-personal, interpersonal and systemically) need to become accessible, explored and finally transformed. This is particularly important in 4IR workplaces which uses mediated communication through advanced technology. In this 4IR communication space, emotions might not be as easily coded and decoded as in complex face-to-face interactions.

8.7 Key Insights and Synopsis

The *Art of Collaboration* in 4IR needs new approaches and will have to take complex changes on different levels into account. For these changes to be transformed successfully into meaning, it needs creative solutions and a positive focus, attitude and practical approach to contribute to mental health and well-being in 4IR contexts. The following figure (Fig. 8.1) provides an overview of the different interplaying aspects of the Art of Collaboration argued for in the chapter.

The positive psychology perspective is contributive to create sustainable and collaborative workplaces, particularly when not only working towards positive functioning (PP1.0), but also by working through the positive and the negative aspects associated (PP2.0).

Creativity is one of the key factors in managing 4IR workplaces and PP1.0 and PP2.0 can build a valuable (theoretical and practical) frame and foundation based on which work and organisations can be constructed creatively, peacefully, effectively and sustainably. Thereby, the systemic perspective needs to be taken into account to counteract the complexity of contemporary 4IR interactions.

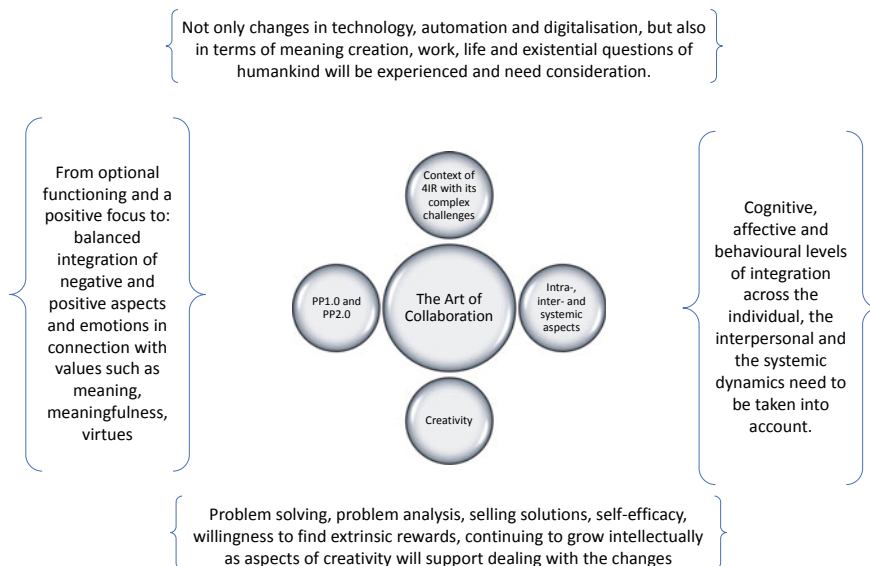


Fig. 8.1 Art of Collaboration in 4IR—author’s own construction

On the cognitive level, employees and organisations need to transform their view from knowledge to mindful meta-reflections and positive perceptions. On the affective level, an increased focus on feelings and emotions is needed to connect to the self and others and transform negative experienced emotions. Finally, on the behavioural level, improved behavioural skills and e-mediated intercultural valid communication skills and actions are needed to promote PP1.0 and PP2.0 on a practical and applied level. These levels need to be adjusted systemically when moving into the 4IR workplace.

Collaboration in times of complex challenges, changes and growing technological processes, automation and artificial intelligence needs a new focus on how to create socio-cultural interaction which are no longer based on linear thinking, but rather on systemic approaches: to know the self and the other is no longer sufficient to drive 4IR workplaces to success. Rather systemic approaches are needed which take the shadow and the light aspects in individuals and organisations on cognitive, affective and behavioural levels into account and thereby enable creativity and creative opportunities across intersectionalities (e.g. cultures, national belonging, language and gender).

While enabling creative processes, the meaning of work and collaboration becomes a key issue in the workplace of the 4IR and needs to be dealt with artistically. Creativity and meaning become key concepts to use the diverse potential of employees in globalised and technologised organisations. This will increase socio-cultural awareness and mindfulness, and explore socio-cultural synergy effects and use them creatively for the greater good of the individual, the organisation and the society.

It is concluded that workplaces in the 4IR need to create meaningful and sustainable virtual and digitalised work spaces, provide individuals and organisations with courage to bridge the virtual gap, support them to develop new, flexible and complex structures and systems which are based on the needs of the employees. This should be fostered while focusing on positive systemic aspects of individuals and organisational systems to develop an *Art of Collaboration* which is based on increased awareness, mindfulness and trust and anchored in meaningfulness.

8.8 Recommendations for Future Research and Practice

Based on the above, multidisciplinary and transcultural research on the *Art of Collaboration* is needed in future to explore the impact of the 4IR and its speedily changing complexities in the workplaces. Therefore, the different levels (cognitive, affective and behavioural levels) need to be taken into account. Further, the different systemic perspectives on intra-, inter-, organisational and societal levels need to be researched in detail and how they interact within the context of the 4IR changes.

In future research, courage and creativity are needed to explore new complex, systemic aspects beyond the mainstream management and organisational research topics, using new methodological s and creating new theoretical approaches and perspectives which match the changes. Research from a PP1.0 and PP2.0 research paradigm can support the exploration of positive and creative key factors to define the new *Art of Collaboration*, including topics such as: the creation of meaning in 4IR workspaces, spirituality and meaning and its impact on changing complex systems on different systemic levels, the influence of emotions in global networks and virtual communication and collaboration, systems psychodynamic approaches and the impact of the unconscious in the virtual, technological advanced workspaces and key factors in the *Art of Collaboration*.

On a practical note, leaders, employees and organisations should become aware and conscious regarding the complex changes which the 4IR brings along. Awareness should be created in the 4IR—not only regarding technologisation, digitalisation and virtual communication and collaboration, but regarding key factors relating to the ability to create new employee–organisation relationships and organisational cultures which are anchored in sustainability, creativity, meaning-creation and peacefulness.

Leaders and organisations need to support the transformation into the 4IR additionally through support programmes which aim at developing new strategies of the *Art of Collaboration*. These programmes, training and coaching approaches need to foster employees to develop creativity, meaning and positive psychology approaches for 4IR collaborations.

8.9 Recommendations for the Discipline of Industrial and Organisational Psychology

Finally, it is important to develop the discipline of Industrial and Organisational Psychology forward, in such a way that a stronger awareness and mindfulness in the field towards the *Art of Collaboration* in the 4IR is created.

Industrial and Organisational Psychologists need to make the 4IR workplace their area of expertise with all the key factors which are needed to research, consult and develop employees and organisations in this transformational situation and to provide informed guidance and decisions.

Additionally, Industrial and Organisational Psychologists should develop training programmes for employees and organisations which are based on the PP1.0 and PP2.0 frameworks to deal with the challenges of the *Art of Collaboration* not only creatively and informed on cognitive, affective and behavioural levels, but also from a positive frame of reference. Industrial and Organisational Psychologists can then, further on, develop research-based and applied models for organisations to provide guidance and fill the space of the 4IR with creativity and meaning to create a sustainable and peaceful global future. They can thereby define the field as an area of expertise for themselves.

Professionals working in higher education and training contexts should further consider to adjust the curricula towards the development of more complex systemic thinking patterns, creativity and knowledge of PP1.0 and PP2.0, as well as systems psychodynamics to provide theoretical approaches to increase the understanding of speedily changing systems and the influences of the 4IR changes within organisations.

8.10 Conclusion

The aim of this chapter was to explore key factors in the *Art of Collaboration* in the twenty-first-century workplaces. Based on the principle of Admiral *Zheng He* “Know your collaborators, know yourself”, it was argued that not only intra- and interpersonal knowledge is needed to collaborate, but a rather expanded and positive view—particularly within the 4IR workplaces.

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Claude-Hélène Mayer (Dr. habil., PhD, PhD, M.A., MSc) is a Professor in Industrial and Organisational Psychology at the Department of Industrial Psychology and People Management at the University of Johannesburg, an Adjunct Professor at the Europa Universität Viadrina in Frankfurt (Oder), Germany and a Senior Research Associate in the Department of Management at Rhodes University, Grahamstown, South Africa. She holds a Ph.D. in Psychology (University of Pretoria, South Africa), a Ph.D. in Management (Rhodes University, South Africa), a Doctorate in Political Sciences (Georg-August-Universität, Göttingen, Germany), and a Habilitation with a *Venia Legendi* (Europa Universität Viadrina, Germany) in Psychology with focus on Work, Organizational, and Cultural Psychology. She has published numerous monographs, edited text books, accredited journal articles, and special issues on transcultural salutogenesis and sense of coherence, shame, transcultural conflict management and mediation, women in leadership in culturally diverse work contexts, creativity and psychobiography.

Chapter 9

Democratising Goal Setting: Possibilities and Pitfalls of Online Deliberation and Big Data Methods



Xander van Lill, Gerhard (Gert) Roodt and Gideon (Deon) P. de Bruin

Abstract Recent research suggests that a participative approach to goal setting is not sufficient to ensure goal commitment. Instead, goal commitment can be bolstered by a deliberative approach, where managers engage employees in mutual reasoning when setting goals. In this chapter, the impact of a deliberative goal-setting style on goal commitment will be discussed. Attention will be paid to the mediating effect of supervisor-focussed justice and the moderating effect of employees' personality on this relationship. Facilitating deliberative processes in face-to-face forums could become a demanding task for managers. Consideration will, therefore, be given to the potential of online forums and big data methods to facilitate discussions and analyse large amounts of textual data based on more deliberative forms of goal setting. The aforementioned methodologies are not without pitfalls, and the unwanted influence of demagoguery and misapplications of big data methods will be addressed accordingly.

Keywords Goal commitment · Deliberative goal-setting style · Personality · Supervisor-focussed justice · Online deliberation · Big data methods

9.1 Introduction

The principles of enlightenment, which fundamentally hold that reason and sympathy can be applied to increase human flourishing, has enhanced life on earth in numerous measurable ways (Pinker, 2018). The twenty-first century is marked by increased life expectancy, sustenance, wealth, equality, environmental sustainability, peace, safety,

X. van Lill (✉)
JvR Africa Group, Cape Town, South Africa
e-mail: xvanlill@gmail.com

G. Roodt
University of Johannesburg, Johannesburg, South Africa
e-mail: groodt@uj.ac.za

G. P. de Bruin
Stellenbosch University, Stellenbosch, South Africa
e-mail: deondb@sun.ac.za

democracy, equal rights, knowledge accessibility, quality of life, happiness, and a decrease in terrorism and existential threats (Pinker, 2018). In spite of compelling evidence supporting the positive implications of enlightenment principles, there are those who remain critical of what modernists call ‘quantifiable progress’ and would instead prefer to perceive society as in threat of collapse (Pinker, 2018). Although humans should not become complacent or naïve about the origins of recent socio-economic achievements, conditional optimism is appropriate, given humans’ collective capacity to co-operatively solve problems through reason (Fiske, Cuddy, & Glick, 2007; Pinker, 2018). The importance of co-operative problem solving is especially relevant in a global economy that is increasingly characterised by volatility, uncertainty, and interconnectedness (Uhl-Bien & Arena, 2017, 2018).

Organisations, at a micro-economic level, can do their part to help increase human flourishing by either empowering their employees or continuing to entrust them with the capacity to co-operate in order to collectively achieve complex business objectives (Schneider & Somers, 2006; Uhl-Bien & Arena, 2017, 2018). It is unlikely that employees’ collective intelligence will materialise in the achievement of ever more complex business objectives if goals are assigned top-down and used as compliance-driven mechanism that oblige employees to fulfil the minimum requirements of a job (McKelvey, 2008; Uhl-Bien & Arena, 2017). Assigning complex goals, in and of itself, is not a sufficient condition to fully optimise a group’s collective intelligence (Klein, Cooper, & Monahan, 2013; Latham, 2009; Locke & Latham, 2013). That is to say, there is an essential psychological element that safeguards employees’ ability to adapt to the uncertainty brought about by business complexity, namely commitment (Klein et al., 2013; Latham, 2009; Locke & Latham, 2013). If employees are not willing to dedicate themselves to and take responsibility for complex goals, it is unlikely that anything will be achieved (Klein, Molloy, & Thomas, 2012; Uhl-Bien & Arena, 2017; Van Lill, 2019). In order to increase commitment to complex goals, the constructive exchange of information between employees of an organisation is essential (Van Lill, Roodt, & De Bruin, 2018).

9.2 Chapter Objective

The first aim of this chapter is to provide and discuss a model that displays the importance of managers’ role in facilitating the flow of information in organisations to ensure employees’ commitment to goals and consequent flourishing in the workplace. The second aim of this chapter will be to indicate how informational flows could be enhanced by online forums and how textual information derived from online forums can be analysed using big data methods.

Even though informational flows in organisations can occur spontaneously, a strong argument will be forwarded for the management of information networks in order to optimise a group’s collective intelligence. More specifically, a deliberative goal-setting style could be a meaningful way to establish information networks in organisations, leading to commitment to complex goals (as depicted in Fig. 9.1).

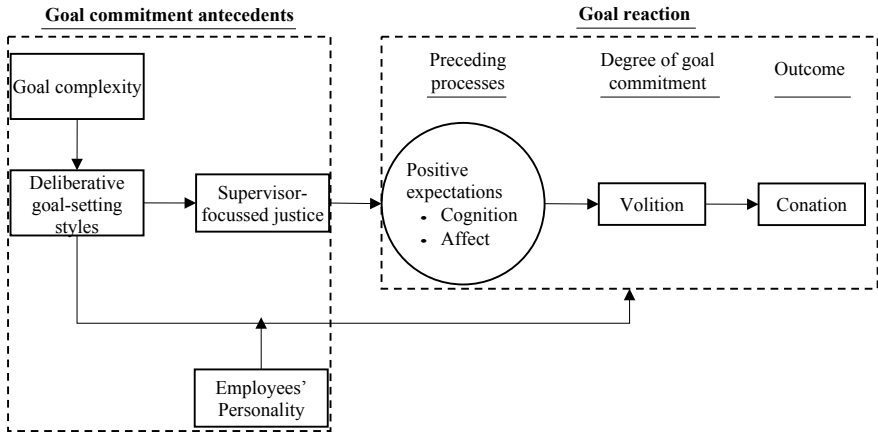


Fig. 9.1 The serial formation of employees’ goal commitment to a deliberative style (authors’ own depiction). Adapted from: Klein et al. (2012, p. 139). (The authors of this chapter received permission from Professor Howard Klein to adapt Fig. 9.1)

There are also psychological factors closely associated with deliberative goal setting that increase an internal motivation to achieve (or commit to) goals (Van Lill, 2019), which should subsequently contribute to human flourishing in the workplace (Fisher, 2014; Keyes, 2007; Rothmann, 2013; Van Lill, 2019). Goal commitment reflects a strong belief in the meaningfulness of, positive affective evaluations of, and a wilful decision to dedicate oneself to complex goals, which could be viewed as indicators of flourishing in the workplace (Fisher, 2014; Keyes, 2007; Rothmann, 2013; Van Lill, 2019). There are several theories that provide deeper insight into the interpersonal mechanisms underlying and personality differences that impact the relationship between a deliberative goal-setting style and goal commitment, namely the theory of social cognition, self-determination theory, expectancy theory, supervisor-focussed justice, and the Big Five personality theory (Van Lill, 2019). An integration of these theories is depicted in Fig. 9.1 and unpacked in the following sections.

9.3 Managers’ Goal-Setting Styles

Goal setting is a crucial managerial function (Drucker & Maciariello, 2008; House & Mitchell, 1975; Piccolo & Buengeler, 2013), even though the impact of managers’ behaviours during goal setting on employees’ goal commitment has received limited attention (Klein et al., 2013; Klein, Wesson, Hollenbeck, & Alge, 1999; Zaccaro, Ely, & Nelson, 2008). This can be ascribed, in part, to the absence of a clear theory-based model, with the exception of House and Mitchell’s (1975) Path–Goal Model, of managers’ goal-setting styles. Marrying the concept of deliberation with goal setting in the workplace is a new concept, which justifies a short theoretical orientation

regarding the concept's standing relative to other constructs in the literature. The theory of social cognition is considered to be the most suitable explanatory framework to portray different goal-setting styles.

9.3.1 *The Theory of Social Cognition and Goal Setting*

Findings in goal-setting research are dominated by the empirical claim that difficult goals increase goal commitment and, hence, performance in the workplace (Latham, Erez, & Locke, 1988; Li & Butler, 2004; Locke & Latham, 2013). The strong focus on goal difficulty as an antecedent of goal commitment might, however, steer attention away from other indicators of the challenging nature of goals, such as complexity (Van Lill et al., 2018). While *goal difficulty* refers to the effort required to achieve goals (Borgogni & Dello Russo, 2013; Lee & Bobko, 1992), *goal complexity* is viewed as the intricate nature and novelty of the goals that must be achieved (Uhl-Bien & Arena, 2017; Van Lill et al., 2018; Wood, 1986). An emphasis on complexity as an indicator of the challenge of goals accentuates the importance of sharing information and collaborating on ideas (De Dreu, 2006; Uhl-Bien, Marion, & McKelvey, 2007). In this respect, it might be meaningful to revisit theory on democratic goal setting, which could point to more fruitful directions concerning the achievement of complex goals in the literature (Van Lill, 2019).

The added utility of participative (democratic) management, along with goal difficulty, in a predictive model of goal commitment is perceived with scepticism by some authors (Latham et al., 1988; Li & Butler, 2004; Locke & Latham, 2013). A one-dimensional view of democracy as inclusivity, or managers' ability to allow as many employees as possible to voice their ideas about goals, is limiting (Gastil, 1993, 1994; Habermas, 1984, 1987; Rawls, 1971; Schneiderhan & Khan, 2008). Instead, a more thoughtful form of democratic goal setting is proposed in this chapter, also referred to as *deliberation*, which includes managers' ability to encourage members of an organisation to exchange views and, equally important, to moderate the rationality of discussions (Gastil, 1993, 1994, Habermas, 1984, 1987; Rawls, 1971; Van Lill & Roodt, 2016). The concepts of inclusivity and rationality resonate with two concepts identified in social cognition, namely warmth and intellectual competence, which serve as useful dimensions to understand deliberative goal-setting style relative to other concepts in the literature (Cuddy, Glick, & Beninger, 2011; Fiske et al., 2007).

Goal-setting theory provides valuable insight into the cognitive aspects inherent to goal setting that motivate employees to perform at work (Locke & Latham, 2013). However, a more interpersonal model that captures employees' social impressions of their managers when setting goals can provide a far more enriching account of why employees choose to commit to some, but not all, goal-setting styles. In order to obtain a unique understanding of the nature of interactive goal setting between managers and employees, principles from social cognition could also provide valuable insights. Researchers of social cognition are interested in the ways in which humans make

sense of and react to other humans (Fiske, 1993). Fiske et al. (2007) posit that humans, through an evolutionary process, have adopted two universal dimensions on which social impressions of others are based, namely warmth and competence.

Warmth reflects employees' impressions of the friendliness, trustworthiness, empathy, and kindness of managers (Cuddy et al., 2011; Fiske et al., 2007; Rosenberg, Nelson, & Vivekananthan, 1968). Warmth is a valuable concept, used by employees to answer a question central to co-operative survival, namely: 'Do managers have good or bad intentions?' (Cuddy et al., 2011). Naively mistaking a manager's bad intentions for good could result in a non-reciprocal relationship, which emphasises the importance of correctly interpreting this social cue (Cuddy et al., 2011; Fiske et al., 2007). Managers who are perceived as warm might be more likely to satisfy employees' need for relatedness and enable employees to flourish in supportive relationships where they are treated with respect and are valued for their contributions (Fisher, 2014; Keyes, 2007; Rothmann, 2013). Intellectual competence provides an indication of a manager's intelligence, power, efficacy, and skill (Cuddy et al., 2011; Fiske et al., 2007; Rosenberg et al., 1968). Judgement of a manager's competence, as an additional social cue, answers a second important question related to co-operative survival, namely: 'How successfully can managers execute their good or bad intentions?' (Cuddy et al., 2011; Fiske et al., 2007). Employees' need for competence might also be satisfied by managers who are intellectually capable of setting complex goals that will help a group of people to successfully adapt to complex business environments (Keyes, 2007; Rothmann, 2013). Figure 9.2 provides a more complete overview of concepts that are related to a deliberative goal-setting style in the literature. Four goal-setting styles are inferred from a horizontal axis, which represents warmth, and the vertical axis, which represents intellectual competence, namely a deliberative, complaisant, hostile, and directive style.

Hostile managers are willing to actively undermine employees' attempts to reason about goals (De Hoogh & Den Hartog, 2008; Duffy, Ganster, & Pagon, 2002; Redeker, De Vries, Rouckhout, Vermeren, & De Fruyt, 2012; Tepper, Eisenbach, Kirby, & Potter, 1998; Van Lill, 2019). In a volatile business environment, where the free flow of information is essential to subordinates' commitment to and the achievement of complex goals (Uhl-Bien & Arena, 2018), the hostile style could be construed as careless (intellectually incompetent) and disagreeable (cold) (Cuddy et al., 2011; De Vries, 2018). As a result, the hostile style will, in all probability, be the least likely to increase flourishing and elicit employees' commitment to complex goals (Van Lill, 2019). Directive managers express their expectations regarding goals in an assertive, clear and self-assured manner (House & Mitchell, 1975; Redeker et al., 2012; Schriesheim & Kerr, 1974; Stogdill, 1974; Van Lill, 2019). Even though a more dominant style during goal setting might create a semblance of intellectual competence (Anderson & Kilduff, 2009), directive managers are more likely to externally motivate others to comply with goals, due to a relatively smaller concern (cold) for employees' ability to reason for themselves (Deci, Eghrari, Patrick, & Leone, 1994; Gagné & Deci, 2005; Klein et al., 2012; Van Lill, 2019). The complaisant style, which is located opposite the directive style in Fig. 9.2, indicates managers who are so desperate to appear warm to employees that they avoid confrontation, hesitate to

	Cold	Warm
Intellectually competent	Directive	Deliberative
Intellectually incompetent	Hostile	Complaisant

Fig. 9.2 Taxonomy of managers' goal-setting styles (authors' own depiction). Adapted from Van Lill (2019, p. 32)

counter poor arguments and compromise greater organisational goals (intellectual incompetence), in order to please employees (Avolio, Bass, & Jung, 1999; Hinkin & Schriesheim, 2008; Redeker et al., 2012; Van Lill, 2019). Complaisant managers' strategic ineptness might render employees unmotivated to pursue complex goals and make them more concerned with the opinion of other strategic role players in their organisation (Einarsen, Aasland, & Skogstad, 2007).

Deliberative managers (high warmth, high intellectual competence), in contrast to other goal-setting styles, respectfully facilitate critical discussions among employees in order to set complex goals that are attractive and perceived as attainable by all stakeholders (Burkhalter, Gastil, & Kelshaw, 2002; Gastil, 1993, 1994; Magee, 2009; Van Lill, 2019). As uncertainties emerge from volatile business contexts, managers affirm the importance of constructive and well-reasoned discussions as a method to obtain temporary clarity in order to stimulate action on complex goals (Gastil, 1993). During critical discussions, these managers carefully facilitate conversational turn-taking by encouraging alternative views and making insightful comments that provoke further discussion (Gastil, 1994; Gastil, Black, & Moscovitz, 2008; Raelin, 2012). In order to successfully deliberate complex goals, managers also act as brokers of relevant and accurate information between relevant employees (Burkhalter et al., 2002; Gastil, 1993, 1994). It is evident that the establishment of information

networks around complex goals is central to the function of a deliberative manager. The manager's ability to facilitate deliberative goal setting might raise more than just impressions of warmth and intellectual competence, but also has implications for employees' perspectives of the manager's fairness.

9.3.2 *Supervisor-Focused Informational Justice*

Humans have evolved to employ fairness heuristics when interpreting social interactions at work (Cosmides & Tooby, 1992; Gigerenzer & Hug, 1992). Significant strides have been made in terms of targets pertaining to justice perceptions, which include that of organisations, supervisors, co-workers and customers (Lavelle, Rupp, Manegold, & Thornton, 2015). A variable that is of particular concern in this chapter is supervisor-focused justice, specifically the mediating effect of supervisor-focussed informational justice on the relationship between a deliberative style and goal commitment. According to Lavelle et al. (2015), *supervisor-focussed justice* refers to employees' judgements of the fairness of their manager's decision-making. Informational justice, instead of other forms of supervisor-focussed justice, was chosen for its theoretical links with a deliberative style (Van Lill, 2019). *Informational justice* refers to the clarity and thoroughness with which managers explain the procedures used to make decisions (Greenberg, 2009). Indeed, one of the most important aims of a deliberative style is to ensure sufficient flow of information between employees (Van Lill, 2019).

At this juncture, it is important to note that social exchange theory offers a useful framework to consider the intermediate position of supervisor-focussed justice between a deliberative goal-setting style and goal commitment. It is also worth mentioning that organisational justice is listed as an important antecedent to flourishing in the workplace (Rothmann, 2013). Employees might commit to goals as a tacit social exchange for what is perceived to be an honest, clear, and thorough explanation of complex goals (Colquitt et al., 2013; Greenberg, 2009). In the context of accelerated businesses complexity, brought about by the information age, the need for effective information flow is greater than ever (Uhl-Bien & Arena, 2017, 2018). Therefore, supervisor-focussed informational justice could be perceived as a more important psychological investment than supervisor-focussed distributive, procedural and interpersonal justice (Uhl-Bien & Arena, 2017, 2018) in ensuring commitment and, hence, flourishing in the twenty-first-century workplace.

9.4 Employees' Reactions to Complex Goals

According to Klein et al. (2012), there is a risk that conceptualisations of commitment can become a theoretical marsh, where it is increasingly hard to differentiate the construct from other theoretical concepts. Per the definition of a deliberative goal-

setting style, a well-ordered conceptual framework of different goal reactions could help to differentiate goal commitment from other goal reactions (Van Lill, 2019). Self-determination theory will be discussed, in anticipation of a more encompassing model of subordinates' reactions. Self-determination theory is central to the formulation of goal commitment, which, in this chapter, is argued to be a manifestation of flourishing in the workplace.

9.4.1 Self-determination Theory

Self-determination theory is primarily concerned with the degree to which employees' motivation originates from a wilful decision to pursue goals (Gagné & Deci, 2005). According to Ryan and Deci (2000), degrees of motivation can vary from amotivation to intrinsic motivation. Amotivation is a state in which employees experience no sense of control over goals set, which results in lethargic attempts to pursue important outcomes (Deci & Ryan, 2000; Gagné & Deci, 2005). Intrinsic motivation, in contrast, is a state where employees feel a spontaneous interest in goals set (Deci & Ryan, 2000), which could result in commitment. Extrinsic motivation is located between amotivation and intrinsic motivation on the self-determination continuum. Extrinsic motivation, in contrast to amotivation, reflects a wilful decision by employees to pursue goals set. However, relative to intrinsically motivated employees, extrinsically motivated employees are less self-determined to pursue goals set (Gagné & Deci, 2005). Rather, the choice to pursue goals is regulated by contingencies external to employees (Gagné & Deci, 2005). On the self-determination continuum, extrinsic motivation is divided further into external, introjected, identified and integrated regulation (Deci & Ryan, 2000; Gagné & Deci, 2005). While external and introjected regulation reflect motivation of a more controlled nature, identified and integrated regulation relate to motivation of a more autonomous nature (Gagné & Deci, 2005). Gagné and Deci (2005) mention that compliance and commitment could be viewed as more controlled and autonomous forms of motivation, respectively (Klein et al., 2012). Goal commitment, therefore, could be the result of the satisfaction of a basic need, namely autonomy, which is an indication of human flourishing (Fisher, 2014; Keyes, 2007; Rothmann, 2013). Self-determination serves as a useful axis on which goal commitment can be differentiated from goal compliance (Klein et al., 2012), as portrayed in Fig. 9.3. However, in order to portray the most comprehensive model of the motivations underlying goal reactions, this chapter will not only focus on adaptive goal reactions, such as goal commitment and compliance, but also on maladaptive goal reactions, such as goal resistance and withdrawal. Carsten et al. (2010) and Haslam and Reicher (2012) rightfully indicate that subordinates' reactions can deviate from the role expectation of being obedient, such as countering the dysfunctional effects of hostile managers (Collinson, 2006; Tepper, Uhl-bien, Kohut, Rogelberg, & Lockhart, 2006). In line with the distinction between goal commitment and compliance, withdrawal, and resistance could also

	Opposition to	Bond with
Autonomous motivation	Resistance	Commitment
Controlled motivation	Withdrawal	Compliance

Fig. 9.3 Taxonomy of employees’ goal reactions (author’s own depiction). Adapted from Van Lill (2019, p. 32)

be perceived as more controlled or autonomous forms of opposition, respectively (Carpenter & Berry, 2014).

Resistance is employees’ wilful (or autonomously motivated) decision to oppose goals set by managers, which could result in either constructive or dysfunctional outcomes (Falbe & Yukl, 1992; Tepper, Schriesham, et al., 1998). Constructive forms of resistance include attempts to debate undesired goals with managers, whereas dysfunctional forms of resistance are attempts to disrupt the goals set by managers (Tepper et al., 2006). While withdrawal can be construed as oppositional behaviour, it appears from the literature to be less intentional and more driven by an avoidance of or disengagement from goals that are perceived as less desirable (Carpenter & Berry, 2014; Hanisch & Hulin, 1991; Klein et al., 2012). With respect to bonds with goals, compliance appears to stem from a more controlled form of motivation to bond with set goals, which could be defined as the decision to acquiesce to a goal (Gagné & Deci, 2005; Klein et al., 2012).

In contrast to compliance, goal commitment reflects a more autonomously motivated or volitional decision to dedicate oneself to and take responsibility for a goal (Gagné & Deci, 2005; Klein et al., 2012). Goal commitment could, therefore, be argued to be a more self-determined motivational state in the pursuit of goals. Important social factors could influence employees’ volition to dedicate themselves

to goals, such as the degree to which good rationales are provided and respect is displayed for employees' ideas (Deci et al., 1994, 2001; Gagné & Deci, 2005). Deliberative managers are likely to display greater concern for employees' ideas and uphold logical discussions when setting goals (Schneiderhan & Khan, 2008; Van Lill et al., 2018). It is, therefore, highly probable that a deliberative style would elicit employees' wilful dedication to complex goals, especially when the managers are also perceived as informationally fair. However, Klein et al. (2012) and Hollenbeck and Klein (1987) indicate that there are important expectancies that precede employees' dedication to and willingness to take responsibility for goals, namely positive expectations regarding goals set (as portrayed in Fig. 9.1).

9.4.2 Expectancy Theory

Vroom (1964, p. 9) defined motivation as “the explanation of choices made by organisms among different voluntary responses”. According to Vroom (1964), the choice to perform an act is influenced by three psychological factors, namely valence, expectancy, and force. *Valence* is defined as the expected worth gained from pursuing a particular outcome (Vroom, 1964). *Value* reflects the actual worth gained from pursuing a particular outcome (Vroom, 1964). In contrast to valence, *expectancy* refers to evaluations made regarding the likelihood of success (Vroom, 1964). Finally, *force* refers to the “direction and magnitude” of behaviours in pursuit of goals, which results from the sum of valences and expectancies (Vroom, 1964, p. 18).

Per the process model (of which the adapted version is shown in Fig. 9.1) proposed by Klein et al. (2012), goal commitment is preceded by a conviction in the meaningfulness of goals, which is reflected in the belief that the goals are attractive and attainable (Hollenbeck & Klein, 1987; Klein, Wesson, Hollenbeck, Wright, & DeShon, 2001; Vroom, 1964). In coherence with the belief that goals are meaningful, subordinates could also experience greater pleasurable affective evaluation of complex goals (Klein et al., 2012; Russell, 1980; Van Katwyk, Fox, Spector, & Kelloway, 2000; Vandenberg & Lance, 1992). Inconsistencies between humans' thoughts about and feelings towards external targets (managers' goals) cause psychological dissonance (Ajzen, 2001; Hinojosa, Gardner, Walker, Cogliser, & Gullifor, 2017; Priester & Petty, 2001). As a result, humans tend to adjust mental aspects that differ from their overall conviction about external targets, to ensure coherent (perhaps even more efficient) reactions towards particular targets (Hinojosa et al., 2017). From an expectancy point of view, deliberative managers could elicit their employees' commitment to goals by facilitating logical discussions that convince employees of the value of pursuing goals (valence) and increase employees' belief in the likelihood of success (expectancy) (Klein et al., 2012; Vroom, 1964; Yukl, Kim, & Chavez, 1999). It is worth mentioning that meaningful activities and pleasurable emotions are both considered to be important indices of human flourishing in the workplace (Fisher, 2014; Keyes, 2007; Rothmann, 2013).

As employees' dedication to goals increases, it is also probable that employees will be more inclined to exert discretionary behaviour (Herscovitch & Meyer, 2002; LePine, Erez, & Johnson, 2002; Riketta, 2002). Commitment could, however, also result in negative discretionary behaviours, such as the neglect of other goals, taking excessive risks and making costly personal sacrifices (Kwan, Lee, Wright, & Hui, 2013; Lee, Bobko, Earley, & Locke, 1991; Siegrist, 2001; Vandenberg & Lance, 1992; Welsh & Ordóñez, 2014). Van Lill (2019) investigated the process model proposed in Fig. 9.1 and found preliminary support for the claim that a deliberative goal-setting style has a positive indirect effect on conative commitment (intentions to do more than what is required) via supervisor-focussed informational justice, positive expectations, and volitional commitment. Apart from interpersonal factors, there might also be individual characteristics that moderate employees' willingness to commit to goals set in a deliberative style.

9.5 Personality

Personality, as personal characteristics that evolve in humans over time (Buss, 1991; Nettle, 2011), predisposes employees to perceive social interactions at work in certain ways (Burnett, Williamson, & Bartol, 2009). Employees' perceptions of the behaviours of managers at work might be subject to the individual characteristics of the perceivers (Ehrhart & Klein, 2001; Felfe & Schyns, 2006; Hetland, Sandal, & Johnsen, 2008; Schyns & Sanders, 2007). In this respect, employees with a particular personality according to the Five-Factor Model of Personality might be more receptive or averse to particular behaviours displayed by managers (Felfe & Schyns, 2006; Hetland et al., 2008; Schyns & Sanders, 2007). Various personality factors might moderate the relationship between a deliberative goal-setting style and goal reactions, such as a Type A personality, the need for achievement, endurance, self-efficacy, self-esteem, locus of control, perfectionism, failure avoidance, future orientation, and learning orientation (Klein et al., 1999, 2013). The Five-Factor Model of Personality was chosen for this chapter because it is comprehensive (McCrae & Costa, 2003), with well-researched implications for interpersonal behaviour (Redeker et al., 2012; Wiggins, 2003), and is relevant to the workplace (Barrick & Mount, 2009). Three traits were considered to be particularly relevant to the boundary conditions under which employees would be more inclined to commit to complex goals set in a deliberative style, namely openness to experiences, conscientiousness and agreeableness.

Individuals who score higher on *Openness to experience* tend to view themselves as intellectual, ingenious, reflective, competent, quick, introspective, creative, imaginative, and deep (Hofstee, De Raad, & Goldberg, 1992; McCrae & Costa, 2003; Taylor & De Bruin, 2005). Deliberative processes might afford employees who possess higher levels of openness to experience the opportunity to fulfil their need for intellectual stimulation (McCrae & Costa, 2003), and managers may gain their respect through the insight afforded by critical discussions (Chamorro-Premuzic &

Furnham, 2005; Van Lill, 2019). These individuals might also hold their ability to think independently in higher regard and might find non-authoritarian approaches, such as deliberative goal setting, admirable and less threatening to their autonomy (Chamorro-Premuzic & Furnham, 2005; McCrae & Costa, 2003). As a result of satisfying the need for autonomy and competence, as well as a propensity to admire deliberative managers' intellectual competence, it has been found that openness to experience moderates the relationship between a deliberative style and goal commitment (Van Lill, 2019). Notable is that ingenuity, creativity, and imaginativeness are all characteristics that might increase innovative ideas that are shared among employees, which might strengthen an organisation's ability to adapt to complex business environments (Uhl-Bien & Marion, 2009).

Employees who score higher on *Agreeableness* tend to be understanding, warm, moral, pleasant, empathetic, co-operative, sympathetic, tender, and nurturing (Hofstee et al., 1992; McCrae & Costa, 2003; Taylor & De Bruin, 2005). Due to agreeable individuals' considerate and co-operative nature, they might be more inclined than others to support organisational, social and psychological environments that are co-operative and conducive to team effectiveness (Morgeson, Reider, & Campion, 2005). Prior research suggested that, when groups have a greater number of women, collective intelligence is more likely to translate into group performance (Woolley, Chabris, Pentland, Hashmi, & Malone, 2010). The reason for the finding is attributed to women's higher levels of social sensitivity and conversational turn-taking, which is more likely to optimise groups' levels of performance (Woolley et al., 2010, Woolley, Aggarwal, & Malone, 2015). Collective intelligence reflects a group's ability to perform a variety of tasks, such as creative brainstorming problems, puzzles involving verbal or mathematical reasoning, negotiation of tasks and moral-reasoning problems, rather than the aggregate intelligence of the individuals in the group (Woolley et al., 2010, 2015). Individuals with higher agreeableness might be especially sensitive to the degree of mutual reasoning facilitated by deliberative managers, and, as a result, be more inclined to commit to goals set in this style (Van Lill, 2019). When agreeable employees engage in discussions with deliberative managers, greater conversational turn-taking might allow the greatest capitalisation on the team's collective intelligence, thereby increasing positive expectancies regarding goals and commitment (Van Lill, 2019; Woolley et al., 2010).

Conscientious individuals tend to be efficient, dutiful, purposeful, organised, cautious, rational, perfectionistic, and orderly (Hofstee et al., 1992; McCrae & Costa, 2003; Taylor & De Bruin, 2005). Conscientious employees might also be more likely to perceptually bond with goals, irrespective of the reasons provided by their managers. In this respect, Barrick, Mount, and Strauss (1993), Bipp and Kleingeld (2011), Colquitt and Simmering (1998) and Erez and Judge (2001) reported a significant positive association between conscientiousness and goal commitment. Barrick et al. (1993) argued that individuals who view themselves as more conscientious (dutiful and self-disciplined) might be more compelled to commit to goals. Conscientious individuals, who value logical reasoning, might also be particularly receptive to deliberative managers' inclination to facilitate logical discussions regarding complex goals (Hofstee et al., 1992; Van Lill, 2019). Given the importance of maintain-

ing a dutiful and self-disciplined image, as well as the need for logical discussions regarding goals, it is not surprising that preliminary evidence supports the moderating effect of conscientiousness on the relationship between a deliberative style and goal commitment (Van Lill, 2019).

9.6 Computer-Mediated (Online) Deliberation

Preliminary evidence suggests that a deliberative goal-setting style has an important role to play in employees' positive expectations of, wilful dedication to, and inclination to take initiative in order to achieve complex business objectives (Van Lill, 2019; Van Lill et al., 2018). A multivariate account of different factors that could mediate or moderate the relationship between a deliberative goal-setting style and goal commitment should also be accounted for, in order to provide a more comprehensive account of the area of interest under investigation (Van Lill, 2019). However, there are some practical obstacles related to face-to-face settings that might discourage the use of deliberative forums (Dahlberg, 2011). One of the obvious constraints to the free flow of information in face-to-face settings is the sheer number of people who can participate, limiting one of the cornerstones of more democratic goal setting, namely inclusiveness (Dahlberg, 2011; Gastil, 1993; Schneiderhan & Khan, 2008). Paradoxically, including more participants in face-to-face settings could make conversational turn-taking less likely, and naturally steer conversations into a more one-way instructional, rather than the ideal conversational form of communication (Gastil, 1993; Halpern, 2017). The logistical costs of arranging a face-to-face setting for members of organisations who are geographically dispersed can also be a discouraging factor (Dahlberg, 2011; Graham, 2009). Furthermore, it might be an unruly task for managers to moderate the rational coherence of a conversation in face-to-face deliberations between large groups of people (Dahlberg, 2011; Janssen & Kies, 2005). Finally, face-to-face settings might not always afford individuals the time required to reflect on arguments made during deliberative goal setting, and, as a result, might hamper the quantity and quality of exchanges during these discussions (Dahlberg, 2011; Graham, 2009).

Computer-mediated communication affords managers a two-way and more equally distributed (Dahlberg, 2011; Kiesler & Sproull, 1992), logistically effective and efficient, easily moderated, and more reflexive form of deliberation (Dahlberg, 2011; Graham, 2009). However, online forums are not without challenges, and the gains of digital platforms can easily be eroded if computer-mediated communication is not secured against potential dangers such as hostility, demagoguery, (Halpern & Gibbs, 2013; Kiesler, Siegel, & McGuire, 1984), narrow and shallow arguments and discontinuity (Dahlberg, 2011; Graham, 2009; Halpern & Gibbs, 2013). Each of these pitfalls will be discussed, together with suggestions to prevent potential drawbacks.

9.6.1 *Hostility*

The virtual distance between participants in computer-mediated communication, especially when participants' identities are kept anonymous, tends to increase depersonalisation, which invites more careless and disregarding posts (Kiesler et al., 1984; Kiesler & Sproull, 1992; Postmes & Spears, 1998). Discussions inflamed by depersonalisation might further encourage participants to seek out posts that confirm their existing position, instead of sincerely considering the positions of other participants (Davis, 1999; Halpern & Gibbs, 2013; Postmes, Spears, & Lea, 2002). To aggravate the issue, online forums might, in some instances, be developing faster than the organisation's capacity to establish social etiquette that will improve regulation (Halpern & Gibbs, 2013; Kiesler et al., 1984).

In order to prevent hostility from derailing online deliberative goal setting, it is strongly recommended that participants' identities on online forums be made known, in order to reduce depersonalisation (Halpern & Gibbs, 2013; Postmes et al., 2002). It might be helpful to empower managers with the administrative rights to moderate discussions, even though participants will have to relinquish some autonomy. The loss in control pales against the negative consequences that hostile discussions can have on participants' commitment to complex goals. In fact, the situation can become counterproductive if employees decide to withdraw from or destructively resist goals set (Postmes et al., 2002; Van Lill, 2019). Managers could also moderate discussions by setting and maintaining mutually agreed upon rules for engagement, which might include sincerity, respect, rationality, and reflexivity (Dahlberg, 2007; Edwards & Wright, 2009; Gastil, 1993), and, in highly sensitive circumstances, block ill-mannered posts, based on predetermined criteria (Dahlberg, 2011; Edwards & Wright, 2009; Graham, 2009; Warren, 2006).

9.6.2 *Demagoguery*

A few 'superparticipants' can skew online discussions into a narrow representation of goals that does not account for the complexity of an emerging business environment, especially when participants are deeply convinced and assertive about their claims (Dahlberg, 2006, 2007; Graham & Wright, 2014; Halpern & Gibbs, 2013). Such discussions might even contribute to hostility when charismatic individuals oversimplify issues, deceive others into a false representation and undermine others' assertions (Dahlberg, 2006; Van Lill, 2019). Furthermore, if managers do not have the inclination, or are not properly trained to moderate deliberative goal setting, they might become the very demagogues who should be moderated (Van Lill, 2019). In these situations, lower rates of conversational turn-taking might emerge, and the group's collective intelligence cannot be harnessed (Woolley et al., 2015, 2010). Hostile managers could, in fact, motivate participants to withdraw entirely

from or destructively resist unfair online discussions (Tepper et al., 2001; Van Lill, 2019).

Managers should solicit, monitor and encourage the participation of a diverse group of people, especially in terms of expertise, gender, and personality traits (Huckfeldt, Mendez, & Osborn, 2004; Van Knippenberg, De Dreu, & Homan, 2004; Van Lill, 2019; Woolley et al., 2015, 2010). Managers should also try to moderate a more balanced discussion by normalising disagreement and ambivalence as the typical atmosphere that transpires as complex goals are set (Huckfeldt et al., 2004; Uhl-Bien & Arena, 2018). Managers could also employ Socratic dialogue, which requires the moderator to ask questions to encourage critical thinking, draw out ideas or disarm oversimplified or distorted depictions of complex goals (Stromer-Galley, 2007). Finally, an online forum might be the perfect platform to debunk false premises based on evidence, as its leniency affords managers the opportunity to share relevant information in a cost-effective and timely manner (Edwards & Wright, 2009).

9.6.3 *Narrow and Shallow Arguments*

In synchronous forms of participation on online forums, where individuals engage in discussions in real time, the restriction of time might make it difficult for more introverted individuals to muster the rational depth and breadth required to make sensible arguments (Graham, 2009; Halpern & Gibbs, 2013). Limitations in terms of bandwidth and the typical span of attention of participants online might further encourage the use of bite-sized responses, which might reduce the nuance and detail required to give a true reflection of a participant's position (Dahlberg, 2006; Millard, 1997). Computer-mediated communications are also quite flexible in terms of the degree to which conversations can increase, branch out or intersect, which can make it difficult for participants to target a position and formulate substantive and coherent arguments in response (Dahlberg, 2006). Computer-mediated communication is often also characterised by rapidity, where individuals can feel pressured by others' frustration to keep up with the speed of communication (Dahlberg, 2006). These situations can increase the chances of misrepresenting another participant's position or formulating a poorly argued response (Dahlberg, 2006).

In order to ensure the level of rational depth and breadth required to deliberate complex goals online, it is recommended that the online forum provides participants with sufficient characters to formulate their positions and remain asynchronous, and to provide them with sufficient time to respond to arguments (Dahlberg, 2006). Managers can further prevent conversations from getting side-tracked by setting a clear agenda for goal setting (Gastil, 1993; Graham, 2009), or using discussion techniques such as opening new discussion lines or making summaries (Edwards & Wright, 2009; Graham, 2009). If desperate measures are called for, managers can pre-moderate the discussion by reviewing messages before they enter the online forum, to ensure logical consistency, breadth, and depth (Dahlberg, 2006; Wright & Street, 2007).

9.6.4 Discontinuity

Ideally, goal setting should continue long enough to obtain temporary consensus, without compromising rational depth and breadth regarding a complex goal (Graham, 2009). However, online forums have a reputation for the one-timer effect, a situation where participants are less attentive in responding to others arguments, and typically withdraw after the first post (Coleman, 2004; Graham, 2009; Jankowski & Van Selm, 2000; Van Lill, 2019). In order to counter breaks in communication, managers can solicit a sufficient amount of individuals who they regard as more conscientious to participate in the online forum (Glikson, Wolley, Gupta, & Kim, 2019; Van Lill, 2019). Managers can also intermittently send short surveys if consensus is required on critical issues (Graham, 2009). Reminding participants of previous contributions and encouraging them to continue to post might be a necessary motivational condition (Gastil & Richards, 2017). Elements from gamification, such as receiving credits for participation (that can be used to vote on complex goals) or levelling up to receive more status among the group, can be incorporated to incentivise continued participation (Gastil & Richards, 2017).

Online forums can serve as a useful mechanism to include as many stakeholders as possible in discussions on complex goals and may help managers to moderate the logical coherence, depth, and breadth of the discussions more effectively and efficiently. Holding written discussions online, however, poses another challenge, namely a vast amount of textual data that presents a greater challenge to traditional quantitative methods of analysis where data is typically derived from structured surveys (Ryan & Herleman, 2016). Fortunately, advances in big data methods have made it possible to analyse large amounts of textual data in more quantitative ways (Hernandez, Newman, & Jeon, 2016; King, Tonidandel, Cortina, & Fink, 2016).

9.7 Online Deliberation and Big Data Methods

Given the conversational nature and considerable number of employees who can participate on computer-mediated deliberations, managers confront different challenges when attempting to make sense of large amounts of textual data (Chung & Pennebaker, 2019; Ryan & Herleman, 2016). Textual data, more specifically the concepts used by participants to deliberate, can reveal a great level of depth about the personality and interpersonal relationships of participants online (Pennebaker, 2011; Tausczik & Pennebaker, 2010). For example, an investigation of word indicators of narcissism revealed that more sexual and swear words, and fewer tentative and anxiety-related words, are strong predictors of this dark personality trait (Holtzman et al., 2018). With respect to interpersonal relationships, computerised text analyses revealed that people with higher status consistently made less use of first-person singular (e.g. I, me or my), and more use of first-person plural (e.g. we, us or our) and

second-person singular (e.g. you) pronouns (Kacewicz, Pennebaker, Davis, Jeon, & Graesser, 2014).

Linguistic content analysis, which is a qualitative method used to make sense of textual data, is strongly recommended as a technique to classify units of text, such as phrases, into meaningful themes (Berg, 2001; Weber, 1990). However, more advanced techniques are required than the traditional method of coding in order to content-analyse and make sense of the large sum of data that can be derived from computer-mediated communication (Dehghani et al., 2017; Hernandez et al., 2016). The advances in natural language processing have made computerised textual analysis possible, which enables consumers to code larger amounts of textual data quicker, more cost-effectively, and in a more quantitative manner (Hernandez et al., 2016; Tonidandel, King, & Cortina, 2018). For example, a proprietary program called Linguistic Inquiry and Word Count (LIWC) can be used to compare every single word used in a body of text to a word count dictionary and divide these words into linguistic categories (Pennebaker, Francis, & Booth, 2001). Open-source software, such as Text Analysis, Crawling and Interpretation Tool (TACIT), can also be applied to collect text from online sources, prepare and store bodies of text, and analyse text according to word count, topic modelling, sentiment analysis, clustering, and classification (Dehghani et al., 2017). The process of acquiring textual data and prominent natural language processing techniques will subsequently be discussed.

(i) *Acquiring and pre-processing a corpus of text*

Collecting and processing a vast amount of textual information from an online deliberative forum could be an overwhelming experience (Dehghani et al., 2017). It is therefore recommended that text crawlers be used to acquire and process a body of text (Dehghani et al., 2017). Text crawlers could scrape online deliberative forums in order to collect a body of text that is relevant to a research question (Dehghani et al., 2017). Before a body of text can be analysed, the data must first be converted to a corpus (annotated collection of text) that can be processed in analytical software such as TACIT (Dehghani et al., 2017; Ryan & Herleman, 2016). For example, TACIT's Corpus Management tool can convert online data into various user-friendly formats, such as JavaScript Object Notation (JSON), Microsoft Word, and comma-separated values (CSV) files (Dehghani et al., 2017). The corpus of text acquired typically has to go through a clean-up process in order to increase the accuracy of the textual analyses (Dehghani et al., 2017). For example, common words that do not add much value (e.g. 'a' and 'the') can be removed, words (e.g. 'debating') should be matched to their root (e.g. 'debate'), and text should be standardised to a uniform format (e.g. lower case) (Dehghani et al., 2017). The clean-up process significantly reduces the size of the vocabulary and speeds up the analytical and interpretation process (Dehghani et al., 2017).

(ii) *Word counting*

Word counting is a simple and widely used technique to classify a large amount of text under predefined categories (Dehghani et al., 2017; Pennebaker et al., 2001; Tausczik & Pennebaker, 2010). Word counting is a computerised process whereby

samples of text are compared against a dictionary with predefined categories, and the occurrence of predefined categories in a body of text is quantified (Hernandez et al., 2016; Pennebaker et al., 2001). In order to conduct the process, a word count dictionary has to be created that contains the predefined criteria according to which phrases can be categorised (Dehghani et al., 2017; Hernandez et al., 2016). A word dictionary can be created by isolating posts in a large amount of textual data that contains the primary words, such as ‘goal’ (Hernandez et al., 2016; Pennebaker et al., 2001; Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007). Subject matter experts, such as industrial psychologists, can then sort phrases from posts on the topic ‘goal’ under categories related to goal commitment, such as cognitive, affective, volitional, and conative aspects of goal commitment (Hernandez et al., 2016; Pennebaker et al., 2001, 2007). Once the phrases related to goal commitment have been identified, dictionaries can be created, using the general structure of the phrases as templates for these dictionaries (Hernandez et al., 2016).

Word dictionaries are not free from the psychometric standards of good measurement (Tonidandel et al., 2018). Concepts such as reliability and validity still have their place in big data methods such as natural language processing (Hernandez et al., 2016). For example, the ability of a dictionary to match target words (reflected as 1 if it does and zero if it does not) at a given time is correlated with the dictionary’s ability to match target words on another given time, thereby providing an estimate of the retest reliability of dictionary (Hernandez et al., 2016; Pennebaker et al., 2007). In order to inspect the convergent validity of the dictionaries, as another example, the correlation between word count dictionaries that should be related can be inspected (Hernandez et al., 2016; Pennebaker et al., 2007). For example, dictionaries for the cognitive, affective, volitional, and conative commitment should theoretically be related (Van Lill, 2019). The divergent validity can be determined by investigating the correlation of the newly developed word count dictionaries with existing but theoretically unrelated word count dictionaries (Hernandez et al., 2016; Pennebaker et al., 2007).

(iii) *Machine learning*

Alternative methods for sorting textual data, such as supervised machine-learning algorithms, can also be used to classify data into predetermined categories (Dehghani et al., 2017; Hernandez et al., 2016). In order to do so, a text corpus must first be organised into different classes based on the dimensions of interest, for example, resistance or commitment to goals (Dehghani et al., 2017; Hernandez et al., 2016). The most typical dimensions used to place the dataset into classes are the words used in posts (Hernandez et al., 2016; Salton & McGill, 1983). The dataset is then split into a training and test subset. The classifier uses the words (features) to determine what the difference between the classes are in the training subset by, for example, using naïve Bayes (Dehghani et al., 2017; Hernandez et al., 2016). The trained algorithm can then be used to determine how accurately membership is classified in the test subset. The performance of the trained algorithm in predicting class membership in a test subset is inspected by using metrics such as accuracy, precision, sensitivity, specificity, and negative predictive value (Fawcett, 2006; Hernandez et al., 2016). If

the trained model performs well, then the algorithm can be used on other, non-test datasets (Dehghani et al., 2017; Hernandez et al., 2016).

The use of big data methods for large amounts of text holds many possibilities. For example, the prevalence of certain personality traits can be inferred from participants' posts on online forums, which could provide an indication of the diversity of the group (Mehl, Gosling, & Pennebaker, 2006; Pennebaker & King, 1999). Dominance (represented by the increased use of the first-person plural) (Sexton & Helmreich, 2000; Tausczik & Pennebaker, 2010) and deception (represented by more negative emotions, motion words, fewer exclusion words and fewer incidences of use of the first-person singular) can also be inferred (Newman, Pennebaker, Berry, & Richards, 2003; Tausczik & Pennebaker, 2010), which might indicate whether deliberative discussions are respectful and sincere. Even the complexity of participants' reasoning can be inferred from the prevalence of exclusive words, conjunctions, or words containing more than six letters (Graesser, McNamara, Louwerse, & Cai, 2004; Tausczik & Pennebaker, 2010). Most importantly, cognitive, affective, volitional, and behavioural intentional aspects of goal commitment, which are considered to be manifestations of human flourishing during goal setting, could also be inspected using word count dictionaries or machine learning (Hernandez et al., 2016; Pennebaker et al., 2007).

Big data methods are not magical machines that allow for the generation of insightful relationships between variables based on random data inputs, which is typically referred to as 'dustbowl empiricism' (King et al., 2016; Tonidandel et al., 2018). Furthermore, whether data is big or not, variables such as age, gender, race/ethnicity, socio-economic status, access to technology, online experiences and Internet skills could still bias findings based on online forums' data (Hargittai, 2015). Instead, an ounce of prevention in terms of good theory, well thought-out research questions, a design that considers the impact of bias, quality measurement (validity and reliability), and good quality and complete data, is still better than a pound of cure (Aguinis & Vandenberg, 2014; Hargittai, 2015; King et al., 2016; Ryan & Herleman, 2016; Tonidandel et al., 2018). Best practice in quantitative and qualitative research methods still contributes to and ensures that reliable inferences can be made based on patterns uncovered in big data (Guzzo, Fink, King, Tonidandel, & Landis, 2015; Tonidandel et al., 2018). The predictive model proposed in this chapter, including the mediating and moderating factors, could be a useful point of departure to facilitate quality exchanges between participants and classify text based on meaningful categories.

9.8 Insights and Implications for Deliberative Goal-Setting Practices

Based on the overview of the literature on goal setting provided above, especially from a deliberative point of view, the following can be said about improving goal

commitment in the organisation, which, in this chapter, is conceived to be an indicator that employees are flourishing in the workplace:

1. Preliminary evidence suggests that commitment to complex goals can be increased through a deliberative process. In order to maintain employees' internal drive to attain meaningful and satisfying complex goals, organisations could benefit from selecting and developing managers based on their levels of consideration (warmth) and reasonability (intellectual competence).
2. Goal commitment, as a manifestation of flourishing in the workplace, is a far more complex construct than initially conceived. In contrast to prior literature, goal commitment is conceived to be a process starting with a belief in the meaningfulness and a positive affective evaluation of complex goals, and leads to wilful dedication and the intention to take the initiative in order to achieve complex goals. Managers should try to be aware of employees' cognitive beliefs of, feelings associated with, volitional dedication to, and intentions towards complex goals. These indicators of commitment might reflect the degree to which employees are motivated and flourishing in the workplace
3. A deliberative style is not the sole factor in predicting commitment. Instead, the formation of goal commitment could be perceived as a process model, where other interpersonal variables, such as supervisor-focussed informational justice, could mediate the relationship. Managers should be made aware of the importance of conveying informational justice when they set goals, as this might increase employees' willingness to exchange goal commitment for the honest and comprehensive communication of information.
4. Apart from interpersonal factors, there are also personal characteristics that might influence whether employees would commit to complex goals set in a deliberative manner. Awareness and active management of employees based on their personal characteristics can increase effective co-operation and the sharing of creative new insights into, dutiful participation in, and, ultimately, commitment to complex goals set in a deliberative style.
5. Facilitating deliberative goal setting in face-to-face settings can be an ineffective and inefficient process. Managers can facilitate more effective, efficient, inclusive and rational discussions by adopting computer-mediated deliberation. These forums are not without their faults, and industrial psychologists, human resource professionals and managers should familiarise themselves with best practice to ensure effective use of these forums.
6. The discursive nature of deliberative goal setting and large amounts of textual data derived from online deliberation can be a burden or a resource to optimise by industrial psychologists and human resource professionals. Big data methods might, in these situations, be the most effective means to analyse and make sense of large amounts of textual data. In this respect, industrial psychologists and human resource practitioners will have to upskill themselves in order to design big data projects and to analyse big data using sophisticated techniques, such as word counting and machine learning.

9.9 Conclusion

Organisations' capability to achieve complex goals is increasingly important in a business environment that is characterised by volatility, uncertainty and interconnectedness. Organisations have to maintain this capability by creating information networks around complex goals, to increase employees' commitment. Deliberative goal setting has an important impact on employees' commitment to complex goals. In this respect, managers can facilitate employees' conviction of the meaningfulness of goals, positive affect, wilful dedication, and a willingness to display initiative towards complex goals through deliberation. However, the relationship between a deliberative goal-setting style and goal commitment is multivariate. The mediating effect of interpersonal variables, such as informational justice, and the moderating effect of personal characteristics, such as openness to experience, conscientiousness, and agreeableness, must be considered. In order to ensure the most effective and efficient use of deliberative goal setting, managers must consider adopting computer-mediated forms of communication. Big data methods can also be used to monitor and adjust textual information derived from online deliberative goal setting, in order to ensure the followers' commitment to complex goals.

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Xander van Lill (PhD) practises as a registered industrial psychologist at JvR Africa Group, where he is involved in the sourcing, development, and distribution of psychological assessments. He serves as an executive member of the Society for Industrial and Organisational Psychology of South Africa (SIOPSA). He specialises in the construction of psychological assessments and multivariate statistics.

Gerhard (Gert) Roodt (DAdmin) is a licensed psychologist and a registered personnel practitioner. He is author/co-author of more than 100 peer-reviewed journal articles and about 60 conference proceeding papers; 15 technical reports; and co-editor/co-author of 11 books; author/co-author of 60 chapters; and several articles in non-research-based journals. He is also presenter/co-presenter of approximately 135 peer-reviewed papers at national and international academic conferences. He was Vice Dean: Research in the Faculty of Management at the University of Johannesburg, South Africa. He was the former head of the Centre for Work Performance in the Department of Industrial Psychology and People Management. He is a former chair of the

Society for Industrial Psychology (1995–1997). He serves on review/editorial boards of nine local and international scholarly journals.

Gideon (Deon) P. de Bruin (PhD) is a professor of industrial psychology at Stellenbosch University. Previously, he was Head of the Centre for Work Performance and Director of the Institute for Child and Adult Guidance at the University of Johannesburg, and Associate Professor of Psychology at Stellenbosch University. He is registered as a counselling psychologist with the Health Professions Council of South Africa. His specialities include psychological assessment, test construction and validation, multivariate statistics, item response modelling, and Rasch modelling.

Chapter 10

Shaking Up the Status Quo? An Analysis of Developments in the Social Context of Work Stemming from Industry 4.0



M. Habraken, T. Bondarouk and D. Hoffmann

Abstract During the past years, academics have revised their earlier decision to omit the social dimensions of work from work design theory, realising that interpersonal interactions in the work setting are becoming more pervasive. Industry 4.0, however, raises new question marks with respect to this pervasiveness. Terms such as big data, Internet of Things and augmented reality have the potential to lead to shifts in the status quo of the social context of work and implicit issue of thriving. This chapter therefore aims to analyse what developments can be observed with respect to the social context of work as a result of industry 4.0. Findings from thirteen interviews conducted in four different organisations at two levels suggest that social interactions will not give into digital options. More importantly, they provide a wake-up call regarding the adoption of industry 4.0 and highlight two ways in which it influences the social context of work and human thriving.

Keywords Industry 4.0 · Social context of work · A two-way influence · Thriving

10.1 Introduction

Publication titles such as ‘The future of employment: how susceptible are jobs to computerization’ (Frey & Osborne, 2013), ‘The future of human work is imagination, creativity and strategy’ (Pistrui, 2018) and even well-known sayings like ‘Choose a job you love and you will never work a day in your life’ highlight the fact that when addressing influences on or consequences of work, we often tend to consider work from a content point of view. Yet the social context which surrounds work—defined as ‘the interpersonal interactions and relationships that are embedded in and

M. Habraken (✉) · T. Bondarouk
Department of Human Resource Management, University of Twente, Enschede, The Netherlands
e-mail: m.m.p.habraken@utwente.nl

T. Bondarouk
e-mail: t.bondarouk@utwente.nl

D. Hoffmann
Human Resources, NSG Pilkington, Enschede, The Netherlands
e-mail: dave.hoffmann@nsg.com

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influenced by the jobs, roles, and tasks that employees perform and enact' (Grant & Parker, 2009, p. 322)—plays an essential role as well.

Statistical support for this fact can be found in the results of the meta-analysis by Humphrey, Nahrgang, and Morgeson (2007), which show that social characteristics explain a considerable amount of unique variance in behavioural and attitudinal outcomes beyond the task and knowledge dimensions of work. Academics even revised their earlier decision to omit the social dimensions by recognising that interpersonal interactions embedded in the work setting are increasing in pervasiveness within contemporary organisations (Grant & Parker, 2009; Oldham & Hackman, 2010).

Technological developments—labelled under the heading industry 4.0 and supplemented by various editions in different countries—facing us at the moment could bring a halt to this observed pervasiveness of social interactions, however. In other words, the far-reaching digitalisation that underlies terms such as big data, Internet of Things and augmented reality has the potential to lead to shifts in the status quo of the social context of work. The huge amounts of data that can now be generated can, for instance, serve as a new source of knowledge for employees. Whether used as is or analysed, this data can be delivered to employees by means of apps, screens or other devices. As a result, employees can obtain performance feedback straight from the data. This would change the way feedback is given and received and puts the use of feedback from others in a new light.

Another frequently addressed expectation of industry 4.0 is the realisation of connected factories. The prediction is that industry 4.0 will result in far-reaching supply chain cooperation. This signals the introduction of more interaction, but the question is to what extent are those interactions interpersonal; much of this increased interaction could take place digitally via communicating systems/devices. Signs of a lesser extent of social communication are already visible when looking at results from an online survey conducted by Randstad in 2016 among employees¹ in 34 countries. Their data showed that globally, 46% of the respondents agreed that they have fewer personal interactions with their colleagues due to technology. Conversely, the same survey showed that 89% of the participants believed that a face-to-face meeting is the best way to interact with someone (Randstad, 2016). A reasonable question to ask would thus be where are the interpersonal interactions and relationships of work heading to in the context of industry 4.0? Are we communicating less and less socially or does a smart supply chain create more social interactions with suppliers?

These questions guide our inquiry in this chapter that aims to analyse what developments can be observed with respect to the social context of work as a result of the industry 4.0 work context. We begin by defining this phenomenon and the adopted interpretation of the social context of work. We then move to the outline of the research process, after which we present the results from the interviews conducted. Next we discuss academic and practical consequences of the observed developments and provide a synopsis of key insights. Finally, the limitations are addressed, and we end with a brief conclusion.

¹These employees were: not self-employed, aged between 18 and 65 and worked a min. of 24 h a week.

10.2 Industry 4.0

When reading about the concept industry 4.0, we cannot escape the connection with the term ‘Fourth Industrial Revolution’ as it is, quite literally, built into the concept of industry 4.0. That is, the 4.0 designation signifies it as being the successor to the three earlier industrial revolutions. This connection probably helped ensure the massive interest that now surrounds industry 4.0. Consider, for instance, the amount of media attention, the number of conferences on this topic as well as the conversations it has sparked within organisations. The popularity of industry 4.0 did not prevent the emergence of a discussion on its meaning. In other words, the absence of a clear understanding of the label industry 4.0 is an issue which has been voiced in recent scholarly publications (e.g. Hermann, Pentek, & Otto, 2016; Liao, Deschamps, Loures, & Ramos, 2017; Reischauer, 2018). Several papers have even addressed this issue, yet a comparison between, for instance, the work of Hermann et al. (2016), on industry 4.0 design principles, and the perspective taken by Reischauer (2018) of industry 4.0 as a policy-driven discourse does not seem to show much unity in how to understand the label. We elaborated on the link between these two seemingly diverse standpoints that can be found in research about smart industry, which is the Dutch equivalent to the more common label industry 4.0 (Habracken & Bondarouk, forthcoming).

The data in this study, obtained via interviews with smart industry experts, led us to develop two distinct components to represent the term smart industry: a communicative bubble and a platform for the multiplicity and complexity of current developments. The first component depicts the human desire to create a way to communicate a sense of importance with respect to the observed technological advances, hence to promote innovation. This component overlaps with the viewpoint presented by Reischauer (2018, p. 26) to consider industry 4.0 as a ‘broader communicative action that mobilizes actors to innovate collaboratively and that is driven yet not determined by politics’.

The latter component, a platform for the multiplicity and complexity of current developments, fits with the design principles discussed by Hermann et al. (2016). This component implied that smart industry can be considered as a ‘platform expressing three technology-based developmental streams that exist at the moment: (1) the establishment of connections between devices and/or systems within firms and with external parties worldwide; (2) the ability to take more advantage of the value of information through the presence of greater amounts of data; and (3) the availability of contemporary physical and non-physical assets’ (Habracken & Bondarouk, forthcoming). All three streams have a digital aspect imbedded within them. The platform component further entails that the application of these three streams is restricted by several constraints, such as access to required skills or supporting infrastructure. Given the goal of this study, we represent industry 4.0 only by means of its platform component. In other words, we focus our attention on the three technology-based developmental streams—connected, informed and equipped. Finally, in general, we adopt the term industry 4.0 throughout this chapter, but on occasion the label smart

industry is used since our data were collected in the Netherlands where industry 4.0 is known as smart industry.

10.3 The Social Context of Work

After we clarified our view on industry 4.0, we turned to the social context of work, a job design category that has had a turbulent history. Job design researchers initially took social dimensions into account, as evident from the assessment of the extent to which jobs involved dealing with others, friendship opportunities, required interaction, interaction opportunities or feedback from others (Hackman & Lawler, 1971; Hackman & Oldham, 1975; Turner & Lawrence, 1965). Yet the job design theory introduced in Hackman and Oldham (1976) omitted any signs of these social dimensions, and they disappeared from general theories and research programmes on job design. Academics today, however, recognise the importance of the interpersonal interactions embedded within the work setting. Oldham and Hackman (2010) even went so far as to state that their earlier judgement call, neglecting the social dimensions of work, was quite short-sighted.

Within this study, we adopt the social work characteristics used by Humphrey et al. (2007) since they are now well-established (see Grant, Fried, & Juillerat, 2011; Morgeson, Garza & Campion, 2013; Morgeson & Humphrey, 2008). The four social work characteristics that are taken into account are: (1) *feedback from others*, ‘the extent to which other organisational members provide performance information’; (2) *social support*, ‘the extent to which a job provides opportunities for getting assistance and advice from either supervisors or co-workers and includes friendship opportunities on the job’; (3) *interaction outside the organisation* is ‘the extent to which a job requires an incumbent to communicate with people (e.g., suppliers or customers) external to the organization’ and (4) *interdependence*, ‘the extent to which a job is contingent on others’ work and other jobs are dependent on the work of the focal job’ (Humphrey et al., 2007, p. 1336). By focusing on these four social characteristics, the less prevalent social aspects such as goal interdependence, outcome interdependence or contact with beneficiaries (Morgeson & Humphrey, 2008; Grant et al., 2011) are neglected. Consequently, to prevent another short-sighted judgement call, these dimensions were kept in mind in case they were raised during discussions on interdependence or interaction outside the organisation.

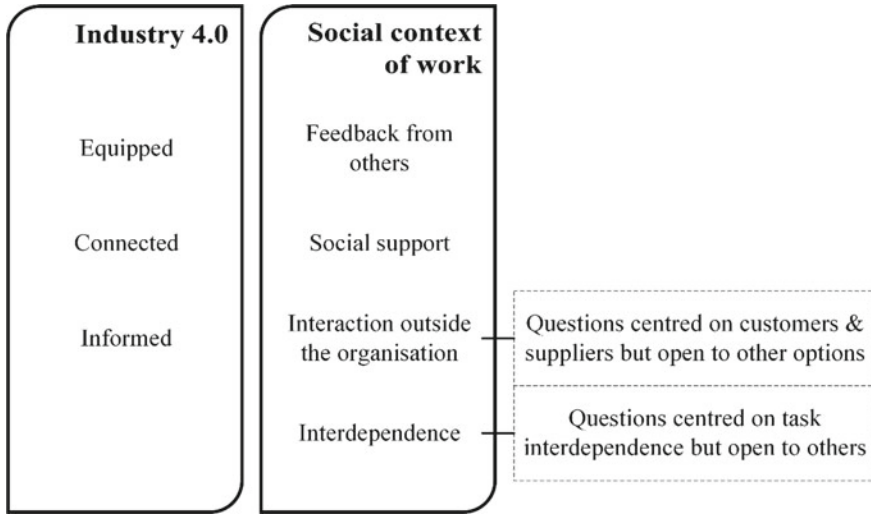


Fig. 10.1 Summary of the theoretical part. Based on Habraken and Bondarouk (forthcoming) and Humphrey, Nahrgang and Morgeson (2007)

Before continuing to the discussion of our method, Fig. 10.1 summarises the above two sections.

10.4 Method

10.4.1 Procedure

An essential prerequisite for answering our research question was the presence of industry 4.0 within the organisations in which our interviews would be conducted. Consequently, two sources were used to search for suitable organisations within the Netherlands: the Smart Industry and Human Capital research group at the Saxion University of Applied Sciences and the national Dutch smart industry website, specifically their list of ambassadors. Smart industry ambassadors are companies and institutions that are ‘ready for the future and actively contribute to the realisation of the smart industry action agenda’ (Dutch smart industry team, n.d.). To ensure consistency among the selected organisations, only those operating in the manufacturing industry were approached. Seven firms were willing to participate in our research. Based on an initial consultation with these companies, four were selected. The selection criteria applied were: the integration of smart industry and the availability of appropriate respondents. For instance, one organisation was willing but busy at the time of data collection which led to the unavailability of targeted participants. In

addition, another firm stated the use of far-reaching technology, yet this technology was already in use for 20 years and thus not considered smart enough.

The four selected organisations were a company that develops and manufactures mass flow metres, one that produces power management products, and two technical service providers that are active in the manufacturing industry. The interviews within these firms were semi-structured, face-to-face and took place in the summer of 2018. All interviews were digitally recorded and transcribed verbatim. At the end of the interviews, respondents were offered the opportunity to provide feedback on their answers. None of the respondents, however, made use of this possibility.

By selecting cases as well as respondents (see participants) in a purposeful manner, by offering respondents the opportunity to offer feedback and by going over transcripts multiple times, within each step, to prevent any oversights as well as incorporate independent analyses by external assessors (see data analysis), we ensured the rigour of our qualitative findings in line with the trustworthiness criteria indicated by Guba (1981).

10.4.2 Participants

Interviewees were selected on the basis of the extent they come into contact with smart industry technology. A choice was also made to select respondents from two hierarchical levels—employees and supervisors (supervisors were direct manager of employees). This distinction was made as we wanted to look at the influence of industry 4.0 on social characteristics of work which encompass the interaction between both levels. In three cases, one manager and three employees were interviewed, while in the remaining case two managers and two employees were approached. Respondents were asked to address changes related to the four social characteristics of work, and thus interviews consisted of the following main topics derived from the literature: feedback from others, social support, interaction outside the organisation and interdependence. Respondents were asked to reflect on the mentioned changes with regard to the role of smart industry technology (see Appendix for the interview protocol).

10.4.3 Data Analysis

The analysis of the transcripts took place in several rounds. During the first round, handwritten memos were made for each interview that summarised the social topics being addressed in a few sentences (e.g. importance of collaboration, presence of verbal agreements or increasing customer specifications). This process provided insights into the social aspects being discussed within the interviews. Next, the transcripts were looked at from a more technological point of view. In other words, memos were made that highlighted any technological developments raised in each

interview. This ranged from very abstract acknowledgements such as the current complexity of technology to more concrete developments like 3D printers, robots or sensors.

Handwritten memos were again used during the third round, but this time the analysis took place at the level of an organisation instead of a specific interview. The aim of this third round was to establish connections between the input from the previous two rounds. Given the complexity of this process, external assessors were contacted to look at the transcripts and offer their opinion on the connections between the mentioned social dimensions and technological developments. Four contacts responded to our request, which resulted in eleven of the thirteen interviews being reviewed by two separate people. As these external assessors did not indicate any surprising findings (i.e. no insights that were not already known), an additional attempt to seek a second assessor for the remaining two interviews was not undertaken.

Two final rounds were conducted to combine the previously obtained input at the type of organisation level (technical service provider versus production organisation) and at the overall level. With respect to the last round, a check was performed to determine whether there were any observed findings that could be detected in both types of organisations.

10.5 Findings

10.5.1 *External Collaboration—Customers*

One of the most frequently addressed external parties in interviews with both types of organisations was the customer. A particular topic was that a more customer-centric approach was being adopted nowadays. Although we could not find a clear link with current technological developments for this observation, the fact that this topic was so prominently visible makes it worth mentioning. A noticeable aspect was that the increase in customer-specific products did not lead to drastic changes for the production organisations. In other words, interviewees stated that contact with the customers was mainly maintained by a sales or service department and by engineers who assisted from a technical standpoint, while staff on the shop floor never communicated with customers. Another interviewee indicated an absence of communication between the production and the service departments. In other words, production was not informed about customer orders that were returned. This is an important statement considering the growing move towards customer-specific production.

The shift to an increasingly customer-centric approach did result in changes to the social context of work within the two technical service providers. Besides technical motives, the possibility to be more customer-oriented was given as a reason for the transition to teams (more details are discussed below). The data from the technical service providers showed that engineers at all levels now have contact with the customer; a project manager (i.e. a senior engineer) is tasked with customer relations

and presents a fixed point of contact, while the junior and mid-level engineers discuss technical specifications. One project manager stated, for instance, that ‘I am not the translator. We try to put the programmers as close as possible to the customer since customer contact can best be placed with people who know how to make things. We leave a lot to the programmers, who talk with the customer about what they want, and I have a steering and coordinating role’ (R2).

This finding could have stemmed from technology since respondents in general addressed the breadth and complexity of technology which fits this change. On the other hand, the previous respondent mentioned that it is not desirable to have the programmers wait patiently to get a project assigned, while a statement from another interviewee signalled that customer preference could be a reason—‘when you ask companies what they prefer, they say that they want a fixed point of contact, but also closer connections with the person who builds the machine’ (R6). Besides an increase in the extent of contact, one interviewee from a technical service provider highlighted a change in whom you work with regarding customers—‘you see that the client has his own programmer and says we want to develop something together. Then we are not just a supplier, we also provide knowledge to that programmer. You share knowledge, and you work together on the product which is then theirs. You see all kinds of collaborations emerge’ (R4).

10.5.2 External Collaboration—Suppliers and a Lending Structure

The communication with suppliers was a topic mentioned less by both the technical service providers and the production organisations. When suppliers were mentioned, it was often in association with common types of interactions such as gaining support, for instance, via email or Microsoft support platforms, or in connection with supply rejections. An exception to the above interactions, which do not reflect industry 4.0-related developments, is highlighted by the following quote: ‘Bosch has obliged their suppliers to place barcodes everywhere so that everything is registered. The entire tracking and tracing process has been optimized in that organisation. Their suppliers must cooperate in this. As a result, you see that cooperation is becoming more and more intensive’ (R4).

Besides customers and suppliers, a new source of external collaboration was observed: ‘in the past you sometimes delved into a field of knowledge in order to gain some experience, to understand or become better at it. Nowadays that does not work anymore. This is our field and we should not concern ourselves with other aspects. We now seek out a colleague for that, or if we do not have one we find a partner [could be a conculega²] that has the knowledge we are after’ (R4³). In

²Implies a colleague from a competitor.

³We are aware that this respondent is used quite often in our discussion of the results. This interviewee, however, mentioned interesting yet unique insights. Likely as a result of his function and

short, this respondent from a technical service provider expressed the fact that they hire engineers from external organisations, for brief periods such as a day, and also stated that competitors hire his own engineers when specific knowledge is absent. The flexibility of such a construction lies in stark contrast to a statement from one of the production organisations—‘we do not share information with our competitors’ (R10).

10.5.3 *Internal Collaboration—Technical Service Providers*

Within both technical service providers, the most prominent development was the observed shift towards operating in self-steering, multidisciplinary teams on the basis of an agile scrum method. This method entails sprints of approximately three weeks, according to interviewees, and once or twice a week the status of the current sprint is discussed—‘you ask once a week which points are finished, which are not finished and what could have been better or different. For example, we do not have that facility or it does not work; what is the problem so that we can try to solve it’ (R1). The extent of collaboration is further highlighted by the quote: ‘we work in a team, a scrum team which is totally non-hierarchical. I would not know who I should see as my boss ... it is really collaborative how we decide to address things’ (R5). These indications of collaboration concern how a sprint or the overarching project is tackled. With regard to once individual tasks, an engineer stated that he mostly works independently. This is emphasised by the order of sources that the same respondent mentioned when seeking help: search the Internet, go to a colleague and, if nothing else works, find an external party.

The newness of this multidisciplinary scrum team approach became clear as interviewees mentioned they are heading more towards teams or that they are still working on that transition. In addition, and more importantly, a link with technology was made—‘I think technology has played a very big role in this. The hardest part is always, when do you think you are ready? If you do something straightforward, it is fairly easy to estimate how much work I still have to do. But it is becoming more complex and interconnected and then that question becomes more difficult. In a group you have several people who look at the estimated amount of work and then you notice that the estimate is more accurate. The process and the monitoring of a project can now be done better’ (R2) *and* ‘I think the technology is driving that because you have to be more flexible, and you have to know a lot more things. So that means that you need your colleagues much more. Technology is getting increasingly complex and is broadening ... you need the other disciplines in order to offer a total solution to customers’ (R4). In short, as pointed out by one interviewee, an

location: ‘I started as an ordinary software engineer and quickly became a lead engineer. From 2011, I am a bit of a project leader. Initially, we call our team “IT” which stands for industrial IT—not the standard industrial automation but the layer above it. We deliberately called our team smart industry because we have a lot to do with that’ (R4).

individualistic approach no longer works in times of industry 4.0. You have to work together and share knowledge. A self-steering, multidisciplinary team structure thus seems to be the solution for this issue. As a result, the following information came as a surprise—‘the team I work in is composed solely of software engineers. Most of our teams encompass nearly all disciplines, only we as software engineers have our own team. We do this very consciously because technologically wise, it all goes so fast for us. To keep up, we have to share knowledge and we, in turn, deliver our knowledge to all those other teams. That is a bit of a twist’ (R4). It shows the need to find a balance between better information sharing between disciplines, on the one hand, and maintaining the exchange of knowledge with employees of the same discipline on the other.

10.5.4 Internal Collaboration—Power Management Production Firm

An aspect which stood out in the power management production organisation was the recurring mention of the tiered structure for internal communication used within that specific company. This structure implies a layered approach towards communication: tier 1 is the communication between a supervisor and his/her employees, tier 2 is between supervisors and tier 3 includes the management level. Despite its frequent mention, its newness was questionable and there is no connection with industry 4.0. One interviewee specifically pointed out that he did not think technology played a role in the emergence of the tiered structure. Respondents also discussed a lot of software applications such as SharePoint or Apex. The introduction of these systems started 18 years ago. Though they signal a digital approach, they are not new advances. A statement that did display a link with new technology, because it showed overlap with augmented reality possibilities, was: ‘what we are looking at now, but that is not there yet, is how can we do things differently on the shop floor? For example, can we work with light or signals instead of work instructions?’ (R11). The respondent indicated that it would likely require a completely different type of employee and that the number of interactions would be reduced, only the tier would be left. In contrast, this organisation’s renewed powder-coating installation changed from being automated to now being operated manually. The reason given was rather cryptic, indicating a long payback time of automation with customer demand, but as a result of the change, the interaction surrounding the installation increased—‘previously it was standing in one place and hanging a plate in the powder coat; simple. Now they are responsible as a team to ensure that steps in the process are done as quickly as possible in succession. That is only possible if they are well attuned to each other’ (R10). It goes to show that in times of industry 4.0, improvements are not always smart.

As a power management company, two interviewees highlighted the smart grid, which can be considered a modern electric power grid infrastructure. The new smart grid project is still a struggle, however, since they would like to incorporate smart elements in their products, but what the customers want is still vague to them. In summary, it seems that for this organisation, industry 4.0 has so far mostly resulted in the creation of research projects or a separate department which checks whether there are technologies which they can apply. Consequently, no drastic alterations in the social dimensions of work were found, and the change that was observed surprisingly stemmed from a reduction in technology.

10.5.5 Internal Collaboration—Mass Flow Metre Production Firm

Two developments that stood out in this production case were the introduction of a 3D printer and the new inhouse production of sensors. The 3D printer replaced the procedure of sending designs for tools to Asia, which has led to a quicker and cheaper process. As a result, a tooling engineer signalled the presence of collaboration with the 3D printer operator, R&D and his own colleagues—‘I do not print 3D myself, but I try to contribute ideas. We had a glue tooling but during gluing it was in the way of soldering. So I asked, is it possible to turn it around? With a colleague something new was drawn and printed 3D. Then we tested it, we did think it through? You get to a design in a cheap and fairly quick manner, and we get it checked by people in the department. Ask them what they think of it’ (R9).

The importance of collaboration with R&D is also visible for the new inhouse production of sensors—‘we have a new line, the sensor production. That is all new to us. You come to realise that the ideas they have are not that easy to implement. Single pieces are fine, but if you want more than ten, twenty or thirty products a day then some actions become quite difficult to repeat. In that respect you have to communicate a lot with people who are in production, who have a different view on that. Previously, they thought of something, and we just had to make it’ (R8). The difficulty of repeating certain actions likely stems from the fact that sensors have become more complex and contain more electronics. This complexity was also one of the reasons why the organisation decided to bring the sensor production inhouse. A logical consequence of this transition is the dependence created on this department instead of an external supplier that can no longer function as a solid backup—‘the process depends on us in principle, because it is our group that makes the sensors. There is another supplier, but they would have to restart again. Then you have a longer delivery time and that supplier cannot weld’ (R9).

10.6 Discussion

10.6.1 *Interaction Outside the Organisation*

The shift in customer contact and the introduction of a lending structure indicate that the engineers in our technical service providers are handling a greater amount of communication with external parties. In addition, the lending structure adds a new party to the standard set of customers and suppliers, while the development in the type of customer that engineers come into contact with (i.e. customer's inhouse programmers) further highlights that there are changes going on with respect to the interactions employees have with people outside the organisation.

Another finding was the lack of such advances within the two production cases. Although engineers address technical issues, the data did not show changes in the role of engineers or of the sales/service department. What was observed (no communication between production and service as well as a clear refusal to share information with competitors) goes against industry 4.0 developments. In the light of the above, we argue that technical service providers will need to pay attention to the social characteristic interaction outside the organisation. Further research is required to investigate whether this dimension remains the same for production organisations, whether it was specific to our two cases, or if we were simply too early to observe any changes in the external interactions for such organisations.

Based on the visible changes within the technical service providers, academics are urged to expand the body of knowledge concerning this dimension since insights into the interaction outside the organisation are currently scarce. The meta-analysis by Humphrey et al. (2007) includes only a single correlation, and articles discussing the future of job design (Oldham & Fried, 2016; Oldham & Hackman, 2010) do not tackle this social characteristic. Stemming from our findings, an interesting research direction would be the inquiry into the types of lending structures that are arising in parallel with industry 4.0 and the consequences of such structures for employees and organisations.

In the introduction, we pointed out that one of the associated expectations of industry 4.0 is the realisation of a far-reaching supply chain cooperation. Our data, however, do not present much evidence for this transition. In addition, a critical element underlying this development (Internet of Things, IOT) hardly showed up in our interviews and when it did, it was in relation to exploration—'what we have done is purely on IOT, we have set up a team that fully focuses on that and initially only pioneers what is out there' (R4). Consequently, the fulfilment of a smart supply chain might, for now, be a bridge too far. We state 'for now' as the example of Bosch (i.e. their obligation to suppliers to place barcodes everywhere) offers a glimpse of what is possible. At the same time, it highlights that when the expectations raised take off, they will create a large digital data flow. Yet the question of to what extent it influences the external interactions remains; will they decrease, increase or be unaffected? Another point of research that the Bosch example suggests is the impact

that the introduction of such a demand creates. In other words, will it strengthen or damage the existing relations and why?

10.6.2 *Teams*

The technical service providers indicated that in an industry 4.0 context, where technology is becoming more complex and interconnected and broadening, an individualistic approach to work no longer functions. Both organisations therefore transitioned to self-steering, multidisciplinary teams with a scrum approach. One element of this approach concerns the (bi)weekly stand-up meetings in which progress and existing hurdles are addressed. As a result, social support has become easier and faster since respondents mentioned the reduction in travel time between departments and knowing who possesses which specialism. It is expected that the extent of feedback from others also increased as, firstly, the stand-ups cover which points are finished (or not) and, secondly, the team members have become dependent on each other for the survival of the team—‘if we do not deliver anything, then the budget will be withdrawn and the team will be dissolved’ (R5). In other words, colleagues now have more opportunities and motives to discuss each other’s job performance.

With regard to task interdependence, one respondent stated that he is not dependent on others in his work as he mostly works independently. The team approach, however, introduces different types of interdependence. As previously mentioned, they are dependent on each other for the survival of the team and individual tasks at some point have to come together at the team level. Given the fact that the concept of teams is hardly considered a new phenomenon, the above might not offer huge innovative insights for the technical service providers (and other organisations) or academia. Yet based on the findings, we want to emphasise two aspects. Firstly, the multidimensionality of the interdependence dimension does not receive the credit it deserves. The increasing use of a team structure places more emphasis on varieties in interdependence, and academics are aware of these multiple facets (Grant et al., 2011; Parker, Wall, & Cordery, 2001). At the same time, the last job design model makes a distinction in autonomy but only focuses on task interdependence (Morgeson et al., 2013). We therefore want to put renewed attention on the message expressed by Grant et al. (2011, p. 441): ‘it is puzzling that other job characteristics have not been seen as multidimensional when related literatures have highlighted multiple facets’. Secondly, one respondent mentioned a social struggle that has arisen as a result of current developments—balancing better information sharing between disciplines on the one hand and maintaining knowledge exchange in the same discipline on the other. Research opportunities are thus reserved for assessing whether this struggle is widely experienced, if the addressed solution can be considered a best practice, or if other methods are adopted.

10.6.3 Physical Assets and Inhouse Production

For both production organisations, the discussions surrounding newly introduced or potential assets stood out with respect to industry 4.0. One organisation shifted to an inhouse production of its sensors, which led to an increase in feedback from others. For example, designs stemming from R&D are not easily produced in bulk. Solving the problem without R&D, as used to be the usual procedure, is apparently not an option here. It resulted in communication, or co-design, between the sensor production and R&D regarding the output of the latter.

The 3D printer introduced by the same organisation resulted in an increase in social support since it offered a cheap and quick manner for designing things. Adjustments are therefore easier to implement, and requesting support from others thus becomes more accessible. A reduction in interdependence was not ensured, however, since employees do not print items themselves, so there was only a shift from an external supplier to the internal 3D printer operator. A similar shift was observed for sensor production. The level of interdependence did change for employees of the renewed powder-coating installation. Finally, the potential application of light or other signals as a means of work instructions is expected to drastically alter social interactions. It would likely simplify tasks to such an extent that most types of interactions will become superfluous, hence the comment, ‘only the tier will be left’ (R11). Production organisations are therefore alerted to keep social influences in mind when introducing such developments. In other words, a reduction in social interactions could be a welcoming solution for certain people (e.g. those with a distance to the labour market), but they also need to be the target group.

The decrease in technology observed in one of our cases also creates future research opportunities. A question that could be asked is if it represents the presence of a counter-movement, or whether the viewpoint of this organisation should be considered an exception that will cause problems in the long term? (e.g. ‘we have many manual activities. That has to do with the numbers and the customer-specific parts. That is why we are still here for if everything is completely automated, you can go to, for example, Romania, because then it will cost nothing’; R10).

10.6.4 From Social to Digital?

The Internet, email, WhatsApp groups, video meetings, SharePoint and software applications such as Apex are a few of the digital tools that were mentioned during interviews with both types of organisations. This highlights the embeddedness of a digital way of interacting in our current way of working. Yet none of the examples are communication methods based on the far-reaching digitalisation that underlies terms like big data, Internet of Things and augmented reality; hence, they do not reflect industry 4.0. Consequently, we could raise the point that we were simply too early to detect a growing digital invasion. However, the acknowledgement of stand-

up, sprint or tier meetings, travelling between locations (in one case, collaboration needs to take place between two different locations which is facilitated by means of a video connection, yet it was stressed that being able to see, smell and feel each other works the best) as well as a supervisor's indication of wanting daily contact with his employees stresses that digital contact has not, and will likely never, fully take over. In other words, social and digital means of contact are expected to coexist since they seem to be used for different reasons. For instance, quick solutions or minimising the interruption of flow versus discussions, not alienate from each other or a lack of digital options. We assume that this dichotomy will persist in an industry 4.0 context. Additional support for the preservation of social contact can be found in the following quote: 'with the what, data often does not lie. But you also have a how. How do people do that? How are people doing? Then you come more towards the soft side. Passion is sometimes very difficult to make smart' (R10).

10.7 Insights and Synopsis

Industry 4.0 is represented by means of the three technology-based developmental streams that currently exist: *connected*, establishment of connections between devices and/or systems within firms and with external parties; *informed*, ability to take greater advantage of the value of information; and *equipped*, availability of contemporary (non)physical assets (Habraken & Bondarouk, forthcoming). The respondents' acknowledgement of the complexity of technology and the observed presence of an exploration stage regarding the first two streams highlighted that the adoption of these streams is not that straightforward. Nonetheless, the perceived complexity has already led to the following findings:

- Extent of interaction with customers increased for the technical service providers. Not only are their engineers more in contact with the customers, the type of customers they deal with has also expanded. It raises the need for organisations to pay attention to, and for academia to conduct more research into the effects of the characteristic interactions outside the organisation.
- A new external party was observed—a hired knowledge expert stemming from the lending structure. This also creates an additional source of social support for the technical service providers. Apart from gaining assistance or advice from supervisors or co-workers, external sources such as competitors are contacted for help. Given its newness, this lending structure creates interesting research possibilities which could also assist practice with identified challenges related to this structure.
- Both technical service providers transitioned to operating in self-steering, multi-disciplinary teams. This transition subsequently led to an increase in social support, and we also expect a growth in the extent of feedback from others given increased team dependency and the stand-up meetings. Though teams are a known structure,

findings raise the issue of multidimensionality of characteristics and an apparent struggle when it comes to team formation.

- A transition to inhouse production of sensors was observed in one of the production organisations, which led to an increase in feedback from others and a shift in the source of interdependence.

Changes to the social work context were also found as a result of the presence of physical assets. The 3D printer within one production organisation resulted in an increase in social support and a shift in the source of interdependence, while the idea of using lights or other signals as work instructions by the other production organisation was expected to reduce the extent of social interaction in general. The direction of intensity change thus varies per technology and means of adoption. Organisations are therefore advised to take the social aspects into consideration during the decision process.

The above insights are represented in Fig. 10.2. It depicts industry 4.0 with the observed abstract terms and the three technology-based developmental streams that underlie them. Each specific stream is represented by more or less spikes depending on the observed implementation level. Industry 4.0, in turn, was found to influence the social context of work in two ways: (1) by altering the intensity or source of current social work characteristics and (2) by introducing new or emphasising known structures. Finally, the vertical arrow indicates that the bottom structures can cause changes to the intensity level.

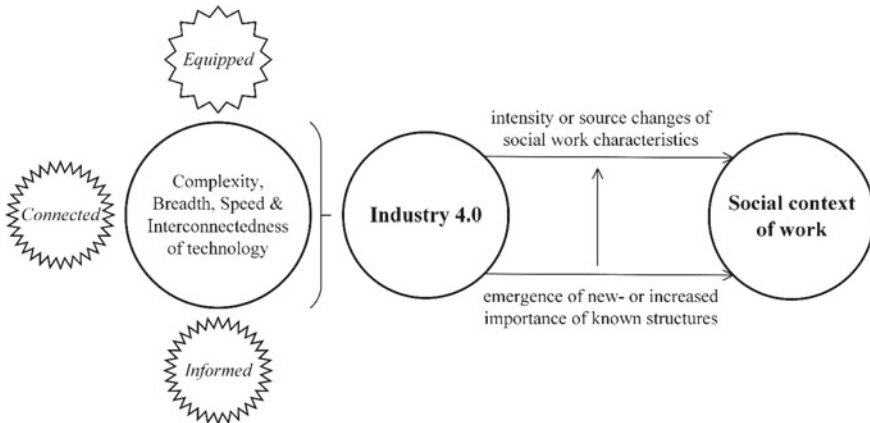


Fig. 10.2 Summary of the chapter. Based on interview data

10.8 Limitations

Given the aim of our study, we have to point out that despite our careful selection, industry 4.0 still seems to be more a subject of research than reality. This finding fits our opinion that industry 4.0 is not the rapid major change that the definition of industrial revolution defines it to be (Habraken & Bondarouk, forthcoming). Yet, it poses a limitation to the current study. Another limitation is the specific focus on the manufacturing industry since industry 4.0 is also applicable to sectors such as healthcare or transport. We expect that the presence of alterations in the intensity of current social work characteristics is applicable to other sectors. For instance, with the introduction of patient coaching platforms, an increase in interaction between physicians, nurses and patients could be assumed.

10.9 Conclusion

In sum, three developments concerning the link between industry 4.0 and the social context of work can be found as well as one general remark. Beginning with the latter, the low presence of industry 4.0 in the selected cases should in our view be classified as a valuable finding as well as a limitation. It stresses that more attention needs to go to the implementation of industry 4.0. Turning to the three developments, we firstly expect that social and digital means of interaction will coexist in an industry 4.0 context. The second and third developments highlight two ways in which industry 4.0 was found to influence the social context of work: altering the intensity/source of current social work characteristics *and* introducing new/emphasising known structures.

Appendix—Interview Protocol

Name of interviewee:

Date:

Location:

Function:

Start time of interview:

End time of interview:

Specifics:

Introduction

Aim: *get to know interviewee, introduce purpose of the interview and mention their rights*

Address:

- Introduction of interviewer
- Research set-up
- Rights of interviewee
- Informed consent
- Introduction of interviewee (function, work experiences, work activities)

Topic X – 1. Feedback from others; 2. Social support; 3. Interaction outside the organisation and 4. Interdependence

Aim: *to gain insights into the experience of characteristic X at the moment and to reflect on the changes in relation to the past, specifically the influence of technology. A standard question for each subject is: "how does this happen?" and / or "what does this look like?"*

Questions:

- How has X changed in the past 5 years? [explain the respective characteristic when necessary]
- In what way has technology played a role in this change?
 - When mentioning smart industry (SI) > inquire about the different technologies and dive into specifics regarding changes of the characteristic and respective SI technologies
 - When SI is not mentioned > search for the cause of change and link to SI when possible

NOTE: when interviewee was an employee, questions adopted the standpoint of their own work. When interviewee was a manager, questions adopted a 'group perspective' (i.e. the department they managed).

Closing

Address possibility for respondent to reflect/offer feedback on their answers

Thank you

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Milou Habraken is PhD candidate at the University of Twente, the Netherlands, in the field of human resource management (HRM). She obtained her Master degree in Business Administration from the University of Twente in 2013 and her Research Master in Economics and Business, profile: Human Resource Management and Organisational Behaviour, from the University of Groningen in 2016. In the period between the two masters, she held a HR function at Landgoedhotel De Wilmersberg (2014). Her PhD research is focused on smart industry (industry 4.0). Herein she examines the label itself—such as its meaning and contribution—and approaches the phenomenon from a HRM point of view. Her particular interest lies in the developments of industry 4.0 with respect to work design. Research of M. Habraken has been published in the book entitled *Electronic HRM in the Smart Era* and presented at various conferences.

Tanya Bondarouk is Professor of human resource management and the Head of the Department of HRM at the University of Twente, the Netherlands. She has been working in the research area of innovating HRM function, with a focus on electronic HRM, and has edited a number of special issues in international journals on this topic. Her main publications concern an integration of human resource management and social aspects of information technology implementations and have appeared in the *International Journal of HRM*, *Personnel Review*, *European Journal of Management and European Journal of Information Systems*. Her research covers both private and public sectors and deals with a variety of areas such as the implementation of e-HRM, management of HR-IT change, HRM contribution to IT projects, roles of line managers in e-HRM, implementation of HR Shared Service Centers. Since 2006 she has been involved in organising European Academic Workshops on e-HRM and International Workshops on HRIS.

Dave Hoffmann obtained his Master degree in Business Administration from the University of Twente in 2018. During his master he worked at Saxion University of Applied Sciences as an education and research assistant in the Smart Industry & Human Capital research group. He currently works as a HR professional at NSG Pilkington in the Netherlands. NSG Pilkington specialises in insulating glass, but aims to become a world leader in the field of glass technology and innovative glass solutions. One of the HR-related challenges Dave Hoffmann faces at NSG Pilkington is the employability of the current employees. What the future brings is unclear, but something needs to be done to make employees future-proof. This challenge has to do with several aspects, for example: new production technologies, business choices and the physical condition of employees.

Chapter 11

Empathy, Morality and Social and Emotional Competencies in Interpersonal Interactions Online



Inmaculada Marín-López, Izabela Zych, Claire P. Monks and Rosario Ortega-Ruiz

Abstract Information and communication technologies are used in education, leisure and working spaces. In those contexts, individuals interact through electronic devices daily, usually for several hours. Individuals and groups communicate, learn and work through cyberspace. They feel, think, act and make decisions while interacting online. Social and emotional competencies, morality and empathy, highly used in informal communication, have been found to be important components of face-to-face interpersonal interactions and new research advancements focus on their role in interpersonal interactions online. These competencies may also play an important role in prosocial versus antisocial interaction online, but research on this topic is still in its early stages. This chapter reviews studies focused on social and emotional competencies, morality and empathy as related to cyberspace. Similarities and differences between face-to-face and online interactions will also be reviewed. This chapter will further present recent findings specifically focused on these competencies as expressed online. Some implications for policy and practice will be discussed, and future research lines will be suggested.

Keywords Online interpersonal interactions · Social and emotional competencies · Empathy · Morality · Online behaviour

I. Marín-López (✉) · I. Zych · R. Ortega-Ruiz
Department of Psychology, University of Córdoba, Córdoba, Spain
e-mail: m02maloi@uco.es

I. Zych
e-mail: izych@uco.es

R. Ortega-Ruiz
e-mail: edlorrur@uco.es

C. P. Monks
School of Human Sciences, University of Greenwich, London, UK
e-mail: c.p.monks@gre.ac.uk

11.1 Introduction

We live connected. In the broadest sense of the word, people talk, make decisions, laugh, suffer and have fun while using electronic devices. According to the Nielsen Report (2018), more than 4 billion people (53% of the global population) are Internet users. The majority of Internet users (92.6%) use mobile devices to connect to the Internet, with many (85%) connecting daily and with increasing frequency, spending more than six hours a day online. Internet access, mobile phone technology and digital innovations are redefining people's interactions. Improvements in security and connectivity contribute to this constant growth in Internet use. Nowadays, people's lifestyles require faster, simpler, easier and digital ways to perform daily activities. Young people are seen to hold an advantage in the use of the Internet, with the term "digital natives" (Prensky, 2005), used to describe those who have been born in a world where technology is frequently used, including also a constant advancement in new technologies.

There are myriad activities that can be performed through electronic devices such as shopping, booking services, watching online content, using social media sites, instant messaging/video calling and online banking. Millions of users spend time on virtual social networks, listening to music, watching videos and playing games online. Electronic devices are considered to be useful tools for informal communication and entertainment, even more so when considering the pace and need for immediacy at which today's society lives and the level of stress of people living in the modern societies.

Young adults are the heaviest users of mobile apps, with those aged 18–34 years being the age-group who spends the largest amount of time using mobile apps (Lipsman & Lella, 2017). The use of mobile apps by young adults is often considered essential for their social activity. A large number of people access online social networking sites or communities in order to make friends, develop relationships and give and receive emotional support (Horrigan, Rainie & Fox, 2005). In fact, communication technologies are used widely for a large number of activities in relation to education, leisure and work among this age-group.

Many variables are involved in shaping human thriving behaviour, and they can be observed in interpersonal interactions. Some of the factors that have been found to be important in influencing thriving via interpersonal interactions and relationships include social and emotional competencies, empathy and morality. According to Gibbs, Basinger and Grime (2003), empathy is crucial for behaviour in terms of considering other people's needs, as well as respecting both current norms and legality. Given the importance of social and emotional competencies, empathy and morality in interpersonal interactions, it is crucial to analyse these variables in relation to online interaction and their influence on human thriving.

11.2 Chapter Objective

This chapter reviews studies focused on social and emotional competencies, morality and empathy in relation to thriving via cyber-behaviour. Similarities and differences between face-to-face and online interactions will be reviewed. This chapter will further present recent findings specifically focused on these competencies as expressed online. Some implications for policy and practice will be discussed, and future research lines will be suggested.

11.3 Interpersonal Interactions Online

The Internet has become a key tool for communication, entertainment and accessing information in modern society. Many of these activities involve interactions between individuals, meaning that interpersonal interactions through electronic devices are constantly taking place. Social and emotional competencies, morality and empathy, highly used in informal communication, have been found to be important components of face-to-face interpersonal interactions (Marín-López, Zych, Ortega-Ruiz, & Hunter, 2018; Marín-López, Zych, Ortega-Ruiz, & Monks, 2019). New research advancements focus on their role in interpersonal interactions online. These variables may play an important role in prosocial versus antisocial interaction online, but research on this topic is still relatively underdeveloped. Prosocial behaviour is understood as those behaviours that aim to be helpful to other people (e.g. helping others, sharing with others, comforting people or cooperating) (Dovidio, 2001). Prosocial behaviours happen when interacting online (Wang & Wang, 2008; Wright & Li, 2011) through online videogames, social networking sites, mail, chats or text messages. Antisocial behaviour is defined as those hostile conducts that aim to attack the welfare of an individual, group or society (Walker, Ramsey, & Gresham, 2004). Antisocial behaviours happen in cyberspace (e.g. cyberbullying, trolling, cyberstalking, flaming or grieving) (Barton, 2016).

Findings from neuroscience show that internal representation of actions is triggered when observing or listening to someone else's actions in both monkeys and humans (Gallese, Fadiga, Fogassi, & Rizzolatti, 1996; Kohler et al., 2002; Rizzolatti, Fadiga, Gallese, & Fogassi, 1996; see Rizzolatti, Fogassi, & Gallese, 2001, for a review). Wicker et al. (2003) demonstrated that similar mechanisms may apply to emotional fields: observing the emotional facial expression of an individual triggers neural activity distinctive to one's own emotional experience. The mirror neuron system allows us to decode and understand other people's actions (Carr, Iacoboni, Dubeau, Mazziotta, & Lenzi, 2003; Decety, 2010; Iacoboni & Dapretto, 2006; Rizzolatti & Craighero, 2004). It is suggested by Carr et al. (2003) that when the brain areas which are related to action representation and emotional content are activated, an individual recognises and empathises with another individual. In this sense, face-

to-face interactions are important for the understanding and shaping of emotional responses.

An individual's accurate perception of another's emotions and feelings is not completely possible when interacting through electronic devices such as instant messaging or email. The inability to see and feel and to be seen and felt could result in fewer social and emotional cues being available, resulting in decreased levels of empathy, and even in biased moral reasoning possibly because of some mechanisms present in cyber-behaviour such as "deindividuation" and "disinhibition" (Silke, 2003; Suler, 2004) that will be described later.

Small and Vorgan (2008) analysed the impact of technology use on the human brain and how the use of electronic devices alters brain function related to individuals' skills. These authors pointed out that frequent use of technologies can have consequences such as poor development of abilities including social skills, direct communication skills and the ability to perceive non-verbal cues. They argue that excessive Internet use contributes to psychological difficulties, such as loneliness, confusion, anxiety, depression, fatigue and abuse, and may even be related to creating or exacerbating social and emotional distance from family and friends. All of these negatively influence individuals' ability to thrive in digital workspaces.

11.4 Social and Emotional Competencies Used in Cyberspace

Social and emotional competencies are defined as effectiveness in prosocial interpersonal interactions and relationships (Gómez-Ortiz, Romera, & Ortega-Ruiz, 2017) including the expression, perception, understanding and management of emotions (Fernández-Berrocal, Cabello, & Gutiérrez-Cobo, 2017). These competencies involve applying knowledge, skills and attitudes to understanding and managing one's own emotions and influencing others' emotions in a prosocial way, while being empathetic and able to initiate and maintain desirable interpersonal relationships and make responsible decisions (CASEL, 2015).

Social and emotional competencies are key to an individual becoming and developing as a good student, worker and citizen, and thriving in general. Also known as "noncognitive skills", these social and emotional competencies are crucial for success and thriving in school and in the workplace (Mattern et al., 2013; National Research Council, 2012). Also, longitudinal studies have shown that increasing these competencies prevents and reduces risky behaviours such as aggression, delinquency, substance use and academic failure (Aspy et al., 2004; Bradshaw, Rodgers, Ghandour, & Garbarino, 2009; Moffitt et al., 2011).

Social and emotional competencies have been studied within the context of online communication, although the number of studies in this domain is still very low. Some research has confirmed that people express, perceive, use and manage emotions during online communication (Bazarova, Taft, Choi, & Cosley, 2013; Kramer, Guillory,

& Hancock, 2014; Zych, Ortega-Ruiz, & Marín-López, 2017). Research has also indicated that online emotional content (termed e-motions) is expressed, perceived, used, understood and managed while interacting online (Zych et al., 2017).

It was also noted that perceiving, using, understanding and managing emotional content online is positively related to some aspects of emotional intelligence such as emotional attention, emotional clarity and perceived emotional intelligence, but was also positively related to difficulties in identifying and perceiving feelings (Zych, Ortega-Ruiz, & Marín-López, 2017). It was reported that social and emotional competencies act as a protective factor, while an excessive use of online emotional content is a risk factor for cybervictimisation (Marín-López, Zych, Ortega-Ruiz, & Hunter, 2018). A high level of social and emotional competencies is related to a high frequency of use of emotional content online. Frequent use of emotional content online is a mediator variable that seems to buffer the desirable effect of social and emotional competencies against cybervictimisation (Marín-López, Zych, Ortega-Ruiz, & Hunter, 2018). Thus, it is possible that a high level of social and emotional competencies contributes to better interpersonal relationships that protect against cybervictimisation. Nevertheless, a high level of social and emotional competencies is also related to a high use of emotional content online which, in turn, is related to more cyberbullying. It was also found that a high level of social and emotional competencies was related to less technology abuse, as defined by Beard and Wolf (2001, p. 378) “use of the Internet that creates psychological, social, school, and/or work difficulties in a person’s life” (Nasaescu, Marín-López, Llorent, Ortega-Ruiz, & Zych, 2018). Furthermore, using emotional content in online communication, bullying victimisation, and perpetration were all positively related to more abuse of technologies. Thus, it seems that an excessive use of emotions in online interactions can be a risk factor for cyberbullying and technology abuse.

Suler (2004) and Silke (2003), respectively, identified two latent mechanisms that might explain changes in cyber-behaviour, via so-called disinhibition and deindividuation. The online disinhibition effect consists of people saying and doing things in online interactions that they would not say or do in face-to-face interactions. Feelings of restraint that may be present in face-to-face encounters may disappear when an individual is in front of a screen, replaced by a freedom of thought and speech. This feeling of “online freedom” can work in two opposite directions, either as benign disinhibition (e.g. sharing personal information or thoughts such as self-emotions, secrets, wishes and desirable behaviours) or as malignant disinhibition (e.g. threats, criticism, rude language or behaviour) (Suler, 2004).

The deindividuation mechanism (Zimbardo, 1969) happens in social situations as a result of becoming part of a group and thereby losing individuality. Once the inner restraint of the individual is lost, the deindividuated state leads them to act freely as if no one is watching or paying attention to them. In a case study of group identification and deindividuation, users of an online site characterised by its large scale and its anonymity, experienced both identification with the site and its users and perceived deindividuation (Mikal, Rice, Kent, & Uchino, 2016). Thus, evidence suggests that social and emotional competencies used in cyberspace could be protective, but could also be a risk factor if they are used in an undesirable way.

11.5 Morality in Face-to-Face and Online Interactions

There are several ways to define and understand morality. Kohlberg (1969) focused on morality in relation to justice, while Gilligan (1982) added a care-based perspective to Kohlberg's definition of morality, understanding it also as caring about personal relationships and community. There is a certain agreement regarding morality referring to how well or how badly people treat each other. Turiel (1983, p. 3) defined a moral domain as "prescriptive judgments of justice, rights, and welfare pertaining to how people ought to relate to each other". There is also a social convention or personal choice domain that does not involve values such as "justice, rights and welfare" and therefore can change according to the context or situation (Turiel, Hildebrandt, & Wainryb, 1991).

Some cross-cultural studies focused on different countries including India (Shweder, Mahapatra, & Miller, 1987), Brazil and the USA (Graham, Haidt, & Nosek, 2009; Haidt & Hersh, 2001; Haidt, Koller, & Dias, 1993; Jensen, 1998) found that many moral concerns are related to rules in social hierarchy and moral expectations of loyalty towards a community or nation (Graham et al., 2011). Thus, there are different perceptions of morality depending on culture, social status, politics and even time period. Nevertheless, there is also a broader definition of the moral domain that, to some extent, seems to be universal.

Haidt and Kesebir (2010) proposed a functional definition of moral systems as an intertwined set of psychologically evolved mechanisms, values, conventions, identities, technologies and institutions that contribute to make social life possible by restraining or managing selfishness. It is inferred that human morality emerges from both cultural innovations and hereditary coevolution (Richerson & Boyd, 2005), finding different ways to foster the potential of the human mind to build communities far from selfishness. People internalise moral norms and values within a context through different cognitive processes that require some self-regulation of behaviour. In morally competent people, moral behaviour is regulated and an assessment of one's own behaviour taking into account its consequences for self and others. People self-regulate their behaviour through the application of consequences to themselves, trying at the same time not to damage their own self-esteem and self-satisfaction (Bandura, 2002). As a result, an individual can differentiate morally desirable and undesirable behaviours. Nevertheless, there are some cognitive mechanisms that might be applied to some behaviours that do not seem to be morally desirable, through which people disengage from moral principles. Moral disengagement refers to a set of mechanisms that people use to justify their immoral or harmful behaviours in order to avoid self-punishment for moral transgressions (Bandura, 2002).

Cyberspace is characterised as being a virtual space where different virtual scenarios are possible. In that sense, it is a space with, at least, potential for moral ambiguity, which refers to the absence of certainty about what is right and what is wrong. Since interpersonal interactions are established through Internet, morality is also expected to play a role in these relationships, but it may be that cyberspace is considered differently, as "not real life" and so the line between right and wrong

blurs. An example of this potential moral ambiguity is demonstrated by an episode that happened in an online community called LambdaMOO. In that community, a virtual rape occurred when a user called Mr. Bungle, using a programme to act as if he was another character, described sexual acts performed between other avatars. His actions were considered to be a sexual violation of the characters who were forced to act sexually (see Turkle, 1995). This upset some users involved while other users asserted it was only a game. As a result, Mr. Bungle's account was deleted.

Morality, as in other human behaviours, is present in cyber-behaviour. Thus, cyberspace has become a new context for moral and immoral actions. There is evidence supporting moral disengagement when interacting online (Runions & Bak, 2015) regarding for example some violent phenomena such as cyberbullying and cyber-aggression (Gini, Pozzoli, & Hymel, 2014). In a recent study (Marín-López, Zych, Ortega-Ruiz, & Monks, 2019), moral disengagement when using technology was studied and an instrument for its measurement was created and validated. Some interesting results showed in the above-mentioned study are that significant and positive relationships between moral justification through technologies (using excuses to justify reprehensible and destructive cyberconduct) and online empathy (including both affective and cognitive dimensions) were found. Online cognitive empathy was also positively and significantly related to overall levels of moral disengagement through technology. Pornari and Wood (2010) examined how cyberspace may encourage moral disengagement by creating an illusion of actions not causing harm based on the inability to see the reaction of the cybervictim and also the distance between the cyberperpetrator and the cybervictim. This has led Pornari and Wood (2010) to argue that cyberspace has some particular structural characteristics that could foster the use of moral disengagement mechanisms and, consequently, increase the occurrence of cyber-aggression.

Haidt (2003) defined moral emotions as those originated as a response to moral violations and also those that trigger moral actions. This means that moral emotions are expected to emerge when observing immoral actions (that trigger anger and standing up for the victim's rights) or as a self-regulation mechanism (triggering shame and guilt, and stopping the immoral action). Some studies have examined the mediating role of moral emotions in the relationship between moral standards and moral behaviour (Olthof, 2012; Tangney, Stuewig, & Mashek, 2007). Moral emotions have proven to be a useful element when anticipating negative outcomes of moral transgressions in order to subsequently adjust moral behaviour to moral standards (Malti, Gasser, & Buchmann, 2009).

Morality might be a part of both face-to-face and virtual life and moral disengagement might not only be present in interpersonal face-to-face but also in online interactions. Our individual level of morality is important in influencing the ways in which we perceive and respond to others and clearly has implications for our social interactions, be they in person or mediated via new technologies. Similarly, although individual propensities to moral disengagement impact on social interactions, certain characteristics of cyberspace may actually amplify some of the moral disengagement mechanisms.

11.6 Empathy in Face-to-Face and Online Interactions

Empathy is a complex construct defined as “understanding and sharing another’s emotional state or context” (Cohen & Strayer, 1996, p. 988). Empathy is usually divided into two dimensions: cognitive empathy, understood as the capacity for understanding other peoples’ emotions; and affective empathy, which is the capacity for experiencing and sharing other people’ emotional states (Jolliffe & Farrington, 2006). Affective empathy is developed during childhood. It works through mirroring and emotional resonance during interactions between the children and social agents from their context. There is empirical evidence that observing someone experiencing an emotion activates the same neuropsychological regions that are activated when experiencing an emotion in oneself (Decety, 2011; Walter, 2012).

Later in childhood, children develop the capacity to take another person’s perspective. This capacity is a requirement for the development of mature empathetic responses (Decety, 2011). Mature empathetic responses require both self-conscious and perspective-taking cognitive processes. Usually, affective and cognitive empathy co-occur when empathetic responses take place (Walter, 2012). Empathy is positively related to intelligence, extraversion, agreeableness, conscientiousness and openness (Jolliffe & Farrington, 2006) while low empathy levels are related to anti-social behaviours (Jolliffe, & Farrington, 2004; Zych, Baldry, Farrington, & Llorent, 2019). Moral reasoning, prosocial reasoning and empathy are positively interrelated (Retuerto, 2002). Since all these constructs are involved in affective and cognitive processes and are positively interrelated, it seems that a positive relationship exists between affective and cognitive processes in an individual’s moral development (Retuerto, 2002).

Empathy may also play an important role in cyber-behaviour. Small and Vorgan (2008) stated that online interactions decrease face-to-face empathy and the amount of time spent in face-to-face interactions. They suggest that this decrease in face-to-face empathy may be because non-verbal communication cues such as facial expressions, body language or eye contact are usually absent in online interaction, which are considered to be crucial elements to perceive and understand emotions.

However, Carrier, Spradlin, Bunce and Rosen (2015) suggested that it is possible to show “virtual empathy” through online communication and argue that interacting online does not seem to decrease people’s empathy in face-to-face interactions. These authors even found that spending time in cyberspace on activities that could promote later face-to-face interactions can even foster face-to-face empathy. Significant and positive correlations between face-to-face empathy and virtual empathy were found, with virtual empathy scoring lower than face-to-face empathy (Carrier et al., 2015). They also found that affective empathy showed lower scores than cognitive empathy, and cognitive empathy’s scores decreased more in the cyberspace than the affective ones. In this vein, research has indicated that online empathy exists and an instrument for its measurement has been created and validated (Marín-López et al., 2019). Caplan and Turner (2007) go further by proposing that empathy could be facilitated or even increased by communication through electronic devices. For example, it is often

easier to find other people online who are in similar situations to yourself and this can be especially comforting, particularly when the topic is difficult to address in face-to-face interactions (Van Zalk, Van Zalk, Kerr, & Stattin, 2014). However, other evidence suggests that being exposed to violent video games is a causal risk factor for decreased empathy and prosocial behaviour, as it is for increased aggressive behaviour (Anderson et al., 2010).

In short, it seems that empathy does exist in online interpersonal interactions. It is possible that some online activities can foster people's empathic response in both face-to-face and virtual interpersonal interactions (e.g. if the Internet is being used to connect with people with similar interests or to be a part of certain communities where people feel protected and comfortable). Or it can decrease empathy within face-to-face encounters (e.g., if an individual spends several hours exposed to violent online games, they may become desensitised to violent behaviour offline).

11.7 Implications for Humans Thriving in Digital Workspaces

The digital revolution and Industry 4.0 are redefining the nature of jobs, workplaces and human behaviour. This has meant that citizens must try to fit into the digital era by readapting and/or developing new sets of competencies. Demands and challenges arise; some people struggle to fit in with this digital age while others experience success and thrive. The review carried out in the present chapter has focused on gathering empirical findings about the role of social and emotional competencies, empathy and morality in cyber-behaviour and consequently their role in the digital workspace.

Social and emotional competencies, empathy and morality have proven to be crucial elements for humans to thrive in different workspaces (Bar-On & Parker, 2000; George, 2000; Mattern et al., 2014; National Research Council, 2012; Salovey & Mayer, 1990). Findings from the fields of affective neuroscience and emotion have noted that emotions and the functioning of the human mind are innately interconnected (Izard, 2009; Lewis, 2005; Tucker, 2007). The interconnection between cognition and emotion is undoubted, as is the level of complexity of human consciousness. The interplay between emotional activity and cognition enables mechanisms such as memory and attention to develop appropriately which facilitate learning (Tucker, 2007). Thus, social and emotional competencies, empathy and morality are key elements in educational settings, not just because of their role in human development, but also because of the importance of emotionality in learning itself.

Schools have an important role in preparing children and young people to be future citizens and workers. Promoting students' academic, social and emotional learning will contribute to supporting rounded and competent students with positive social and emotional competencies, work habits, meaningful careers and levels of citizenship (Dymnicki, Sambolt, & Kidron, 2013). Research has highlighted (e.g. CASEL, 2015;

Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011) the need for fostering social and emotional competencies in school in order to prepare individuals in both work and life. These competencies are expressed in a certain way in face-to-face interactions and, as this chapter shows, can be expressed, used and managed in a different way in cyberspace. In this sense, it is necessary to further advance knowledge and understanding of human behaviour in digital workspaces in order to promote positive aspects, as well as acknowledging and preventing possible risks of cyber-behaviour.

Educational actions that explicitly focus on social and emotional competencies, morality, moral disengagement and empathy would be beneficial for individuals at both the intrapersonal and interpersonal level. It is advisable that promoting social and emotional learning (SEL) is understood as an aspect of lifelong learning, starting in nursery school and extending to postgraduate educational levels, including approaches focused on the workplace involving digital character education. It is vital to understand the differences between the expression and use of social and emotional competencies in face-to-face and online encounters as well as examining face-to-face and online empathy and face-to-face and online morality. Understanding the potential and risks of these elements is key.

Social and emotional learning includes the acquisition and effective application of knowledge, attitudes and skills to understand and regulate emotions, set and reach goals, feel empathy and be able to show it, establish and maintain positive relationships and make responsible decisions. We recommend that complementary training is developed, relating to these social and emotional competencies in virtual interpersonal interactions focusing on morality and tackling moral disengagement in cyberspace. It is possible that understanding cyberspace as an extension of face-to-face interactions rather than as a separate context with no connection to face-to-face interactions could help to promote more careful consideration of human behaviour and the consequences of this behaviour when interacting through electronic devices.

Such an educational enterprise entails a great responsibility and is a considerable challenge. Educators, teachers and every individual related to educational settings must be correctly trained before training other individuals. New educational opportunities continue to emerge in the online environment, and they must be addressed in order to prepare citizens for happy and productive lives in a technological world that is constantly evolving.

11.8 Insights and Synopsis

In the age of digital communication and in the light of the massive use of electronic devices by adolescents, cyber-behaviour has become an online part of young people's life and social relationships. Social and emotional competencies, empathy and morality are important in both face-to-face and online interactions. They are relevant for success in school and in the workplace (Mattern et al., 2014; National Research Council, 2012) and have been found to prevent and reduce risky behaviours such

as aggression, delinquency, substance use and academic failure (Aspy et al., 2004; Bradshaw et al., 2009; Moffitt et al., 2011). They have a protective role for cybervictimisation and technology abuse. Research studies examining the emotional aspects of cyber-behaviour, using measures of emotional intelligence, are demonstrating that an excessive use of online emotional content is a risk factor for cybervictimisation as it is for abuse of technologies (Marín-López et al., 2018; Nasaescu et al., 2018). Beyond the possible requirement of finding other means of measurement, current studies suggest that social and emotional competencies used in cyberspace could also be a risk factor if they are used in an undesirable way (Mikal et al., 2016; Silke, 2003; Suler, 2004).

Research has also noted that morality and moral disengagement are important aspects of face-to-face and virtual interactions (Gini et al., 2014; Marín-López et al., 2019; Pornari & Wood, 2010; Runions & Bak, 2015). It has been argued that cyberspace is a space where different virtual scenarios are possible, and this can lead to moral ambiguity when trying to establish what is right and what is wrong.

Moral disengagement may occur when interacting online (Runions & Bak, 2015) and has been found to be particularly relevant for some violent phenomena such as cyberbullying and cyber-aggression (Gini et al., 2014). Significant and positive relationships between moral justification through technologies and online empathy (including both affective and cognitive dimensions) were found (Marín-López et al., 2019). It was also found that online cognitive empathy was positively and significantly related to overall levels of moral disengagement through technology. Since the stimuli and the emotional responses are different in an “emotionally cold” environment such as electronic devices, this may favour the greater ease of moral disengagement.

In this sense, it might be that the emotional aspect of the interaction may be a causal factor in the diversity of moral attribution. It might be that an individual’s physical presence in an interaction means that the emotional content of the interaction is more apparent, but when the interaction is mediated through an electronic device, this is less visible. An individual level of morality impacts on people’s social interactions, in person or mediated via new technologies. Similarly, individual propensities to moral disengagement also influence people’s social interactions. Thus, new research lines are focused on discovering the impact of both social mediation in general and social mediation through digital devices.

Empathy is key in developing mature interpersonal relationships (Decety, 2011). It is positively related with intelligence, extraversion, agreeableness, conscientiousness and openness (Jolliffe & Farrington, 2006) while low empathy is related with antisocial behaviours (Jolliffe & Farrington, 2004; Zych et al., 2019). It appears that empathy does exist in online interpersonal interaction (Carrier et al., 2015; Marín-López et al., 2019). Research has indicated contradictory findings showing that in some circumstances online interaction can even foster face-to-face empathy (Caplan & Turner, 2007), while in others it can act to decrease face-to-face empathy (Anderson et al., 2010; Small & Vorgan 2008). Empathy, a neuro-emotional and cognitive product, seems to be working slightly differently in online as opposed to face-to-face interactions. Carrier et al. (2015) found significant and positive correlations between

face-to-face empathy and virtual empathy, although virtual empathy scores were lower than the face-to-face ones. They also found that affective empathy showed lower scores than cognitive empathy and that cognitive empathy online decreased more in the cyberspace than affective empathy scores.

Similarities between the above-mentioned components of human behaviour in online and offline interactions might be explained by the capacity of maintaining social and emotional competencies, empathy and morality fully “activated” when interacting online. Differences may be due to the lack of normal face-to-face communication cues such as facial expressions, body language or eye contact which are absent in online interaction. The role of these offline communication cues in perceiving and understanding emotions together with the “emotional coldness” that may characterise online communication by making the user distanced or even emotionally disconnected from the individual on the other side of the screen could provide some explanation for these differences.

11.9 Conclusion

Despite the promising findings that advanced knowledge on emotions, social and emotional competencies and morality in online communication, further research is needed. A better understanding of these aspects is needed in order to support thriving and flourishing in digital workspaces. Future workers and citizens must be able to manage emotions, social and emotional competencies, empathic behaviour and morality when interacting through electronic devices. School and lifelong learning are key tools for achieving this aim. Future research lines could focus on carrying out prospective longitudinal studies of the online dimension of social and emotional competencies, morality and empathy. It would also be interesting to conduct this kind of research in different countries in order to facilitate cross-cultural comparisons.

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Inmaculada Marín-López is a Doctoral Student, with a FPU/2015 (Training of University Professors) grant from the Spanish Ministry of Education, Culture and Sport (Spanish Government). She currently works at the Department of Psychology at the University of Cordoba (Spain). She studied a Master Degree in Psychological Intervention and Research in Health, Justice and Social Wellbeing. She is a member of a research project (PSI2015-64114-R) granted to Dr. Zych by the Spanish Ministry of Economy and Competitiveness within the I+D+I 2015 National Programme for Research Aimed at the Challenges of the Society (RETOS). She is a Member of the Laboratory of Studies on Convivencia and Violence Prevention (laecovi.com). Her research interests focus on online emotional content, moral disengagement and cyberbullying. She has made several conference presentations and publications including journal articles and book chapters.

Isabela Zych (Ph.D.) is Associate Professor at the Department of Psychology in the University of Cordoba (Spain) and Member of LAECОВI research team (laecovi.com). She studied psychology at the Jagiellonian University (Poland) and the University of Granada (Spain) and she earned her Ph.D. in psychology from the latter. She is Visiting Scholar in the Institute of Criminology, Cambridge University. Her main research interest focuses on bullying and cyberbullying, with particular attention to personal and contextual protective factors. She has led and participated in different research projects on these topics, has been an invited speaker in international conferences and has published various journal articles related to the topic. Her undergraduate teaching and Ph.D. supervision are mostly related to the school climate and competencies that protect children against bullying and cyberbullying.

Claire P. Monks (Ph.D.) is a Reader in Developmental Psychology and Head of the Applied Psychology Research Group at the University of Greenwich (UK). Her research interests lie in the development of aggressive behaviour in childhood. She has published on aggression in early childhood and cyberbullying and dating violence during adolescence. She is interested in applying diverse approaches to the study of peer-relations among young people and has employed methods such as social network analysis to understanding aggressive and defending relations between children. She is interested in the development of social cognition in relation to behaviour, in par-

ticular executive functions as predictors of aggression and prosocial behaviour. She has research links with international colleagues and has published collaboratively with colleagues in Europe, Asia and South America.

Rosario Ortega-Ruiz (Ph.D.) is a Ful Professor of Psychology at the University of Córdoba. She has more than 25 years of research experience in interpersonal relations and development of social and emotional competencies. She is an expert on children's play and social knowledge construction, bullying and cyberbullying, as well a dating violence. She is the Director of the Laboratory of Studies on Convivencia and Violence Prevention (laecovi.com) and Vice President of the International Observatory on School Violence. She has published more than one hundred and fifty scientific articles and other peer reviewed publications. She is Member of different national and international evaluation panels in a number of EU and Spanish agencies. She has been the director of the Postgraduate Research Programme of the University of Cordoba for 10 years.

Part IV

Factors of Diversity and Human Thriving

Part IV of this book collection highlights compositional differences among people and collectives that need to be considered for thriving interventions in digital workspaces (*see* Deas, Chap. 12; Naim and Bulinska-Stangrecka, Chap. 13; Nel, Chap. 14; Bernstein, Chap. 15). The part explores factors of surface-level diversity (e.g. differences in experiences relating to gender, age, race and generational groups) as these pertain to issues of deep-level diversity (i.e. group-level differences in terms of intra-personal or psychological attributes relating to thriving and flourishing). Factors of functional diversity in terms of the variety of backgrounds and experiences of members in societal context are also explored in this part of the book.

Key Emerging Issues for Research

- Research on the relationship between psychological contract fulfilment and thriving in digital workspace contexts for diverse groups of workers.
- Extended research on societal values and beliefs of the emerging *digital natives*' generational cohort in order to map the antecedents of the psychological contract for this generational cohort.
- Research on factors such as top leadership support, as a mechanism to embrace social media in the culturally and generational diverse digital network organisation.
- Research on social media use at workplace, workplace collaboration and organisational commitment drivers as antecedents of human thriving for millennials.
- Extended research on group differences regarding personal and job resources for human thriving and flourishing in digital workspaces.
- Research on inhibiting factors that may thwart diverse groups of individuals' ability to thrive in the era of digitalisation.

Key Emerging Issues for Practice

- Organisational practices that support the psychological contract expectations and needs of digital natives, as well as the needs of diverse groups of workers (i.e. generations, age, gender, job tenure, job level, race and gender) in digital workspaces
- Organisational conditions and practices that support workers of diverse groups in adopting new technology
- Interventions to identify high-risk groups (non-flourishers) and improve their levels of emotional intelligence and psychological capital.
- Interventions that focus on improving employees' coping competence, stress management skills, emotional management and emotional resilience.
- Interventions that focus on developing hope, optimism, self-efficacy and resilience in diverse groups of workers.
- Interventions to upskills at a number of critical levels, most crucially at the levels of improving education and eliminating intersectional and educational disadvantages of diverse groups that potentially thwart thriving in Industry 4.0 workplaces.

Chapter 12

Mapping Antecedents of the Psychological Contract for Digital Natives: A Review and Future Research Agenda



Alda Deas

Abstract The concept of the psychological contract (PC) refers to an individual's perception regarding the expectations and obligations of a reciprocal exchange agreement between the individual and the organisation. This chapter will undertake a narrative review of psychological contract research, focusing on former conceptualisations and empirical results specifically focusing on the expectations and obligations of different generational cohorts as aspects of their thriving. The synthesis of previous results lays the foundation for mapping the expectations and obligations of the emerging digital natives in terms of their psychological contract. This discussion is focused around employees' expectations and obligations against the backdrop of the Fourth Industrial Revolution in order to ensure that they thrive in the new digitised workplace. The findings of this review can be used to provide directions for future research in the psychological contract, generational diversity and Industry 4.0 by proposing a research agenda.

Keywords Psychological contract · Industry 4.0 · Generational cohorts · Baby boomers · Generation X · Millennials · Digital natives

12.1 Introduction

The contemporary workplace has experienced tremendous change in recent times (Chernyak-Hai & Rabenu, 2018). These changes include advancement in digitalisation of technologies including the Internet of People, Things and Services (IoPTS) (Simmers & Anandarajan, 2018), robotics, data analytics and cloud computing (Sung, 2018), which is commonly referred to as the fourth stage of the industrialisation process, Industry 4.0 (Schneider, 2018; Working Group Industrie 4.0 2013) or the Smart Industry (Habraken & Bondarouk, 2018).

A. Deas (✉)

Department of Human Resource Management, University of South Africa, Pretoria, South Africa
e-mail: deasaj@unisa.ac.za

The concept of Industry 4.0 has been extensively explored from a technical perspective; however, researchers and academics from the field of human resource management (HRM) has not yet focused much attention on the impact of Industry 4.0 on the workplace and its people (Habraken & Bondarouk, 2018; Schneider, 2018).

12.2 Chapter Objective

The objective of this chapter is to stimulate and guide human resource management (HRM)-related research by specifically focusing on the psychological contract of diverse generational cohorts in this digital era. Previous researchers have viewed the psychological contract as a valuable concept in understanding changes to the employment relationship as a result of changing economical and organisational conditions (Agarwal & Gupta, 2018; Anderson & Schalk, 1998; Guest, 2004).

Farnese, Livi, Barbieri and Schalk (2018) postulate that the accumulation of uncertain environmental conditions, labour market mobility and the continuing changes in organisational structures and processes, impact the employee–employer relationship and human thriving in general. Lub, Bal, Blomme and Schalk (2016) also suggest that these organisational and societal changes have a significant bearing on HRM and the manner in which employers should manage a diverse generational workforce, characterised by different perceptions on the employment relationship and the psychological contract.

Though research on the topic of generational differences has been widely explored, very few papers address the emergence and impact of the youngest generation, Generation Z (digital natives), entering the workforce (Christensen, Wilson, & Edelman, 2018). There is also a dearth of research focusing on generational cohorts from a psychological contract perspective (Lub et al., 2016). This chapter therefore critically examines the present literature to briefly assess the psychological contract of the generational cohorts currently in the workforce, namely the Baby Boomers, Generation X, the Millennials as well as the emerging digital natives cohort.

The chapter contributes to the literature by responding to calls on more research in terms of the emerging digital natives cohort (Nichols & Wright, 2018) by specifically focussing on the antecedents of the psychological contract of this generational cohort. The distinctive characteristics of the digital natives cohort raise many theoretical questions for the field of HRM and specifically psychological contract theorists and HRM practitioners. Linking the psychological contract theory to the various generational cohorts will allow us to determine the content and characteristics of each of the various cohorts and specifically the emerging digital natives cohort. The next section provides a conceptualisation of the psychological contract theory.

12.3 The Psychological Contract

The psychological contract theory has customarily been understood in light of the Social Exchange Theory (SET) (Blau, 1964) as conceptual basis (Coyle-Shapiro, Costa, Doden, & Chang, 2018). The main assumption of the SET is that bilateral exchanges are made between two parties, where the parties will adjust their contributions made in order to maintain a balanced relationship (Barbieri, Farnese, Sulis, Dal Corso, & De Carlo, 2018; Blau, 1964). Expanding on the SET (Blau, 1964), Adams (1965) developed the Equity Theory (ET), proposing that parties to an exchange relationship are ruled by inputs and outcomes. Inputs refer to the qualities that an individual contribute to an exchange relationship, whereas outcomes refers to the recompenses received by an individual in return for their inputs (Gray, 2018). Adopting both the SET (Blau, 1964) and ET (Adams, 1965), the psychological contract can consequently be referred to as a social exchange process where both parties to the exchange relationship modify their inputs or contributions in return for reciprocal outcomes in order to maintain a balanced working relationship and a mutually understood psychological contract. Positive reciprocal outcomes allude to human thriving for both employees and employers (Barbieri et al., 2018; Cooper-Thomas, Van Vianen, & Anderson, 2004; De Vos, 2002).

In contrast with the formal contract of employment, the psychological contract is subjective (Joeng, Kurnia, Samson, & Cullen, 2018; Rousseau, 1989) and dynamic (Person & Wasieleski, 2015) in nature as it is concerned with an individual's subjective perceptions in terms of the reciprocal inputs and outcomes of the exchange relationship (Coyle-Shapiro et al., 2018; McGrath, Millward, & Banks, 2015) and constantly changing and evolving due to the changing perceptions and experiences of individuals (Person and Wasieleski, 2015). This subjective and dynamic nature of the psychological contract therefore results in parties to an exchange relationship having different perspectives relating to the terms of the psychological contract (Obushenkova, Plester, & Haworth, 2018), and consequently also have an impact on the formation of the psychological contract (Karagonlar, Eisenberger, & Aselage, 2016). An individual's psychological contract is formed on the basis of information collected from numerous sources (Bordia et al., 2015; Dick, 2006; Rousseau, 1995) including, for example, discussions with recruiting agents, supervisors, fellow employees or managers of the organisation (Coyle-Shapiro et al., 2018; Rousseau, 1995). Ultimately, the formation of the psychological contract may already start before the onset of employment on the basis of an individual's professional norms and societal beliefs (Rousseau, 2001).

Though there is an unlimited range of psychological contract types, most psychological contracts can be clustered in terms of transactional and relational contracts (Griep, Wingate, & Brys, 2017; Lub et al., 2016; Rousseau, 1990). Agarwal and Gupta (2018) refers to a transactional contract as a short-term agreement that includes explicit beneficial outcomes that are greatly economic or monetary in nature. In contrast, the relational contract is a long-term agreement comprising open-ended agreements such as socio-emotional and financial outcomes; however, it excludes

explicit performance-reward agreements (Agarwal & Gupta, 2018). These two types of contracts (see Table 12.1) can be differentiated based on their time frame, stability, scope, focus and tangibility (Coyle-Shapiro et al., 2018; Coyle-Shapiro & Parzefall, 2008). Table 12.1 illustrates how the two types of psychological contracts can further be differentiated (Deas, 2017; O’Donohue, Martin, & Torugsa, 2015; Rousseau, 1995):

Griep et al. (2017) has argued that the legitimacy of the transactional psychological contract is based on legal, rational and or reasonable principles; whereas the relational psychological contract is normally socio-normative and based on moral legitimacy. In transactional psychological contracts, specific tasks are required in return for specific tangible or financial rewards (Jeong et al., 2018) and hence, trust, commitment and attachment are concerns that are not present in transactional contracts (Seopa, Wöcke, & Leeds, 2015).

Relational psychological contracts are characterised by elements of loyalty and sustainability of long-term relationships (Manxhari, 2015). The main objective of a relational psychological contract is to build a lasting relationship that is mutually beneficial for both parties to the exchange agreement (Gardner et al., 2015) and therefore the elements of trust, commitment and attachment are present in relational contracts (Agarwal, 2015). According to Rousseau (1989), the psychological contract should be viewed on the basis of a continuum where transactional and relationship contracts are at opposite ends of the continuum. Therefore, the more transactional a psychological contract is, the less relational the psychological contract is, and vice versa (Coyle-Shapiro et al., 2018; Millward & Hopkins, 1998).

Table 12.1 Interpretive framework for psychological contracts

Contract type	Transactional PC	Relational PC
Salient beneficiary	Self	Joint (self and organisational community)
Content focus	Economic, material, such as pay in exchange for hours worked	Socio-emotional, non-material, such as job security in exchange for loyalty
Organisation’s obligations	Provide continued work, safe working environment, fair compensation	Provide training, career development, promotion opportunities, job security
Individual’s obligations	Fulfil specified requirements	Fulfil generalised requirements, loyalty, commitment, organisational citizenship behaviour
Scope and tangibility	Narrow, specific, observable, non-flexible reciprocity	Pervasive, less specific, subjective, flexible reciprocity
Stability and duration	Static, close-ended, specific time frame	Dynamic, open-ended indefinite time frame

Source Author’s own work

Individuals develop a mental schema based on different sources such as pre-employment and professional norms as well as societal influences (Rousseau, 2001). Previous researchers have focused on the significance of individual differences in the development of this mental schema; however, limited attempts have focused on a conceptual model that connects the psychological contract with individual differences (Griep et al., 2017). Lub et al. (2016) postulates that employees from different generational cohorts have different mental schemas in terms of the environments that they work and live in. The different mental schemas of the various generational cohorts can subsequently have an influence on the individual psychological contract of each generational cohort through the development of generation-specific employer outcomes (Lub et al., 2016). Therefore, grounded in Equity theory (Adams, 1965), the focus of this chapter centres on how different generational cohorts are likely to differ in terms of the inputs and outcomes of the psychological contract. Sakdiyakorn and Wattanacharoensil (2018) posits that generational cohorts are grouped together based on their historical and sociocultural contexts. Subsequently, this chapter will briefly review the antecedents of the psychological contract of the three generational cohorts (Baby Boomers, Generation X, and Millennials) currently in the workforce by referring to the societal beliefs of the different generational cohorts. The antecedents of the psychological contract of the new emerging digital natives cohort will then be mapped by reviewing the literature on the societal beliefs of this specific generational cohort.

12.4 Generational Cohorts

Christensen et al. (2018) posits that the concept of generational cohorts are not a new topic; however, the subject of exploring generational differences is currently a popular debate involving economic and political interest (Pyöriä, Ojala, Saari, & Järvinen, 2017). The concept of generational cohorts was originally defined by Mannheim (1952) as individuals who share common understandings and uniqueness in terms of their reactions (Ignatius & Hechanova, 2014). A generation furthermore refers to individuals, born in the same time period and sharing mutual formative events during their developmental years, and as a result, share values, perceptions and attitudes that are alike (Naim & Lenka, 2018; Kupperschmidt, 2000). Consequently, individuals from one generational cohort will differ from another generational cohort in terms of how they act and respond (Deas, 2017; Gursoy, Maier, & Chi, 2008). A generational cohort is normally 15–25 years of a specific time period (Christensen et al., 2018; Eastman & Lui, 2012; Schewe, Meredith, & Noble, 2000); however, the start and end birth years are fluid in nature (Nichols & Wright, 2018) and may therefore fluctuate as a result of the external events that define it. Table 12.2 below illustrates the relative birth years for each generational cohort currently in the workforce (Nichols & Wright, 2018).

Table 12.2 Birth years of each generational cohort

Generation	Birth years
Baby Boomers	1944–1964
Generation X	1965–1980
Millennials	1981–1995
Digital natives	1996–present

Source Author's own work

12.4.1 *Baby Boomers*

This generational cohort originated from the period after World War II (Nichols & Wright, 2018) with war veterans thankful to be alive and focused on creating live as an alternative to taking it away (Christensen et al., 2018). Baby Boomers were raised in a relative positive era characterised by opportunities for growth and development (Kleinhans, Chakradhar, Muller, & Waddill, 2015). Raised by wartime parents, who had experienced civil injustices, Baby Boomers were encouraged to embrace their hard-fought freedom and to think as individuals, expressing themselves and to be the change that they want to see in the world (Christensen et al., 2018; Sherman, 2006).

A significant characteristic of this generational cohort is that they recognise work as an extension to their self-worth and contributing financially to their abundant lifestyle (Jones, Murray, & Tapp, 2018). Consequently, Baby Boomers divorced easily and they redefined the family structure to non-traditional households (Hicks, Riedy, & Waltz, 2018; Lowe, Levitt, & Wilson, 2008). Baby Boomers experienced a lot of societal changes (Hicks et al., 2018) including assassinations, riots, wars, protests and conflict (Christensen et al., 2018). Previous researchers have characterised Baby Boomers as loyal, hardworking employees, team players who keep their individualism, ambitious, orientated towards achievement and competitive in nature (Hayes, Pars, McNeilly, & Johnson, 2018). They are also seen as committed employees portraying a strong work ethic (Nichols & Wright, 2018).

12.4.2 *Generation X*

Generation Xers are the smallest generation up to date who witnessed their workaholic Baby Boomer parents being downsized (Hoole & Bonnema, 2015; Lowe et al., 2008). Their childhood was characterised by a changing society with increasing divorce rates as well as working mothers and therefore they were nicknamed the latchkey generation—a generation deprived of continuous adult supervision (Hicks et al., 2018; Jones et al., 2018; Salahuddin, 2010). Christensen et al. (2018) postulate that the 1970s and 1980s encompassed rising oil prices and large scale layoffs, resulting in most of the Generation Xers raised in poverty.

Generation Xers saw the collapse of the Soviet Union, epidemic outbreaks such as HIV/Aids and the introduction of technology such as mobile phones and television and the first personal computers (Christensen et al., 2018; Jones et al., 2018). This generation has been referred to in both a positive and negative manner in terms of their culture, values and morals (Hicks et al., 2018). With their parents being absent, Generation Xers had to survive on their own, making them brutally independent, pragmatic, and prone to takings risks (Christensen et al., 2018; Sherman, 2008). Kleinhans et al. (2015) allude that this generation is highly distrustful of big corporate organisations. Authority is not something that intimidate them much and they are more focused on their own career development than on organisational success (Jones et al., 2018; Lyons, 2004). Generation Xers value a balance between their work and personal lives (Christensen et al., 2018; Jones et al., 2018; Salahuddin, 2010) and they introduced the concept of non-traditional working hours (Jones et al., 2018).

12.4.3 Millennials

Millennials were born between the 1980s and early 1990s (Pyöriä et al., 2017) and have seen the rise of the internet, environmental consciousness, acceptance of social media, economic freedom and an upsurge in terrorism (Naim & Lenka, 2018). They are known as the Millennials as they were born and raised in the digitalised era which are regarded as a symbol of the imminent millennium (Nichols & Wright, 2018). Millennials were raised and safeguarded through hardships by over-protective parents who provided structure and guidance to their day-to-day activities (Cahill & Sedrak, 2012; Christensen et al., 2018). As a result, their core values include to be optimistic, achievement-orientated, focused on their civic duty (Jones et al., 2018; Salahuddin, 2010), carefree, fun-loving and risk takers (Naim & Lenka, 2018).

Members of this generation are highly educated, more than previous generations, and extremely competent in the use of information and communication technologies and the environment of social media (Pyöriä et al., 2017). They are the most diverse in terms of race and ethnicity (Jones et al., 2018; Mitchell, 1998) and are consequently particularly socially conscious and eco-cognisant (Eastman & Lui, 2012). Previous researchers have also found that members from this generational cohort value family life and leisure time higher than that of paid employment (Pyöriä et al., 2017; Twenge, Campbell, Hoffman, & Lance, 2010). It is reported that Millennials require immediate feedback and constant recognition of their inputs (Hurst & Good, 2009; Naim & Lenka, 2018). Millennials are also not as committed to a single employer and are more focused on personal development and advancement than on life time employment (Broadbridge, Maxwell, & Ogden, 2007; Pyöriä et al., 2017). Previous studies have indicated that Millennials are characterised by their need to work in teams, flexible career paths and communication with supervisors that is open (Hayes et al., 2018; Myers & Sadaghiani, 2010).

12.4.4 *Digital Natives*

Research concerning the Digital natives is still embryonic (Chicca & Shellenbarger, 2018; Twenge, 2017). Although some scholars still disagree on the specific dates defining this generational cohort, in general, it includes those born from the beginning of 1995 (Chicca & Shellenbarger, 2018; Chillakuri & Mahanandia, 2018; Lanier, 2017). Events impacting on their social values include 9/11 and its aftermath, public protests, heightened unemployment, economic downturn and the world at war (Chicca & Shellenbarger, 2018; Twenge, 2017). These events, together with their cynical Generation X parents, have developed a new cautious generation (Chicca & Shellenbarger, 2018). Uncertainties in terms of politics, economics and society throughout their childhood, resulted in a generation concerned with emotional, physical and financial wellbeing (Chicca & Shellenbarger, 2018). Consequently, members of this generational cohort are financially conservative and focused on collective security rather than individual rights and liberties (Carter, 2018).

The Digital natives are predisposed to technological events, including the unrestricted use of the World Wide Web, the use of smartphones, and cyber bullying and attacks (Chicca & Shellenbarger, 2018; Christensen et al., 2018). Members of this generational cohort are enthusiastic users of technology and require the digital world to function (Chicca & Shellenbarger, 2018; Gho & Lee, 2018; Ozkan & Solmaz, 2015). The digital natives are the only generational cohort brought up exclusively with technological influences and therefore they are extremely comfortable to interact, every so often on their own, in the digital world (Chicca & Shellenbarger, 2018). Schwieger and Ladwig (2018) postulate that this generational cohort have never been unable to immediately connect and be able to communicate and receive information at the press of a button, and subsequently, they are the only generational cohort who cannot identify with a world without the Internet (Chicca & Shellenbarger, 2018; Cho, Bonn, & Han, 2018; Christensen et al., 2018; Grow & Yang, 2018). Members of the digital natives cohort would rather socialise digitally as to face-to-face (Schwieger & Ladwig, 2018). The downside to this is that they are immature in terms of their social and relationship abilities and consequently at an increased risk to feel lonely, insecure, anxious and depressed (Chicca & Shellenbarger, 2018).

Members of this generational cohort have a restricted attention span and get easily bored with monotonous and repetitive work (Chicca & Shellenbarger, 2018); however, they are more intelligent than any generation before them (Christensen et al., 2018). They are pragmatic and cynical (Grow & Yang, 2018) and value aspects that are convenient and immediate (Berkup, 2014; Chicca & Shellenbarger, 2018; Christensen et al., 2018). Digital technology are utilised to answer questions immediately, thus less direction from parents or supervisors are needed (Christensen et al., 2018). According to Carter (2018), the family structure of the digital natives are the most diverse in terms of ethnicity and they place a high value on tradition. Chicca and Shellenbarger (2018) further posit that while digital natives are diverse in terms of race and ethnicity, and they are liberal, they are not actively involved in social issues but rather engage in sedentary activism. This generation is also ambitious in terms

of achieving the goals that they set for themselves and they believe that education is important in realising these goals (Chillakuri & Mahanandia, 2018).

In investigating existing literature on the digital natives, a number of themes became apparent in terms of the specific characteristics of this generational cohort. Table 12.3 provides a list of these characteristics:

Previous researchers have found that although digital natives are fond of organisational offices, they prefer flexibility (Goh & Lee, 2018; Ozkan & Solmaz, 2015). They expect their workplace to be convenient, transferable and according to their pace and timetable (Christensen et al., 2018; Wiedmer, 2015). They expect to be trusted by their employers to know what is expected of them, and subsequently, see no reason why they cannot work from home (Chillakuri & Mahanandia, 2018). Digital natives prefer face-to-face communication; however they also expect their organisations to adopt social media as a method of communication (Goh & Lee, 2018; Ozkan & Solmaz, 2015). Emails and presentations should include more interactive elements to capture their attention (Christensen et al., 2018; Shatto & Erwin, 2016), as they have a short attention span (Chicca & Shellenbarger, 2018). Therefore, communication efforts may be extended further than the traditional conference rooms and email discussions to new technologically integrated methods of training, reporting, and creative inventions (Nichols & Wright, 2018). They are career-driven and expect to be able to work in multiple countries throughout their career (Goh & Lee, 2018; Ozkan & Solmaz, 2015). Consequently, they are more socially liberal and will expect multi-cultural workplaces and open-minded attitudes (Nichols & Wright, 2018).

Members from this generational cohort have a preference for regular feedback instead of a yearly performance evaluation (Goh & Lee, 2018; Ozkan & Solmaz, 2015). As they have an intense desire to differentiate themselves, they prefer individualised evaluations (Nichols & Wright, 2018). They value honest, reliable (Goh & Lee, 2018; Ozkan & Solmaz, 2015), direct (Christensen et al., 2018), and fair supervisors (Schwieger & Ladwig, 2018). They appreciate hard work; however should be rewarded appropriately (Schwieger & Ladwig, 2018). Digital natives may not always be content with their work and may easily become bored of repetitive work (Chillakuri & Mahanandia, 2018). Their supervisors should therefore focus on their strengths and afford them opportunities to play to these strengths in order to keep them motivated in the workplace (Chillakuri & Mahanandia, 2018).

12.5 The Psychological Contract and the Digital Natives

In light of Table 12.3 and the aforementioned discussion in terms of the digital natives, this section offers a mapping of the antecedents of the psychological contract of the digital natives. Based on the SET (Blau, 1964) and ET (Adams, 1965), Table 12.4 provides the proposed inputs from the digital natives as well as the expected outcomes from their employers:

Table 12.3 Characteristics of the Digital Natives

Characteristic	Literature
Career-driven	Goh and Lee (2018)
Creative	Schwieger and Ladwig (2018)
Diverse	Carter (2018), Chicca and Shellenbarger (2018), Cho et al. (2018), Nichols and Wright (2018)
Entrepreneurial	Carter (2018), Chillakuri and Mahanandia (2018), Hicks et al. (2018), Nichols and Wright (2018), Schwieger and Ladwig (2018)
Face-to-face, interactive communication	Carter (2018), Chillakuri and Mahanandia (2018), Christensen et al (2018), Goh and Lee (2018)
Financially conservative	Carter (2018), Nichols and Wright (2018)
Flexibility	Chillakuri and Mahanandia (2018), Goh and Lee (2018)
Future-orientated	Cho et al. (2018), Goh and Lee (2018), Schwieger and Ladwig (2018)
Independent, self-reliant and sophisticated	Carter (2018), Chillakuri and Mahanandia (2018), Christensen et al., (2018), Grow and Yang (2018), Hicks et al. (2018), Schweiger and Ladwig (2018)
Individualistic	Chicca and Shellenbarger (2018), Chillakuri and Mahanandia (2018)
Impatient, seek immediate feedback	Chicca and Shellenbarger (2018), Christensen et al. (2018), Goh and Lee (2018)
Private and reserved	Carter (2018), Cho et al. (2018), Christensen et al. (2018), Grow and Young (2018)
Realist, pragmatic, practical	Chicca and Shellenbarger (2018), Cho et al. (2018), Christensen et al. (2018), Grow and Yang (2018), Nichols and Wright (2018), Schwieger and Ladwig (2018)
Social activist	Chicca and Shellenbarger (2018), Grow and Yang (2018)
Socially connected	Chillakuri & Mahanandia (2018), Cho et al. (2018), Hicks et al. (2018), Schwieger and Ladwig (2018)
Team players	Goh and Lee (2018), Nichols and Wright (2018)
Technological savvy	Chicca and Shellenbarger (2018), Chillakuri and Mahanandia (2018), Chirstensen et al. (2018), Hicks et al. (2018)

Source Author’s own work

Table 12.4 Inputs and outcomes of the psychological contract for digital natives

Inputs	Outcomes
Diverse in terms of race, ethnicity	Provide a multi-cultural workforce Open-minded supervisors
Individualistic	Provide personalised feedback Flexible work schedule Work/life balance Face-to-face communication
Impatient and seek immediate feedback	Regular feedback on performance
Independent, self-reliant	Provide autonomous work
Social activists	Provide purposeful work where they can make a difference
Socially connected	Provide communication through social media
Team player	Provide team work
Technologically savvy	Provide technological and digital devices; interactive communication
Career-driven	Career opportunities
Financially conservative	Fair compensation

Source Author’s own work

12.6 Future Research Directions

The advent of Industry 4.0 on our doorstep and the emergence of the digital natives into the workplace poses a strong motivation for innovative and fresh research ideas, specifically in terms of human resource management and industrial and organisational psychology. Nichols and Wright (2018) suggest that techniques should be discovered to embrace the digital natives’ different beliefs, values and attitudes relating to work in order to unearth their unique competencies. This can result in a competitive advantage for future-orientated employers prepared to revolutionise their traditional views on the workplace (Nichols & Wright, 2018).

The purpose of this chapter was to map the possible antecedents of the psychological contract of the digital natives. Based on the ET (Adams, 1965), Table 12.4 provides the possible inputs and outcomes of the psychological contract for digital natives. This offers an array of consequences for psychological contract and generational diversity research. Recognising its significance (Lub et al., 2016), further research is required to understand the influence of generational cohorts on the psychological contract. More specifically, it is encouraged to determine how the societal beliefs and values of the different generational cohorts influence the formation of individual psychological contracts. In addition, future research should explore the

impact of Industry 4.0 on the workplace and its people (Habraken & Bondarouk, 2018; Schneider, 2018) by specifically focussing on the psychological contract and generational diversity. Finally, this chapter calls for further research into the emerging digital natives generational cohort as literature on this generation is still scanty (Chillakuri & Mahanandia, 2018) as there is no empirical evidence defining the digital natives apart from practitioner definitions (Nichols & Wright, 2018).

12.7 Implications for Thriving in Industry 4.0 Theory and Practice

The concept of thriving refers to an individual's psychological state in terms of both a sense of vitality and a sense of learning at work (Boyd, 2015; Spreitzer et al., 2005; Wu et al., 2018). Vitality denotes to an individual's experience of passion and excitement with regard to their work, whereas learning refers to the attainment of information and skills, which aid in the development of individual and professional developmental goals (Boyd, 2015). Mapping the possible antecedents of the psychological contract of digital natives could be a doorstep to assist researchers to determine what makes this new generation thrive in Industry 4.0. Future research should determine the relationship between psychological contract fulfilment and thriving. Research focussing on thriving at work in relation to organisational behaviour and management concepts such as the psychological contract, would be a response to the call for future research by Boyd (2015).

12.8 Chapter Summary

This chapter reflected on some of the existing literature on the psychological contract and the generational cohorts currently in the workplace. More specifically, this chapter focused on the societal values and beliefs of the emerging digital natives generational cohort in order to map the antecedents of the psychological contract for this generational cohort. This chapter concluded by providing future research directions in the field of human resource management and industrial and organisational psychology.

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Alda Deas (Ph.D.) is Lecturer in labour relations management at the Department of Human Resource Management at the University of South Africa (UNISA). She is also an author and co-author of several published articles in accredited journals. She has also presented a poster at an international conference. She is registered with the South African Board of People Practices (SABPP) as a human resource practitioner.

Chapter 13

Down the Rabbit Hole: Social Media, Workplace Collaboration, Millennial Psychological Need Satisfaction and Affective Commitment in Industry 4.0



Mohammad Faraz Naim and Helena Bulinska-Stangrecka

Abstract The main purpose of this chapter is to examine the relationship between workplace use of social media, collaboration, psychological need satisfaction and Millennial employees' affective commitment. Based on a review of extant literature and using social exchange theory, this study develops a conceptual framework to spur affective commitment of Millennials. Different workplace patterns of social media application offer opportunities to enhance collaboration. It can facilitate the fulfilment of employees' psychological needs, leading to an increased affective commitment. The framework suggests a social media-enabled approach of collaboration to satisfy Millennial employees' psychological needs, leading to their affective commitment. The framework should be empirically tested in future research. This study contributes to the literature in human resources pertaining to social media as an asset to promote collaboration and develops a linkage between social media and Millennial employees' affective commitment via psychological need satisfaction.

Keywords Social media · Millennials · Collaboration · Psychological needs · Affective commitment

13.1 Introduction

The present-day volatile, uncertain, complex and ambiguous (VUCA) business environment is characterised by hyper-connectivity, data intensity and technology richness. To sustain in such an environment otherwise referred as Digital 4.0 economy (Lasi, Fettke, Kemper, Feld, & Hoffmann, 2014), organisations rely highly on knowledge workers to continuously innovate and adjust to ongoing environmental changes (Howaldt, Kopp, & Schultze, 2017). They are the driving force that helps organisa-

M. F. Naim (✉)
BITS Pilani, Pilani, India
e-mail: mfaraznaim@yahoo.com

H. Bulinska-Stangrecka
Warsaw University of Technology, Warsaw, Poland

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tions to remain competitive and flexible. One of the main challenges in the Digital 4.0 economy is how to effectively manage multigenerational employees (Sivathanu & Pillai, 2018).

The generational structure of the current pool of knowledge workers is changing (Fishman, 2016). Baby boomers (1946–1960) are leaving the talent market; Generation X (1961–1980) is currently shrinking, leaving the Generation Y (1981–1995) at the helm of the contemporary workforce (Montes, 2017; Naim & Lenka, 2017b). Importantly, the new cohort—Millennials (born between 1980 and 2000) is gaining in numbers in the current workforce (Naim & Lenka, 2017c). While Baby boomers and Generation X were oriented towards work stabilization (Gilbert, 2011), the Millennial is considered more pragmatic and seeks access to sophisticated technologies in a collaborative work environment (Glass, 2007). They desire individual recognition and career development (Black, 2010) rather than being loyal to one employer (Glass, 2007). Millennial is considered to be entrepreneurs with a tendency to start work early in their lives (Martin, 2005). Since they are entered the talent market a few years ago, the employers are still learning about their work values, expectations and preferences. Hence, it is crucial to understand and meet Millennials' work expectations and psychological needs to leverage their talent for organisational sustainability. However, studies suggest that Millennials suffer from lack of commitment and engagement with employers and exhibit a low attention span while learning (Cennamo & Gardner, 2008; Naim & Lenka, 2017b). Therefore, retaining this generational cohort is going to be a serious challenge for organisations in this Digital 4.0 era. A possible strategy to bolster their retention is to embrace interventions that evoke high commitment levels.

Organisational commitment is conceptualised as a tri-dimensional construct comprising of affective, normative and continuance components (Allen & Meyer, 1990). Empirical evidence demonstrates that affective commitment is strongly related to the positive organisational behaviours such as employee retention (Ribeiro, Gomes, & Kurian, 2018). Affective commitment is defined as an individual's emotional attachment to the given organisation (Allen & Meyer, 1990). It reflects the degree to which an employee is identifying with organisational goals (Naim & Lenka, 2016, 2017b) and his/her willingness to remain in the organisation (Fazio, Gong, Sims, & Yurova, 2017). In contemporary literature, affective commitment has been shown to be evoked by enablers such as communication, leadership, trust and supportive HR practices (Mercurio, 2015). However, affective commitment of Millennial is yet to be examined, thereby leaving a potential research gap of what spurs their emotional attachment with the organisation. In this vein, we endeavour to explore the relationship between psychological need satisfaction and affective commitment of Millennials.

Millennials have been described as digital natives (Prensky, 2001). They are brought up using social media in a 'wired' economy which affects both their cognition and work-related attitudes (Moore, Jones, & Frazier, 2017; Roblek, Mesko, Dimovski, & Peterlin, 2018). Social media is an inseparable element of their lives (Turner, 2015). Furthermore, thanks to the digital upbringing, Millennials are proficient in multitasking and short attention span, which requires continuous stimulation

(Shahid, 2018). What's more, social media is a basic tool for Millennials to be a member in various communities and which spur their tendency towards the collaborative environment (Roblek et al., 2018). Additionally, collaboration via social media fulfils their need for affiliation and achievements, as well as their thriving in general. Consequently, social media-driven collaboration contributes to Millennials' affective commitment as an aspect of their thriving.

13.2 Chapter Objective

The need for this research has emanated from the calls for enquiry into the effect of workplace use of social media on employee positive attitudes such as engagement and commitment (Bolton et al., 2013). Therefore, this chapter aims at exploring this research gap concerning the relationship between social media and affective commitment by incorporating the elements of collaboration and psychological need satisfaction from the perspective of Millennials.

Millennials have been shown to exhibit remarkable proficiency over sophisticated technologies; hence, they seek technological presence in both their personal and professional lives (Martin, 2005). What's more, social media is a basic tool for Millennial to be a member in various communities and which spur their tendency towards the collaborative environment. Additionally, collaboration via social media fulfils their need for affiliation and achievements. Consequently, social media-driven collaboration contributes to the Millennial affective commitment. The need for this research has emanated from the calls for enquiry into the effect of workplace use of social media on employee positive attitudes such as engagement and commitment (Bolton et al., 2013). Therefore, this chapter aims at exploring this research gap concerning the relationship between social media and affective commitment by incorporating the elements of collaboration and psychological need satisfaction as aspects of thriving from the perspective of Millennials.

Within this approach, this chapter endeavours to develop a conceptual framework that relates social media with workplace collaboration and Millennial psychological need fulfilment, which in turn, foster affective commitment of Millennials. The potential of social media to increase employees' affective commitment has not been explored. The reasoning behind linkage of social media, workplace collaboration and Millennial employees' affective commitment has been grounded on social exchange theory (SET). The chapter is organised as follows: it begins with the development of a conceptual framework, followed by a discussion with implications for practice and finally the avenues of future work.

13.3 Social Media and Workplace Collaboration

The changes in workplace organisation caused by technological revolution are linked to the emergence of innovative communication technologies, especially social media. Social media encompasses community-developing services such as image and video sharing sites, social networking, virtual worlds, reweaving sites, online and content sharing sites (Krishnamurthy & Dou, 2008). Social media has been defined as Internet-based applications founded on the Web 2.0 technological and ideological context enabling creation and transfer of community-generated content (Kaplan & Haenlein, 2010). The usage of social media has become increasingly popular (Shanahan, Tran, & Taylor, 2019). Social media has become the primary applications to boost Digital 4.0 presences in contemporary organisations.

The adoption of social media is reducing the boundaries within organisations. Social media transforms the way contemporary enterprises are managed. For instance, its application enables and modifies various HR practices in the Industry 4.0 (Pavlíček & Novák, 2018). Kluemper, Mitra, and Wang (2016) described the four main categories of social media usage in the contemporary HRM practices. The first one relates to communication with external stakeholders. The second one involves using social media tools in recruitment and selection. The third one includes the application of social media to build affective commitment, teambuilding or facilitate knowledge transfer. The fourth depicts possible counterproductive consequences of social media usage at work such as lack of work engagement or social loafing. The social media is an instrument that can enhance certain work-related behaviours in organisations. Therefore, its incorporation in HR practices might support desired outcomes and positively stimulate employees' attitudes. The empirical study conducted by Moqbel, Nevo, and Kock (2013) demonstrated that social media applications lead to increased job performance based on higher job satisfaction and organisational commitment. In line with this, the study by Eren and Vardarliner (2013) confirmed that social media applications increase organisational commitment. Social media is a vital instrument in supporting the positive employees' behaviours and collaboration in organisations. Additionally, it helps to implement successful HR strategies in Industry 4.0 (Sivathanu & Pillai, 2018). The integration of social media in an organisation allows facilitating work collaboration (De Vreede, Antunes, Vassileva, Gerosa, & Wu, 2016).

Collaboration refers to the collective cooperative efforts oriented towards achieving a common goal (Rank, 2008). It is defined as a participative process (Polenske, 2004, p. 1029). Then, necessary conditions for collaboration are shared interest, common purpose and commitment to the group task. In order for a collaboration to be successful, involved group members should have formed a group identity, interact with each other, exchange ideas and communicate effectively. Therefore, the core aspect of collaboration is knowledge transfer and social interactions.

Social media at the workplace allows employees to connect with peers from different departments and locations. Additionally, it facilitates an exchange of opinions and provides a platform for looking for advice or consultation in the workplace, thereby

fostering learning opportunities (Mueller, Della Peruta, & Del Giudice, 2014). Social media tools hastens internal communication among employees and offers avenues for knowledge sharing (Nisar, Prabhakar, & Strakova, 2019). Various applications such as intranets, blogs, forums and wikis (e.g. Yammer) encourage open communication. Moreover, organisation members are more apt to gain necessary knowledge and expertise from others, so they can deal with the work-related challenges in a more effective and efficient manner (for instance, they can find the solution quicker thanks to the advice from more experienced co-workers). Furthermore, it helps to develop a positive relationship among organisation members. Consequently, it leads to the development of a social capital and sense of community. In turn, it improves collaboration and working relationship (Naim & Lenka, 2017c).

This is in agreement with social translucence theory, which states that social information of encouraging information sharing, and fosters collaboration (Cross & Parker, 2004). Social media allows establishing the social/virtual communities which are the core element of successful collaborative organisational behaviours, such as creation, acquisition, transfer and application of knowledge, which increase employees' capabilities. Furthermore, it has been demonstrated that the use of social media is significantly related with the effective collaboration and project success by boosting team connectivity (Zhang, Sun, Yang, & Wang, 2018). Therefore, social media use integrates maintaining of social relationship, transfer of knowledge, communicating and vicarious learning, supporting new levels of collaboration. Therefore, we propose

Proposition 1 *Workplace use of social media promotes collaboration.*

13.4 Workplace Collaboration and Millennials' Psychological Need Satisfaction

Notably, in the contemporary economy, it is not uncommon for an employee to experience the feeling of isolation and/or being lost in regard with the latest happening of the organisation. Furthermore, due to the geographical dispersion of project teams, very often employees are engaged in virtual collaboration. Recent research suggests that organisation culture that support communication and social interaction fuels collaboration (Koçak & Puranam, 2018). The social media tools can support collaborative learning, by promoting social interaction and open discussions. As a result, it establishes the sense of community within the organisation. Additionally, it encourages expressing one's opinion and asking questions; therefore, it strengthens the development of internal support networks within organisations. In turns, it improves the opportunities for personal and professional development. By gaining knowledge, employees are fulfilling their need for self-actualisation. Social media is supporting the process of acquisition of various work-related competencies, such as problem-solving, communicating, interpreting, critical analysis, internal locus of control, self-confidence, initiative-taking and negotiation.

This is consistent with the social constructivist approach, which assumes that learning in a social context is more effective when involved social interaction, negotiation and collective creation of knowledge (Naim & Lenka, 2017d; Vygotsky, 1978). As a consequence, this helps to answer Millennial needs for achievement, growth and self-development. Further, employees from the Millennial cohort are still in their early twenties (as in 2019), so they are new to the organisation and lack working experience; therefore, they perceive collaboration as an ideal avenue to learn from more experienced employees. Such collaboration enhances their understanding of organisational processes, in turn, enhancing their work-related capabilities.

Moreover, the organisations that help employees in fulfilling their needs for growth and in general are concerned about their development are usually comprehended as beneficial. It supports employees' sense of belongingness, involvement and engagement, ultimately translating into increased affective commitment. Grounded on social exchange theory (Emerson, 1976), employees are more likely to be affectively committed to those organisations, in which their needs and expectations are satisfied. In this view, when Millennial employees feel being cared by the organisation, they have the resources to socialise with colleagues, build relationships on the basis of social interactions, share their knowledge and learn; they feel cognitively and emotionally satisfied. Therefore, we propose

Proposition 2 *Perception of collaboration in the organisation satisfies Millennials employees' psychological needs of belongingness and growth.*

13.5 Millennials' Psychological Need Satisfaction and Affective Commitment

Affective commitment is conceived as a measure of an employee's emotional attachment with the organisation (Allen & Meyer, 1990). It acts as a binding force that is determining employees' loyalty towards the organisation (Rhoades, Eisenberger, & Armeli, 2001). Affective commitment is considered to be a vital area of interest for HR managers. In the extant literature, it has been claimed that affective commitment differs among generations (Cennamo & Gardner, 2008; Nelson, 2012). Yet, there is not enough evidence regarding Millennials' affective commitment conditions. Since, they are just entering a talent market; this aspect has not been yet studied. Therefore, the need for comprehension of antecedents of affective commitment from the perspective of Millennials is an important challenge for contemporary HR managers.

Importantly, the extant literature on affective commitment suggests its strong positive relationship with psychological need satisfaction (Meyer & Gagnè, 2008). When employees' psychological needs are satisfied, they are more likely to feel emotionally attached to the organisation. Referring to the social exchange theory, the fulfilment of employees' belongingness and growth needs evokes their positive psychological responses of commitment. Therefore, it leads to the development of affective commitment. In other words, a positive emotional relationship with the organisation is

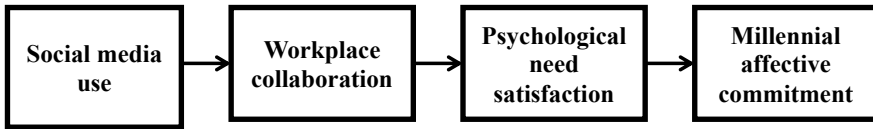


Fig. 13.1 Conceptual framework of social media-enabled collaboration and affective commitment of Millennials (authors' own work)

more likely to occur, when employees' psychological needs are met. Consequently, from Millennials' perspective, when their cognitive and affective needs are answered, they feel an obligation to repay in terms of the positive behavioural response of higher affective commitment. Therefore, we propose

Proposition 3 *Perception of psychological need satisfaction fosters Millennials employees' affective commitment (as depicted in Fig. 13.1).*

13.6 Discussion and Implications

Digital 4.0 technologies change the way organisations are functioning in the contemporary digital economy. Demands in a digital working environment for innovation and continuous efficiency call for changing the existing collaboration patterns. Employees are prone to focus on meeting their deadlines and attaining their targets. The work pressure causes preoccupation, which affects social aspect of work. It often causes neglect of relationships with co-workers, especially those working in different departments, teams or units. Lack of direct interaction and consistent work pressure disturb the work behaviours of employees. Consequently, employees might experience disconnection with others, which can cause a lack of commitment to the organisation.

Lack of employee commitment might lead to the work outcomes such as low engagement, low satisfaction and high turnover intention and low thriving in general. The employees' retention is an important challenge, especially considering Millennials. The recent report by Deloitte (2018) stated that the Millennials are even less loyal to employers than their predecessors. Further, the positive workplace culture has been indicated by Millennials as the most important factor in the workplace (rather than financial incentives). Therefore, supporting work collaboration and strengthening the relationship between employees should be a vital aspect of contemporary HR strategies for facilitating human thriving. Firstly, it nurtures the social networking among organisational members. Secondly, it improves the organisation development by better outcome and performance. The main purpose of this chapter is to emphasise the linkage between social media and affective commitment in contemporary organisations. Additionally, it implies the need for the development of social media policy in industry 4.0.

Affective commitment is an important factor related to talent management, especially in organisations dealing with rapid changes in a highly competitive environment (Bhatnagar, 2007). The employees' attachment helps organisations to sustain in difficult times. The importance of affective commitment for organisational performance has been demonstrated by Hadžiahmetović and Dinc (2017). Yet, affective commitment is even more significant since the new generation is entering the talent force. Particularly, the current research demonstrates that Millennials are generally less engaged to work than previous generations (Barr, 2016). This study presents a conceptual framework to link collaboration, social media and employee affective commitment in Millennial employees.

Social media plays an important role in supporting employees' affective commitment which is an indication of general thriving (Bolton et al., 2013). Even though some studies analyse the linkage between social media and employee engagement (e.g. Di Gangi & Wasko, 2016; Naim & Lenka, 2017a), there is no research on how workplace use of social media relates to affective commitment as a signal of human thriving. This study provides an explanation of how collaboration and social media usage influence employees' affective commitment in the Millennial employees' context. Social media enhances collaboration and social relations within an organisation creating an opportunity for knowledge sharing and development of social capital and consequently improving employees' competencies. This fulfils the psychological needs of Millennial employees. As a result, they have a higher level of belongings, community and self-actualisation, which leads to higher affective commitment with the organisation.

Moreover, the friendly work environment satisfies the employees' psychological safety, which brings about the willingness to attach them to the organisation. The sense of community and growth opportunities leads to the assurance of the satisfying future with the organisation and enables increased commitment. Besides, the employees whose psychological needs are fulfilled are more likely to develop a higher affective commitment to the organisation. The previous research demonstrated the connection between friendship at the workplace and positive work attitude (Khaleel, Chelliah, Khalid, Jamil, & Manzoor, 2016).

Furthermore, social media supports the sense of community in the organisation. This satisfies employees' affiliation needs and thus fosters affective commitment. The social identification theory (SIT) (Tajfel & Turner, 1986) illustrates how the self-categorisation and sense of belongingness to the organisation affect individual's perception and positive behaviours, such as loyalty and commitment towards this organisation (Ashforth & Mael, 1989). The process of interacting on social networking sites facilitates development of group identity (Vernuccio, Pagani, Barbarossa, & Pastore, 2015). Significant effect has been demonstrated between the in-group social identity, sense of belonging and participation and social media usage (Dery & Hafermalz, 2016). Therefore, based on theoretical underpinnings of SIT, social media strengthens a sense of community in organisations, thereby satisfying the need for belongingness of Millennial employees.

Moreover, in order to sustain in the contemporary Digital 4.0 economy, organisations need to strengthen its potential by developing interconnections, networking

and collaboration. A collaboration-oriented organisation is more successful in terms of innovation, productivity and competitive advantage (Nielsen, 2015). In addition, previous studies suggest that collaboration reinforces young employees' positive attitudes (Naim & Lenka, 2017c). Further, collaborative work environment influences the transition from autocratic management to a supportive one, which is based on participation. Such transformation affects the perception of an organisation. It creates a positive brand image, which strengthens commitment and engagement of Millennial employees (Naim and Lenka 2017e). It has been acknowledged that social media is a vital instrument to enhance work cooperation (Franchi, Poggi, & Tomaiuolo, 2016; Zaffar & Ghazawneh, 2012). Importantly, the technological orientation of Millennial emphasises on the need to develop the information technology-driven interventions to bolster collaborative behaviours in organisations.

13.7 Limitations and Future Scope

The main limitation of this study is its lack of empirical confirmation of the developed conceptual framework. However, the study introduces the original framework from the perspective of Millennials. Future research should explore factors such as top leadership support, as a moderating mechanism to embrace social media in the organisational culture. Also, it is worthwhile to examine the perception of managers whom Millennial reports to, in order to get robust findings.

13.8 Conclusion

The contributions of this study cover various aspects of human resource management. The managerial implications include an enquiry of Millennial employees' psychological needs for thriving. The presented framework will guide human resource managers on how to improve affective commitment as a signal of thriving among youngest talent pool. It provides recommendations on how adopting social media strengthens workplace collaboration that satisfies Millennials' psychological needs and leads to higher commitment. The theoretical implication concerns the insights into the relationship between collaboration and affective commitment. To the best of our knowledge, the topic of Millennials' affective commitment has not been studied so far. This study presents a conceptual framework which introduces the understanding of the mechanism that is influencing Millennial employees' affective commitment. Additionally, it makes a substantial addition to the existing literature on Millennials, social media use at the workplace, workplace collaboration and organisational commitment drivers.

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Mohammad Faraz Naim (Ph.D.) is presently an Assistant Professor, at Department of Management, BITS Pilani, Pilani, India. He has completed his Ph.D. in Human Resource Management from Indian Institute of Technology, Roorkee, India. Prior to that, he has completed an MBA in Human Resource Management and holds a bachelor degree in Biotechnology. His research interest includes Gen Y/Millennials, talent management, knowledge management, social media in HR and employer branding.

Helena Bulinska-Stangrecka (Ph.D.) is presently an Assistant Professor at Faculty of Administration and Social Science, Warsaw University of Technology, Warsaw, Poland. She holds a Ph.D. in Human Resource Management from Warsaw University of Technology, Poland and has published research on a wide range of areas. She has research experience of more than five years. Her research interest includes trust, knowledge management, leadership, change management and innovation.

Chapter 14

Person-Centred Characteristics as Predictors of Flourishing and Well-Being



Elzabé Nel

Abstract This chapter provides insight into the role of person-centred characteristics as predictors of flourishing and well-being among diverse employees. The chapter discusses the empirical findings of a cross-sectional quantitative study conducted on a sample of employees from a South African university. The results of the study indicated that core person-centred characteristics, specifically race and job position, were significant predictors of flourishing as an indicator of well-being. Moreover, race and tenure indicated significant differences in the levels of flourishing among employees. The findings of the study offer valuable new insights relevant to employee well-being theory. These insights could potentially inform industrial psychologists—with the aim of increasing the levels of flourishing among higher education employees.

Keywords Flourishing · Person-centred characteristics · Higher education · Employee well-being · Fourth industrial revolution · Industry 4.0

14.1 Introduction

Current changes in the world of work have, so far, been characterised by fundamental technological breakthroughs in fields such as genetics, artificial intelligence, greater global connectivity, wearable technology and the Internet of Things (IoT) (Liao, Loures, Deschamps, Brezinski, & Venâncio, 2018; Schäfer, 2018). Forming part of the Fourth Industrial Revolution (IR 4.0), or Industry 4.0 (Schwab, 2016), these rapid technological advancements have indeed posed a great challenge to the higher education system (Raman & Rathakrishnan, 2019). To respond to the needs of Industry 4.0, higher education institutions need to continue to lead and play their role as proving ground for educating future generations and innovation (Sani, 2019). This can only happen if higher education initiatives are redesigned for Industry 4.0 to include

E. Nel (✉)

Department of Industrial and Organisational Psychology, University of South Africa, Pretoria, South Africa

e-mail: coetzec1@unisa.ac.za

more interdisciplinary teaching, collaborative research and innovation (Mahmud & Ridgman, 2019; Xing & Marwala, 2017).

Currently, technologies powered by artificial intelligence are transforming universities' fundamental functions (i.e. teaching, research and service) in several ways. Firstly, teaching in the Fourth Industrial Revolution (Teaching 4.0) now requires modern learning and teaching approaches such as blended learning, massive open online courses (MOOCs) and wearables-assisted teaching (Raman & Rathakrishnan, 2019; Xing & Marwala, 2017; Yaakob & Zalli, 2019). Secondly, research in the Fourth Industrial Revolution (Research 4.0) calls for open innovation, evolutionary and revolutionary innovations, technological-driven research and development, and shorten innovation cycles (Xing & Marwala, 2017). Lastly, service in the Fourth Industrial Revolution (Service 4.0) requires universities to transform to a platform-based institution which includes the delivery of inter-; multi-; and across disciplinary degrees; a suitable blend of service models; the emergence of the Internet of Things (IoT); the integration of routine education activities into software systems; up-to-date digital infrastructure; and enhanced connectivity among all stakeholders present in the higher education system (Sani, 2019; Xing & Marwala, 2017).

The changes in Industry 4.0 have significantly changed the role of academic employees to be more entrepreneurial, collaborative and innovative. Academic employees are thus expected to perform complex tasks, develop digital and technological proficiency as well as lifelong learning capacities (Kergroach, 2017; Wiegel, Sattler, Göritz, & Diewald, 2016). Consequently, work in Industry 4.0 has become increasingly stressful with potential consequences for employees' physical and psychological well-being (Bakhshi, Downing, Osborne, & Schneider, 2017; Bonekamp & Sure, 2015; Chia, Lim, Sng, Whang, & Chia, 2019; Coldwell, Callaghan, Papa-georgiou, & Fried, 2016; Derks, Van Mierlo, & Schmitz, 2014; Ghislieri, Emanuel, Molino, Cortese, & Colombo, 2017; Montealegre & Cascio, 2017; Wiegel et al., 2016). As a result, well-being at work has become a strategic issue for organisations as it contributes to organisational success (Thomson, Chadwick, & Hämisegger, 2018). Well-being at work refers to an environment which promotes a sense of fulfilment that allows employees to flourish and achieve their full potential in order to contribute to higher levels of organisational performance (Chartered Institute of Personnel and Development, 2007). Considered as an indicator of well-being, the concept of flourishing (Keyes, 2002) has been highlighted as the most prominent multidimensional well-being model (Keyes, 2002; Lomas, 2017; Seligman, 2011). Flourishing refers to a complete state of human well-being (VanderWeele, 2017). With specific reference to the workplace, Rautenbach (2015) defined flourishing as an employee's perception of feeling well and functioning effectively at work.

Flourishing has significant positive outcomes for employees' experiences at work, which include, amongst others, job satisfaction (Redelinguys & Botha, 2016), work engagement (Chen, Yen, & Tsai, 2014), organisational citizenship behaviour, in-role performance (Redelinguys, Rothmann, & Botha, 2019) and meaningful work (Duffy, Autin, & Bott, 2015). Promoting flourishing depends on a range of different factors. Globally, research indicates that flourishing can be linked to personality traits (Golena, 2016; Kotov, Gamez, Schmidt, & Watson, 2010; Schotanus-Dijkstra et al.,

2016; Steel, Schmidt, & Schultz, 2008), psychosocial factors (Du Plooy, Lyons, & Kashima, 2019; Nabi & Rizvi, 2017) and work-related characteristics (Janse van Rensburg, Rothmann, & Diedericks, 2018; Hone, Jarden, Duncan, & Schofield, 2015; Roemer & Harris, 2018). While many scholars have focused on some of these constructs as predictors, only a few have explored the influence of person-centred characteristics on flourishing with specific reference to the work and organisational context.

14.2 Chapter Objective

This chapter explores by means of an empirical study whether employees' person-centred characteristics (race, gender, age, job position and tenure) influence their experiences of flourishing at work. As such, the chapter may potentially extend employee well-being research by adding insight into the role that person-centred characteristics play with regard to flourishing, specifically with reference to the digital workspace of distance learning higher education.

14.3 Theoretical Background

Flourishing generally refers to high levels of well-being (Diener et al., 2010; Huppert & So, 2013; Keyes, 2002; Seligman, 2011). Keyes (2002, 2005, 2007) developed the concept of flourishing to refer to a combination of positive feelings (i.e. hedonia) and positive functioning (i.e. eudaimonia). Most approaches to well-being tend to align with either hedonic or eudaimonic formulations of well-being (Keyes, Shmotkin, & Ryff, 2002). Hedonic approaches to well-being focus on positive evaluations (e.g. life satisfaction) and positive feelings (e.g. happiness). By contrast, eudaimonic approaches to well-being emphasise different aspects of positive functioning, including engagement, self-actualisation, positive relationships and purpose in life. Flourishing can be linked to a number of theoretical models that conceptualise it according to these two approaches. Table 14.1 illustrates the dimensions of flourishing from various theoretical perspectives (Bono, Davies, & Rasch, 2012; Diener et al., 2010; Huppert & So, 2013; Keyes, 2002; Noble & McGrath, 2015; Rautenbach & Rothmann, 2017; Seligman, 2011).

The mental health continuum (MHC) was developed by Keyes (2002, 2005, 2007, 2009) and describes the way individuals function emotionally, psychologically and socially. The MHC labels individuals as languishing, moderately mentally healthy and flourishing. According to Keyes (2005), emotional well-being consists of positive affect, interest in life or satisfaction with life. Psychological well-being consists of self-acceptance, personal growth, purpose in life, environmental mastery, autonomy and positive relations with others. Social well-being refers to how an individual function socially and consists of social acceptance, social actualisation, social con-

Table 14.1 Theoretical models of flourishing

Keyes (2002)	Diener et al. (2010)	Seligman et al. (2011)	Bono et al. (2012)	Huppert and So (2013)	Noble and McGrath (2015)	Rautenbach and Rothmann (2017)
Positive affect (happiness)	Positive relationships	Positive relationships	Job satisfaction	Positive relationships	Relationships	Positive affect
Positive affect (interest in life)	Engagement	Engagement	Self-determination	Engagement	Engagement	Job satisfaction
Life satisfaction	Purpose and meaning	Meaning and purpose	Positive emotions	Meaning	Purpose	Autonomy
Self-acceptance	Self-respect	Positive emotion	Positive moods	Positive emotion	Positivity	Competence
Personal growth	Competence	Accomplishment	Vitality	Self-esteem	Outcomes	Relatedness
Purpose in life	Optimism		Learning	Competence		Meaning
Environmental mastery	Social contribution			Optimism		Purpose
Autonomy	Social relationships			Emotional stability		Cognitive engagement
Positive relations				Vitality		Emotional engagement

(continued)

Table 14.1 (continued)

Keyes (2002)	Diener et al. (2010)	Seligman et al. (2011)	Bono et al. (2012)	Huppert and So (2013)	Noble and McGrath (2015)	Rautenbach and Rothmann (2017)
Social acceptance				Resilience		Physical engagement
Social actualisation						Learning
Social contribution						Social contribution
Social coherence						Social acceptance
Social integration						Social growth
						Social integration
						Social comprehension

Source Author's own work

tribution, social coherence and social integration (Keyes, 2005). Diener et al. (2010) conceptualised flourishing as the existence of positive relationships, engagement, purpose and meaning, self-respect, competence, optimism, social relationships and social contribution.

Diener et al.'s (2010) model is grounded in humanistic and positive psychology traditions which focus on both an individual's psychological and social functioning (Diener et al., 2010). Seligman (2011) developed the PERMA model which conceptualises flourishing according to five dimensions: positive emotions (P), engagement (E), positive relationships (P), meaning (M) and accomplishments (A). According to Seligman (2011), this model may help individuals to develop new cognitive and emotional skills in order to attain a purposeful and meaningful life. Similar to that of the MHC and the PERMA model, Huppert and So (2013) conceptualised flourishing as feeling good and functioning well. Their model highlights individuals' psychological states and defines flourishing in terms of positive characteristics (i.e. emotional stability, vitality, optimism, resilience and self-esteem); positive functioning (i.e. engagement, competence, meaning and positive relationships); and positive appraisal (i.e. life satisfaction and positive emotion).

More recently, Noble and McGrath developed the PROSPER framework (2015) which conceptualises flourishing in terms of positivity (P), relationships (R), outcomes (O), strengths (S), purpose (P), engagement (E) and resilience (R). Their model, which draws on both the principles of positive psychology and educational research, includes two additional and distinct elements: strengths (S) and resilience (R). While the previous theoretical models highlight important elements of flourishing, they were not explicitly developed for work and organisational settings.

With specific reference to work and organisational contexts, Bono et al. (2012) conceptualised flourishing in terms of thriving (e.g. vitality and learning), happiness (e.g. positive moods and emotions) and engagement (e.g. job satisfaction and self-determined motivation). These authors suggest that flourishing employees tend to have a positive approach to the self, others and work situations and also prefer to take an active, engaged and forward-looking approach to work, especially in novel and challenging situations (Bono et al., 2012). Within the South African work context, Rautenbach and Rothmann (2017) conceptualised flourishing as a multi-faceted concept consisting of feeling (i.e. emotional well-being) and functioning (i.e. psychological and social well-being) dimensions at work. As such, flourishing consists of emotional well-being (i.e. job satisfaction and positive affect), psychological well-being (i.e. autonomy, competence, relatedness, meaning, purpose, cognitive engagement, emotional engagement, physical engagement and learning) and social well-being (i.e. social acceptance, social growth, social contribution, social comprehension and social integration) in the work context.

As indicated in Table 14.1, various similarities and differences regarding the concept of flourishing exist. While these authors have proposed different theoretical approaches to flourishing, it is evident that all the conceptualisations mentioned above incorporate the two dimensions of positive emotions (i.e. hedonic well-being) and positive functioning (eudaimonic well-being) which were originally proposed by Keyes (2002, 2005, 2007). Based on these dimensions, flourishing employees

show positivity, vitality and resilience; are fully engaged in their work; experience significant meaning and purpose in their life and work; are intrinsically driven and motivated by a sense of autonomy, competence and satisfaction; and exhibit high levels of work-related emotional and social well-being by maintaining both positive personal and social relationships.

Person-centred characteristics include sociodemographic factors such as race, age, gender, marital status, education, job position and tenure. Research shows that sociodemographic factors are often important determinants of well-being (Addai, Opoku-Agyeman, & Amanfu, 2014; Ngoo, Tey, & Tan, 2015; Nel, 2018) and may influence organisations in a positive manner (Balogun, 2014; Dwivedi, Kaushik, & Luxmi, 2015). A recent study linked emotional and psychological well-being with certain sociodemographic characteristics (i.e. marital status, education and race) (Geldenhuys & Henn, 2017). Research findings also indicated that higher levels of education and higher employment status predicted increased social well-being (Cicognani, Pirini, Keyes, Joshanloo, Rostami, & Nosratabadi, 2008; Keyes, 1998; Keyes & Shapiro, 2004). Due to the unique sociodemographic diversity within the South African context, differences in employees' levels of flourishing are expected. As such, knowledge and insight into the person-centred characteristics that may influence flourishing among diverse employees in the higher education context are needed.

14.4 Focus of the Empirical Study

Differences exist in terms of how individuals experience well-being (Diener, Oishi, & Lucas, 2003). In this regard, person-centred characteristics can also be expected to affect how diverse employees flourish at work (e.g. how they approach work, how they engage physically, emotionally and socially at work, how they find meaning and purpose and how satisfied they are with their work, relationships and life in general). The literature on flourishing at work has primarily focused on the work environment and job characteristics as predictors of flourishing (e.g. Hackman & Oldham, 1980; Janse van Rensburg, Rothmann, & Diedericks, 2018). Some attention has also been paid to the context of personality traits relative to employee flourishing (Bono et al., 2012).

Other research studies examine the prevalence rates and outcomes of flourishing (Huppert & So, 2013; Janse van Rensburg et al., 2018). While mainstream research has focused on the link between individual and workplace factors in relation to flourishing, empirical studies considering the influence of person-centred characteristics on employees' levels of flourishing seem to be limited, specifically within the diverse South African higher education context. The current study is expected to close this gap in the research literature by exploring how diverse employees assess their levels of flourishing, which in turn, might provide insight into the development and implementation of well-being policies and interventions. As a result of such policies and interventions being implemented, industrial psychologists would be better pre-

pared to develop and implement targeted interventions that stimulate flourishing at the individual, group and organisational level.

14.5 Empirical Study

14.5.1 *Participants and Procedure*

The empirical study involved a convenience sample of academic- and administrative-level employees ($N = 1102$) employed in a South African higher education institution. Data were collected by means of a web-based survey. The majority of the sample was represented by white (49%) and African (42%) employees. Females comprised 64% and males 35% of the participants. The mean age of the participants was 45 years (SD: 11.31). Sixty-five per cent of the participants were employed in administrative positions while 35% occupied academic positions. The participants consisted of employees who had more than five years of tenure (60%) and employees with less than five years (40%). Consent to conduct the research was obtained from the partaking institution and ethical clearance was received from the research ethics committee. Participation in the study was voluntary and anonymous.

14.5.2 *Measures*

The measuring instrument consisted of two sections, namely a sociodemographic questionnaire and flourishing scale.

Sociodemographic questionnaire. Race, gender, age, job position and tenure were included in the sociodemographic questionnaire.

Flourishing scale. The construct was measured by means of the flourishing scale (FS) (Diener et al., 2010). The FS measures psychological well-being using eight items (e.g. “*My social relationships are supportive and rewarding*”) and a seven-point Likert-type scale ranging from (1) strongly disagree to (7) strongly agree. Cronbach’s alpha coefficient obtained for the FS was high ($\alpha = 0.87$) (Diener et al., 2010).

14.5.3 *Data Analysis*

The Statistical Analysis System (SAS) Version 9.4 (SAS Institute Inc., 2013) was used to analyse the data by means of descriptive and correlation statistics, multiple regression analysis and a test for significant mean differences. The sociodemographic variables of race, gender, age, job position and tenure were used in the multiple regression analysis based on prior research which indicated a correlation between

flourishing and race (Keyes, 2007, 2009; Keyes & Simoes, 2012), flourishing and age (Karólínudóttir, 2015; Keyes & Simoes, 2012; Keyes & Westerhof, 2012) as well as flourishing and gender (Keyes, 2002; Keyes, Dhingra, & Simoes, 2010; Keyes & Simoes, 2012; Schotanus-Dijkstra et al., 2016). While employment status has been linked to higher levels of flourishing (Khumalo, 2011), it is unclear from the literature how job position and tenure per se related to flourishing. The sociodemographic variables were coded as follows: Race: 1 = black; 2 = coloured; 3 = Indian; 4 = white. Gender: 0 = female; 1 = male. Job position: 0 = administrative/support; 1 = academic. Tenure: 0 = less than 5 years; 1 = more than 5 years.

14.6 Results

14.6.1 Correlations

Table 14.2 shows the descriptive statistics and correlations for all variables. The results indicated a significant and negative bivariate relationship between flourishing and race ($r \leq -0.23$, small practical effect size, $p \leq 0.001$) and flourishing and tenure ($r \leq -0.15$, small practical effect size, $p \leq 0.001$).

14.6.2 Predictor Effects

The regression model in Table 14.3 showed that the predictor sociodemographic variables (race, gender, age, job position and tenure) explained 3% ($R^2 = 0.03$; small practical effect) of the variance in overall flourishing. In terms of the sociodemographic variables, only race ($\beta = -0.24$; $p = 0.003$) and job position ($\beta = -0.19$; $p = 0.02$) contributed statistically significantly and negatively in explaining the variance in overall flourishing. Gender, age and tenure did not predict flourishing.

14.6.3 Significant Differences in Sociodemographic Characteristics

As indicated in Table 14.4, the ANOVA for sociodemographic characteristics (i.e. race and tenure) showed significant differences in terms of flourishing. The Kruskal–Wallis tests showed that African participants ($M = 6.17$; $SD = 0.95$; $p = 0.00$; $\eta_p^2 = 0.06$; small practical effect) obtained significantly higher levels of flourishing as compared to participants from the coloured group ($M = 5.87$; $SD = 1.03$; $p = 0.00$; $\eta_p^2 = 0.06$; small practical effect). In terms of tenure, the results indicated significant differences in terms of flourishing for the tenure groups. Participants with

Table 14.2 Descriptive statistics and bivariate correlations

	Variables	M	SD	α	1	2	3	4	5
1	Race	-	-	-	-	-	-	-	-
2	Age	-	-	-	-	-	-	-	-
3	Gender	-	-	-	-	-	-	-	-
4	Job position	-	-	-	-	-	-	-	-
5	Tenure	-	-	-	-	-	-	-	-
6	Flourishing	6.02	0.89	0.91	-0.23***	-0.06	0.01	-0.01	-0.15***

Notes N = 1102. *** $p \leq 0.001$ ** $p \leq 0.01$ * $p \leq 0.05$ —statistically significant

Source Author's own work

Table 14.3 Results of the multiple regressions of sociodemographic variables and flourishing

Sociodemographic variables	Flourishing	
	β	SE
Race	-0.24**	0.08
Age	0.06	0.09
Gender	-0.06	0.08
Job position	-0.19*	0.08
Tenure	-0.13	0.08
<i>Model info</i>		
<i>Fp</i>	5.32**	
R^2	0.03	
Adjusted R^2	0.02**	

Notes $N = 1102$. $p \leq 0.001$ ** $p \leq 0.01$ * $p \leq 0.05$
 Source Author’s own work

less than five years’ tenure ($M = 6.18$; $SD = 0.7$; $p = 0.00$; $\eta_p^2 = 0.03$; small practical effect) obtained significantly higher mean scores than those participants with more than five years ($M = 5.96$; $SD = 0.98$; $p = 0.00$; $\eta_p^2 = 0.03$; small practical effect).

14.7 Discussion of Findings

This chapter explored person-centred characteristics (race, gender, age, job position and tenure) as significant predictors of flourishing for employees employed within a higher education institution.

14.7.1 Race and Job Position as Significant Predictors

The multiple regression analysis results have provided original insight in terms of the relation between employees’ person-centred characteristics and their levels of flourishing. Overall, the findings suggest that race and job position were instrumental in explaining employees’ levels of flourishing. The dominant role that race played in terms of predicting flourishing may be explained by cultural differences among individuals’ perceptions of well-being (i.e. flourishing). According to Neff (2007), race groups in South Africa might have different perceptions of well-being. In addition, different perceptions regarding the factors contributing to well-being might affect their level-of-well-being assessments. For example, Moller and Saris (2001) found that, while income was an important determinant of subjective well-being for

Table 14.4 Sociodemographic differences on flourishing

Sociodemographic variable	N	M	SD	Chi-square	df	p	Partial eta squared
Race	African	6.17	0.95	61.94	3	0.00***	0.06
	Coloured	5.87	1.03				
	Indian	6.00	1.02				
	White	5.90	0.80				
Age	25 years and younger	6.18	0.69	16.25	3	0.19	0.01
	26–40 years	6.06	0.94				
	41–55 years	5.99	0.88				
	56 years and older	6.01	0.83				
Gender	Male	6.02	0.85	0.20	1	0.66	0.01
	Female	6.01	0.98				
Job position	Administrative (support)	6.00	0.95	0.06	1	0.80	0.06
	Academic	6.05	0.78				
Tenure	More than 5 years	6.18	0.98	27.76	1	0.00***	0.03
	Less than 5 years	5.96	0.70				

Notes N = 1102. ***p ≤ 0.001 **p ≤ 0.01 *p ≤ 0.05

Source Author's own work

black and coloured individuals, white and Asian individuals were more influenced by personal and social factors (e.g. positive relationships).

Another factor contributing to differences in perception may relate to the concept of Ubuntu. Ubuntu, which is incorporated in African (black) culture, focuses on showing humanity and support to one another, something which could provide a greater sense of social support (Van Dyk, 2016). In addition, workplace policies and legislation such as the Employment Equity Act (Republic of South Africa, 1998) may also explain the relationship between race and flourishing. In recent years, much has been done to improve inequality and promote the employment and development of skills among black employees. According to Sieberhagen, Rothmann, and Pienaar (2009) increased skills may reduce stress since employees who formerly lacked the necessary skills may feel more self-assured and experience lower levels of stress than when they did not have the basic skills. Moreover, the implementation of various transformation initiatives in universities (e.g. New Generation of Academics Programme) has resulted in an increase of black South African academics (Tabensky & Matthews, 2015). As such, a sense of social identity (i.e. a shared culture, heritage, language and traditions) and social connectedness may generally promote a higher sense of flourishing (Eraslan-Capan, 2016).

In terms of job position, this study provides original findings in terms of flourishing among academic and administrative employees. More specifically, academic positions predicted higher levels of flourishing as opposed to administrative positions. The dominant role that job position played in terms of predicting flourishing may be explained by the job demands-resources (JD-R) theory (Bakker & Demerouti, 2007, 2014, 2018). According to the JD-R theory, job demands and job resources may contribute to high or low levels of well-being (e.g. flourishing). In terms of this study, the job demands that are associated with a specific job position (e.g. administrative positions) may cause a depletion of employees' personal resources, resulting in lower levels of flourishing. By contrast, job resources may increase flourishing (Bakker et al., 2003; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Research suggests that administrative employees employed at universities experience conflicting pressures and are required to take on additional work. In addition, administrative employees are required to use new technology with no or limited training (Rothmann & Essenko, 2007). This view is also supported by Bester (2018) who reported similar results in terms of job position and career well-being (i.e. career satisfaction). According to his study, employees' job position may impact the amount of resources they receive which is aligned to their career satisfaction (Bester, 2018).

14.7.2 Significant Differences Among Race and Tenure Groups

The person-centred characteristics (i.e. race and tenure) showed significant differences in terms of flourishing. The findings indicated that African participants expe-

rienced higher levels of flourishing compared to the other race groups. These findings suggest that African participants had a higher tendency to experience positive emotions, engagement, positive relationships, meaning and accomplishments. This is in line with previous research, which indicated that black (African) employees demonstrated higher levels of flourishing when compared to their white counterparts (Keyes, 2007, 2009; Keyes & Simoes, 2012). Similarly, Tay, Ng, Kuykendall and Diener (2014) in the USA reported slightly higher levels of flourishing for blacks (African-Americans) as compared to whites. These findings may be explained by black participants being more resilient in the face of greater social inequality and exposure to discrimination, which are distinctive risk factors for poor mental health (Keyes, 2007, 2009; Keyes & Simoes, 2012). General changes in diversity perceptions, as well as major changes in the work climate for black workers within South Africa and the USA, may also shed more light on these findings.

In terms of tenure, participants with less tenure (i.e. less than 5 years) scored significantly higher on flourishing than did participants with higher tenure (i.e. more than 5 years). This finding suggests that flourishing declines with a rise in tenure and that employees with the shortest tenure were likely to display significantly higher levels of optimism and a sense of purpose than those with higher tenure. This finding is somewhat supported by Meyer (2012) who found higher levels of burnout (e.g. low levels of flourishing) among employees with more years of service (or greater tenure). In this study, employees with greater tenure also experienced higher levels of job demands-resources than those with less tenure. It can therefore be argued that the work environment of novice employees (i.e. those with less tenure) varies substantially from that of more experienced employees (i.e. those with greater tenure) and, as a consequence, their job characteristics may also differ. Drawing on the JD-R theory (Bakker & Demerouti, 2007, 2014, 2018), it can be assumed that novice workers (i.e. those with less tenure) experience fewer job demands and more resources (e.g. social support) and, as a result of this, higher levels of flourishing. On the other hand, more experienced workers (i.e. those with greater tenure) may face higher job demands and lower levels of resources (e.g. social support) and are therefore also likely to experience lower levels of flourishing.

14.8 Limitations and Recommendations

A number of limitations need to be taken into account when interpreting the results of the study. The results are based on a sample of employees from a single higher education institution, all of whom are employed in South Africa. As a result, the findings may not necessarily be generalised to employees working in other industries. Another possible limitation relating to the population relates to the broader sociopolitical context in which the higher education institution operates. As a result, the specific context could have contributed to the perceptions of and differences between the various race groups. Another limitation included the use of specific person-centred characteristics. The person-centred characteristics were limited to race, gender, age,

job position and tenure. Other person-centred characteristics might also have had their own (different) influence on the research findings. Taking the above-mentioned limitations into account, the study nonetheless showed the potential of investigating variables that influence the experience of flourishing. The results of this study could be regarded as unique in encouraging further research into employee well-being practices in the diverse South African context.

14.9 Implications for Employee Well-being Practice

As the nature of work evolves amidst the Fourth Industrial Revolution, new threats to employees' well-being are expected to emerge. JD-R theory has shown to be particularly useful as it promotes an understanding of the job demands and job resources related to flourishing (well-being). Given the complexity of work in Industry 4.0, identifying and managing the job demands-resources that may decrease flourishing is an important step for improving employee well-being. In this sense, organisations should create a psychologically healthy workplace environment by reducing negative job demands and work-related stressors inherent in the future world of work. In addition, organisations should also increase physical, mental and emotional job resources that will increase flourishing and optimal functioning. Importantly, these initiatives should also take into account individual differences among employees.

This study further provides meaningful insight for practitioners to implement positive psychological interventions targeting multiple well-being components that satisfy basic needs such as the need for autonomy, engagement, competence and positive relationships. As a result, organisations should encourage employees to engage in job crafting behaviours in an attempt to proactively redesign the demands of their jobs and reframe their social relationships to provide meaning and purpose. Organisations should also play their part by enhancing support, autonomy and information-sharing, creating employee development plans, promoting a climate of trust and respect and developing leaders (e.g. transformational, authentic and servant) that will build strong relationships with employees. These interventions should also take into account the possible barriers, constraints and challenges that employees from diverse backgrounds face, specifically with regard to race, job position and tenure.

In addition, developing or enhancing employees' personal resources (e.g. psychological capital and emotional intelligence) may have a positive impact on employees' perceptions of their jobs and their levels of flourishing. Organisations should therefore identify high-risk groups (non-flourishers) and then implement interventions to improve their levels of emotional intelligence and psychological capital. More specifically, practitioners should consider the potential differences and the unique characteristics of employees from minority race groups (white, coloured and Indian), those employed in administrative positions as well as those employees with greater tenure (i.e. more than 5 years). In terms of emotional intelligence, practitioners may implement strategies that focus on improving employees' coping competence, stress

management skills, emotional management and emotional resilience. In terms of psychological capital, practitioners could implement interventions that focus on developing hope, optimism, self-efficacy and resilience. By developing and implementing training interventions, employees should also be able to adjust more effectively to the demands posed by Industry 4.0 and be less likely to experience negative well-being effects arising from this transition.

Understanding how person-centred characteristics predict high to low levels of flourishing broadens the theoretical knowledge base of this construct and provides insight into the development of interventions targeted at high-risk groups. As such, it is recommended that organisations integrate these flourishing interventions into their well-being programmes for all employees, but especially for those who have been identified as higher risk groups.

14.10 Conclusion

The study demonstrates that person-centred characteristics (i.e. race, job position and tenure) have the potential to influence employees' levels of flourishing. Race and job position were found to significantly predict flourishing, while differences across the various race and tenure groups were also established. Organisations should therefore consider the unique needs of and differences between individuals, especially those from minority race groups (i.e. white, coloured and Indian), those employed in administrative positions and those having greater tenure (i.e. more than 5 years), when developing and implementing flourishing interventions. The presence of person-centred characteristics in flourishing suggests that universal approaches to intervention measures may not be ideal and that targeted interventions designed to increase flourishing among diverse populations should be developed.

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Elzabé Nel (Ph.D.) is a Lecturer in the Department of Industrial and Organisational Psychology at the University of South Africa (UNISA), South Africa. She is a Registered Psychologist (cat. industrial) at the Health Professions Council of South Africa (HPCSA). She is also an author and co-author of several published articles in local and international journals. In addition, she presented several papers at national conferences.

Chapter 15

Digitalisation and Thriving Within the Contested Terrain of Intersections of Gender, Race, Education and Class Inequalities in the South African Context



Colleen Bernstein

Abstract A large body of research has examined antecedents, mechanisms and consequences of human thriving within the workplace and across the lifespan. This research has examined individual and demographic differences and contextual factors and their implications for fostering or inhibiting thriving. More recently, there has been an interest expressed in examining such antecedents and their mechanisms and consequences, specifically within the context of digitalised workspaces. At present, South Africa is on the cusp of forays into the digitalisation of the workplace and very little research exists on the topic. Of particular interest within the South African context would be an examination of factors that could serve to thwart thriving in digitalised workspaces. In particular, structural inequalities in South African society and the intersections of various demographic differences such as gender, race, education and class status may serve to thwart thriving in Industry 4.0. This chapter aims to explore these factors and their relevance and implications for human thriving in Industry 4.0. Further, possible interventions that could mitigate these factors and promote human thriving within South African workplaces in the era of digitalisation will be proposed.

Keywords Thriving · 4IR · Intersectionality · Race · Gender · Class · Inequality

15.1 Introduction

According to Piasna and Drahokoupil (2017) digitalization, automation and technological changes have rendered a dramatic change in the structure of work along with a shift in career patterns, the timing of work and the standard employer–employee relationship. The impact of these changes has major implications for workers and their well-being within the South African context. These implications may be further amplified by the particularities of structural inequalities within South Africa and intersections of race and gender.

C. Bernstein (✉)

Department of Psychology, University of Witwatersrand, Johannesburg, South Africa
e-mail: Colleen.Bernstein@wits.ac.za

Race, within South Africa, is inexorably intertwined with education and class and the type of work individuals are employed in. Thus, the levels of complexity pertaining to the impact of digitalization, automation and technological change within the South African context are multiplicitous. While a large body of research within South Africa has focused on the intersections between gender and race amongst working women and the relationship of such demographics to stress, health, and thriving; to the authors knowledge, there has been no research that looks at these intersections in relation to stress and digitalization, automation, technological change and thriving. Further, while some research has been done on the implications of digitalization, automation and technological change in relation to gender, work skill level and the well-being of employees internationally, within South Africa, there is scant research on this topic. There is thus a need to explore contextual factors of structural inequalities and South Africa's demographics of race, gender, education and class and how these unique intersections may differentiate South African implications of digitalization, automation and technological change from international trends.

15.2 Chapter Objective

The chapter will begin by defining thriving and by exploring the implications of structural inequalities in society, and how gender and race, education and class intersect within the South African context to thwart thriving. The chapter will then define stress and a theoretical framework for the chapter will then be explicated, within which, stress, intersectional variables and thriving interact. The possible consequences that these intersections may have upon stress, health and thriving will then be outlined. The chapter will then explore the implications of intersectional variables and structural inequalities in relation to levels of employment. The implications of intersectionality, structural inequalities and levels of employment in relation to changes that will be brought about by digitalization will then be examined. The chapter will then conclude with possible interventions and recommendations that can provide some forms of enabilitation, thereby mitigating the negative impact of digitalization upon South African employees.

15.3 Defining Thriving

Thriving can be broadly defined as 'effective holistic functioning' that is 'observed through the experience of high-level well-being and perceived high level(s) of performance' (Brown, Arnold, Fletcher, & Standage, 2017, p. 168). Within the context of work, Spreitzer, Sutcliffe, Dutton, Sonenshein, and Grant (2005) define thriving at work as 'the psychological state in which individuals experience both a sense of vitality and a sense of learning at work' (p. 538). This notion of thriving is envisaged as a joint experience of the affective component of vitality and the cognitive component

of learning. Vitality indicates an individual's subjective experience of energy and liveliness whereas learning refers to the acquisition and application of new knowledge and skills to one's work (Niessen, Sonnentag, & Sach, 2012; Paterson, Luthans, & Jeung, 2014). Ultimately, thriving occurs when employees experience momentum and progress in their work and although both vitality and learning as individual dimensions can result in growth and personal development in one's job, it is the combination of both psychological states simultaneously that enhances both their effects and results in the experience of thriving (Carmeli & Spreitzer, 2009; Paterson et al., 2014; Porath, Spreitzer, Gibson, & Garnett, 2012).

Vitality and learning have been found to predict affect and behaviour in the workplace, with both being correlated to positive well-being and job performance (Niessen et al., 2012). More specifically, research has indicated that outcomes of thriving at an individual level are an increase in individual functioning and adaptability at work, higher levels of general health and improved career development (Carmeli & Spreitzer, 2009; Porath et al., 2012). At an organizational level, organizations benefit through increased performance and lowered healthcare costs, as well as a workforce that is better able to generate creative and innovative ideas and exhibit higher levels of job satisfaction and organizational commitment (Paterson et al., 2014; Porath et al., 2012).

Other definitions such as those cited by Brown et al. (2017) note that thriving is the 'effective mobilisation of individual and social resources in response to risk or threat or challenge' and that thriving '..leads to positive mental or physical outcomes and/or positive social outcomes' (O'Leary & Ickovics, 1995, pp. 122, 136; Ickovics & Park, 1998, p. 237; as cited in Brown et al., 2017).

All of the above definitions have relevance for the examination of thriving in the workplace in the context of the challenging and changing environment of Industry 4.0. In order to thrive, workers will need to respond to the challenge and change presented by digitalization, automation and technological disruption. There are, however, a number of factors that could thwart such thriving in response to the challenge and change implied by Industry 4.0. These pertain to the structural inequalities that remain evident within South African society, intersections of race and gender, and by association intersections of education and class.

15.4 Structural Inequalities, Intersectionality and Thriving

While many societies are stratified according to a range of intersecting social categories in which economic and social resources are unequally distributed (Friel, 2014), the implications of these intersections remain acutely pertinent in South Africa where a history of disadvantage and discrimination under apartheid has inextricably interlinked these demographics (Albertyn, 2007). These inequalities limit individual freedom and empowerment with regard to where individuals may live, grow and work and may often hinder their access to quality and affordable education and thereby higher-skilled levels of work.

Such inequalities have a disabling effect on individuals' ability to improve their socio-economic status and their prospects and thereby their ability to thrive; concomitantly also affecting the ability of their offspring and future generations to thrive (Friel, 2014). In particular, Blankenship (1998) in her '*Race, class and gender analysis of thriving*' notes that intersections of race, gender and class form interconnections that interact to provide a 'complex system of domination...that operate simultaneously to organize social life in general and women's lives in particular' (p. 396). She specifically notes in relation to the definition of thriving offered by O'Leary and Ickovics (1995) that, while mobilization of individual and social resources suggest that such mobilization will enable thriving, if a particular group lacks access to social resources due to race, gender and class inequalities this can disinhibit their ability to thrive.

Thus, in situations of 'risk' and 'challenge' (such as those posed by Industry 4.0), certain groupings that are disadvantaged by virtue of their place in the social hierarchy may be at the greatest 'risk' or 'threat'. That is, those located in the lower rungs of the hierarchy, with less access to resources, face greater risk or threat and may have their thriving impeded while those located in the higher rungs, having greater access to resources, will be more likely to thrive (Blankenship, 1998). That is not to say that individual resources such as proactive personality, social support, psychological capital and intrinsic motivation (Brown et al., 2017) do not play a crucial role in fostering thriving, but in the absence of socio-economic resources, even if one has internal resources, this absence may imply a measure of disadvantage.

15.5 Defining Stress

Ganster and Rosen (2013) note that stress can be thought of as a feature of the environment that acts upon the individual and that manifests in individual responses to environmental demands, threats and/or challenges. The stressor-strain relationship is thus an *interaction* between the two, that is, between the environment and the individual. Within this view, stressors are considered antecedents and strains are the psychological, physiological and behavioural reactions to stressful antecedent events (Bernstein, 2013). This approach also acknowledges that the same stressor or set of stressors does not produce *the same degree* of negative consequences, in terms of (poor) well-being, in *all* individuals and that there are certain factors, intrinsic and/or extrinsic to the individual that can reduce the extent to which stress is perceived and/or can reduce the negative impact of the stress on well-being, when it is perceived (Bernstein, 2013). In the context of this chapter, the environmental demand is the experience of the threat or challenge posed by digitalization, automation and technological change. Intersectional and intrinsic demographic variables such as race, gender, educational level and class and extrinsic factors of social and structural inequalities can impact upon the stress process in terms of variations in perceiving the environmental demand as a threat or challenge, and thereby on one's ability to cope and thrive.

Adopting this view, the theoretical framework of the transactional model of Stress and coping (Lazarus & Folkman, 1984) may be utilized. This model notes that individual differences such as demographics and contextual factors can moderate the ability of the individual to adapt to and cope with change stressors leading to variations in health outcomes. Within the context of digitalisation, the demands that digitalisation places upon the individual would be in terms of a threat to their job or having to upskill to meet the new task demands within a 'new job'. As such, this would act as a possible stressor. Intersectional demographic variables of race, gender, education and class plus the contextual restraints of structural inequalities could intercede (moderate), in that those who are more educated and employed in jobs that are less likely to be made obsolete by digitalization and/or those who have good literacy, numeracy and ICT skills and are able to be upskilled; they will experience less threat and therefore less negative outcomes in response to digitalisation. However, for those who are lacking in education, opportunities and capacities to be upskilled, the outcomes of digitalisation are likely to be far more deleterious.

15.6 Intersectionality, Stress, Health and Thriving

The implications of research findings on race, gender, education and class and the role that they may play in the stress–well-being process remain acutely pertinent to South Africa where a history of disadvantage and discrimination under apartheid has inextricably interlinked race, gender, education and socio-economic status (Albertyn, 2007). South Africa, in particular, is a country that has been stratified along intersecting social categories of race and gender, with race and gender inexorably linked to levels of education and social class. Racine (2003), Mohanty (2003) and Dlamini (2013) note that the oppression arising from one's sex and race interlocks with access to education, health and economic opportunities (Dlamini, 2013, p. 22). Dlamini (2013) in fact notes that education is one of the *main* differentiators in social status. Because of South Africa's past colonial history in which different race groups had differential access to education, Blacks (that is, Black Africans, Coloureds and Indians) in the pre-1994 era had been recipients of drastically inferior education. In particular, the Bantu Education Act of 1953 consigned Black Africans to a level of education that was so impoverished that to date the majority of Africans by virtue of their lack of education remain relegated to unskilled working positions (Dlamini, 2013).

Access to quality education is also exacerbated by the spatial structural inequalities that still exist, despite the ending of apartheid and advent of democracy in 1994. Spatial inequalities have meant that those that are formerly disadvantaged have continued to reside in poorly serviced areas. With better schooling available in more affluent (predominantly White) areas, while poor quality schools are geographically located in economically disadvantaged areas (townships and rural areas)—that are mainly populated by Black Africans and to a lesser extent Coloureds and Indians—these groups remain less likely to be able to access quality educational opportunities

and are therefore less likely to be able improve their education and uplift their socio-economic status.

Post-apartheid-1994, the aim of the new democratic dispensation was to provide redress and equality to all South African citizens. Since then, South African society has made great strides socially, politically and economically with the Constitution, the Bill of Rights and redress legislation such as Black Economic Empowerment, Affirmative Action and Employment Equity and equal access to education being granted to all citizens, particularly those that were previously disadvantaged (Bernstein, 2013). However, in reality, the aim to provide redress and equality to *all*, particularly previously disadvantaged groups, has not been fully realized. Such legislation has enabled only a small grouping to obtain access to better education and to thereby gain employment at higher skill levels. This has led to the emergence of a Black middle class. Nonetheless, this emerging middle class remains a very small proportion of the overall Black population, with most still continuing to reside in economically deprived areas, both urban and rural.

To date, the formerly disadvantaged, that is, Blacks of both genders, still live in areas that are socio-economically disadvantaged. Within these areas (Black townships and rural areas), schools are under-resourced and still offer very poor levels of education. With such poor access to quality and affordable education, living in these areas often consigns inhabitants to a vicious cycle of being unable to improve their level of education and thereby their upward mobility into more skilled positions of work and a higher socio-economic class. Many of these individuals remain in precarious or poorly paid employment, with Friel (2014) noting that individuals in precarious employment or poorly paid employment are often constrained in terms of the areas in which they reside. Housing prices in more affluent areas are simply out of reach for such individuals who are then often compelled to stay in areas that are poorly resourced and far away from work, thus 'reinforcing social stratifications of choice and opportunity for generations to come' (Friel, 2014, p. 162).

Research has indicated that the intersections of gender have even more deleterious outcomes for women as compared to men (Albertyn, 2003, 2007). Working women are exposed to a greater 'amount' of stress than men (Bernstein, 2013; DePasquale et al., 2017; Fielden & Cooper, 2002; Gibson, Li, Inslicht, Seal, & Byers, 2018; Gyllensten & Palmer, 2005; Johnson, Greaves, & Repta, 2007; McDonough & Walters, 2001; Patel, Govender, Paruk, & Ramgoon, 2006; Van den Berg & Van Zyl, 2008). With regard to exposure to greater amounts of stress, McDonough and Walters (2001) purport that women perceive a greater degree of stress because there are more demands placed upon them. That is, they are exposed to more stress due to the fact that they tend to or are required to take on more roles relating to work *and* family. As a consequence, they could be more exposed to role overload and greater cumulative stress (McDonough & Walters, 2001). Working women, particularly those that are married and/or have children, find themselves subject to ever-increasing demands, that is, demands from work *and* family (Patel et al., 2006; Van den Berg & Van Zyl, 2008).

Nyberg, Leineweber, and Hanson (2015) and Trzebiastowski and del Carmen Triana (2018) similarly note that women report greater work-related quantitative

demands, higher levels of emotional stress and exhaustion and work–family conflict, as compared to men. This research also indicates that women in managerial positions fare better than women in non-managerial positions in terms of well-being outcomes (Lippert, 2018). Although women in managerial positions do not necessarily experience *less stressors* than their non-managerial counterparts, they have greater resources available to them. For example, women in managerial positions may have the necessary financial resources to afford domestic help, which enables them to cope more effectively with stress, particularly stress pertaining to work–family balance (Fielden & Cooper, 2002).

However, irrespective of job level, and more or less resources, women at work *are* subjected to increasing stressor loads as they attempt to manage *both* family and occupational roles (Patel et al., 2006; Nyberg et al., 2015; Trzebiastowski & del Carmen Triana, 2018; Van den Berg & Van Zyl, 2008). Compared to their male counterparts, research suggests that women report greater levels of stress as they often work longer hours than their male counterparts (Nyberg et al., 2015; Trzebiastowski et al., 2018). This is due to their having a greater unpaid workload, which is their load as primary home and caretaker of family needs along with their paid working hours. These longer working hours pose a serious threat to working women’s mental and physical well-being and their ability to thrive which place women in an increasingly poorer position compared to males with regard to their health (Fielden & Cooper, 2002; Nelson & Burke, 2002; Sparks & Cooper, 1999; Van den Berg & Van Zyl, 2008).

Levels of education also play a role in disadvantaging women. Educational differences may impact on the way in which stress is perceived with research indicating that the greater one’s level of education the greater one’s problem-solving skills and thereby the greater one’s capacity to resolve stressful situations (Bernstein, 2013). Therefore, in the event of stress perception, those that are more educated may have better problem-solving and coping strategies to enable them to master and manage external environmental stressor situations (Bernstein, 2013). Research on women, in particular, has indicated that more educated women have a higher degree of self-efficacy, mastery and sense of control in the event of being faced with stressful situations (Salguero, Martinez, & Monteoliva, 2008).

The intersections of gender and education with race expose women to even more deleterious outcomes (Albertyn, 2003, 2007). In this regard, research notes that differently positioned femininities, in the context of intersections of race, social class and unequal power exchange, are further systematically subjected to oppression and disadvantage (Dlamini, 2013; Diggins, 2011; Lewis, 2006; Schippers, 2007). Dlamini (2013) notes, ‘intersectionality acknowledges and illuminates where disadvantage interplay and coincide’ amongst women of differing race and class (p. 3). ‘Intersectionality takes into consideration socio-historical contexts and the combined and cumulative effects of marginalization based on gender, race and class’ (Dlamini, 2013, p. 10).

While non-White races of both genders suffer disadvantage, Albertyn (2003) specifically notes that women in South Africa, particularly those belonging to formerly disadvantaged groups, face the ‘double oppression’ of race and gender (and by

implication, poor education and social class). Thus, while it is noted that all women may be disadvantaged as compared to men, it is women of colour, particularly those of lower classes who lack education, that are subjected to the greatest discrimination (Hurtado, 1989). White women, (more especially those that are well educated and of a higher class), experience less disadvantage because of their closer proximity in the social hierarchy to White men. Schippers (2007) notes that White women enjoy an identity that is 'hegemonic' by virtue of their close proximity to White men and their adoption of traits that are approved by White males, while women of colour have femininities that are defined as pariah by virtue of their distance from the traits that define White hegemonic femininity and by implication White hegemonic masculinity. Thus, although White women are still subjugated to subordinate positions as compared to men, their closer proximity to White men allows them a measure of relational power that limits their disadvantage as compared to women of colour and lower education and class (Hurtado, 1989).

In research carried out by Milner, King, LaMontagne, Bentley, and Kavanaugh (2018) and Lippert (2018), it was noted that intersections between gender, race, education and class have clear implications for levels of stress experienced and health status. Lippert (2018) reports that those that are more educated hold higher-level jobs with concomitant higher wages and decision-making authority as compared to those with lower educational levels. This, in turn, evidences in lower levels of perceived stress and higher biomarkers of stress-related immunity for those with a better education in higher-level jobs as compared to those with lower education in lower-level jobs. Further, Lippert (2018) reports lower levels of perceived stress and higher levels of immunity biomarkers in White women as compared to Black and Hispanic women.

Within South Africa, while there has been a shift with redress increasing representation of the formerly disadvantaged in spheres of power and influence in both corporate and government sectors, those that are previously disadvantaged are still under-represented at higher skill levels and this is even more evident for women, of colour. In a study conducted by Van den Berg and Van Zyl (2008) on a sample of South African career women, significant differences between White, Black, Coloured and Asian women were reported on both exposure to number of stressors and perceptions of these stressors. More specifically, they noted that women in Black African, Coloured and Asian race groups were exposed to greater life stress as a function of their social life conditions as compared to those that were White. Van den Berg and Van Zyl (2008) note that South African women, particularly Black women, are subject to greater disadvantageous and negatively stressful experiences at work as they are unable to access higher-level positions and if and when they are, they are often placed in such positions with inadequate resources, training and support, all of which have concomitant implications for their ability to thrive.

Thus, on the basis of this fundamental suggested proposition that gender, race, educational levels and social class can define the conditions of life to which individuals are subjected, with stressful events and circumstances arising out of the structural contexts and inequalities of peoples lives (Van den Berg & Van Zyl, 2008), the fol-

lowing section will examine the intersections of gender, race and education and their implications for employment levels and thriving.

15.7 Intersectionality and Employment Levels

Differential gender exposure to stress, intersecting with race, educational levels and social class and definitions of the various femininities, all intertwined with the aforementioned structural inequalities are evidenced in the levels of employment that individuals of different race groups and genders are able to secure. This, in turn, has implications for thriving in the present, and in the future of Industry 4.0.

With regard to employment levels, recent figures supplied by the latest Commission for Employment Equity Report (2017–2018) support the fact that different race groups and women, and more so women of colour, are not occupying higher positions as compared to their representation within the population at large (see Table 15.1). The implications of this in relation to digitalization become evident when we examine job levels and the extent to which jobs in certain levels are more or less susceptible to disruption by digitalization.

Data supplied by the Commission for Employment Equity (CoEE) within the aforementioned report clearly indicates that there are divisions across gender and race in terms of the skill level of work carried. These differences are particularly evident at the highest levels (for both gender and race) and at the lowest skill levels (for race).

Within South Africa, although the feminization of the labour market is evidenced by the fact that as of 2017–2018, 45.3% of females as compared to 54.7% of males are economically active, skill levels are still segregated by gender and race. The current CoEE (2017–2018) report indicates that males still dominate at all higher levels of work (top management, senior management, professionally qualified and technically skilled) as compared to females (Figures supplied by the Commission of Employment Equity (CoEE) 2017–2018 18th Annual Report) (see Table 15.1). In addition, this report indicates that at top management level and senior management level, these levels are still dominated by Whites (as compared to other race groups) at 67 and 65.1%, respectively. Considering that, in terms of race, within South Africa, the overall economically active population (EAP) is Black (78.5%), White (9.1%), Indian (2.8%) and Coloured (9.6%); it is clear that Blacks, followed to a far lesser extent by Indians and Coloureds, are significantly under-represented at top and senior management levels. With regard to professionally qualified and technically skilled, the disparities along racial and gender lines are less evident. However, this CoEE report notes that for professionally qualified, (middle management level), the proportion of real representation for African groups as compared to other population groups is about half of the national EAP for their grouping. Thus, while the national EAP for Africans is 78.5%, at these levels, only half of this national EAP is represented at the professionally qualified level. Once again, these figures illustrate that at

Table 15.1 Race and gender by skill level

	White	Male	Female	B	Male	Female	Coloured	Male	Female	Indian	Male	Female
Top management	67.7%	54.5	13.2	14.3%	9.6	4.7	5.2%	3.3	1.9	9.4%	6.8	2.6
Senior management	56.1%	38.1	18	22.1%	14	8.1	7.7%	4.7	3.1	10.9%	7.1	3.8
Professionally qualified (and experienced specialists—middle management)	36.5%	21.1	15.4	42.5%	20.8	21.7	9.7%	5.0	4.7	8.8%	4.9	3.9
Technically skilled (academically qualified, technically trained—junior management)	19.6%	10.2	9.4	61.7%	32.7	29.0	11.3%	5.8	5.5	5.6%	2.9	2.7
Semi-skilled/routinized	5.8	2.4	3.4	76.9	44.8	32.1	12.1	5.8	6.3	2.9	1.4	1.5
Unskilled/routinized	1.2	0.8	0.4	83.5	49.3	34.2	11.1	5.7	5.4	0.8	0.5	0.3

Note Figures do not total 100% as foreign nationals have not been included in the table
Source Commission for Employment Equity Report (2017–2018) (public domain)

levels of middle management (as with senior and top management), Africans remain disproportionately under-represented.

At the semiskilled and unskilled level, this report indicates that at the semiskilled level, most of the workforce is Black African ($m = 39.3\%$ and $f = 29\%$) followed by Coloureds ($m = 7.1\%$ and $f = 6.8\%$); Indians ($m = 2.3\%$ and $f = 2\%$) and Whites ($m = 5.6\%$ and $f = 6.7\%$). The same pattern is clearly evident for the unskilled group where race disparities are even more evident. At the unskilled level, 83.5% are Black African; 11.8% Coloured; Indian 0.8% and White 1.1%. Thus, while these proportions at the unskilled level are aligned with the National EAP, they are indicative that Black Africans are consigned to the lowest, most poorly paid levels of work.

To summarize: At higher levels (senior and top management), there is a much greater proportion of Whites and White males are far more highly represented as compared to White females. At middle (professionally qualified) to junior management (technically skilled), though gender disparities are not significant at these levels, non-Whites have greater representation. However, this still does not align to their proportion of the economically active population. At the lowest skill levels, that is, semiskilled and unskilled, there is very high African representation. This is likely so as it is this group that has, as mentioned, been the most disadvantaged in terms of lack of education and lack of skills and thus, it is likely that only at this level may they be able to obtain formal employment.

The previous sections have outlined and defined societal structural inequalities by race, gender and education. In addition, there has been a discussion of the greater exposure to stress for working women compounded by intersections of race, gender and education. Furthermore, figures have been presented indicating divisions across race and gender with regard to skill levels of work. All of these inequalities and divisions, in turn, intersect with the threat of digitalization and thereby an individual's ability to thrive at work. Furthermore, the implication of the above-outlined research and figures provided by the CoEE (2017–2018) report seem to indicate the greater exposure to disadvantage for working women, particularly women of colour, in relation to employment levels. In the following section, the impact of digitalization in relation to race, gender, education, class intersections and employment levels are discussed in detail.

15.8 Implications of Intersectionality and Employment Levels for Employee Thriving in the Digital Age

Opposing arguments have been offered regarding the implications of digitalization on employment and on thriving (Slusarczyk, 2018). From a positive perspective, it has been proposed that digitalization, technical advances and automation will lead to cost reductions, improvements in performance and an offering of improved products and services (Slusarczyk, 2018). Digitalization will free humankind from monotonous

forms of employment and will enhance their work experience. In addition, it will create a whole range of new job opportunities (Danaher, 2017). As such, it has the potential to reshape our workforce for the better, unleashing an increase in productivity and ushering in a new era of innovation. In one estimate, Accenture forecasts that artificial intelligence (AI) could double the economic growth rates of countries by 2035. These gains will come from computers doing what they have always been good at—helping us to make better use of our time (Bergvall-Kareborn & Howcroft, 2013; Butler-Adam, 2018; Danaher, 2017).

However, while digitalization may offer many benefits to organizations, there are a number of barriers that could impede its implementation and the positive transformation that it implies (Slusarczyk, 2018). For those already in employment, the utopian implications proffered may not be experienced and these changes may lead to a future that is far gloomier. That is, it may be more a case of ‘Foucauldian gloom’ than ‘utopian sunshine’ (Driver, 2002). For many, particularly those in low-level unskilled jobs, they may find their positions become obsolete as they are replaced by robotics and automation (Danaher, 2017; Gardner, 2017; Johannsen, 2018). It is at these points that race and gender within South Africa intersect to render Blacks and women the most vulnerable. As there are more Whites and less women in senior and top management levels and significantly more Blacks in semiskilled and unskilled work, it is at this point that women and Blacks are exposed to greater vulnerability. In addition, many individuals, particularly those at lower levels, may not be provided with on-the-job upskilling or cannot afford to reskill themselves and may therefore be unable to take up the ‘new jobs of the future’.

This vulnerability arises as digitalization brings about changes in the structure of employment, changes in the task content of work and changes in forms of employment, which can have a negative impact on workers lives and their ability to thrive. Further, it is argued that while these changes may negatively impact on both men and women, the overall impact on women is more deleterious (Piasna & Drahokoupil, 2017). An examination of this negative impact on lower-skilled workers and the possible differential impact on women working at this level requires that we examine the extent to which occupations are routinized or non-routinized, manual or non-manual and how digitalization will bring about changes in ‘forms of employment’ and ‘work organization’.

Piasna and Drahokoupil (2017) note that jobs that are routinized are more likely to be automated than those that are not. Arntz, Gregory, and Zierahn (2016) also note that this is the case and that in this regard, there is a ‘skills-bias hypothesis’ with non-routinized work requiring a higher level of skills and often involving the use of interpersonal contact, people skills, creativity and critical thinking (Piasna & Drahokoupil, 2017). Consequently, in accordance with the skills-bias hypothesis, those in top management and senior management (mainly White males and to a lesser extent White females) are less likely to have their jobs automated because of the requirement that these jobs entail critical thinking skills, while workers in routinized work requiring lower level of skills (mainly Blacks) are likely to bear the brunt of automation. Further, jobs that are more manual (as opposed to non-

manual) as well as more routinized (as opposed to non- or less routinized) are far more vulnerable to automation and digitalization.

While there is a dearth of research evidence indicating what job levels will be affected by digitalization within South Africa, international trends suggest that, in South Africa, top and senior management (occupied mainly by White males and to a lesser extent White females) are the levels least likely to be affected by digitalization, while semiskilled and unskilled levels (occupied mainly by Black Africans of both genders) may experience the most negative impact in terms of digitalization. In addition, *at all levels*, as mentioned, women's twofold burden of work and family responsibilities is a double oppression to their thriving (Albertyn, 2007; Van den Berg and Van Zyl, 2008). Further, although it is noted that women working at more senior levels may be able to afford domestic help and therefore may experience the burden of household duties to a lesser extent, for those at the lower levels, where financial constraints will preclude such assistance, there will thus be little to no alleviation of their paid and unpaid workload.

Another area within which automation brings about great change regards 'forms of employment' and 'work organization'. Once again, it is in 'forms of employment' and 'work organization' that women, in particular, may be disadvantaged. Rubery (2015) notes that digitalization may lead to fragmentation of the employment relationship. In the past decades, there has been a decline in the standard employment relationship in which individuals work for a single employer and have a 'job for life' (Piasna & Drahokoupil, 2017). Outsourcing and the use of consultants and independent contractors have fragmented the standard employer–employee relationship and thereby reduced the degree of protection that such 'employees' have in this relationship. For the most part, these workers engaged in 'multiple fragmented work gigs' are not covered by traditional labour legislation and are therefore less protected, thus finding themselves in a work situation that is more precarious (Campbell & Price, 2016; Wall, 2015).

Digitalization can accentuate these conditions as it has enabled companies to offer fragmented forms of non-standard employment to employees, who by virtue of having an Internet connection and a home computer can work outside of the office and be paid according to the piece work that they complete in hours that are by and large unstructured. In South Africa, extremely high levels of unemployment have often disabled individuals from finding permanent formal employment (Mapungubwe Institute for Strategic Reflection [MISTRA]—Annual Report, 2017/2018), and thus working digitally from home and doing consultant piece work may often be the only alternative to earn an income for those in possession of digital skills, a home computer and an Internet connection. Such fragmented work and 'home gigs' and 'solo-self employment' (if the individual does not employ any other employees) are the most precarious form of work associated with possible irregular income, no benefits and lack of group representation, for example, in the form of unions or bargaining councils (Wall, 2015).

International trends show that this type of work mostly affects those in professionally skilled and technically skilled occupations (Piasna & Drahokoupil, 2017). Further, it is women that may find themselves in this precarious situation more than

men due to their having competing home and work obligations (Chandola, Booker, Kumari, & Benzeval, 2019; Young & Schieman, 2018). Many women with young families opt for this form of work where they can work digitally from home. Such a work arrangement *seems* to offer women the opportunity to manage their household chores and child care while still engaging in paid work.

Thus, on the surface while this ‘work from home’ arrangement, enabled through digitalization, may appear to be an facilitator to women’s potential to thrive, as it allows women with family to telecommute and work from home, the informal work relationship that this gives rise to opens women up to less traditional protections that characterize the standard fulltime employer-employee relationship (Baines & Gelder, 2003; Eurofound, 2015; Eurofound and the International Labour Office, 2017). In addition, though such work appears to provide women with greater freedom to manage work–home balance, such arrangements may often lead to the inability to separate and create clear work–home boundaries. The constant spillover of work into home may thus, have a negative impact of women’s overall well-being and may, as a consequence, serve as an inhibitor to their thriving and well-being (Chandola et al., 2019; Hillbrecht, Shaw, Johnson & Andrey, 2008; Young & Schieman, 2018). In addition, as South Africa is a country still dominated by high levels of patriarchy and low levels of egalitarianism within households, this further compounds the ‘spillover effect’ as women struggle to simultaneously manage work and home responsibilities.

While the main purpose of this chapter has been to examine the intersections of gender, race, education, class and social–structural inequalities and their implications for employee thriving in the digital age, Slusarczyk (2018) notes that there are further inhibitors for building digital operations in South Africa. These pertain to a shortage of qualified staff, insufficient talent (to target and train), and a lack of digital culture and training; all of which are intertwined with poor educational opportunities. In addition, Slusarczyk (2018) also singles out a lack of investment in basic infrastructure and ICT technologies. These impediments all have major implications for workers ability to adapt and thrive in Industry 4.0. Thus, in order to better prepare South African employees for Industry 4.0, a number of drastic interventions and policy changes need to be undertaken.

15.9 Interventions and Recommendations

In order to mediate the inhibiting factors that may thwart individuals’ ability to thrive in the era of digitalization, a range of interventions and recommendations can be made. Interventions need to occur at a number of critical levels, most crucially at the levels of improving education and eliminating intersectional and educational disadvantages. There is a need to intensively step up on the promises made post-1994 that *all* individuals, irrespective of race and gender, are to have access to quality education. Further demands in relation to this constitutional right are that access to quality education must be free. Since 2015, there have been national student

protests that have demanded that all qualifying students be given free access to tertiary education.

In addition, the work begun post-1994 to alleviate race and gender discrimination needs to be escalated. Greater policy changes are also required to address structural inequalities in terms of housing and health care and there needs to be greater investment in infrastructure. Additionally, there needs to be a concerted effort to upskill those already in employment—particularly at the lower and unskilled levels—to ensure that they are not left behind or completely displaced by technology with the implementation of Industry 4.0.; thus becoming part of *The 'Precariat'*, that is, those relegated to no employment or precarious employment (Mapungubwe Institute for Strategic Reflection [MISTRA]—Annual Report, 2017/2018).

With regard to education, interventions need to occur at *all* levels, that is, primary schooling, secondary schooling and tertiary education. As discussed, the most critical impediment facing current employees within the South African context is a history of educational disadvantage, with a large proportion of the population lacking proficiency in written and oral communication, numeracy skills and information, communication and technology (ICT) skills (Bernstein & Osman, 2012). This lack of education and ICT skills is likely to critically impair the readiness of South African employees for Industry 4.0. Further, lack of adequate education, manifested in illiteracy or at best poor literacy, poor numerical skills and little to no ICT skills, relegates these individuals to employment that is unskilled or at best semiskilled and, as mentioned, these groups are the most likely to suffer the brunt of automation as their jobs are largely routinized.

According to Griesel and Parker (2009), our national schooling system has failed dismally to lay the foundation for critical competencies of proficiency in English and ICT skills within school leavers. While internationally, in most developed countries, an adequate foundation for these competencies is already laid in the schooling system *before* learners enter the workforce or higher education; in South Africa, this has not been case (Griesel & Parker, 2009). South Africa's history of poor schooling for the formerly disadvantaged classes and a lack of well-qualified teachers compounded by poverty and unemployment of learners' parents are all evident in our school leavers (Loots, 2009), resulting in a workforce consisting of individuals who lack the preparedness to cope with the demands of digitalization in the workplace.

For those who manage to complete their secondary schooling and do not immediately enter the workforce, the poor quality of their schooling does not prepare them for tertiary studies in fields required to prepare them for a digital future. An examination of courses under study in higher education conducted by Bhengu, Cele, and Menon (2006) indicate that students, particularly African students, are not entering into the fields of engineering, ICT, technology, mathematics and science in sufficient numbers and are therefore not graduating with the disciplinary content, attributes and skills that the digital economy requires. Discipline ratios indicate that a far higher proportion of graduates are emerging from Humanities and Social Sciences (HSS) than from Science, Engineering and Technology (SET) (Bhengu et al., 2006).

Figures supplied by STATS SA, in their 2016 report, 'Education Enrolment and Achievement', indicate that while there has been some positive shift in these ratios,

approximately only 16% of tertiary enrolments are in the fields of SET. In addition, the STATS SA (2016) report notes that a disproportionately small percentage of African students as compared to White and Indian/Asian students are enrolled in tertiary institutions. Further, the STATS SA (2016) report notes that White and Indian/Asian students' complete their higher education qualification earlier and are less likely to drop out, as compared to African students.

The slower throughput rate and higher dropout rate of African students have been attributed to poor quality secondary schooling and a history of socio-economic disadvantage (Loots, 2009). Based on this history, Cilliers (2018) notes that interventions in education need to 'aggressively' occur at a primary, secondary and tertiary level. There is an urgent need to build skills in sciences, engineering, manufacturing and mathematics which are the drivers of future jobs in Industry 4.0. Building such skills require suitably qualified educators, well-resourced schools in all areas (including remote rural areas) and the introduction of digital technologies in schools to prepare learners for digital futures.

In addition, although there has been much research on the qualities that graduates require in terms of 'graduateness' as they leave the confines of higher education to enter the world of work (Bernstein & Osman, 2012; Coetzee, Botha, Eccles, Nienaber, & Holtzhausen, 2012), a new definition of graduateness is required as we face Industry 4.0. Digital workspaces will require 'adaptable people whose jobs are re-imagined, enriched or facilitated by technology' (Butler-Adam, 2018, p. 114). 'To succeed as a member of society in the era of the fourth industrial revolution, numeracy, literacy, and an understanding of how the world operates are essential' (Butler-Adam, 2018, p. 114). (Even) students who do not enter the fields of SET and rather enter the humanities need to understand the basic foundations of the digital economy, technology and AI, and how it operates. 'This is different kind of decolonization of curricula' that requires 'not only that people can implement, manage and work with the technology *and* with one another but that they are also adaptable problem solvers that can express themselves in both the written and spoken word and can make the kinds of ethical and moral decisions that AI is unlikely to be capable of' (Butler-Adam, 2018, p. 114). So interestingly, while South African HEI's are currently introducing language policies making it compulsory for all students to learn an African language, perhaps what should also be a requirement is making it compulsory for students in all disciplines to do courses which prepare them for digitalization.

Robotization, informatization and the demands of Industry 4.0 thus require an entire overhaul of the education system (Johannsen, 2018). School leavers and graduates need to have knowledge balanced between theory and practice, an attitude of professionalism, experience in multidisciplinary teamwork and outstanding communication skills (Kozák, Ružický, Štefanovič, & Schindler, 2018). Gardner (2017), in his examination of tertiary institutions, notes that HEI's will be challenged to make radical changes to their curricula. There is a need for collaboration and a crossing of complex disciplinary domains in which the silos prevalent across faculties within universities are to some extent blurred, with the creation of overlap with one another, particularly with regard to technology, science and mathematical skills. Universi-

ties need to shape their students into a new form of graduate, that is, the ‘T-shaped professional’ who is an “adaptive innovator... best suited to thrive on the edge of chaos” implied by the changes and challenges of Industry 4.0 (Gardner, 2017, p. 73; Johannsen, 2018). It is thus evident, that there is a need exert an intensive effort at all levels of primary and secondary schooling *and* for tertiary education, with regard to the type of learning that is undertaken in order to prepare our population to become digital citizens capable of thriving in Industry 4.0.

In terms of gender discrimination, while a concerted effort has been made to reduce gender barriers, more remains to be done especially for those in employment. Piasna and Drahekoupil (2017) note that public policies need to address aspects underlying gender discrimination such as the availability of affordable childcare, national support for greater participation in care activities, for example, providing males with paternity leave, working time regulations that promote work–home balance and promotion of a national culture which encourages egalitarianism with regard to household duties amongst families.

Similarly, with regard to race and gender discrimination in relation to employment practices, although much has been done to transform South African workplaces, supported by redress legislation such as Affirmative Action and the Employment Equity Act, figures from the latest CoEE report (2017–2018) indicates this work remains unfinished and requires continual progress.

Structural changes, policy changes, investments and improvements to the economy are also required to prepare South African society as a whole to participate and thrive in the forthcoming digital revolution. Friel (2014) and Baker et al. (2018) note that in order to address inequalities, policy levers need to be put into place to improve service delivery, health, quality of education and housing. This requires ‘strong and ethical leadership, political courage, progressive public policy and social struggle action’ (Friel, 2014, p. 162).

Moreover, there is a need to foster local and foreign investment so as to lower excessively high levels of unemployment. The implementation of such technologies requires major financial investment in terms of physical infrastructure, a well-maintained transportation network, sufficient bandwidth at low costs countrywide and a stable and secure energy supply. Presently in South Africa, there are critical threats regarding the stability of our national electric grid (ESKOM); an inadequate transportation network and data costs remain high as compared to other countries in Africa and the rest of the world (Observer Research Foundation, 2019). Thus, structural and infrastructural constraints need to be urgently addressed to ensure that South Africa is not left lagging behind as the world and the rest of Africa digitalises. In addition, there needs to be a concomitant growth in the economy and a concerted effort to increase jobs and reduce unemployment, particularly, for those who could be displaced by the new technologies. With regard to the latter, upskilling would be a major intervention.

The timing of such upskilling is also critical. In South Africa, unemployment at present is at levels that are inordinately high and way exceed those of other countries worldwide. Unemployment is presently at an unprecedented height of 27% and this number may increase with major job cuts imminent in the mining industry, possible

job losses with the unbundling of ESKOM and proposed cutting of the number of employees in the civil service. According to the Mapungubwe Institute for Strategic Reflection (MISTRA) (Annual Report 2017/2018), it is projected by 2022 that the unemployment rate will be close to 29%.

Thus, timeous upskilling is crucial if the country is to avoid further disruption and job losses. Gardner (2017) notes Industry 4.0 will lead to a massive disruption to existing jobs (particularly those that are routinized) and even if government, or more so in South Africa, the labour unions, attempt to maintain job stability by halting disruptions or slowing down digitalization (as it is perceived that such automation benefits capital and not workers) (Danaher, 2017, p. 46); in the long term, they will not be able to halt the advance of such technologies. In this event, Gardner (2017) and Johannsen (2018) note that Industry 4.0 may lead to a temporary economic crisis as the destruction of current jobs may occur before the creation and establishment of new jobs and professions. The latter will require new skills and competencies and unless those displaced have such skills or competencies, they may be faced with no means to survive as their jobs become obsolete (Danaher, 2017). It is thus incumbent on organizations, as part of their skills development required by legislation, that they provide targeted training for those who need to be upskilled to meet the needs of digitalization.

However, there is a caveat. That is, if those that need to be upskilled are lacking in language and numerate proficiencies, their upskilling becomes increasingly difficult to accomplish. Such upskilling requires that employees have the requisite basic proficiencies in place to enable their upskilling. Thus, whether this upskilling is indeed possible remains to be seen in South Africa where massive unemployment and educational deficits exist and where, if organizations do automate, they may have insufficient vacancies to fully employ all obsolete workers into new upskilled positions. The impact of this technological advance is so vast that it is not likely that all workers can be protected. In this regard, Mindell (2015) notes that: 'Change the technology and you change the task, and you change the nature of the worker—in fact you change the entire population of people who can operate the system' (cited in Gardener, 2017, p. 13). Given South Africa's severely constrained economic growth and ability to create jobs, the possibility of *upskilling for all* and avoiding major job losses looks increasingly bleak, leading to the creation of a large 'Precariat' within South Africa.

Solutions to the threat of unemployment in the formal sector, as noted by the Mapungubwe Institute for Strategic Reflection (MISTRA) (Annual Report 2017/2018), are the introduction of the basic income grant and a concerted effort to advance small, medium and micro enterprises (SMME's). MISTRA (2017/2018) notes that South Africa's major union body, the Congress of South African Trade Unions (COSATU), is urging the government to provide a comprehensive social security plan in which a basic income grant is supplied to all.

In addition, there is a push to by COSATU to provide places for *more* individuals to enter the public and civil service for a stipend. However, given the financial constraints South Africa finds itself in at present, and the drive to reduce the public sector wage bill, the cost impact and affordability will mitigate against this implementa-

tion. Another solution offered by the MISTRA (2017/2018) is that greater effort and finances are put into supporting SMME's. SMME's are proposed as a major source of job creation and poverty alleviation, providing informal business owners with independence and the possibility of creating jobs for others if their enterprise is successful. However, the success of such enterprises will rely heavily on financial support from government, that such enterprises are in the right 'location' (and if not that they have digital connectivity and a means to transport their goods and services), and that such enterprise owners are provided with financial and management skills to enable them to run their own businesses successfully. Such support has been critically absent in the past, contributing to the high failure rate of such enterprises.

15.10 Conclusion

The present chapter has provided a unique insight into the interrelationship of intersectional variables or race, gender, education, class and structural inequalities in the South African context. The chapter has attempted to demonstrate how these variables may intervene in the relationship between the changes and challenges of workplace digitalization and outcomes of well-being and thriving. More specifically, the chapter has attempted to illustrate that there are a number of major inhibitors that may serve to constrain South African employees and the country itself for entry into Industry 4.0. Although it is noted that many countries, including those in the developed world, will encounter difficulties pertaining to the changeover to a digital economy, South Africa's problems relating to intersectionality and structural inequalities are profound and to some extent unique. A concerted effort needs to be undertaken to mitigate these inhibitors to ensure that South Africa and its people are not left behind in an age that offers great promise for growth and thriving. At present, socially and politically, South Africa lies at an important crossroad. If the right policy levers are put into place to enable that we follow a path to improve policy certainty, to secure local and foreign investment, grow jobs, and improve education, housing and health care, the potential for a promising future, that is, one in which workers of all persuasions may flourish and thrive, remains a hopeful possibility.

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Colleen Bernstein (Ph.D.) is a Senior Lecturer in the Department of Psychology, School of Human and Community Development at the University of the Witwatersrand. Prior to joining the department, Dr. Bernstein spent eight years in the field of Learning, Training and Development working for the Centre of Learning, Teaching and Development (CLTD) at the University. Currently, and for the last nine years, Dr. Bernstein has lectured organizational behaviour to third year students, Theoretical Foundations of Organizational Behaviour to Industrial Psychology Honours students and Critical Human Resource Development (CHRD) to the Industrial Psychology Masters students. In addition, Dr. Bernstein is course coordinator for the Industrial/Organizational Psychology Masters' Program at the University of the Witwatersrand. Dr. Bernstein has focused her research on sex and gender role identity, work stress, workplace bullying, toxic leadership, nurses' well-being at work, social support, gradueness, psychological capital and flourishing. She has published ten papers in DOE accredited and international journals and one book chapter that focus on the aforementioned topics. Dr. Bernstein is also Section Editor for the South African Journal of Industrial Psychology and has acted in this role from 2013 to date.

Part V

Organisational Conditions and Human Thriving

Part V of the book collection provides an overview of important organisational conditions that need to be established for human thriving and flourishing in Industry 4.0 workplaces (*see* Coetzee, Chap. 16; Bester, Chap. 17; Lee and Sirgy, Chap. 18; Ludike, Chap. 19). These organisational conditions pertain to the intra-personal/intra-digital and inter-personal/inter-digital dimensions of holistic human thriving.

Key Emerging Issues for Research

- Quantitative and qualitative research on people's experiences of the transformation of jobs and the cyber-physical interactions that are part of new workplace digital technologies, on their vitality, learning and feelings of psychological safety.
- Research that helps build new psychological theory relevant to Industry 4.0 organisational and work behaviour.
- Research on workers' perceptions of the extent/impact of digital transformation/innovation on their sense of psychological safety and human need satisfaction in the changing workplace.
- Extended research on the job demands such as work pressure, work-home interference, isolation and slower decision-making capabilities as a result of different time zones in digital virtual workspaces.
- Research on human thriving and flourishing in virtual team contexts.
- Research on the effects of schedule flexibility and telecommuting on inter-domain work–life balance strategies of employees.
- Research on factors enabling and thwarting organisations' and individuals' ability to adapt and learn @ speed and scale.

Key Emerging Issues for Practice

- Innovative, technology-enhanced supportive organisational practices that facilitate human thriving in the digital workspace of Industry 4.0.

- Technology-enhanced assessment of workers' perceptions of the extent/impact of digital transformation/innovation on their sense of psychological safety and human need satisfaction in the transforming digital workplace.
- Organisational practices that enhance perceived organisational safety climate, and ensure organisational, supervisor and co-worker/team support for technology adoption and effective human-digital technology interaction/collaboration.
- Organisational practices that enhance thriving and flourishing conditions for the virtual team environment: communication and inter-personal support, learning and development, job autonomy and person–environment fit.
- Policies (both public and managerial policies) that can help people achieve a better work–life balance in the Industry 4.0 context.
- Interventions to ensure clear job objectives, as well as technology and communication structures that allow virtual team members to interact and collaborate easily with their team.
- Interventions for developing behaviour- and cognition-based strategies through multiple role engagement in digital workspace contexts.
- Leader development interventions that help managers to continue to sculpt innovative learning solutions which are insight driven, enabling, and that do not just enhance skilled competence.
- Leader development interventions that help managers learn how to engender trust and serve the interest of large corporations as well as society at large.
- Strategies to define, articulate and deploy a comprehensive strategic digital learning transformation roadmap for the digital-driven workplace.
- Interventions and organisational conditions that help create an agile learning culture and consider the governance of learning @ speed and scale.

Chapter 16

Organisational Climate Conditions of Psychological Safety as Thriving Mechanism in Digital Workspaces



Melinde Coetzee

Abstract Psychological safety is explored as a key mechanism enabling thriving in workplaces that are becoming increasingly digital. The objective of the chapter is to present tentative propositions about how an organisational climate of psychological safety supports human thriving in technologically evolving work contexts. The debate offered in the chapter is novel by integrating living systems theory and the classical self-determination theory to extend the conceptualisation of human thriving through the precondition of psychological safety and human needs fulfilment. The chapter fills an important gap in thriving research by exploring the relevance of the construct in the Industry 4.0 heralded digital workplace. The chapter reviews current research on the psychological demands of new digital mobile and information technology on individuals in modern workplaces and proposes practices towards fostering human thriving. The chapter further explores a future research agenda for extending knowledge of the psychology of thriving.

Keywords Human thriving · Psychological safety · Organisational climate · Digital workspaces · Industry 4.0

16.1 Introduction

Psychological well-being and thriving in the workplace have become major issues in a context where the Fourth Industrial Revolution's rapid technological developments, accelerated digitisation and automation of work pose both opportunities and challenges for people and organisations (Bartolomeo, 2014; Burns, 2017). Automation will globally become the competitive advantage for companies because it is seen to provide them with the resources to innovate, improve business processes, achieve higher output and product quality and continue to meet consumer demands (House, 2018). Accelerated technological advances change employers' requirements of workers; companies require workers to be adaptable life-long learners who embrace

M. Coetzee (✉)

Department of Industrial and Organisational Psychology, University of South Africa, Pretoria, South Africa

e-mail: Coetzml@unisa.ac.za

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automation, digitalisation of work processes, and who are good at using higher-order nonlinear thinking skills (i.e. critical, innovative, imaginative) in delivering customised services requiring high emotional and social intelligence to other humans and trade skills that call for real-time iterative problem diagnosis and solving (House, 2018). Continuous improvements through learning and unlearning, change and innovation will become imperative to organisational and worker thriving in digitalised work contexts (Frazier, Fainschmidt, Klinger, Pezeshkan, & Vracheva, 2017).

A key challenge of the continuous development of information technologies is individuals' ability to thrive at digitalised work, that is, being willing to improve, learn and adapt by successfully adopting new digital technologies (Mitič, Nikolič, Jankov, Vukonjanski, & Terek, 2017). Thriving in digital workspaces presumes user experiences of vitality (i.e. feeling energised by the technology adoption and interaction) and learning (i.e. gaining competence and improving at what they do). As an adaptive function in the adoption of technology, thriving provides an internal cue, helping individuals assess their individual growth and development in the workplace (Porath, Spreitzer, Gibson, & Garnett, 2012). Thriving at work becomes an important concept in Industry 4.0 workplaces when considering that any company desiring competitive advantage and sustained business performance in the extremely turbulent business environment needs to attain synergy of information technology and people, with a common ability to create new knowledge, learn, grow and develop (Mitič et al., 2017).

In addition, the use of mobile and information technology in modern digital workplaces may place additional psychological demands on individuals. The digital era brings about a fascinating hybrid of the Internet of people (IoP) and the Internet of things (IoT), with IoT offering intelligent and smart technological networking solutions that make remote working plausible for businesses and industries. Workers will be able to connect to central databases and technologies in the office/factory floor from as far away as possible. Some researchers suggest that the IoT could create more isolated workplace experiences, while others suggest the opposite because of the IoP through smart mobile and Internet technology (IoT) improving interactions between workers (Conti, Passarella, & Das, 2017).

Although the concept of human thriving is of much interest to organisational and work behaviour scholars, the contextual relevance of the construct in Industry 4.0 is unclear and under-researched. The digital workspaces of Industry 4.0 will increasingly render continuous challenges for learning and performance through adopting and interacting with technological innovations in the workplace as an imperative for organisational success (Conti et al., 2017). Thriving as a concept will remain relevant and maybe even increase in importance, because of the inherent self-regulated human drive for self-improvement, growth and learning and personal fulfilment of needs and goals (Brown, Arnold, Fletcher, & Standage, 2017). Although many antecedents of human thriving have been proposed in the extant literature, their relative importance in digital workspaces remains unclear.

16.2 Chapter Objective

In this chapter, the concept of human thriving is explored in terms of psychological and organisational factors that may potentially enable or thwart workers' thriving in workspaces that demand technology adoption and interaction. More specifically, the aim of the chapter is to offer a novel perspective by means of integrating living systems theory and the classical self-determination theory in formulating propositions about how an organisational climate of psychological safety supports human thriving in technologically evolving work contexts. The chapter fills an important gap in thriving research by exploring the relevance of the construct in the Industry 4.0 heralded digital workplace. The chapter reviews current research on the psychological demands of new digital mobile and information technology on individuals in modern workplaces and proposes practices towards fostering human thriving. The chapter further explores a future research agenda for extending knowledge of the psychology of thriving.

16.3 Psychological Factors Influencing Human Thriving in Digital Workspaces

Digital workspaces allude to human–technology interaction in cyber-physical interactive systems. Technology adoption in Industry 4.0 workplaces is growing as an important research theme because workers and customers as users of digital technology will typically have many personal information technology (IT) devices and interact with multiple IT services (Partala & Saari, 2015). Successful adoption of technology by workers as users is crucial for their continued thriving in digital workspaces. Workers who are unable to adopt new technology may not be able to function as productive members of modern society (Ovčjak, Heričko, & Polančič, 2015; Partala & Saari, 2015). However, people often resist change due to psychological reasons such as the fear of the unknown, the loss of the familiar and fear of failure. Their sense of psychological safety, autonomy, competence and relatedness (i.e. sense of identification and belonging) is often threatened by changing conditions. People also vary in their capabilities to cope with change. A change with unknown consequences can be highly threatening for people who have a low tolerance for ambiguity. The invention of something radically new (i.e. rapidly evolving digital innovations) is generally met with greater resistance than with incremental change as it carries a greater measure of perceived risk and failure, high costs and a longer timescale for development (Coetzee, 2016a, 2016b).

16.3.1 *Theoretical Lenses*

In this chapter, living systems theory (Vondracek, Ford, & Porfeli, 2014) and self-determination theory (Deci & Ryan, 2014) are used as theoretical lenses to elucidate the potential impact of digital technology adoption and interaction on human thriving. *Living systems theory* explains that, similar to organisations that function as open living systems which need to adapt to changing meta-contexts, individuals adapt to changing contexts through self-directed, self-organising, self-regulating and self-achieving regulated feedback processes in order to fulfil the innate human need to thrive. Human thriving is embedded in person-in-context transactional processes of directive regulated goal-setting, controlled planning of goal pursuit, transactional context-goal implementation and monitored context/goal-directed activities towards goal accomplishment. Living systems theory argues that contexts do not directly cause a person's current behaviour, but indirectly have an important influence by providing possibilities (affordances) for and limitations (barriers) to how a person behave. Individuals select or create a context/environment that will facilitate their efforts towards needs fulfilment, goal achievement and thriving and that does not have insurmountable need thwarting limitations or barriers (Vondracek et al., 2014).

Self-determination theory (Deci & Ryan, 2014), further elaborates that revolutionary changes in transformative organisational systems may potentially pose a threat to workers' fulfilment of three basic psychological needs that influence the need to thrive and achieve personal goals: individuals may potentially question how new technologies may influence their need for autonomy (i.e. adopting technologies through their own volition because of alignment with personal values and interests); need for competence (i.e. thoughts about self-efficacy and perceived own cognitive ability to accomplish tasks and achieve goals through the adoption/interaction with new digital technologies); and need for relatedness (i.e. the human striving for belongingness and a sense of communication). People's workplaces are a source of psychological needs satisfaction; they encourage self-expansion and provide opportunities and challenges that stimulate personal growth and the development of new competencies (i.e. satisfying the basic human need for autonomy and competence); they also provide opportunities for social interactions and forming bonds with others (i.e. satisfying the basic human need for belonging). Psychological needs satisfaction is crucial for the well-being and thriving of people (Van Scheppingen et al., 2015).

16.3.2 *Psychological Factors*

The extant literature on theories of technology acceptance (Fishbein & Ajzen, 1975; Venkatesh & Bala, 2008; Venkatesh & Davis, 2000) highlights a range of psychological factors that influence individuals' adoption of new technologies. These factors include aspects such as behavioural intention to use because of perceived usefulness and perceived ease of use, job relevance, output quality, result demonstrability,

computer/digital self-efficacy, perceptions of external control, computer/digital anxiety, computer/digital playfulness and perceived enjoyment and objective usability. A meta-analysis of factors involved in mobile technology acceptance highlights the user intention to adopt and use the technology, including performance expectancy, perceived ease of use, usefulness and added value, extrinsic motivation, job fit, relative advantage, outcome expectations, perceived risk or perceived credibility (Ovčjak et al., 2015). However, Industry 4.0's focus on cyber-physical systems has given rise to increased research on human–technology interaction and users' experience of interactive systems (Partala & Saari, 2015). Users' experiences in cyber-physical systems pertain to concepts in the human thriving realm such as their emotions, psychological needs and user values (Partala & Saari, 2015).

In the context of human thriving, users' felt experience of their interaction with and use of technology seems to be the most influential factor to consider in digital workspaces. People's emotions and feelings are integral to their thriving experiences in relation to technology use and adoption (Hazzenzahl, 2010; Partala & Saari, 2015). Research indicates links between emotions involving feelings of enjoyment and computer/digital anxiety and perceived ease of use as an element of technology acceptance (Venkatesh, 2000). Research by Beaudry and Pinsonneault (2010) highlights emotions of anger, anxiety, excitement and happiness in relation to IT use. Feelings of flourishing (i.e. positive well-being and thriving) seem to be determined by psychological need fulfilment and value concordance (Partala & Saari, 2015).

Theories of psychological needs (i.e. self-determination theory: Deci & Ryan, 2014; model of psychological needs: Sheldon, Elliot, Kim, & Kasser, 2001) help to elucidate users' experiences and behaviour of digital technology interaction (Partala & Saari, 2015). Self-determination theory pinpoints the three needs of autonomy (i.e. acting in accordance with own values and working and playing freely and willingly), competence (i.e. feeling capable and competent in controlling the environment and predicting outcomes), and relatedness (i.e. having a sense of belonging, caring for and being cared for). Sheldon et al (2001) extend the range of psychological needs by adding the need for self-actualisation-meaning, physical thriving, pleasure-stimulation, money luxury, security, self-esteem and popularity influence in explaining experiences of satisfaction and well-being.

Research shows links between autonomy, self-esteem and physical thriving and the motivation to use virtual worlds (Partala, 2011). Autonomy, competence and self-esteem are associated with satisfying user experiences with a range of different technologies (Partala & Kallinen, 2012). Partala and Saari (2015) found that feelings of flourishing in both successful and unsuccessful technology adoption contexts increase with positive emotions and are associated with fulfilled psychological needs such as competence, relatedness and self-acceptance. Need fulfilment and value concordance (i.e. adopting the product or system is in line with the user's values) are shown to link to positive long-time well-being (flourishing) in influential experiences of both successful and unsuccessful technology adoptions. In addition, positive user experiences are also associated with the perceived pragmatic value of a product or system when the product or system is capable of fulfilling psychological needs (Partala & Saari, 2015).

The introduction of digital technological changes and new systems can provoke emotional and cognitive reactions of fear and anxiety (Khasawneh, 2018). Awareness of the emotional energy provoked by technology adoption and interaction is important to consider in the context of thriving. Research on the role of emotions and psychological needs fulfilment in the adoption of and interaction with technologies alludes to the notion of emotional energy. The level at which the individual user expresses continuous feelings of security, energy/vitality and excitement when using IT technology (as a result of positive interactions in the past) is important to consider in evaluating states of thriving in digital workspaces (Reychav et al., 2019). People generally feel emotionally more secure in their interaction with technology when they feel in control (i.e. need for autonomy) and competent in the use of the technological device; fulfilling these psychological needs enhances their self-esteem (Carter & Grover, 2015; Reychav et al., 2019).

The emotional energy provoked by digital technology adoption and interaction happens within the context of an organisational climate. The introduction of new technology in the workplace potentially creates a job space of which workers have no previous experience; workers may experience anxiety because of the unpredictability (and loss of autonomy and competence) of the unfamiliarity that rapid advances in new technology bring to the work and job space (Khasawneh, 2018). The emotional energy resulting from feelings of anxiety may disrupt feelings of thriving and may potentially cause employees to avoid technology. The use of digital technology is critical to the success of the organisation. Creating an organisational climate of psychological safety in the adoption of new digital technologies may be important because of previous research showing its strong moderating role in buffering feelings of anxiety and enhancing emotional intelligence in accepting digital technology (Khasawneh, 2018).

16.4 Organisational Factors Affecting Workers' Adoption of Digital Technologies

Modern-day companies accept digital as a business imperative to remain competitive by taking advantage of the opportunities digital technologies create to innovate in delivering enhanced products, services and customer engagement. Digital organisations articulate a visionary digital value proposition which reassesses how digital technologies and information can enhance the organisation's existing assets and capabilities to create new customer value. Workers employed in organisations that embark on digital transformation are therefore frequently exposed to a host of powerful, accessible and innovative digital technologies like social, mobile, cloud, analytics, IoT, cognitive computing, automation and biometrics (Ross, 2017).

The organisation's strategy, culture and values in the adoption of new digital technologies create an organisational climate that may potentially negatively affect workers' feelings of thriving, psychological needs fulfilment, psychological safety

and organisational identification. It can be assumed that an organisation's success in realising its digital transformation strategy hinges on its employees' knowledge and creative solutions regarding the challenges and opportunities concerning the efficient functioning of digital technology and how it influences their personal, team and organisational performance. Supportive organisational–social environments in which workers feel safe, respected and tolerated to take interpersonal risks in expressing themselves without negative consequences (i.e. being ridiculed, criticised or losing support from peers and supervisors) may facilitate greater individual thriving and organisational knowledge sharing in digital workspaces. Thriving (energy of vitality and learning) is as much a social as a cognitive-affective process. Individuals learn from their peers in the work environment or from friends and colleagues in social settings (Cauwelier, Ribière, & Bennet, 2016). It is assumed that thriving will be an outflow of the social context (i.e. relatedness) and especially the organisational climate in which individuals need to learn to adopt and engage with evolving digital technologies.

Organisational climate signifies the emotional energy of the organisational social system which affects human behaviour in the workplace. An organisational climate that denotes psychological safety is typically characterised by beliefs and behaviour reflecting feelings of safety, interpersonal trust and mutual respect (Kirk-Brown & Van Dijk, 2016; Nembhard & Edmondson, 2006). A climate of psychological safety signals reduced fears, less emotional energy spent in self-protective behaviour, more time spent on productive problem resolution and interpersonal risk-taking such as speaking up about failures and concerns (Edmondson, 2004; Kirk-Brown & Van Dijk, 2016). Perceptions of psychological safety contribute to employee thriving because they enhance the capacity of workers to communicate and learn from their mistakes in a psychological safe space. Learning (an aspect of thriving) has been linked to positive affective work experiences, creative work involvement, information sharing, feelings of security and employee well-being (Kark & Carmeli, 2009; Kessel, Kratzer, & Schultz, 2012; Kirk-Brown & Van Dijk, 2016; Triplett & Loh, 2018).

The concept of psychological safety in digital workspaces alludes to workers' perceptions of personal risk or vulnerability when adopting or interacting with new digital technologies. Building on Edmondson's (2003) conceptualisation of psychological safety, it is assumed that psychological safety is experienced within the organisational social system, especially on a team level, with individuals being concerned about the possible short-term negative interpersonal ramifications of raising their anxiety about their possible failure or lack of capability in digital technology adoption or interaction. Research by Triplett and Loh (2018) shows that individuals with a high external work locus of control generally tend to have lower self-esteem and lower levels of interpersonal trust, with a lowered inclination to express personal opinions for fear of negative ramifications (that is, their feelings of psychological safety tend to be low). High internal level of control is characterised by high self-esteem, high levels of interpersonal trust and high levels of psychological safety. Locus of control pertains to individuals' varying beliefs that they have control of the events in their lives (internal locus of control) and over external forces beyond their control (external locus of control: Triplett & Loh, 2018).

The research on work locus of control and psychological safety seems to corroborate the proposition of psychological needs theories (i.e. self-determination theory: Deci & Ryan, 2014; model of psychological needs: Sheldon et al., 2001) that workers' feelings of autonomy, competence, relatedness and self-esteem are important psychological needs to consider in digital organisational contexts. Autonomy, competence and relatedness point to an organisational climate that encourages volitional behaviour in accordance with one's personal values (i.e. autonomy), perceptions of having the resources and capabilities required to accomplish activities, tasks and goals (i.e. competence) and feeling connected with and being cared for by others (i.e. relatedness). Fulfilment of these three needs generally lead to higher levels of self-esteem and seems to be associated with positive work attitudes, well-being, work internal locus of control and psychological safety (Carter & Grover, 2015; Khasawneh, 2018; Reychav et al., 2019; Schultz, Ryan, Niemiec, Legate, & Williams, 2015).

Organisational identification (i.e. workers' perception of being valued members the organisation) has also been associated with psychological safety, learning, information and suggestion sharing, self-esteem and employee creativity (Liu, Zhang, Liao, Hao, & Mao, 2016). Psychological safety alludes to an organisational communication climate which is conducive to shaping organisational identification and fulfilling the need for relatedness (i.e. belonging). Workers with a high degree of identification with their organisation tend to adopt the organisation's values, goals and interests as their own and are more willing to volitionally put more effort into achieving the organisation's goals and values because of a high sense of belonging. Research further shows that a climate of psychological safety enhanced employee creativity through organisational identification. An organisational climate that reflects tolerance and respect for workers' speaking up about anxieties and mistakes and circumstances that have the potential to create a crisis or problems may help to enhance organisational identification (Liu et al., 2016). Egold and Van Dick (2015) argue that people who identify highly with their organisation gain positive self-esteem and demonstrate greater well-being because identification may potentially buffer negative effects of stress or anxiety-provoking circumstances. Individuals develop organisational identification through a process of being socialised over time into the organisational culture, values, goals and the prevailing organisational climate. Alignment between personal and organisational goals and values and organisational conditions that support psychological needs fulfilment may facilitate organisational identification (Egold & Van Dick, 2015; Liu et al., 2016).

16.5 Practices Towards Fostering Human Thriving in Digital Workspaces

Human thriving is a dynamic, purposeful process of individual–context interaction within a complex social living system. Building on the basic tenets of living systems theory (Vondracek et al., 2014), the system assumes self-regulation and self-

organising of both the individual and the environmental context systems amidst chaos and change. Thriving occurs when the individual and the context are mutually enhanced through the interaction process (Bundick, Yeager, King, & Damon, 2010; Vondracek et al., 2014). Human thriving is generally realised through optimal, holistic functioning evident in the experience of a high level of psychological well-being, vitality, learning, performance and satisfying social interactions (Brown et al., 2017). Feelings of thriving (i.e. well-being, vitality, learning, growth) represent an emotional energy oriented towards self-efficacious superior performance, optimal human functioning and achieving success (Brown et al., 2017). The research literature provides ample evidence of how companies in the process of engaging in innovative digital transformation strategies may benefit from human thriving (Conti et al., 2017; Khasawneh, 2018; Mitič et al., 2017; Porath et al., 2012). Because social working conditions, interpersonal relationships and organisational culture and climate are often related to individual learning and vitality (Van Scheppingen et al., 2015), some practices for enabling human thriving in digital transformative contexts are suggested as a starting point.

16.5.1 Organisational-Level Practices

High-performing workplaces make workers' psychological well-being, thriving and safety a priority. As a critical part of the "unfreezing" process required for organisational learning and change, psychological safety may help reduce perceived threats and remove barriers to change. A climate of psychological safety creates a context which encourages individuals to take risks in adopting new technology and engage in provisional tries, whilst knowing that failure will be tolerated without retaliation and that the organisation and team will provide the necessary support (Coetzee, 2016a; Frazier et al., 2017). Adopting new technologies may be perceived as a potential risk of failure, lowering performance, and not achieving personal and team achievement goals. Workers need the belief that the workplace is safe for interpersonal risk-taking and that concerns and failures will be tolerated by the team that is dependent on the performance of all members in adopting new technologies. The extant research literature demonstrates that a climate of psychological safety fosters a pervasive positive socioemotional energy. Workers generally feel safe to take risks at work in order to grow, learn, contribute and perform effectively in a rapidly changing world (Edmondson & Lei, 2014; Frazier et al., 2017).

In psychologically safe work environments, workers at all levels of the organisation are encouraged to contribute to defining and questioning relevant practices and procedures for the protection of employees' psychological well-being amidst the implementation of work transformative technological innovations (Huyghebaert, Gillet, Fernet, Lahiani, & Fouquereau, 2018; Khasawneh, 2018). Organisations can further offer the necessary resources of support such as educating and training supervisors in helping employees adjust to innovative changes in technology, including the resulting changes in job structures and skills requirements. Such education and

training efforts could include the organisation's strategy and supervisors' roles in creating a psychologically safe work environment. Psychological safety is embedded in the social structure of the organisation because it is built through workplace interactions and interpersonal relationships in teams (Edmondson, 2002; Frazier et al., 2017). As such, it can be violated or breached, implying that organisations must put in proactive measures to ensure its repair on especially leadership and team levels (Edmondson, 2002; Frazier et al., 2017).

Research shows that employees feel more understood and valued in the presence of supportive supervisors and colleagues who encourage workers to speak up their mind without being inhibited (Singh, Shaffer, & Selvarajan, 2017). Communication amidst revolutionary technological changes remains essential to help alleviate the fear of the unknown and potential failure in adopting new technologies in performing job tasks. Supervisors need to communicate the rationale for the digital transformation and change, stipulate clear expectations and goals and provide training and development opportunities to ensure workers have the required skills and self-efficacy in adopting the new technology (Coetzee, 2016a, 2016b; Frazier et al., 2017). Research shows positive links between employee thriving and the desire to work in collaboration with others and willingness to take risks in supervisor supportive climates (Brown et al., 2017; Paterson, Luthans, & Jeung, 2014).

16.5.2 Individual-Level Practices

On an individual level, organisations could establish learning and development interventions that help individuals cultivate the characteristics necessary for human thriving. Research points to positive perspectives, proactive personality, motivation, knowledge and learning, psychological resilience and social competencies as important personal enablers of developing human thriving qualities (Brown et al., 2017). Positive perspectives allude to, for example, self-esteem, self-efficacy, optimism, positive views of one's personal future and having hopeful future expectations (Brown et al., 2017). Positive attitudes towards technological change and innovation (i.e. cognitive receptivity to, and change readiness) generally suggest agentic proactivity, motivation and initiative (proactiveness) in actively attempting to bring about change in the organisation (Coetzee, 2016b). Willingness and motivation (i.e. agentic autonomous behaviour) to adapt and change are important aspects of a learning orientation which pertains to thriving and proactive personality.

Commitment to learning and a desire to learn and grow are important for thriving. The mastery orientation underpinning a learning goal orientation denotes the tendency to engage in proactive adaptive behaviours, which, in turn, reflects psychological resilience in the face of adversity or when experiencing strain. Proactive individuals seek out opportunities for challenge; they capitalise on challenging life circumstances as opportunities for thriving. They see challenging or changing circumstances as opportunities for maximising personal growth, learning and enhancing competencies. Social (interpersonal/cultural) competencies further help individuals

retain their personal and environmental support resources for the purpose of thriving and feeling safe to risk learning and growing in uncertain volatile contexts (Brown et al., 2017; Coetzee, 2016b).

Learning and development interventions for cultivating positive proactive attitudes and behaviours of thriving may include coaching, mentoring, team building exercises, assessment and development centres and frequent performance and development discussions. Team building interventions and assessment and development centres could potentially be valuable mechanisms linking personal (psychosocial) and contextual practices enabling thriving and psychological safety. These two personal development mechanisms involve challenge appraisals and problem-solving which encourage change-oriented task engagement in a psychological safe and supportive space. As personal development and learning mechanisms, they create opportunities for enhancing individuals' self-esteem and self-efficacy, sense of autonomy and competence and increase the likelihood of thriving.

16.6 Integration: Towards Conceptual Propositions Regarding Psychological Safety as Mechanism of Human Thriving in Digital Workspaces

Figure 16.1 provides a conceptual overview of the core theoretical tenets outlined in this chapter. By integrating the various theoretical lines of reasoning, Fig. 16.1 illustrates core propositions for understanding the role of psychological safety as mechanism of human thriving in digital workspaces:

- Principles of living systems theory explain the psychodynamics underpinning human–context interactions in digital workspaces. Similar to organisations that function as open living systems that need to adapt to changing meta-contexts, individuals adapt through self-directed, self-organising, self-regulating and self-achieving regulated feedback processes in order to fulfil basic human needs and thrive.
- Technological/digital transformation (systems adaptation) is essential for organisations to sustain a competitive edge in the current and future Industry 4.0 global market.
- Optimal worker performance and thriving remain a key leverage for sustained business performance.
- Workers have to learn to effectively adopt and interact with new digital technologies as part of their adaptation and thriving in digital workspaces. Human thriving is embedded in transactional processes of directive regulated goal-setting, controlled planning of goal pursuit, transactional context-goal implementation, and monitored context/goal-directed activities towards goal accomplishment.
- Optimal cyber-physical/technology adoption/interaction results in organisational identification, vitality, learning and performance (i.e. human thriving).

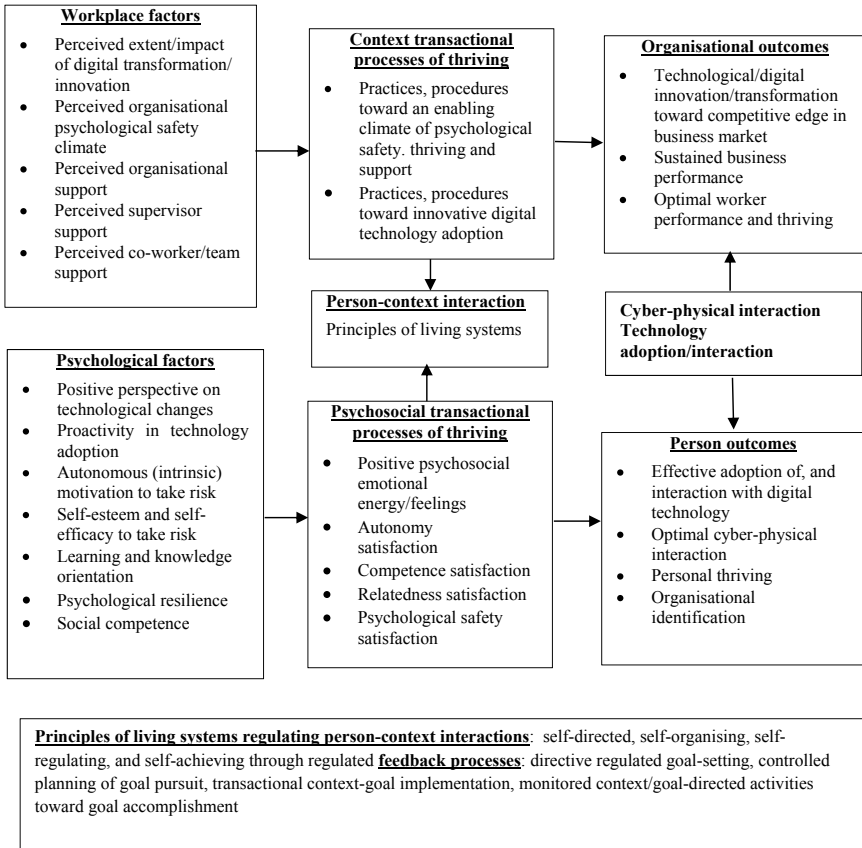


Fig. 16.1 Theoretical model of psychological safety as a mechanism of human thriving in digital workspaces (author’s own work)

- Social conditions are important factors that influence workers’ thriving in the workplace. Such factors include workers’ perceptions of the extent/impact of digital transformation/innovation on their sense of psychological safety and human needs satisfaction in the changing workplace. Perceived organisational safety climate, organisational, supervisor and co-worker/team support are important preconditions for technology adoption and effective human–digital technology interaction.
- Individual psychological characteristics enable their ability to engage in self-directed, self-regulatory, self-organising processes to adapt to and thrive in changing contexts. Positive perspective on technological changes, proactivity in technology adoption, autonomous/intrinsic motivation to take risks in technology adoption and interaction, self-esteem and self-efficacy in technology adoption/interaction, learning and knowledge orientation, psychological resilience and social competence are enablers of human thriving.

- Workplace factors enable human thriving and positive organisational outcomes through the contextual transactional processes supporting thriving: practices, procedures fostering a climate of psychological safety, thriving and support, including practices and procedures enabling the adoption of innovative digital technology.
- Individuals' interaction with the social context transactional processes occurs through their own psychosocial transactional processes of thriving, including positive emotional energy/feelings in the adoption of technology/interaction with the social and technological context, and self-directed/self-regulatory/self-organising processes of autonomy, competence, relatedness and psychological safety satisfaction.

16.7 Setting a Future Research Agenda

In this chapter, I made an argument for psychological safety as an important mechanism for enhancing human thriving in digital-driven workspaces. This effort is not without limitations. First, the role of psychological safety in supporting human thriving was explored from self-determination theory within the larger context of living systems theory. The paradigmatic boundaries of these two theoretical lenses may potentially have narrowed the reasoning about the mechanism of psychological safety in the human thriving-digital adoption and interaction debate. Thus, the literature review presented in the chapter highlights areas where research has the potential to fill in existing gaps in our understanding of psychosocial mechanisms that may influence human thriving in rapidly evolving technological-driven work contexts. For example, future empirical studies could consider both quantitative and qualitative research on people's experiences of the transformation of jobs and the cyber-physical interactions that are part of new workplace digital technologies, on their vitality, learning, and feelings of psychological safety. Such research endeavours may help to advance the conceptualisation and measurement of human thriving and psychological safety and contribute to the building of new psychological theory relevant to Industry 4.0 organisational and work behaviour.

Second, the reasoning about human thriving in this chapter abided by the current tenets of positive psychology which argue for optimal human development, human needs satisfaction, self-acceptance, positive relations with others, personal growth, learning, vitality and environmental mastery as being critical for individuals' well-being (King, Barrett, Greenway, Schnitker, & Furrow, 2018). Future research could consider how evolutionary psychology informs our understanding of human thriving. Digital technological development has an evolutionary effect on the way people will work and function in Industry 4.0. Evolutionary psychology may potentially highlight how technological innovations flow from the "big brain" inventions of humans. Human thriving is therefore a natural inborn endowment, a state of being resulting from humans harnessing through their "big brains" their ability to self-regulate and solve the unique challenges and problems stemming from human-technological

interactions in order to adjust and become “adaptive fit” in their transactions with an evolving environment created by humans. Human “big brains” allow through cyber-physical interactions and digital social innovations for bigger social groups, better cooperation and a new form of cumulative social culture that provides the support for fulfilling the basic human need for belonging. Evolutionary psychology also describes humans (and their “big brains”) as having an unusual capacity to adapt and learn from each other and their environment. Human thriving as such is then an outflow of humans’ innate self-regulatory capacity to navigate the development and adoption of new technologies to learn about the world around them, extend their social connectedness, vitality and learning and utilise digital technologies to their evolutionary “adaptive fitness” advantage (King et al., 2018).

16.8 Conclusion

Notwithstanding the apparent limitations of the literature review, the chapter offers a fresh perspective by means of integrating living systems theory and the classical self-determination theory in formulating propositions about how an organisational climate of psychological safety supports human thriving in technologically evolving work contexts. The chapter fills an important gap in thriving research by exploring the relevance of the construct in the Industry 4.0 heralded digital workplace. Furthermore, a conceptualisation of human thriving, through the precondition of psychological safety and human needs fulfilment, is presented. Overall, it is hoped that the perspective offered on the enabling context and psychosocial conditions of human thriving will stimulate much needed further scientific inquiry on the theme. Future research endeavours may potentially support the development of supportive organisational practices for enabling human thriving in the digital workspace of Industry 4.0.

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Melinde Coetzee (DLitt et Phil) is Professor in the Department of Industrial and Organisational Psychology at the University of South Africa, Pretoria, South Africa. She has extensive experience in the corporate environment on psychological interventions pertaining to organisational development, human capacity and career development, and talent retention. Her research interests include issues of employability and career and retention psychology in multicultural work contexts. She served in the role of Chief Editor of the *South African Journal of Industrial Psychology (2014 to 2019)*. She has published in numerous accredited academic journals. She has also edited, co-authored and contributed subject matter chapters to books nationally and internationally. She has presented numerous academic papers and posters at national and international conferences. She is a professionally registered Psychologist (cat. Industrial) with the Health Professions Council of South Africa (HPCSA) and Master Human Resource Practitioner with the South African Board for People Practices (SABPP). She is Member of SIOPSA, EAWOP and IAAP.

Chapter 17

Organisational Conditions for Flourishing in Virtual Teams



Marais Bester

Abstract This chapter explores the theoretical elements of flourishing in virtual teams, seeking to provide industrial psychologists, human resource practitioners and organisations with recommendations on creating organisational conditions that assist virtual team members to flourish. The chapter starts by giving context to the prevalence, use and importance of the virtual team within the context of the imminent 4th industrial revolution. Subsequently, the differences between the virtual team and the traditional team are highlighted. This is followed by a discussion of the available literature on flourishing and, specifically, flourishing in the modern workplace. In addition, the elements and importance of the flourishing virtual team will be explored. The chapter concludes by discussing some practical implications for virtual team flourishing and makes suggestions for further research.

Keywords Team development · Virtual teams · Flourishing · Workplace flourishing · Subjective wellbeing

17.1 Introduction

As a result of the 2008 global economic crisis, organisations have made rapid changes to the way they operate, manage their employees and organise their structures in order to optimise costs (Lee et al., 2018). Organisations have had to be increasingly creative to remain competitive in the global marketplace, with many organisations cutting salaries, reducing staff numbers, freezing travel and employing fewer new employees. In the current hypercompetitive and fast-paced environment of work, many creative ideas become obsolete even before they reach the customer, which means that organisations need to make quick decisions, have access to global resources and have faster turnaround times. Many organisations are finding that the virtual team structure can help to address these challenges and help them remain competitive in spite of the looming 4th industrial revolution (Solomon, 2016).

M. Bester (✉)
PSI International, Dubai, UAE
e-mail: maraisbester@gmail.com

The adoption of a virtual team structure is a way in which organisations can have a global footprint, have access to the most talented international employees and reduce operational costs. The virtual team allows organisations to have access to employees working in different time zones, which means that the organisation can be fully operational at all times. The virtual team also allows the organisation to hire staff from countries where labour costs are cheaper, with the added advantage that the team structure cuts down on travel time, increases productivity and increases staff retention (Solomon, 2016).

As the adoption of technology becomes more common, so too does the dependency on the virtual team. It is estimated that 80–85% of the global workforce participates in virtual teamwork on a regular basis (Solomon, 2016). Researchers state that as the workplace becomes more digitalised the more employees will be expected to form part of virtual teams (Paek, Gaglione, Gnawali, Vieira, & Hao, 2018). Some researchers go as far to say that the majority of future team engagements will be conducted virtually (Paek et al., 2018; Solomon, 2016).

Despite the many benefits of the virtual team structure, challenges such as communication, work-life interference, isolation, trust and relationship building can have a negative impact on individuals' abilities to thrive and flourish in their work and their careers. Due to the complexities of the virtual team, managers, industrial psychologists and HR practitioners are unfortunately not prepared to support the flourishing of the members of the virtual team. There is a need for a theoretical framework that managers, industrial psychologists and HR practitioners can use to equip virtual team members to thrive and flourish.

17.2 Chapter Objective

This chapter explores the elements of the virtual team, examine the differences between the traditional and the virtual team and discuss the factors and organisational conditions that influence the individual and overall flourishing of virtual team members. The chapter provides an overview of the current theoretical frameworks related to flourishing and makes some recommendations in terms of creating organisational conditions that help ensure the flourishing of virtual team members.

17.3 The Virtual Team

A team may be seen as a group of individuals who work together to obtain a mutual and pre-specified goal (Jelphs & Dickinson, 2016). The virtual team is distinctly different from the traditional team as it comprises a group of individuals who are geographically dispersed from each other and rely on technological resources to interact and reach common goals (Gilson, Maynard, Jones Young, Vartiainen, & Hakonen, 2015). Members of the virtual team are usually knowledge workers, may

never interact face-to-face and may be highly diverse in terms of ethnicity, experience and job level.

Traditional teams (also known as collected, conventional and co-located teams) are typified by their proximity, whilst the virtual team is characterised by the physical distance between team members (Gilson et al., 2015). Typically, virtual teams consist of individuals who hail from different cultures, time zones and geographies and who are interconnected by a common goal and technology. Although traditional and virtual teams both go through Tuckman's (1965) steps of team development (forming, storming, norming, performing and adjourning), the complexities and dynamics related to the make-up of the virtual team make these steps more complex. In terms of Tuckman's (1965) steps, the following are some of the key differences between virtual and traditional teams (Gilson et al., 2015; Krumm, Kanthak, Hartmann, & Hertel, 2016):

- *Forming*—During this stage, the respective members of the team meet, learn about potential outcomes, goals, challenges and opportunities, and agree on ways to achieve specific outcomes. Typically, team members in this stage behave independently from each other, may distrust other team members' intentions and skills, and tend to be on their best behaviour and focused mainly on their own objectives. Owing to the physical distance, time zones and communication challenges, the forming stage of team development may be more complex for virtual team members, resulting in them focusing more on their own needs and outcomes as opposed to those of the team. This may result in the virtual team taking longer to establish trust and mutual objectives. In traditional teams, members are generally selected to form part of the team based on their functional knowledge, skills and capabilities. However, when selecting virtual team members, organisations need to consider each team member's ability to network, communicate and act independently and collaboratively, as well as their time management skills, ability to manage uncertainty, cultural sensitivity and adaptability.
- *Storming*—During this second stage of team development, Tuckman (1965) indicates that team members start to gain each other's trust and freely share their opinions (which may result in conflict), and power and status are assigned. In the traditional team environment, information, ideas and insights are quite often exchanged during informal discussions. However, in the virtual team environment, team members have very limited or no opportunity to interact informally. In this environment, there is thus a need for more regular updates on project deliverables and other important information. Time zone differences in global virtual teams can result in difficulty organising meetings and sharing information. Delays in problem-solving, reaching agreements and making decisions are thus often synonymous with the storming phase of virtual team development. These delays can lead to frustration and conflict among team members which often results in the storming phase being extended. In comparison with traditional teams, virtual teams tend to work better in flatter organisational structures with low levels of bureaucracy and hierarchy and high levels of autonomy. This structure ensures faster turnaround times for decision-making and delivering results.

- *Norming*—When team members have resolved their conflict, it typically results in greater levels of intimacy, cooperation and even friendship among team members. Norming typically takes place when the team has identified the competition and has a greater understanding of shared goals. During this stage, each team member takes responsibility for certain tasks and outcomes and starts placing the team's objectives above their own. Team members have greater acceptance for the ideas of others and make an effort to work collaboratively. In the traditional work environment, team members who are in close physical proximity find it easier to form close social ties with each other than individuals who are part of a virtual work environment. As traditional team members interact frequently, it is easy for them to build rapport and trust and explore mutual interests. In the virtual team environment interactions are shorter, interactions are mostly dependent on task requirements and communication tends to be more formal. Further challenges that virtual team members face in terms of relationship building is a lack of the personal touch, non-verbal gestures (if communication mostly takes place via phone and email) and the ability to interact socially outside work.
- *Performing*—After the team's roles, norms and outcomes have been determined, the team focuses on achieving these. Team members are driven, knowledgeable and focused on success. Individuals in the team tend to be able to complete tasks autonomously, are highly skilled and can manage decision-making without close supervision. Conflict is managed through the channels, values and norms established by the team. In the virtual team environment, supervisors are unable to physically manage the daily tasks and monitor each team member's contributions closely; therefore, they need to delegate authority more than in traditional team environments. The virtual team is thus initiating a shift in management styles, in terms of which supervisors are encouraged to coach, mentor, empower and be more democratic as opposed to being more controlling and autocratic. The psychological contract between the organisation and the individual and the individual and the rest of the team tends to be more fragile in the virtual team environment. This is due to the fact that gaps in communication can result in distrust between the respective parties. The breakdown of the psychological contract between the respective parties often impedes the performance of the virtual team. To ensure high levels of performance, virtual team leaders need to work harder than traditional team leaders to build trust, cohesion and commitment among team members.
- *Adjourning*—The final stage in the team development journey signposts the completion of the task or outcome and the breaking up of the team. Since fewer close emotional ties exist between the members of a virtual team, this process tends to be quicker and less painful than in the traditional team. However, virtual team members can have highly intense feelings of abandonment, loneliness and even loss after the team breaks up.

Kossek (2016) states that virtual workers struggle to manage their work-life balance as technology enables them to be always available. Virtual workers who prefer structure often battle in the virtual environment as it is highly fluid and reactive (Kossek, 2016). Virtual employees who work from home often report that they struggle to con-

centrate due to the distractions at home (Kossek, 2016). Virtual team members state that the lack of immediate support, especially when working on complex projects, often makes them feel very anxious. The structural make-up of the virtual team thus makes it more challenging for a team to move through the stages of team development. Challenges such as dependence on technology, frequency of communication, ability to build relationships, cultural differences and physical proximity make the virtual team environment far more complex than the traditional team environment.

Due to high job demands and potentially low levels of support and resources, the structural make-up of the virtual team may have a negative impact on the wellbeing of virtual team members. Research shows that when organisations are concerned with the wellbeing of their employees, their employees tend to stay longer with the organisation, are more productive, are positive organisational brand ambassadors, treat clients better, are more committed and more ethical, and have better relationships with fellow employees (Diener et al., 2017; Ilies, Aw, & Pluut, 2015). Employee wellbeing theorists use the term ‘flourishing’ to define and measure the wellbeing of individuals in organisations. The next section explores the theory behind the concept of flourishing in the workplace.

17.4 Theories on Flourishing

In positive psychology research, the concept of flourishing is increasingly being used to describe the concept of happiness and the hedonic and eudaimonic elements of wellbeing (Rautenbach, 2015; Seligman, 2011). Flourishing can be explained as a temporary state in which individuals experience mostly positive emotions and positive psychological wellbeing, are engaged in their daily activities such as their work and have high levels of social functioning (Fredrickson, 2004; Keyes, 2002; McGaffin, Deane, Kelly, & Ciarrochi, 2015). When individuals are flourishing, they experience social wellbeing, emotional wellbeing and psychological wellbeing (Keyes & Annas, 2009).

Huppert and So (2013) describe flourishing individuals as individuals who experience positive emotions (such as feeling happy) and display enduring positive behaviour (such as being energetic and optimistic, having emotional resilience, displaying positive self-esteem, being engaged, strive towards building positive relationships, want meaning in their lives and are emotionally stable). Flourishing is thus a form of subjective wellbeing which is based on an individual’s own opinion of their satisfaction with their life, relationships, work and career at a certain point in time (McGaffin et al., 2015).

It should be noted that flourishing is distinct from thriving. Similarly, to thriving, flourishing involves a positive state of human functioning, but flourishing represents a much broader positive state than thriving. For a person to be described as thriving at work, they need to experience both a sense of learning and a sense of vitality at work where a person who is flourishing can either experience learning or vitality or other positive emotional experiences (Ryff & Singer, 2003). As the factors that

contribute to the subjective wellbeing of individuals within the virtual team are relatively unexplored to date, it was decided that a broader theory of subjective wellbeing (namely flourishing as opposed to thriving) be used as a theoretical lens for this chapter.

Below, a number of theoretical models related to flourishing and subjective wellbeing are explored in order to enhance our understanding of the concept of flourishing and to give practitioners a number of options to support virtual team members to flourish. A critical review of each model is provided to highlight the positive and negative aspects of implementing the models in the virtual work environment.

17.4.1 The Mental Health Continuum

The Mental Health Continuum (MHC) was developed by Keyes (2002, 2007) to explain individual wellbeing, with specific emphasis being placed on the concept of flourishing. The MHC indicates that individuals' wellbeing can vary from flourishing (high levels of positivity, vitality and psychological wellbeing) to moderately mentally well to languishing. Languishing may describe a life that is unfilled, lacks vitality, is hollow and empty (Fredrickson, 2004; Keyes, 2002). Individuals who are languishing experience low levels of social, emotional and psychological wellbeing consistently or at a certain point in time (Keyes, 2005). The MHC-SF is a questionnaire developed by Keyes (2009) which allows individuals to report the regularity of occurrence of their social, emotional and psychological wellbeing.

As virtual team members are often at risk of languishing due to the difficulties with communication and isolated nature of their work, industrial psychologists and HR practitioners need to frequently check in with virtual team members to determine where they are on the MHC. As the MHC was developed to measure individual flourishing within a clinical setting (Keyes 2002), it does not encapsulate the unique challenges that virtual employees face that may result in lower levels of flourishing.

A number of subjective wellbeing-related theories have similar theoretical elements to flourishing and are discussed below. These include the theories of hedonia and eudaimonia, the adaptation theory of subjective wellbeing, the disease model and the positive psychology model, the PERMA model, telic theories of subjective wellbeing, the AIM model, evolutionary theories of subjective wellbeing, relative standards models of subjective wellbeing and the self-determination theory. Once again, a critical overview of these models is provided to support practitioners to implement theoretically backed interventions within the virtual work environment.

17.4.2 Hedonia and Eudaimonia

Diener (2013) indicates that hedonic wellbeing places the emphasis on experiencing maximum levels of positive emotions and minimum levels of negative emotions

at all times. The bottom-up perspective on hedonic wellbeing refers to the manner in which individuals perceive the external environment and the influence this has on their ability to experience satisfactory and meaningful lives (Steptoe, Deaton, & Stone, 2015). In essence, the bottom-up perspective to hedonic wellbeing is based on the concept that individuals will be happy when they can satisfy their basic needs to survive within their environments. Individuals will perceive themselves as being well when they experience positive thoughts (cognitive wellbeing) and positive feelings (positive affect) related to their own lives and circumstances (Steptoe et al., 2015). Consistent experiences of cognitive wellbeing and positive affect will result in individuals perceiving themselves as flourishing individuals.

In the work context, hedonia refers to the extent to which individuals are happy with their job content and experience their jobs as pleasurable (Huta & Waterman, 2014). Hedonia differs from work engagement as individuals may be absorbed in their jobs but may not always experience them as pleasurable. When individuals are constantly engaged and continuously experience happiness in their work, they will flourish. Industrial psychologists and HR practitioners should check in with virtual team members on a frequent basis to determine whether they are enjoying their work. Before appointing people into a virtual team environment, HR practitioners should determine whether applicants would enjoy the dynamic nature of the virtual team environment.

It should be noted that as hedonic wellbeing focuses on experiencing maximum levels of pleasure at all times, the pursuit of hedonic wellbeing may lead to maladaptive behaviour, superficial values and constant dissatisfaction (Huta & Waterman, 2014). Models of hedonic wellbeing can thus not be used to fully measure the levels of flourishing of virtual employees as they only focus on the high-level elements of subjective wellbeing.

The concept of eudaimonic wellbeing differs from hedonic wellbeing as it does not focus on achieving maximum levels of pleasure at all times, but rather focuses on an individual's personal development and emphasises the learning that can be taken out of both pleasurable and unsatisfying experiences (Turban & Yan, 2016). Eudaimonic wellbeing thus focuses on an individual's pursuit of learning and development in relation to their own goals, objectives and values to assist them in finding meaning in their lives (Turban & Yan, 2016). The eudaimonic perspective on wellbeing states that individuals will flourish when they feel that they are living an optimal life, are reaching their full potential, are constantly learning, developing and growing and are making a positive contribution to those around them.

Certain scholars refer to eudaimonic wellbeing as the top-down perspective on wellbeing (Ryff, 2013). This approach to wellbeing postulates that individuals' satisfaction with life and work is based on certain predispositions such as genes, personality, culture and their ability to adapt. Certain individuals are thus more able to be happy and to flourish than others because of their background, genetic make-up and the society of which they are part (Blum et al., 2009).

Eudaimonic wellbeing within the work context refers to the opinions that individuals have regarding their work content and how their work environments allow them to develop, have a sense of meaning and assist them to make a positive contribution

to society (Ryff, 2013). To experience eudaimonic wellbeing within the virtual work context, it is essential for employees to acquire new knowledge, perceive their jobs as challenging and engaging, utilise their skills and have the opportunity to share their expertise with others. Organisations should thus think of creative ways of upskilling their virtual team members through things like online training and allow them to partake in meaningful work. If organisations were to adopt the eudaimonic model of wellbeing, it may assist virtual employees to flourish from a learning and development perspective but may not speak to their needs of interacting with others and contributing positively to colleagues and society.

17.4.3 The Adaptation Theory of Subjective Wellbeing

The adaptation theory of subjective wellbeing (ATSW) holds that the extent to which individuals can adapt to their environments and develop within these environments will have an impact on their ability to flourish (Brickman & Campbell, 1971). According to this theory, individuals use their past experiences, and especially experiences where they were able to successfully overcome challenging circumstances, as a benchmark against which they measure their current level of wellbeing. Thus, if a person perceives their current level of happiness or satisfaction as more favourable than previous levels of happiness or satisfaction, they perceive themselves to be well, happy and flourishing.

It should be noted that the ATSW also maintains that the effect that a person's past experiences have on their emotions reduces over time (Brickman & Campbell, 1971). An example of this within the work context could be that a person may experience a spike in their levels of flourishing after a salary increase, as their salary may now be above their previous salary levels. However, over time, the new salary level will become the new benchmark and will no longer have a major impact on a person's level of flourishing. Therefore, recent positive changes in a person's life, work and/or career may have a short-term effect on their levels of flourishing until a new benchmark for happiness or flourishing is established. This ongoing process is known as the hedonic treadmill, which hypothesises that an individual will never achieve ultimate levels of happiness, wellbeing or flourishing as their benchmarks keep on changing (Brickman & Campbell, 1971).

Industrial psychologists and HR practitioners can use the ATSW as a model to support virtual team members to flourish. When virtual team members are struggling with the complexities of the virtual team environment, they can be reminded of their previous positive achievements and experiences and be reminded to set realistic benchmarks of happiness within their work. The downside of utilising the ATSW in the virtual work context is that employees do not always have positive benchmarks that they can compare their current status to and that the large amount of work demands in the virtual work context may cause employees to quickly forget their past positive experiences.

17.4.4 The PERMA Model

Seligman's (2011) PERMA model describes flourishing in terms of five different dimensions of wellbeing. These five dimensions include positive emotions (P); engagement (E); relationships (R), meaning (M); and accomplishment (A). In accordance with Keyes' (2002, 2007) MHC, the PERMA model proposes that flourishing entails both emotional and functioning dimensions (Seligman, 2011). The PERMA-profiler was developed in order to measure the five wellbeing dimensions suggested by the PERMA model (Forgeard, Jayawickreme, Kern, & Seligman, 2011). The PERMA model can be used by managers, industrial psychologists and HR practitioners to determine the flourishing levels of virtual team members.

In terms of the model, positive emotions (P) indicates individuals' desire to experience as much satisfaction and pleasure as possible by means of positive affect. The model postulates that when individuals experience positive emotions they are more able to solve complex problems and think strategically and are more open to new information. Individuals in a negative state of mind, however, tend to be more conservative, less adaptable and more systematic in their thinking (Seligman, 2011). Individuals who frequently have a positive frame of mind are more able to flourish, as they are able to solve complex problems presented to them by their environments. Virtual team members need to be encouraged to focus on the positive aspects of their work such as the flexibility that the virtual team environment provides them with.

Within the context of Seligman's (2011) model, engagement (E) is associated with the understanding that individuals have of their own strengths and how their strengths can be applied to have a positive impact on their work, careers and relationships and the overcoming of challenges. Individuals who feel that their strengths are consistently utilised, optimised and appreciated tend to flourish more than individuals who feel that they do not have the opportunity to exhibit their strengths or do not feel that they have the ability to overcome certain challenges. Managers should celebrate the success and contributions of their virtual team members. Virtual coaching and feedback should also be used to assist virtual team members to be more self-aware and discover ways of leveraging their strengths.

Positive relationships (R) refer to the amount and level of positive interpersonal relationships individuals have in their personal and work lives (Seligman, 2011). As human beings are social creatures, want to belong and be accepted, positive relationships are essential for individuals to flourish. Managers of virtual teams should encourage frequent interaction (even if takes place virtually) to give team members the opportunity to support each other. Team members can be encouraged to break into smaller groups where they get the opportunity to share their feelings and challenges with each other.

Meaning (M) refers to the level of purpose that individuals believe their lives have. Seligman (2011) states that when individuals feel that they have sufficient opportunities to use their talents and strengths for the greater good of society they will experience higher levels of flourishing. Individuals who set clear goals and objectives for themselves also report higher levels of flourishing as they experience

their lives as being meaningful. Virtual team members should be encouraged to think of how their work contributes to others and society. They should be encouraged to partake in activities that contribute to society and support the other members of their team.

Lastly, accomplishment (A) is associated with individuals' perspectives of their own success, achievement of goals and mastery of their work, life, relationships and careers. Individuals who feel constantly out of depth in their work from a skills mastery perspective are not appreciated for their accomplishments and are not proud of their work achievements tend to report lower levels of flourishing (Seligman, 2011). Managers should have frequent career conversations with their team members where the career objectives and opportunities can be discussed. Organisations should be clear about their succession strategy and clearly communicate career paths to their employees on their intranet.

17.4.5 The AIM Model

The AIM model forms part of the cognitive theories of subjective wellbeing which emphasise the manner in which people think about their lives as the most important contributor to their ability to flourish. The AIM model (Attention, Interpretation and Memory model) postulates that individuals who focus on, reminisce about and ponder positive life experiences will flourish more than people who constantly think about negative life experiences (Diener & Biswas Diener, 2008). The AIM model states that when individuals focus on the positive aspects of a situation as opposed to the negative, they are better at problem-solving and adapting to difficult circumstances.

Individuals who take a positive cognitive approach to life will seek out new experiences and stimuli that will allow them to feel better about their lives and work (Diener & Biswas Diener, 2008). By contrast, individuals who constantly dwell on negative experiences will be unable to see the positive aspects of life, will be unable to adapt and will be less creative (Diener, 2013). Cognitive theories of wellbeing emphasise the fact that individuals who flourish are those who have the ability to direct their cognitive attention outward from themselves, remain objective in challenging circumstances and choose to think positively about their lives and work (Diener, 2013). Individuals who experience lower levels of wellbeing take a more pessimistic view on their outside worlds, struggle to remain objective about certain events and people and constantly focus on the things that may go wrong in a situation.

Studies that make use of the cognitive approach to wellbeing have found that although individuals who are flourishing still experience negative events in their lives, they are more able to deal with these events in a proactive and positive way, as they recall past negative experiences as more positive, which, in turn, will allow them to adapt better to their current circumstances (Diener & Ryan, 2009).

Employees who work in a virtual environment should be encouraged to take a positive cognitive approach towards their environment. They should try and think of the positive aspects of working in the virtual environment and direct their cognitive

attention outward from themselves. Utilising tools such as keeping a diary and having conversations about the positive aspects of their work with others can assist virtual team members to feel more positive about their work. Individuals who are languishing should be reminded to think about previous positive virtual work-related experiences.

Potential criticism against the AIM model could be that not all individuals may have the cognitive capacity to recall past positive events to make them feel better especially when they are languishing or not well (Keyes, 2009). Practitioners should thus take a cautionary approach when advising virtual employees to think of past positive experiences to assist them to flourish.

17.4.6 Evolutionary Theories of Subjective Wellbeing

The evolutionary theories of subjective wellbeing focus on the fact that humans, in their primitive form, flourished when they believed that they were able to overcome environmental threats, protect themselves and provide for their offspring (Diener, 2013). Scholars maintain that individuals will feel happy when they are able to adapt successfully to the challenges presented to them by their environments (Diener & Ryan, 2009). Human beings are driven by their primitive drive to survive and emotions such as anger and fear will assist them to overcome challenges. These emotions have assisted the human race to consistently overcome threats in their environments and survive as a species (Diener & Ryan, 2009). Groups of people such as certain tribes, races or cultures that have consistently been able to overcome the challenges presented by their environments are more able to flourish than groups of people who have been consistently oppressed by their environments.

The broaden and build theory by Fredrickson (1998), for example, states that individuals build up action repertoires through life experiences which allow them to overcome the challenges posed to them by the environment. The more life experiences individuals have the more psychological, physical, social and cognitive resources they develop, which allows them to survive longer within their environments. Individuals who flourish have a well-developed repertoire of resources that they can draw from in different circumstances. Individuals with lower personal resource reservoirs will be easily overcome by the challenges in their environments and will struggle to flourish (Fredrickson, 1998).

Virtual employees should be encouraged and supported to build up personal resource reservoirs which they can draw from when they are showing symptoms of languishing. When virtual employees feel discouraged by their environment, they should be encouraged to implement their psychological resources (such as emotional intelligence and resilience), their physical resources (such as their physical stamina), their social resources (such as their ability to interact with others) and cognitive resources (such as their ability to solve complex cognitive problems) to overcome the challenges (Hobfoll, Johnson, Ennis, & Jackson, 2003).

Hobfoll et al. (2003) state that individuals with depleted resource reservoirs find it very difficult to obtain outcome resources such as wellbeing and flourishing. Virtual

employees with low personal resource reservoirs should thus be encouraged to take time off or gain support in order to replenish and/or develop well-rounded resource reservoirs.

17.4.7 Relative Standards Models of Subjective Wellbeing

Diener et al. (2010) took a different route in terms of conceptualising and measuring the concept of flourishing. They describe flourishing in terms of how individuals see their own success in relation to their interpersonal relationships, their self-worth, their goals and their outlook on life. Diener et al. (2010) developed a one-dimensional scale to measure the construct of individual flourishing.

The relative standards approach to subjective wellbeing suggests that individuals perceive themselves as flourishing based on their assessment of themselves in terms of past successes, other people's successes, their own goals and values and the expectations that others have of them (Diener, Larsen, Levine, & Emmons, 1985). Social comparison theory, for example, indicates that individuals will perceive themselves as flourishing if they perceive their lives, work and careers as being more successful than those of the people around them (Suls & Wheeler, 2013).

Within the work context, individuals will flourish when they believe that they are making a greater contribution to the organisation than their co-workers, they are receiving higher compensation than those around them and that their talents are perceived as more important to the organisation than the talents of their co-workers (Diener et al., 1985). As human beings, we are constantly comparing ourselves to our family, friends and co-workers, and our experiences of wellbeing are highly dependent on the extent to which we believe other individuals are successful and are satisfied with their lives. Potential criticism against relative standards models of subjective wellbeing is that individuals may tend to compete with each other in the pursuit of being more well than others which may have a negative impact on teamwork.

Virtual employees should be encouraged to set SMART (specific, measurable, attainable, realistic and time-specific) goals which they can use as measures of their success. Organisations should provide individuals with resources and support that will allow them to achieve these goals. Organisations should provide virtual employees with a clear view of the vision and advise them on how they contribute to the vision. Managers should check in with their virtual subordinates on a frequent basis to determine where they are in terms of achieving their career goals. Virtual team members should be encouraged to partake in peer mentoring and coaching to assist fellow team members to achieve their career goals.

17.4.8 Self-determination Theory

Deci and Ryan's (2002) self-determination theory is based on the notion that individuals have three psychological needs that have to be satisfied in order for them to flourish, namely autonomy, competence and relatedness. Ryan and Deci (2017) describe the need for autonomy as the desire that individuals have to experience independence in terms of choosing for themselves when making decisions. Although the virtual work environment allows for much autonomy, managers should encourage their virtual team members to take responsibility for their actions and projects whilst providing them with adequate support and resources to achieve their goals.

Competence (also known as environmental mastery) can be described as individuals' intrinsic need to regulate outcomes and to be able to function effectively within their environments (Ryan & Deci, 2017). As virtual team members are often hired for their high levels of competence, managers must realise that they still require support in terms of their learning and development.

The third need in self-determination theory that individuals seek to satisfy is relatedness, which refers to the desire to establish meaningful connections with others (Ryan & Deci, 2017). Managers should think of creative ways to make virtual team members feel connected. By making use of technology such as video conferences, managers should encourage virtual team members to share their ideas, challenges, hopes, dreams and desires with each other. This will allow virtual team members to feel connected, respected and part of a community.

17.5 Work-Specific Theories to Flourishing

Although the above-mentioned models are satisfactory for conceptualising and measuring individual flourishing, they were not necessarily developed to measure individual and group flourishing within the occupational context. Rothmann (2013) elaborated on Keyes' (2002, 2005) MHC to conceptualise and measure flourishing within the occupational context, arguing that the concept of flourishing at work is complex and multidimensional as it includes the elements of emotional wellbeing (i.e. feeling well and positive), psychological wellbeing and social wellbeing (i.e. functioning well). Using the outcomes of previous studies (Keyes, 2002, 2005), Rothmann (2013) indicated that emotional wellbeing comprises a balance between how satisfied individuals are with their work and the positive affect that they experience in their work. Rothmann (2013) used Keyes' (1998) theory to show that social wellbeing refers to the satisfaction that individuals have with their social experiences and tasks within the work context. Psychological wellbeing, based on Rothmann's (2013) work, consists of elements such as relatedness, having a growth mindset, goal orientation, emotional autonomy, competence, work engagement and striving for meaningful work experiences.

Rothmann (2013) describes emotional wellbeing at work as the extent to which individuals are satisfied or content with all aspects of their job, their career and related expectations. Positive affect, in the occupational context, refers to the positive emotional experiences (e.g. happiness, appreciation, calmness, pride, confidence, hope and engagement) that individuals have in relation to their work and organisations (Rothmann, 2013). Conversely, negative affect, in the occupational context, refers to the negative emotional experiences that individuals have in the job context such as anxiety, boredom, dissatisfaction, anger and guilt (Rothmann, 2013).

According to Rothmann (2013), flourishing at work thus consists of three elements, namely psychological wellbeing (satisfaction with autonomy, competence satisfaction, relationship satisfaction, meaning and purpose, engagement and learning), emotional wellbeing (job satisfaction, positive affect and low negative affect) and social wellbeing (social contribution, integration, actualisation, acceptance and coherence).

Rautenbach (2015) developed the Flourishing-at-Work Scale (FAWS), which consists of 46 items that measure how frequently participants experience symptoms related to flourishing and languishing at work. Consistent with Rothmann's (2013) and Keyes' (2002, 2005, 2007) theories on flourishing, the FAWS is made up of the dimensions of social wellbeing, psychological wellbeing and emotional wellbeing. Although Rothmann's (2013) theory of flourishing at work and the FAWS (Rautenbach, 2015) encapsulate most elements that describe flourishing in a virtual environment, they have not been tested within a virtual team environment at the time of this study. Rothmann's (2013) theory of flourishing at work and the FAWS (Rautenbach, 2015) speak to individual flourishing, but do not necessarily capture the elements of the flourishing team.

The next section explores the elements of a flourishing team.

17.6 The Flourishing Team

A flourishing team may be described as a group of individuals who are concerned with each other's psychological, social and emotional wellbeing whilst working towards a common goal (Colbert, Bono, & Purvanova, 2016). Flourishing teams hold several benefits for employees and can give an organisation a competitive advantage. Individuals who are part of a flourishing team report higher levels of individual flourishing and overall wellbeing as they feel that their individual psychological needs are valued and respected (Hart, Cotton, & Scollay, 2015). Such individuals also report higher levels of absorption, creativity and engagement in their work as they feel more connected and committed to their team members and the organisation (Hart et al., 2015).

Coetzee and Oosthuizen (2017) found that when individuals are in a work environment where their psychological flourishing is supported and encouraged they have a greater tendency to be resilient to bullying and have lower turnover intent. Keyes and Grzywacz (2005) found that when individuals are part of teams that place

importance on individual and collective flourishing, they tend to display higher levels of productivity, are more cognitively engaged in their work and report fewer workplace injuries. Kern, Waters, Adler and White (2014) go as far as to say that individuals who flourish in their work environments experience greater satisfaction with life, display greater commitment to their organisations and experience greater job satisfaction and physical health. In a study on IT professionals, Diedericks and Rothmann (2014) found that flourishing was strongly associated with high levels of organisational commitment and lower turnover intention.

This does not necessarily mean that when a group of individuals who are flourishing in their individual capacities come together as a team that the team will also be described as a flourishing team. There are a number of structural and resource elements that need to be in place to ensure that a team and individuals within the team will flourish. These elements include communication and interpersonal support, learning and development, job autonomy and person-environment fit.

17.6.1 Communication and Interpersonal Support

Fredrickson and Losada's (2005) study with organisational teams proved empirically that constructive communication and expressions of support amid team members clearly differentiated flourishing teams from languishing teams. In their observations of 60 leadership teams, Fredrickson and Losada (2005) identified 15 teams that delivered better outputs (as measured by their cost-effectiveness, their customers' satisfaction and their performance appraisals) than the other leadership teams that formed part of the study. These high-performing teams frequently used positive speech interactions such as words of appreciation, motivation and support. Individuals in these high performing teams indicated that as their individual wellbeing, ideas and inputs were valued by means of positive communication and appreciation by their team members, it was easy for them to in turn positively communicate and appreciate their team members.

In Fredrickson and Losada's (2005) study, the poorest performing teams used negative speech interactions such as words of disapproval, pessimism and sarcasm. The average performing teams used a mixture of positive and negative speech interactions. The results further show that successful teams tend to display verbalisation of more positive affect and a larger variety of creativity and ideas. However, the study showed that teams with low and/or average levels of success tended to be more inhibited in the variety of creativity and ideas that they displayed. The lowest performing teams tended to be pessimistic, uncreative, less supportive and wound up. Individuals in these low-performing teams indicated that they did not feel valued or appreciated which meant that it was difficult to display positive affect towards their fellow team members. The extent to which individuals will flourish within the team and the extent to which the team will flourish as a whole are thus dependent on the reciprocal feelings of appreciation, positive communication and support among the team members.

These findings were replicated in Hone, Jarden, Duncan and Schofield's (2015) research which found that employees who feel highly appreciated in their teams are almost 30 per cent more likely to flourish in comparison with individuals who do not feel appreciated in their teams. Hone et al. (2015) advise that organisations should take extra steps to ensure that they develop team environments where positive speech is encouraged as it has a major impact on individuals' and teams' abilities to flourish.

Rautenbach (2015) argued that individuals' abilities to flourish at work are dependent on the following five social elements: (1) social acceptance, which refers to the manner in which individuals support diversity within their work environments; (2) social growth, which indicates the extent to which individuals support the possible development of co-workers, teams and the organisation as a whole; (3) social contribution, which refers to the extent to which individuals believe that their daily work activities contribute to the organisation, their colleagues and society; (4) social coherence, which specifies whether employees experience their organisational and social lives as being meaningful and comprehensible; and (5) social integration, which indicates whether individuals feel supported, understood and valued by others in the organisation.

Managers of virtual teams should thus encourage frequent and positive communication between team members. Structures should be put in place where individuals can support each other and gain support from industrial psychologists and HR practitioners. Virtual employees should be encouraged to have frequent positive interactions with members of the community and build positive relationships with members of their professional network.

17.6.2 Learning and Development

Ryff (1989) maintains that personal growth is essential for individuals to be well in both personal and work contexts, whilst Spreitzer, Lam, and Fritz (2010) mention in their model of thriving that learning is essential for individuals to flourish within the work context. When individuals learn, in other words have the opportunity to acquire and utilise new knowledge, they tend to flourish as they experience their work as meaningful and purposeful (Spreitzer et al., 2010). Continuous learning is important to individuals as it helps them have a purpose and work towards a goal.

Meaning and purpose are important contributors to the extent to which individuals flourish at work as these concepts can be described as a person's perspective in terms of how they see their work as important, goal-orientated and valuable (Steger, Dik, & Duffy, 2012).

Virtual employees should be supported to continuously develop their skills and expertise and find meaning in their work.

17.6.3 Job Autonomy

The ability to have control over one's work outcomes, responsibilities and content has been found to be a predictor of flourishing at work. In alignment with self-determination theory (Ryan & Deci, 2017), the study by Hone et al. (2015) found that autonomy is one of the basic psychological needs that have to be met in order for individuals to flourish. Hone et al. (2015) found that individuals who experienced autonomy in their roles had up to 10 per cent more chance to flourish in their work and lives in comparison with individuals who reported low levels of autonomy in their work.

Within the virtual team context, this means that individuals should be allowed to work autonomously on their tasks and responsibilities whilst keeping the greater goals of the team in mind. Robertson and Cooper (2011) indicate that 'control', in other words control over one's own life, decisions, work and career, is one of the essential criteria for whether a person will flourish or not.

17.6.4 Person-Environment Fit

In a recent study by Redelinguys, Rothmann, and Botha (2019), it was established that person-environment fit is closely associated with workplace flourishing, which consists of emotional wellbeing, psychological wellbeing and social wellbeing. Person-environment fit describes the extent to which an employee is compatible with their team and/or organisational context (Kristof-Brown & Guay, 2011). It is a complex and multifactorial concept, as employees' fit is dependent on a number of different aspects within their environments (Kristof-Brown & Guay, 2011). Thus, organisational behaviour theorists have defined person-environment fit across several different levels such as the fit between the individual and the holistic organisation, the fit between the individual and the team and the fit between the individual and their job (Su, Murdock, & Rounds, 2015).

Person-organisation fit refers to the alignment between employees' individual goals, values and psychological expectations and the norms, mission, values and expectations of their organisation (Su et al., 2015). Individuals tend to flourish in organisations where there are structures, processes, procedures and values in place that support and encourage emotional, social and psychological wellbeing (Rothmann, 2013). When employees experience alignment between their needs and goals and the needs and goals of the organisation, a perception of social acceptance emerges which leads to lower levels of turnover intention and ultimately increased levels of flourishing (Van Vianen, Stoelhorst, & De Goede, 2013).

Person-team fit arises when there is alignment between the wellbeing needs, objectives, personality preferences, values, norms, practices and expectations of the individual and other members of their team (Su et al., 2015). Glew (2012) describes two elements that contribute to person-team fit, namely interdependence (i.e. the degree

to which team members are expected to work together) and social interactions (i.e. interpersonal work relationships). If there is alignment, respect and support for the psychological, emotional and social wellbeing of each individual in the team, then both individuals and the team will flourish.

Person-job fit has a major impact on the extent to which individuals will flourish, perform and commit to their jobs. Person-job fit refers to the alignment between individuals' characteristics (such as their personality, ability, perspective on wellbeing, goals and expectations) and the characteristics of the job (such as outcomes, responsibilities and key performance indicators) (Kristof-Brown & Guay, 2011). Person-job fit includes demands-abilities fit and need-supplies fit, which should be in balance if individuals are to flourish in their jobs (Kristof-Brown & Guay, 2011). When individuals have the aptitude, skills and knowledge required for the job, demands-abilities fit occurs. On the other hand, when a position satisfies an individual's psychological needs then needs-supplies fit occurs (Kristof-Brown & Guay, 2011).

Person-environment fit theory postulates that the extent to which individuals will flourish is dependent on their interactions with their organisational, team and job environments (Shipp & Jansen, 2011). The greater the fit between the employees' characteristics (such as psychological needs, personality, skills, abilities, knowledge and values) and the environmental characteristics (such as organisational structures, processes and values, team goals and outcomes and role requirements), the more the employee will flourish (Shipp & Jansen, 2011).

Self-regulation processes support an individual's ability to achieve fit between themselves and their environments (Johnson, Taing, Chang, & Kawamoto, 2013). By identifying the actions that need to be taken in order to achieve environmental fit, individuals are more able to connect with their organisations, teams and jobs (Dik, Byrne, & Steger, 2013). In turn, organisations and teams should create environments that enable individuals to have positive relationships with others, achieve their career goals and enjoy their jobs (Dik et al., 2013). This alignment between the needs of the individual and their environment will have an impact on the extent to which individuals, teams and organisations flourish (Bakker & Schaufeli, 2008).

Janse van Rensburg, Rothmann, and Diedericks (2017) hypothesised and subsequently found that the extent to which an individual fits the team and the organisational environment will have a significant impact on their ability to flourish in their work and team. Consequently, the collective feeling that individuals have within their fit to the team and the organisation will have an impact on the team's ability to flourish.

Thorough employee screening process should be used to determine whether an individual would fit the virtual team environment prior to appointment. Organisations should be clear on the demands of the virtual team environment in their job adverts and industrial psychologists, managers, recruiters and HR practitioners should be aware of the key competencies required of a virtual employee. There are thus several benefits related to individual and team flourishing. There are also a number of structures and resources that should be in place in order to facilitate team and individual flourishing.

17.7 Critical Analysis of Theories on Flourishing in Relation to Virtual Teams

The above literature review was used to consider the structural elements of the virtual team and the unique demands associated with virtual team work. Various current theoretical frameworks related to the concept of flourishing were considered and it was established that there is currently no single empirically validated framework that practitioners can use to assist virtual team members to flourish. This section attempts to combine a number of key principles on the frameworks of flourishing and subjective wellbeing that were discussed to inform researchers and practitioners of the possible elements that need to be included in a future empirically validated framework of flourishing with the virtual team context. These tenets (principles) are discussed below.

17.7.1 Tenet 1: Building Relationships

Owing to the fact that virtual workers are physically removed from their fellow team members they often feel isolated and experience a lack of companionship (Kossek, 2016). According to Keyes and Annas (2009), people flourish when they are among other people, when they have a sense of community and when they experience positive relationships. Several other theoretical models that were discussed agreed that human interaction is essential for individuals to be well (Deci & Ryan, 2002; Seligman, 2011). Rothmann (2013) stated that a person's social wellbeing (namely the ability to build and sustain positive relationships) is essential for someone to flourish at work. In turn, Glew (2012) stated that for a person to remain in a specific team they need to have positive relationships with their team members.

As the world becomes more virtual and as organisations opt more often to implement the virtual team structure within their environments, we need to remember that human beings have a primary need to have positive relationships with others (Deci & Ryan, 2002). Virtual employees need to go out of their way to build positive relationships with their colleagues by making use of technology such as emails and video calling. Virtual team members need to be reminded to go out into the community and make a positive impact on the lives of others. Individuals who work in a virtual environment should be supported to develop social skills and optimise their emotional intelligence. Managers should make an effort to build a feeling of community among team members where diversity is celebrated, and personal challenges are supported.

17.7.2 Tenet 2: Communication

Communication is a key challenge that virtual team members struggle with as they are often in different time zones which cause delays, there are often language barriers, there are challenges with the reliability of communication technology and virtual communication is not as personal as face-to-face communication. Research shows that emotional wellbeing is a key element that needs to be prevalent for individuals to flourish (Keyes, 2002, 2005; Rothmann, 2013). Socha and Beck (2015) found that positive communication such as words of support and affirmation, frequent communication and clear communication have a positive relationship with emotional wellbeing. Fredrickson and Losada (2005) found that the team would flourish when positive communication is used. Seligman (2011) argues that individuals will flourish when they are engaged in certain work decisions and allowed to give their feedback on their ideas and insights. Research shows that individuals will flourish when they receive feedback on their own and other people's performance (Diener et al., 1985). Fredrickson and Losada (2005) indicate that clear communication helps team members to understand what is expected which ultimately has a positive impact on the team's effectiveness, engagement and flourishing.

Managers should be equipped to frequently and clearly communicate with their virtual team members. Virtual employees should also be allowed to give feedback to their manager and the organisation in terms of their role clarity and communication challenges. Frequent virtual meetings need to be set up among the respective members of the virtual team to ensure that everyone is clear on project deliverables. Organisations should encourage teams to use multiple forms of technology to communicate (e.g. video calling, telephone calling, emails and text messages) to ensure that communication is received. To ensure that virtual team members feel connected, organisations should clearly communicate strategies to employees, have virtual 'town hall' meetings and provide employees with adequate and reliable technological communication resources. 24-hour technology support should be provided to virtual employees to reduce the risk of technology having a negative impact on communication.

17.7.3 Tenet 3: Competence

Although virtual team members are often hired from around the globe for the unique skills and expertise that they provide, research shows that individuals need to constantly grow and develop in order for them to flourish (Seligman, 2011). Studies show that positive psychological wellbeing is one of the key contributors of individual flourishing (Keyes, 2002, 2005; Rothmann, 2013). Green and Palmer (2018) state that a positive association between training and development interventions such as coaching and psychological wellbeing exists, as individuals get the opportunity to identify and satisfy their psychological needs. Research shows that individuals who

take a learning approach towards all work circumstances are highly likely to be well and flourish (Ryff, 1989; Spreitzer et al., 2010; Turban & Yan, 2016). Individuals who feel equipped with the right skills and knowledge to do their jobs are also more likely to flourish (Hone et al., 2015).

Virtual employees should be encouraged to continuously expand their skills and expertise. Managers should be trained as coaches to support individuals to work towards their career objectives. Organisations should make resources such as training, e-books and personal development plans available online so that virtual team members can actively develop themselves. Virtual team members should be encouraged to mentor and coach each other to ensure that knowledge and skills are shared throughout the team.

17.7.4 Tenet 4: Psychological Resources

Hobfoll et al. (2003) state that individuals who have well-developed and well-rounded psychological resource reservoirs will be more able to be resilient and overcome environmental challenges. Psychological wellbeing, which is a key element of flourishing (Keyes, 2002, 2005; Rothmann, 2013), is dependent on a person's ability to adapt and be flexible (Houben, Van Den Noortgate, & Kuppens, 2015). Psychological resources such as motivators and social connectivity (Diener & Ryan, 2009), learning agility (Spreitzer et al., 2010), optimism (Huta & Waterman, 2014; Seligman, 2011); flexibility (Houben et al., 2015) and goal orientation (Brickman & Campbell, 1971) may enable virtual employees to experience greater levels of flourishing.

Industrial psychologists and HR practitioners should support virtual employees to develop well-balanced resource reservoirs. Employees should be encouraged to draw on their resource reservoirs when they feel discouraged by the virtual environment. Organisations should support employees to take breaks and seek psychological assistance when their resource reservoirs are unbalanced, low or depleted. Online counselling and employee assistance programmes should be available to support individuals with their wellbeing. Managers should be trained on having conversations with their team members on their flourishing, the risks of languishing and the resources that are available to employees to assist them to flourish.

17.8 Insights and Implications for Virtual Team Flourishing Practices and Research

From the above overview of the research literature, the chapter hopes to contribute to the available literature on flourishing in virtual teams on the following points:

1. Owing to increased competition and globalisation, organisations are changing quickly and need better-operating models if they are to remain competitive. The

virtual team allows organisations access to highly qualified and experienced employees, as well as giving organisations a global footprint.

2. The virtual team differs considerably in terms of its make-up and the way that it is formed. It has a complex structure which requires proactive behaviour from all members to ensure that common goals are achieved. The virtual team structure complicates things such as communication, colleague support, supervisor support, speed of decision-making, work hours and team building which may negatively impact flourishing.
3. Several flourishing and wellbeing theoretical frameworks were presented to broaden the understanding of the concept of flourishing and more specifically flourishing within the modern work environment. These models concur that social wellbeing, psychological wellbeing and emotional wellbeing are key elements associated with flourishing.
4. The chapter discussed the concept of the flourishing team. The point was made that even though individual team members may be flourishing it does not necessarily mean that the team is flourishing. Based on the literature review, it was argued that because the flourishing team holds several benefits for the individual and the organisation, the following areas need to be developed and enhanced within the virtual team environment: communication and interpersonal support, learning and development, job autonomy and person-environment fit.

17.9 Conclusion

The principles accentuated in this chapter are associated with important organisational conditions that facilitate flourishing within the work environment. Models and theories of flourishing inform organisational conditions for the flourishing of virtual teams. Organisations should put policies, processes and systems in place that support virtual team members to flourish. Clear job objectives, as well as technology and communication structures that allow them to interact easily with their team, are paramount. Industrial psychologists and human resource practitioners should be aware of the job demands such as work pressure, work-home interference, isolation and slower decision-making capabilities as a result of different time zones. They should assist virtual team members to be aware of the job resources and challenge team members to support each other in terms of each other's levels of engagement and flourishing. Future research studies should attempt to develop and/or adapt empirical models of flourishing that have been validated within a virtual team environment.

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Marais Bester (Ph.D.) is an industrial and organisational psychologist who is registered with the Health Professions Council of South Africa and the British Psychological Society. He works as a consultant, trainer and coach across Africa and the Middle East, with large multinational organisations, in the areas of talent acquisition, employee benefit management, employee wellbeing, change management, organisational development, team development, talent development, talent audits, succession planning, coaching and mentoring as well as performance management. He values the opportunity that he has to help individuals optimise within their careers. His research interests are in the fields of personality, diversity, wellbeing, coaching, emotions and careers.

Chapter 18

Work-Life Balance in the Digital Workplace: The Impact of Schedule Flexibility and Telecommuting on Work-Life Balance and Overall Life Satisfaction



Dong-Jin Lee and M. Joseph Sirgy

Abstract The goal of this chapter is to develop a theoretical model of work-life balance specific to the digital workplace. We first discuss two characteristics of the digital workplace: schedule flexibility and telecommuting. We then describe a formative conceptualisation of work-life balance involving a set of inter-domain strategies people use to enhance (or preserve) overall life satisfaction—behaviour-based strategies (role engagement in multiple domains, role enrichment, domain compensation, role conflict management, etc.) and cognition-based strategies (whole-life perspective, positive affect spillover, value compensation and segmentation). We then propose and explain how schedule flexibility and telecommuting in the digital workplace have a positive influence on the aforementioned work-life balance strategies and consequently overall life satisfaction and thriving.

Keywords Work-life balance · Digital workplace · Schedule flexibility · Telecommuting · Overall life satisfaction · Subjective well-being · Life balance

18.1 Introduction

There has been growing interest among academics and practitioners in the topic of work-life balance (e.g., Allen, Herst, Bruck, & Sutton, 2000; Ford, Heinen, & Langkamer, 2007). A common definition of work-life balance can be captured as follows: “Work-life balance is the ability to accomplish the goals or meet the demands of one’s work and personal life and achieve satisfaction in all life domains” (Bulger & Fisher, 2012, p. 182).

D.-J. Lee
School of Business, Yonsei University, Seoul, Korea
e-mail: Djlee81@yonsei.ac.kr

M. Joseph Sirgy (✉)
Virginia Polytechnic Institute and State University, Pamplin College of Business, Blacksburg, VA,
USA
e-mail: sirgy@vt.edu

Why is work-life balance so important? Research has shown that work-life balance plays an important role in domain satisfaction (satisfaction with work life, family life, social life, leisure life, health, etc.) as well as overall life satisfaction (e.g., Greenhaus, Collins, & Shaw, 2003; Keyes, 2002; Marks & MacDermid, 1996). Furthermore, research has demonstrated that work-life balance influences experiences in work life by increasing job satisfaction and organisational commitment as well as decreasing employee stress (e.g., Allen et al., 2000; Ford, Heinen & Langkamer, 2007; Kossek et al. 2014). The research related to work-life balance (e.g., work—family balance, work—family interference and work—family interface) is voluminous in terms of both empirical studies and competing theories (see the literature reviews of various concepts related to work-life balance by Allen et al., 2000; Bulger & Fisher, 2012; Byron, 2005; Casper et al., 2007; Danna & Griffin, 1999; Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005; Eby, Maher & Butts, 2010; Greenhaus & Allen, 2011; Kalliath & Brough, 2008; Kossek & Ozeki, 1998; McNall, Nicklin, & Masuda, 2010; Sirgy & Lee, 2015; Sirgy et al., 2008; Yasbek, 2004).

The vast majority of studies have employed an outcome-based metric of work-life balance designed to capture balanced satisfaction across life domains with minimal role conflict (Greenhaus et al., 2003). Unfortunately, these outcome-based work-life balance measures are often criticised for lacking predictive validity in relation to overall life satisfaction (Pichler, 2009). To counter this key criticism, we use a behavioural conceptualisation of work-life balance that focuses on what people do to achieve work-life balance (behaviour- and cognition-based strategies), not an outcome-based conceptualisation. Behaviour-based strategies include role engagement in multiple domains, role enrichment, domain compensation and role conflict management; cognition-based strategies include whole-life perspective, positive affect spillover, value compensation and segmentation. As such, work-life balance is conceptualised as a formative higher-order construct composed of a set of behaviour and cognitive strategies (Sirgy & Lee, 2018).

18.2 Chapter Objective

The goal of this chapter is to develop a theoretical model of work-life balance specific to the digital workplace. We first discuss two characteristics of the digital workplace: schedule flexibility and telecommuting. We then describe a formative conceptualisation of work-life balance involving a set of inter-domain strategies people use to enhance (or preserve) overall life satisfaction—behaviour-based strategies (role engagement in multiple domains, role enrichment, domain compensation, role conflict management, etc.) and cognition-based strategies (whole-life perspective, positive affect spillover, value compensation and segmentation). We then propose and explain how schedule flexibility and telecommuting in the digital workplace have a positive influence on the aforementioned work-life balance strategies and consequently overall life satisfaction and thriving.

In the following section, we will discuss two main characteristics of the digital workplace, namely schedule flexibility and telecommuting. We then will describe our construct of work-life balance involving the behaviour- and cognition-based strategies. Finally, we will introduce a set of theoretical propositions linking the characteristics of the digital workplace and the behaviour- and cognition-based strategies of work-life balance. Policy implications are then discussed.

18.3 Today's Digital Workplace

With the development of modern digital technologies at work, employees have a high degree of control of their work schedule today more than ever (e.g., Anderson, Coffey, & Byerly, 2002). Employees have flexibility to work wherever and whenever using digital tools. That is, employees in the digital workplace telecommute—perform their organisational roles using electronic media. They have flexibility of time and place. As such, boundaries between work life and personal life are becoming fuzzy (e.g., Ilies, Wilson, & Wagner, 2009). In this chapter, we will focus on two important characteristics of the digital workplace, namely schedule flexibility and telecommuting.

Schedule flexibility refers to firm policies and procedures that allow employees to perform their work role at times of their own choosing (e.g., Anderson et al., 2002; Byron, 2005). Thus, employees have flexible work hours and the ability to work on a schedule customised to fit their needs. Hence, schedule flexibility allows the individual to select the number of hours they work (e.g., part-time options) and the time they work (e.g., flextime). Consequently, schedule flexibility provides employees with autonomy over when and how they allocate time resources to work. Schedule flexibility also serves to demolish boundaries between work life and other life domains such as family life, social life and leisure life (e.g., Ashforth, Kreiner, & Fugate, 2000; Clark, 2000; Hall & Richter, 1988). As such, researchers view schedule flexibility as a boundary-spanning resource that helps workers accomplish both their work and their family responsibilities (e.g., Hill et al., 2008; Voydanoff, 2004). This occurs by creating opportunities to minimise work–family conflict, promote work–family enrichment and improve functioning at work and home.

Employees in the digital workplace also have autonomy in the way they perform their work role through telecommuting. *Telecommuting* refers to an alternative work arrangement in which employees perform tasks elsewhere that are normally done in a primary or central workplace, for at least some portion of their work, using electronic media to accomplish their duties and interact with others inside and outside the organisation (e.g., Bailey & Kurland, 2002; Baruch, 2001; Feldman & Gainey, 1997). In other words, telecommuting allows employees to choose where they can do their work.

The key goal of this chapter is to reflect on how schedule flexibility and telecommuting impact work-life balance. In doing so, we provide the reader with a brief review of our conceptualisation of work-life balance involving behaviour-based

strategies (role engagement in multiple domains, role enrichment, domain compensation, role conflict management, etc.) and cognition-based strategies (whole-life perspective, positive affect spillover, value compensation and segmentation). We then introduce a set of theoretical propositions designed to shed light on how schedule flexibility and telecommuting may affect work-life balance.

18.4 Work-Life Balance

Much of the research in work-life balance can be categorised in terms of three major theoretical approaches that reflect how individuals manage the interplay between/among domain satisfaction to influence overall life satisfaction. The three approaches are (1) management of role engagement, (2) management of role conflict and (3) management of life domain satisfaction (see Table 18.1).

The first theoretical approach to work-life balance focuses on *management of role engagement*. Specifically, work-life balance is achieved through attentive engagement in multiple roles (e.g., Marks, 1977; Marks & MacDermid, 1996; Sieber, 1974), engagement in multiple roles with an approximately equal time and involvement (e.g., Kirchmeyer, 2000), and allocation of time and psychological energy in a balanced way in work and nonwork domains (e.g., Greenhaus et al., 2003). As such, work-life balance involves active engagement in multiple roles requiring balanced distribution of involvement in multiple life domains. In this resource-based approach to work-life balance, the construct of work-life balance is customarily measured by focusing on balanced allocation of time and energy to meet demands from various life domains (e.g., Drenzo, Greenhaus, & Weer, 2015; Voydanoff, 2005).

The second theoretical approach to work-life balance reflects a conceptualisation focusing on *management of role conflict*. In this approach, work-life balance is achieved through effective management of role conflict across different social roles. Work-life balance can be achieved when individuals do not experience role conflict (e.g., Allen et al., 2000; Clark, 2000; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). Minimal role conflict is an important aspect of work-life balance because it allows the individual to meet role demand with available resources (e.g., Fisher, Bulger, & Smith, 2009; Hobfoll, 1989). Conflict or interference results when resources to meet role demand are threatened or lost. As such, work-life balance can be construed as fit between role demand and resources (e.g., Voydanoff, 2005). That is, fit (work demand–family resources fit and family demand–work resources fit) is a major determinant of work-life balance. This fit promotes role enrichment with no role conflict (e.g., Frone, 2003; Greenhaus & Powell, 2006).

The third approach to work-life balance focuses on *management of domain satisfaction*. In this approach, work-life balance is achieved when individuals attempt to balance satisfaction across life domains (e.g., Frone, 2003; Greenhaus & Powell, 2006). Work-life balance is achieved when they experience positive spillover (positive affect from one life domain contributing to positive affect in another), compensation (negative affect in one domain may cause the individual to enhance positive

Table 18.1 Theoretical approaches to work-life balance

Theoretical approaches to work-life balance	Main characteristics of work-life balance	Conceptualisation of work-life balance	Representative authors
Engagement management	Multiple role engagement	The tendency to become fully engaged in the performance of every role in one's total role system to approach each role and role partner with an attitude of attentiveness and care	Marks (1977), Marks and MacDermid (1996), Sieber (1974)
	Equal time and involvement	Engagement in multiple roles with an approximately equal level of attention, time, involvement or commitment	Kirchmeyer (2000)
	Balanced allocation of time and psychological energy	Allocation of time and psychological energy in a balanced way in work and nonwork life while deriving much satisfaction from both work and nonwork life	Greenhaus et al. (2003)
Conflict management	Minimising role conflict	Satisfaction and good functioning in work and family roles with minimum role conflict	Allen et al. (2000), Clark (2000), Kahn et al. (1964)
	Meeting role demand with resources	Work-life balance is achieved through effective management of role conflict. Conflict or interference results when resources to meet role demand are threatened or lost	Fisher et al. (2009), Hobfoll (1989)

(continued)

Table 18.1 (continued)

Theoretical approaches to work-life balance	Main characteristics of work-life balance	Conceptualisation of work-life balance	Representative authors
	Fit between role demand and resources	Fit (work demand–family resources fit and family demand–work resources fit) is a major determinant of work–family balance	Voydanoff (2005)
	Role enrichment with no role conflict	A high degree of role enrichment with a low degree of role conflict	Frone (2003), Greenhaus and Powell (2006)
Satisfaction management	Balanced satisfaction across life domains	Work-life balance is achieved when individuals experience balanced satisfaction across life domains	Clark (2000), Kirchmeyer (2000)
	Spillover and compensation	Work-life balance is achieved when individuals experience spillover (positive affect from one life domain contributes to positive affect in another) and compensation (negative affect in one domain may cause the individual to enhance positive affect in another domain)	Champoux (1978), Lambert (1990), Staines (1980)
	Segmentation	Work-life balance is achieved when individuals erect boundaries between life domains (e.g., boundary between work and family life) to prevent dissatisfaction in one domain to spillover unto another	Ashforth et al. (2000), Bulger et al. (2007), Clark (2000), Nippert-Eng (1996)

affect in another domain) (e.g., Champoux, 1978; Lambert, 1990; Staines, 1980) and segmentation (erection of boundaries between life domains to prevent dissatisfaction from one domain to spillover unto another) (Ashforth et al., 2000; Bulger, Matthews, & Hoffman, 2007; Clark, 2000; Nippert-Eng, 1996).

While the role engagement and role conflict approaches to work-life balance shed light on important aspects of work-life balance, these two approaches do not provide theoretical and practical guidelines on what can be done to achieve work-life balance. Building on the notion that work-life balance reflects *management of domain satisfaction*, we conceptualise work-life balance as a high-order formative construct composed of a set of inter-domain strategies. The goal of inter-domain strategies is to effectively manage the interplay between/among life domain satisfaction in a manner to increase overall life satisfaction. As such, our conceptualisation of work-life balance involves two sets of strategies that workers use to achieve work-life balance. These are behaviour-based strategies (role engagement in multiple domains, role enrichment, domain compensation, role conflict management, etc.) and cognition-based strategies (whole-life perspective, positive affect spillover, value compensation and segmentation).

To better understand our conceptualisation of work-life balance, the reader should first be familiar with the bottom-up spillover theory of life satisfaction. We believe this theory to be the overarching backbone of our attempt to establish a theory that focuses on behavioural strategies people use to enhance work-life satisfaction and ultimately life satisfaction.

18.5 The Bottom-Up Spillover Theory of Life Satisfaction

How do individuals manage the interplay between work and nonwork roles and domains in an effort to increase life satisfaction or prevent decreases in life satisfaction? To explain the psychological dynamics of this inter-domain interplay, we will have to first describe a popular theory in quality-of-life/well-being research, namely *bottom-up spillover theory of life satisfaction* (Andrews & Withey, 1976; Campbell, Converse, & Rodgers, 1976).

Bottom-up spillover is essentially a satisfaction hierarchy reflecting the carry-over impact of affect from subordinate life domains to superordinate ones, specifically from life domains such as leisure, family, job and health to overall life. Affect within a life domain (e.g., work life and family life) influences overall life satisfaction (Diener, 2009; Sirgy, 2012). Specifically, life events at the most concrete level of the satisfaction hierarchy are associated with positive and negative affect. This affect travels up the hierarchy to influence life domain satisfaction. For example, a life event in the work domain (e.g., job promotion) is likely to generate positive affect. This positive affect influences overall satisfaction in work life, which in turn travels up the satisfaction hierarchy to further influence satisfaction with life in general (i.e., life satisfaction). Thus, bottom-up spillover theory implies that subjective well-being can be increased by allowing domain satisfaction to spill over positive affect unto

the most abstract of all life domains, namely life in general. The degree of spillover from domain satisfaction to overall life satisfaction is influenced by the salience of life domain. Specifically, the degree of vertical spillover is high when the life domain is salient to the self-concept (Oishi, Diener, Lucas, & Suh, 1999; Strack, Martin, & Stepper, 1988).

The concept of bottom-up spillover has been used by quality-of-life/well-being researchers to explain the effects of certain domain satisfaction on overall life satisfaction (see the literature reviews in Diener, 1984; Diener et al., 1999; Sirgy, 2012). To reiterate, the key concept here is that overall life satisfaction can be explained and predicted from the various global feelings one has in relation to the different life domains (work and nonwork life). Many studies in quality-of-life/well-being research have empirically demonstrated the vertical bottom-up spillover effect between satisfaction with specific life domains and overall life satisfaction (e.g., Chen, Ye, Chen, & Tung, 2010; Gonzalez, Coenders, Saez, & Casas, 2010; Wu, 2008, 2009; Wu, Tsai & Chen, 2009).

18.6 Conceptualising Work-Life Balance in Terms of Inter-domain Strategies

We view work-life balance as involving behaviour- and cognition-based strategies that individuals use involving the interplay between/among life domains and domain satisfaction with the goal being increased life satisfaction. We propose a new conceptualisation of work-life balance as a composite of a set of life domain strategies (Fig. 18.1). To reiterate, our conceptualisation of work-life balance involves two sets of strategies that workers use to achieve work-life balance. These are behaviour-based strategies (role engagement in multiple domains, role enrichment, domain compensation, role conflict management, etc.) and cognition-based strategies (whole-life perspective, positive affect spillover, value compensation and segmentation).

In the sections below, we discuss the aforementioned behaviour- and cognition-based strategies of work-life balance in some detail and explain the underlying psychology of these strategies characterising how individuals go about managing the interplay between/among domain satisfaction in ways to increase life satisfaction (and mitigating possible decreases in life satisfaction). The behaviour and cognition inter-domain strategies and their underlying theoretical principles are all summarised in Fig. 18.1.

18.6.1 *Work-Life Balance as Behaviour-Based Strategies*

Table 18.2 shows the behaviour-based inter-domain strategies of work-life balance. Behaviour-based strategies of work-life balance refer to individual's actual

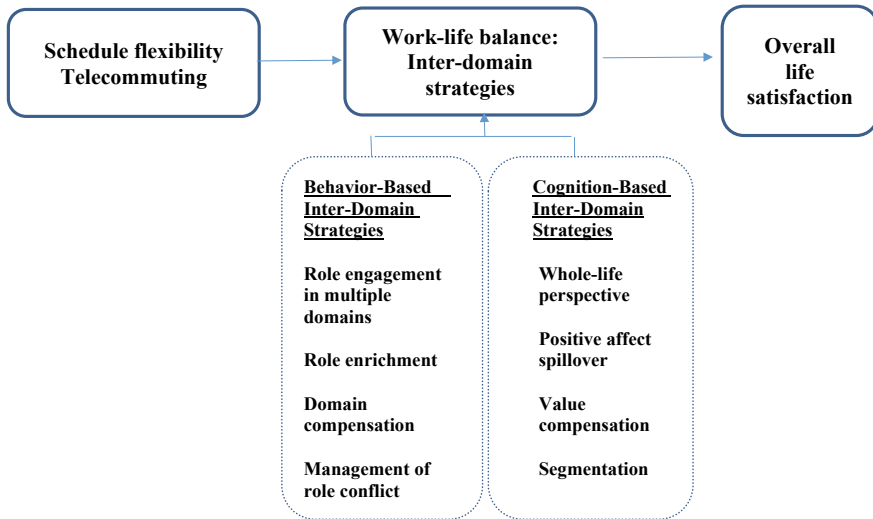


Fig. 18.1 A model of work-life balance in the digital workplace (authors’ own work)

behaviours designed to enhance satisfaction in work and nonwork domains in ways to achieve work-life balance. There are four behaviour-based strategies that have been studied and reported in the work-life balance literature: (1) role engagement in multiple domains, (2) role enrichment, (3) domain compensation and (4) role conflict management.

18.6.1.1 Role Engagement in Multiple Domains

This behaviour-based strategy refers to individual’s active involvement in social roles across life domains. Individuals using this strategy are likely to experience a high level of enthusiasm, performance and satisfaction from the multiple social roles they engage in (e.g., Clark, 2000; May et al., 2004). Work-life balance is viewed as good functioning at work and at home. That is, individuals applying this strategy are likely to experience higher levels of life satisfaction than those engaged in one or few domains because active engagement in social roles in multiple life domains contributes to high levels of satisfaction in multiple life domains.

Role engagement in multiple life domains is an important first step to achieve work-life balance. Without active engagement in roles in various life domains, it is difficult for an individual to increase, let alone maintain, an acceptable level of life satisfaction. When an individual fails to engage in multiple social roles, he/she is likely to experience imbalance in domain satisfaction (satisfaction in work life but dissatisfaction in nonwork domains or vice versa), hence role conflict. In contrast, work-life balance through engagement in multiple roles contributes to overall life satisfaction because the individual is likely to increase domain satisfaction in various

Table 18.2 Inter-domain strategies of work-life balance and their impact on overall life satisfaction

Inter-domain strategies		Definition	Impact on overall life satisfaction
Behaviour-based inter-domain strategies	Multiple role engagement	Individuals are highly engaged in social roles in work and nonwork life domains	Multiple role engagement allows one to experience need fulfilment of the full spectrum of human developmental needs, which in turn serves to enhance overall life satisfaction
	Role enrichment	Individuals transfer skills and experiences from one social role to another	Role enrichment facilitates role performance in both work and nonwork domains. Successful role performance in work and nonwork domains increases satisfaction in work and nonwork domains, which in turn contribute to overall life satisfaction
	Domain compensation	Individuals allocate more time and energy in satisfying domains and less time and energy in dissatisfying domains	Domain compensation serves to decrease the influence of dissatisfying domain on overall life satisfaction; conversely, the strategy serves to increase the influence of satisfying domains on overall life satisfaction
	Role conflict management	Individuals allocate sufficient time and energy to both work and nonwork roles in ways to meet role demand in the domains in question and minimise role conflict	Role conflict management serves to reduce role stress, thus serving to reduce dissatisfaction in work and nonwork domains, which in turn helps maintain acceptable levels of overall life satisfaction
Cognition-based inter-domain strategies	Whole-life perspective	Individuals make role engagement decisions by considering the consequences of role engagement in all life domains that can be impacted by the action	Whole-life perspective serves to ensure that role engagement in a given life domain is likely not to adversely impact satisfaction in other life domains; doing so ensures the maintenance of an acceptable level of overall life satisfaction

(continued)

Table 18.2 (continued)

Inter-domain strategies		Definition	Impact on overall life satisfaction
	Positive affect spillover	Individuals allow the transfer of positive affect from one life domain to another	Positive affect spillover serves to amplify satisfaction across multiple roles and domains; doing so serves to enhance overall life satisfaction
	Value compensation	Individuals inflate the importance of satisfying domains while deflating the importance of dissatisfying domains	Value compensation serves to inflate domain satisfaction in satisfying domains and deflate dissatisfaction in dissatisfying domain; doing so serves to increase overall life satisfaction (or at least prevent decreases below acceptable levels)
	Segmentation	Individuals prevent spillover of negative affect from one domain to other domains by erecting a barrier around the dissatisfying domain	Segmentation serves to prevent the spillover of negative affect from one domain to another, thereby preventing overall life satisfaction from slipping below acceptable levels

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domains given the fact that engagement in different life domains is likely to satisfy different human developmental needs (economic needs, health and safety needs, social needs, esteem needs, self-actualisation needs, knowledge needs and aesthetics-related needs) and by doing so increases the likelihood of experiencing high levels of life satisfaction (e.g., Baumann, Kaschel, & Kuhl, 2005; Helson, 1964; Sirgy, 2012; Sirgy & Lee, 2015).

18.6.1.2 Role Enrichment

Role enrichment refers to the notion that skills and resources in one role can improve or further enhance performance in another role (e.g., Greenhaus & Powell, 2006). Individuals using a role enrichment strategy are likely to experience increased life satisfaction because skills and resources in one role can enhance successful performance in other roles in work and nonwork domains, which in turn results in greater satisfaction across domains (e.g., Hanson & Hammer, 2006; Ilies et al., 2009; Wayne, Butts, Casper, & Allen, 2016). For example, negotiation skills at work can be applied in family situation when a parent negotiates with children or a spouse negotiates with

another. As such, role enrichment contributes to domain satisfaction, which in turn contributes to overall life satisfaction.

18.6.1.3 Domain Compensation

This strategy refers to how the individual attempts to decrease engagement in a dissatisfying life domain while increasing engagement in a satisfying life. By doing so, the individual is able to maintain an acceptable level of life satisfaction (e.g., Clark, 2000; Edwards & Rothbard, 2000; Fereday & Oster, 2010; Freund & Baltes, 2002; Hsieh, 2003; Judge, Thoresen, Bono, & Patton, 2001; Lambert, 1990; Tait, Padgett, & Baldwin, 1989). For example, if an individual experiences dissatisfaction in the work life, the person reduces engagement at work while spending more time and energy on family activities. This is done to compensate for the dissatisfaction the individual is experiencing in work life. It should be noted that allocation of time and energy in a satisfying domain does not lead to no engagement in a dissatisfying domain because engagement in multiple social roles/domains is necessary to maintain an acceptable level of life satisfaction.

18.6.1.4 Role Conflict Management

Role conflict refers to the experience of stress arising from mutually incompatible roles—successful participation in one role is made more difficult by successful participation in another role (e.g., Greenhaus & Beutell, 1985; Frone, 2003). For example, a high level of psychological involvement in one role is usually associated with increased amount of time and involvement devoted to that role (e.g., work life), thereby making it difficult to deal with role demand in other life domains. Individuals experiencing role conflict across life domains are likely to experience stress in the domains in question, which in turn takes a toll on overall life satisfaction (e.g., Burke, 1988; Frone, Russell, & Cooper, 1992).

Role conflict management involves behaviours designed to reduce role conflict. A typical example of a behaviour designed to reduce role conflict is the allocation of sufficient time and energy to work and nonwork roles in ways that would minimise conflict between work and nonwork roles (e.g., Greenhaus & Allen, 2011; Greenhaus & Beutell, 1985).

Work-life balance through role conflict management contributes to overall life satisfaction. Individuals who are successful in allocating sufficient time and energy to both work and nonwork roles in ways that minimise role conflict are less likely to psychological stress and role overload, and doing so helps guard against decreases in overall life satisfaction (e.g., Allen et al., 2000; Brief, Butcher, George, & Link, 1993; Eby et al., 2005; Frone, 2003; Greenhaus & Powell, 2006; Judge, Locke, Durham, & Kluger, 1998; Kossek & Ozeki, 1998; Watson, 2000; Watson, Clark & Tellegen, 1988).

18.6.2 Work-Life Balance as Cognitive Inter-domain Strategies

In this section, we will discuss four cognitive inter-domain strategies of work-life balance influencing work-life balance. Cognitive inter-domain strategies refer to an individual's cognitive efforts related to the interplay between work and nonwork domains that serve to maintain an acceptable level of life satisfaction. Specifically, cognitive inter-domain strategies include whole-life perspective, positive affect spillover, value compensation and segmentation.

18.6.2.1 Whole-Life Perspective

This strategy refers to an individual's cognitive effort to consider all potential consequences of an action in one life domain on other life domains (e.g., Briscoe, Hall, & DeMuth, 2006; Drenzo, Greenhaus & Weer, 2015; Powell & Greenhaus, 2012). Whole-life perspective allows one to frame work-related decisions broadly enough to recognise the impact of their work-related decisions on other life domains. The use of this cognitive strategy facilitates effective allocation of time and energy across life domains in ways to minimise role conflict. Work-life balance through the use of whole-life perspective contributes to overall life satisfaction because the use of this strategy increases the likelihood of taking action that would result in balanced domain satisfaction with minimal role conflict (e.g., Briscoe et al., 2006; Friedman & Greenhaus, 2000).

18.6.2.2 Positive Affect Spillover

This strategy refers to the cognitive process that facilitates affective experiences in work spilling over to nonwork life domains and vice versa (e.g., Edwards & Rothbard, 2000; Grzywacz & Carlson, 2007; Staines, 1980). Allowing positive affect spillover serves to integrate social roles in multiple life domains, making domains highly interdependent (e.g., Clark 2000; Greenhaus & Powell, 2006; Ilies, Wilson & Wagner, 2009; Lambert 1990). Positive affect spillover also plays an important role in overall life satisfaction. It does so by amplifying domain satisfaction, which in turn serves to increase overall life satisfaction (Edwards & Rothbard, 2000; Frone et al., 1992).

18.6.2.3 Value Compensation

This cognitive strategy involves changing the salience or perceived importance of specific roles/domains. It refers to a cognitive process in which the individual reacts to dissatisfying life domain by decreasing the perceived importance of that life domain.

Conversely, increases in satisfaction in a given role/domain lead to increases in perceived importance of that role/domain. Doing so serves to increase overall life satisfaction or maintaining life satisfaction at acceptable levels (e.g., Edwards & Rothbard, 2000; Sirgy, 2002).

It should be noted that individuals using value compensation remain engaged in dissatisfying life domains even if they reduce the importance of the life domain. Without role engagement, it is not possible to achieve work-life balance.

18.6.2.4 Segmentation

Segmentation strategy refers to a cognitive strategy designed to separate or compartmentalise two or more life domains at risk from negative spillover. This is done by erecting a barrier or wall around the domain with high dissatisfaction making the wall impermeable (e.g., Ashforth et al., 2000; Bulger et al., 2007; Clark, 2000; Edwards & Rothbard, 2000; Judge et al., 2001; Nippert-Eng, 1996; Sonnentag, 2012; Sonnentag, Mojza, Binnewies, & Scholl, 2008). Consider the use of mobile technologies. Research has shown that increased use of mobile technologies blurs the boundaries between work and family, making segmentation difficult (Chesley, 2005; Park, Fritz, & Jex, 2011).

Segmentation plays an important role in overall life satisfaction because this cognitive strategy helps to prevent spillover of negative affect in one domain afflicting other domains. Work-life balance refers to balanced life domain satisfactions at a high level. By preventing the spillover of negative affect in a life domain to other life domains, segmentation helps individuals maintain equally satisfying life domains (Kreiner, Hollensbe, & Sheep, 2009; Clark, 2000).

18.7 The Digital Workplace and Inter-domain Strategies of Work-Life Balance

In this section, we will discuss two main characteristics of the digital workplace, namely schedule flexibility and telecommuting. We will argue that both schedule flexibility and telecommuting play an important role in work-life balance by helping the digital employee better use the aforementioned behaviour- and cognition-based strategies.

Schedule flexibility is a boundary-spanning resource that helps workers meet both their work and their family responsibilities (Hill et al., 2008; Voydanoff, 2004). A boundary-spanning resource is a physical or social attribute of one life domain that could be used by the individual to meet demand arising in another domain (Voydanoff, 2005). Employees with schedule flexibility are likely to have a high degree of autonomy on their work schedule and work hour (Anderson et al., 2002); as such, it is considered as a boundary-spanning resource. We will argue in this section that

schedule flexibility serves to help the individual make use of inter-domain strategies of work-life balance. Table 18.3 summarises much of the discussion of this major section.

Table 18.3 The effect of schedule flexibility and telecommuting on inter-domain strategies of work-life balance

Inter-domain strategies of work-life balance	How schedule flexibility influences the use of inter-domain strategies of work-life balance	How telecommuting influences the use of inter-domain strategies of work-life balance
Multiple role engagement	Employees who enjoy schedule flexibility are likely to be in a better position to schedule activities to engage in multiple roles and meet role demand	Employees who have telecommuting privileges are likely to be in a better position to engage in multiple roles and meet demand of these roles because telecommuting can save time and energy, thus allowing the individual to engage in multiple roles with greater efficiency
Role enrichment	Employees who enjoy schedule flexibility are likely to be in a better position to schedule activities to engage in multiple roles through which the skills and experiences of one role can be used to enhance performance in another role	Employees who have telecommuting privileges are likely to be in a better position to transfer their skills and experiences from one role to another because telecommuting helps to break down barriers between work and nonwork domains; doing so is likely to facilitate role enrichment
Domain compensation	Employees who enjoy schedule flexibility are likely to be in a better position to schedule activities to increase role engagement in satisfying domains while decreasing their engagement in dissatisfying domains	Employees who have telecommuting privileges are likely to be in a better position to increase their engagement in roles in satisfying domains because telecommuting provides greater efficiencies in role performance in satisfying domains
Role conflict management	Employees who enjoy schedule flexibility are likely to be in a better position to allocate sufficient time to meet role demand in work and nonwork domains; by doing so can minimise role conflict	Employees who have telecommuting privileges are likely to be in a better position to allocate sufficient time and energy in their work and nonwork roles in ways to meet role demand because telecommuting can create efficiencies in the allocation of time and energy in the designated work and nonwork roles

(continued)

Table 18.3 (continued)

Inter-domain strategies of work-life balance	How schedule flexibility influences the use of inter-domain strategies of work-life balance	How telecommuting influences the use of inter-domain strategies of work-life balance
Whole-life perspective	Employees who enjoy schedule flexibility are likely to be in a better position to schedule activities that ultimately can increase satisfaction in certain domains while minimising dissatisfaction in other domains	Employees who have telecommuting privileges are likely to be in a better position to make decisions and take action by contemplating the consequences of planned action on all life domains because telecommuting reduces barriers between work and nonwork domains, and doing so helps the individual apply a whole-life perspective in decision-making
Positive affect spillover	Employees who enjoy schedule flexibility are likely to be in a better position to schedule activities in work and nonwork domains that can create positive affect spillover	Employees who have telecommuting privileges are likely to be in a better position to experience positive affect spillover because telecommuting reduces barriers between work and nonwork domains; and as such, satisfaction in work domain can easily spill over to nonwork domains and vice versa
Value compensation	Employees who enjoy schedule flexibility are likely to be in a better position to schedule more activities in satisfying domains (and less in dissatisfying domains); doing so is likely to help inflate the importance of satisfying domains (and deflate importance of dissatisfying domains)	Employees who have telecommuting privileges are likely to be in a better position to inflate the importance of satisfying domains (and deflate the importance of dissatisfying domains) because telecommuting provides greater flexibility in scheduling activities in satisfying domains. Activities enacted in satisfying domains are likely to be regarded as more important compared to those that are not enacted
Segmentation	Employees who enjoy schedule flexibility are likely to be in a better position to schedule activities in ways to minimise domain overlap; doing so is likely to help erect a barrier around dissatisfying domains	Employees who have telecommuting privileges are likely to be in a better position to create a barrier around dissatisfying work roles and prevent dissatisfaction from spilling over to nonwork domains because telecommuting allows individuals to work from home and away from the work environment that may be associated with dissatisfying experiences. As such, telecommuting helps to compartmentalise dissatisfying work-related experiences

Source Authors' own work

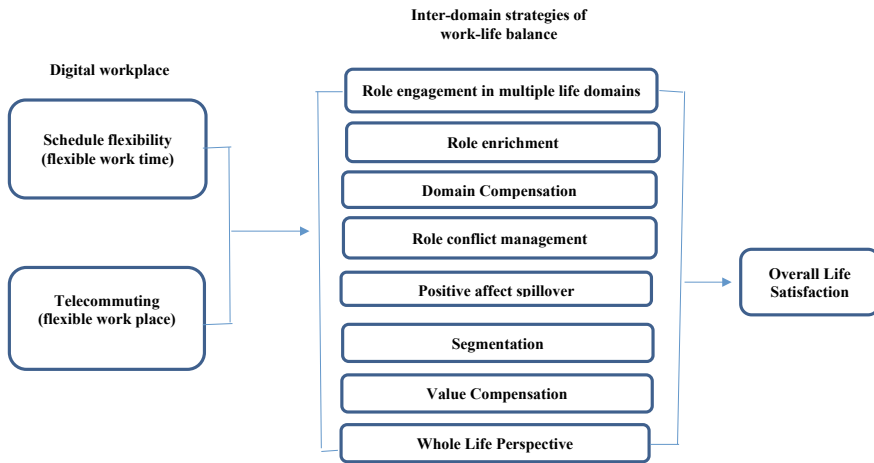


Fig. 18.2 Digital workplace and inter-domain strategies of work-life balance (authors' own work)

Digital technologies have enabled common, even synchronous activities to be distributed across employees at remote locations (Herschel & Andrews, 1997). Telecommuting is an alternative work arrangement in which employees perform tasks elsewhere that are normally done in a primary or central workplace, for at least some portion of their work schedule, using electronic media to interact with others inside and outside the organisation (Bailey & Kurland, 2002; Baruch, 2001; DuBrin, 1991; Feldman & Gaine, 1997; Standen, Daniels, & Lamond, 1999). It also leads to reduced costs of working, savings in transportation hassles, time and money for employees (Gajendran & Harrison, 2007). Research has shown that high-intensity telecommuters seek to balance their work and family demands, while office-centred or low-intensity telecommuters seek freedom from interruptions (Konradt, Hertel, & Schmook, 2003). We will argue in this section that telecommuting serves to help the individual make use of inter-domain strategies of work-life balance (see Table 18.3 for a summary of this discussion) (Fig. 18.2).

18.7.1 Multiple Role Engagement

Multiple role engagement involves the situation when individuals become highly engaged in social roles in work and nonwork life domains (Voydanoff, 2005). Employees who enjoy schedule flexibility are likely to be in a better position to schedule activities to engage in multiple roles and meet role demand. That is, individuals who can adjust their work schedule can easily schedule both their work and their nonwork activities in ways to meet role demand in both work and nonwork domains.

Telecommuting provides employees with enhanced autonomy over the location and means of work. Telecommuter has flexibility in the workplace in the sense that they can use their valuable time and energy more efficiently compared to the non-telecommuters. Given that telecommuters can save time and energy from commuting, they can use the saved commuting time and energy to engage in multiple social roles. That is, employees who have telecommuting privileges are likely to be in a better position to engage in multiple roles and meet demand of these roles because telecommuting can save time and energy, thus allowing the individual to engage in multiple roles with greater efficiency.

18.7.2 Role Enrichment

Role enrichment involves the situation when individuals transfer skills and experiences from one social role to another (Carlson, Grzywacz, & Michele Kacmar, 2010). Individuals with schedule flexibility are likely to engage in multiple roles more effectively. Given a higher level of engagement in multiple roles, their skills and experiences in one social role can be more easily used for roles in other life domains resulting in better performance in work and nonwork domains. As such, schedule flexibility is likely to facilitate role enrichment.

Employees with telecommuting are likely to experience integration between their work and their nonwork roles because they can engage in multiple roles in a place of their choice (e.g., Duxbury, Higgins, & Neufeld, 1998; Raghuram & Wiesenfeld, 2004). Integration of social roles facilitates the transfer of skills and experiences from work to nonwork domains and vice versa. In sum, employees who enjoy schedule flexibility are likely to be in a better position to schedule activities to engage in multiple roles through which the skills and experiences of one role can be used to enhance performance in another role.

18.7.3 Domain Compensation

Domain compensation involves the situation when individuals allocate more time and energy in satisfying domains and less time and energy in dissatisfying domains (Ashforth et al., 2000; Clark, 2000). Employees are in a better position to reshuffle their schedule of activities to increase role engagement in satisfying domains while increasing their engagement in dissatisfying domains. That is, schedule flexibility allows employees to squeeze in more satisfying activities in their normal schedule than if they were to have a fixed and traditional work schedule (e.g., 9 a.m.–5 p.m.).

Employees with telecommuting privileges have a flexibility to work at the place of their choice. Thus, they have a greater flexibility to adjust their level of engagement in various social roles and effectively allocate their time and energy to handle urgent role demand from multiple life domains. As they are capable of managing satisfaction

in multiple life domains, they are likely to use domain compensation by increasing role engagement in a satisfying life domain while decreasing role engagement in a dissatisfying life domain. That is, employees who have telecommuting privileges are likely to be in a better position to increase their engagement in roles in satisfying domains because telecommuting provides greater efficiencies in role performance in satisfying domains.

18.7.4 Management of Role Conflict

Management of role conflict involves the situation when individuals allocate sufficient time and energy to both work and nonwork roles in ways to meet role demand in the domains in question and make every attempt possible to minimise role conflict (Bulger et al., 2007; Kinman & Jones, 2008). Having schedule flexibility, employees are in a better position to allocate sufficient time to meet role demand in work and nonwork domains; by doing so can minimise role conflict. Role conflict occurs when the individual lacks resources to meet demand from work and nonwork roles. Schedule flexibility is a boundary-spanning resource that helps reduce conflict between work and nonwork roles. Employees with schedule flexibility ability to leave work to attend to urgent family needs, and as such schedule flexibility serves to reduce conflict between trying to meet work demand and family demand.

Employees with telecommuting privileges are likely to manage role conflict effectively because they have boundary flexibility in meeting role demand in work and nonwork domains. Increased boundary flexibility from telecommuting can help employees better manage role demand and reduce work–family conflict (Duxbury et al., 1998; Raghuram & Wiesenfeld, 2004). Telecommuting could reduce role conflict because place flexibility allows employees to use saved commuting resources efficiently to handle urgent demand in nonwork domains (Konradt et al., 2003). In sum, employees who have telecommuting privileges are likely to be in a better position to allocate sufficient time and energy in their work and nonwork roles in ways to meet role demand because telecommuting can create efficiencies in the allocation of time and energy in the designated work and nonwork roles.

18.7.5 Whole-Life Perspective

Work-life perspective refers to the situation in which individuals make role engagement decisions by considering the consequences of role engagement in all life domains that can be impacted by the action (Powell & Greenhaus, 2012). With schedule flexibility, employees are in a better position to schedule activities that ultimately can increase satisfaction in certain domains while minimising dissatisfaction in other domains. For example, an employee faced with a work-related moral dilemma and considering violating a business ethics principle may consider the neg-

ative repercussions of his action in relation to his future career aspiration, how his action would affect his family and the family financial situation, how his neighbours and associates would view him, etc. Schedule flexibility may allow the same employee to investigate alternative courses of action that may be more ethical.

Employees with telecommuting privileges are likely to invest more time and energy to meet role demand in work and nonwork domains. As such, they are better suited to use whole-life perspective in making consequential decision. That is, employees who have telecommuting privileges are likely to be in a better position to make decisions and take action by contemplating the consequences of planned action on all life domains because telecommuting reduces barriers between work and nonwork domains, and doing so helps the individual apply a whole-life perspective in decision-making.

18.7.6 Positive Affect Spillover

To reiterate, positive affect spillover refers to the situation in which individuals allow the transfer of positive affect from one life domain to another (Carlson et al., 2010; Voydanoff, 2004). Employees who enjoy schedule flexibility are likely to be in a better position to schedule activities in work and nonwork domains that can create positive affect spillover. Employees are likely to experience positive spillover because schedule flexibility becomes a factor in increasing the interdependence between work and nonwork domains, which in turn facilitates positive affect spillover.

Employees with telecommuting privileges can meet role demand in work and nonwork situation because they have flexible work locations. They are likely to have interdependent life domains, and as such, they may experience a high degree of spillover of positive affect across life domains. In sum, employees who have telecommuting privileges are likely to be in a better position to experience positive affect spillover because telecommuting reduces barriers between work and nonwork domains; as such, satisfaction in work domain can easily spill over to nonwork domains and vice versa.

18.7.7 Value Compensation

As previously noted, value compensation refers to situations in which individuals inflate the importance of satisfying domains while deflating the importance of dissatisfying domains (Edwards & Rothbard, 2000; Sirgy, 2002). Employees who enjoy schedule flexibility are likely to be in a better position to schedule more activities in satisfying domains (and less in dissatisfying domains); doing so is likely to help inflate the importance of satisfying domains (and deflate importance of dissatisfying domains).

Employees with telecommuting privileges also are likely to use value compensation to achieve work-life balance. Telecommuters are likely to better handle role demand in multiple roles because they have flexibility to adjust priorities as urgent situations arise. Specifically, employees who have telecommuting privileges are likely to be in a better position to inflate the importance of satisfying domains (and deflate the importance of dissatisfying domains) because telecommuting provides greater flexibility in scheduling activities in satisfying domains. Activities enacted in satisfying domains are likely to be regarded as more important compared to those that are not enacted.

18.7.8 Segmentation

As a reminder, segmentation refers to situations in which individuals prevent spillover of negative affect from one domain to other domains by erecting a barrier around the dissatisfying domain (Sonnentag, 2012; Sonnentag et al., 2008). Employees who enjoy schedule flexibility are likely to be in a better position to schedule activities in ways to minimise domain overlap; doing so is likely to help erect a barrier around dissatisfying domains. That is, employees with schedule flexibility are in a better position to adjust priorities related to the dissatisfying domain to prevent contagion of negative affect.

Employees with telecommuting privileges engage in multiple roles in one place (mostly home). Although they engage in multiple roles at the place of their choice, they are less likely to experience role blurring (Milliken & Dunn-Jensen, 2005). Telecommuters can exert better control over domain boundaries (Ashforth et al., 2000). When they experience dissatisfaction in a life domain, they are likely to segment that domain to protect satisfaction in other domains likely to be affected by negative spillover. In sum, employees who have telecommuting privileges are likely to be in a better position to create a barrier around dissatisfying work roles and prevent dissatisfaction from spilling over to nonwork domains because telecommuting allows individuals to work from home and away from the work environment that may be associated with dissatisfying experiences. As such, telecommuting helps to compartmentalise dissatisfying work-related experiences.

18.8 Insights and Synopsis

The main goal of this chapter was to discuss the possible impact of schedule flexibility and telecommuting in the digital workplace and their impact on inter-domain strategies of work-life balance and ultimately overall life satisfaction. We first introduced to the reader our formative construct of work-life balance that involves a set of inter-domain strategies designed to enhance overall life satisfaction (or at least maintain satisfaction at an acceptable level). Specifically, we treated the work-life balance

construct as a higher-order construct composed of behaviour-based inter-domain strategies (namely role engagement in multiple domains, role enrichment, domain compensation and role conflict management) and four cognition-based inter-domain strategies (namely whole-life perspective, positive spillover, value compensation and segmentation). We then discussed the positive effects of schedule flexibility and telecommuting on these inter-domain strategies of work-life balance and overall life satisfaction.

Specifically, we discussed two main characteristics of the digital workplace, namely schedule flexibility and telecommuting. We made the case that both schedule flexibility and telecommuting play an important role in work-life balance by helping the digital employee better use the aforementioned behaviour- and cognition-based strategies. How? Through *multiple role engagement*. That is, employees who enjoy schedule flexibility can easily schedule both their work and their nonwork activities in ways to meet role demand in both work and nonwork domains. Telecommuters also have flexibility in the workplace by using their valuable time and energy more efficiently; they use the saved commuting time and energy to engage in multiple social roles.

Schedule flexibility and telecommuting also help achieve work-life balance through *role enrichment*. Employees with schedule flexibility can easily engage in multiple roles more effectively and transfer their skills and experiences from one social role to another resulting in better performance in work and nonwork domains. Telecommuters experience integration between their work and their nonwork roles because they can engage in multiple roles in a place of their choice. Integration of social roles facilitates the transfer of skills and experiences from work to nonwork domains and vice versa.

Schedule flexibility and telecommuting are also instrumental in achieving work-life balance through *domain compensation*. Employees with schedule flexibility can reshuffle their schedule of activities to increase role engagement in satisfying domains while increasing their engagement in dissatisfying domains. Furthermore, telecommuters have a greater flexibility to adjust their level of engagement in various social roles and effectively allocate their time and energy to handle urgent role demand from multiple life domains. As such, they can easily use domain compensation by increasing role engagement in a satisfying life domain while decreasing role engagement in a dissatisfying life domain.

Again, schedule flexibility and telecommuting help with work-life balance through *management of role conflict*. Employees with schedule flexibility are in a better position to allocate sufficient time to meet role demand in work and nonwork domains; by doing so can minimise role conflict. Similarly, telecommuting could reduce role conflict because place flexibility allows employees to use saved commuting resources efficiently to handle urgent demand in nonwork domains.

To reiterate, schedule flexibility and telecommuting help with work-life balance through *work-life perspective*. Employees with schedule flexibility can easily schedule activities that ultimately can increase satisfaction in certain domains while minimising dissatisfaction in other domains. Similarly, telecommuters can invest more

time and energy to meet role demand in work and nonwork domains. Hence, they are in a better position to use whole-life perspective in making consequential decision.

Furthermore, schedule flexibility and telecommuting can assist in work-life balance through *positive affect spillover*. Employees with schedule flexibility can easily schedule activities in work and nonwork domains that can create positive affect spillover by increasing the interdependence between work and nonwork domains. Telecommuters also can meet role demand in work and nonwork situation because they have flexible work locations which enhances interdependence among life domains. As such, they may experience a high degree of spillover of positive affect across life domains.

Value compensation can also be facilitated through schedule flexibility and telecommuting. Employees with schedule flexibility can easily schedule more activities in satisfying domains (and less in dissatisfying domains); doing so is likely to help inflate the importance of satisfying domains (and deflate importance of dissatisfying domains). Similarly, telecommuters can better handle role demand in multiple roles because they have flexibility to adjust priorities as urgent situations arise. They are in a better position to inflate the importance of satisfying domains (and deflate the importance of dissatisfying domains) because telecommuting provides greater flexibility in scheduling activities in satisfying domains.

Segmentation, as a work-life balance strategy, can also be facilitated through schedule flexibility and telecommuting. Employees with schedule flexibility are in a better position to schedule activities in ways to minimise domain overlap, which in turn can help erect a barrier around dissatisfying domains. Similarly, telecommuters can easily engage in multiple roles in one place (mostly home), which may allow them to control boundaries around life domains. As such, when they experience dissatisfaction in a life domain, they can easily segment that domain to protect satisfaction in other domains likely to be affected by negative spillover.

Future empirical research should formally test the theoretical propositions and hypotheses presented in this chapter. That is, future research should examine the effects of schedule flexibility and telecommuting on inter-domain strategies of employees as discussed in the chapter. Study findings based on this research should be instrumental in the formulation of policies (both public and managerial policies) that can help people achieve a better work-life balance. Given the increasing ubiquity of the digital workplace, it is important for managers and policy-makers to fully understand how employees go about trying to achieve work-life balance. We still have a limited understanding of work-life balance in the digital workplace. We hope that this chapter would encourage future research on this very important topic.

18.9 Conclusion

We made the case that both schedule flexibility and telecommuting play an important role in work-life balance by helping the digital employee better use behaviour- and cognition-based strategies through *multiple role engagement*. Employees who enjoy

schedule flexibility can easily schedule both their work and their nonwork activities in ways to meet role demand in both work and nonwork domains. Telecommuters also have flexibility in the workplace by using their valuable time and energy more efficiently; they use the saved commuting time and energy to engage in multiple social roles. Behaviour- and cognition-based strategies positively influence work-life balance strategies and consequently overall life satisfaction and thriving.

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Dong-Jin Lee (Ph.D.) is Professor of marketing at Yonsei University, Seoul, Korea. His research has been published in the *Journal of Marketing*, *Journal of the Academy of Marketing Science*, *International Journal of Research in Marketing*, *Journal of Advertising*, *Journal of Business Research*, *Social Indicators Research*, *Journal of Business Ethics*, *Applied Research in Quality of Studies* and among others. His research interests include relationship marketing and quality-of-life studies. He has served as Vice-President for the ISQOLS and is currently Dean of Sangnam Management Institute at Yonsei University.

M. Joseph Sirgy (Ph.D.) is Management Psychologist and the Virginia Tech Real Estate Professor of marketing. He has published extensively in the areas of marketing, business ethics and quality of life (QOL). He received the Distinguished Fellow Award from ISQOLS. ISQOLS also honoured him as the Distinguished QOL Researcher for research excellence and a record of lifetime achievement in QOL research. He co-founded the journal, *Applied Research in Quality of Life*, the official journal of the ISQOLS; he has served as Editor. He was awarded the EuroMed Management Research Award for outstanding achievements and groundbreaking contributions to well-

being and quality-of-life research. He also edited ISQOLS/Springer book series on Handbooks in Quality-of-Life Research and Community Quality-of-Life Indicators (Best Practices). He is currently serving as Springer book series Co-Editor on Human Well-Being and Policy-Making.

Chapter 19

Digital Learning Experience of Exponential Organisation Employees: The Race Against Obsolescence



John Ludike

Technology changes exponentially organizations change logarithmically.
Scott Brinker

Abstract The chapter explores how digital disruption in the form of social, mobile, analytics, artificial intelligence, data analytics, the cloud as well as internet of things, is impacting learning. The chapter also explores how learning practitioners may respond to avert individual obsolescence and shortened corporate longevity. The chapter discusses the organisational conditions and learning capabilities, competencies and learning culture that will enable not a race and battle against the smart machines, but rather a constructive collaborative augmentation which will enable sustainability despite massive automation, deskilling of knowledge work and redefinition of professions.

Keywords Digital learning · Obsolescence · Deskilling · Automation · Learning culture · Digital economy

19.1 Introduction

Reflecting on the myriad of research articles related to the future of work and work of the future, the majority renders past and current approaches to individual, team and or organisational learning as either irrelevant or obsolete. Recent reports by Mc Kinsey's Global Institute (2017) as well as the OECD (2017) perspectives on global development lament both the lack of skills to compete in modern, digital connected economy as well as inability of enterprises to source talent required to deliver on need to differentiate itself in exponential changing global economy. The time required to

J. Ludike (✉)
Executive Human Resource Practitioner, London, UK
e-mail: jludike@hotmail.com

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acquire education and competence from primary, secondary to postgraduate degree level on average about 18 years by which time literally everything external to these academic institutions have completely, unrecognisably and rapidly been transformed. This might relate to be it the scale, scope and or speed of businesses or the structure of markets rendering huge percentage of in many cases rather expensive learning initiatives entirely obsolete. The prominence of digital economy further significantly elevates intangible capital (intellectual property, algorithms, software and data) over tangible capital and given rapid innovation even more so. Should and if all literature can be relied upon intangible assets can represent as much as 80–90% of organisation value hence emphasis need to be on not just to preserve as such but ensure its continuous relevance and innovative renewal. It was a gentleman by name of Brown and Thomas (2011) who is famously credited with espousing that the half-life of knowledge and skills is shrinking and could by now we'll be anything from 3 to 5 years at most. He further advocated skills renewal required sculpted environments with rich embedded innovative learning experiences which matched the scale and scope of change in external market. One is reminded of Jack Welch prophetic pronouncement in General Electric's 1996 annual report at the time stating that the actionable speed of learning is only source of organisations competitive advantage. This is especially meaningful given that average lifespan of organisations has significantly reduced since then to below 24 years and predicted to be reduced to 12 years by 2027 as many races against age of exponential learning machine.

Authors the likes of Palmer and Blake (2018) Arena (2018) as well as Hart (2018) amongst others advocate the need for:

- Sculpting a learning and development ecosystem that optimises value innovation and personal wellbeing.
- Renewed foresight relating to digital learning landscape and responsive yet hyper-personalised design of enabling learning experiences which proactively develop people for jobs that do not yet exist.
- Reskilling and upskilling talent to deliver on the future be it via learning analytics, agile learning experience design methods, and or whilst recalibrating future continuous learning and growth.

19.2 Chapter Objective

The objective of this chapter is to explore upon the aforementioned as well as how specifically digital disruption in form of social, mobile, analytics, artificial intelligence, data analytics, the cloud as well as internet of things is currently likely impacting and most likely disrupting learning. Digital learning does not only mean learning on one's phone but proposes the redefinition, redesign and the repositioning of the employee learning experience.

Human resource practitioners be it scientifically inspired occupational psychologists or generalist HR practitioners are similarly having to respond to demands of

digital future of work. Many are all scrambling around for an elixir or alchemy of learning analytics, learning experience design platforms and agile methodologies in hope to both revitalise and renew the learning experience. Their ambition is also often to future-proof ailing relevance of enterprise learning and development functions and ensure meaningful impact (Dochy & Segers, 2018).

Having said that this chapter will reflect on how learning practitioners are responding to avert individual obsolescence and shortened corporate longevity. It will attempt to elaborate and espouse further what this might look like in terms of learning capabilities, competencies and learning culture. These will hopefully engender and enable not a race and battle against the smart machines but rather a constructive collaborative augmentation. This learning could aid sustainability despite massive automation, deskilling of knowledge work and the exponential redefinition of professions given that up to 90% of organisations asset value increasingly considered and described as intangible.

19.3 Deeply Smart Intelligent New Generation Digital Learning Organisations

New generation digital organisations which are also described as exponential organisations whose impact (or output) is disproportionately large are described at least 10x larger compared to its peers because it leverages new organisational techniques and accelerating technologies which according to Ismail, Malone and van Geest (2014) is enabled via

Experimentation: these new generation exponential organisations are known to tweak

and learn their way to success, think Facebook, Amazon, Google and Alibaba. The old top-down, risk-avoidance ways of yesteryear no longer work, they provide for rapid reinvention via low-cost, low-risk and rapid trial and error.

Interface mechanisms: creative mechanisms are engineered via these organisations to encourage interaction with range of stakeholders and communities. Netflix, for example, launched an incentive programme literally to source and optimise a better search algorithm. It received more than 51,000 entries and accordingly developed a system to sort, rank and rate them. As you might have experienced Uber uses an efficient method to match drivers to customer segments locations and population or traffic density.

Social technologies: these smart organisations use corporate social networks like Yammer, Slack and SAP Jam to connect employees to each other, to stakeholders and to real-time information encouraging rich exchange of information, data as currency and creative collaboration. They accordingly share schedules, task lists, files and virtual workspace, allowing people to collaborate from anywhere, anytime in boundary-less manner.

Engagement: following on they further emphasise games, challenges, quizzes and competitions to tap the natural competitiveness of people in their communities and to engage them in creating value.

Similarly, Palmer and Blake (2018) more recently in addition advocate the deployment of following guiding principles which they consider vital to an organisation's ability to ensure value innovation now in the present and in the future:

- **Embrace technology enabled personalised learning:** technology which enables constructive learning experience is a key factor in helping people integrate learning with their own work fostering enthusiasm to remain relevant.
- **Position learning as a competitive advantage:** engender and build a culture where learning is integral to companies overall strategy. Invigorate learning as and consider it as something that employees would embrace and have natural passion for as it will provide organisation with distinctive advantage.
- **Explore, experiment and succeed with the most relevant technology:** determine which new innovative approaches to learning are fit for purpose and create learning ecosystems to help employees not just succeed but continuously reinvent themselves. Importantly though although learners have access to plethora of technologies as such many a time they could become overwhelmed in quest to be find best solution to their questions and challenges in what Carson (2017) has also termed learning in age of immediacy where the pace of learning is significantly impacted and learning is literally on-demand everywhere, anywhere anytime.
- **Guard against tendency to overload content:** curate the abundance of learning resources available to help employees learn what they need, when they need it, however, bear in mind that increasingly personalisation of learning experience far more liberating and attractive. The consumerisation via likes of Twitter, Instagram, U Tube, etc., all provide for choice and preference as to how to communicate, connect and constructively collaborate.
- **Appreciate and understand the power and influence of peers:** implement strategies to learn from each other and tap into the knowledge and experience of those around you as co-creation, co-design and crowdsource methods is language of new generation and notably is in many a way synonymous with sense of community, belonging and learning growth mindset.
- **Analyse employees' skills with data and evidence-based behavioural insights:** in order to ensure employees do not rapidly become obsolete its essential to use data analytics to provide future focused foresight in terms of reskilling and upskilling you workforce. It is a well-known fact that proprietary institutional knowledge and skills are highly mobile and hence urgent need not to merely capture it but to renew, nurture and continuously leverage it.
- **Make skills and expertise count:** in similar vein adopt agile skills learning approach which is complemented with top-notch mentors, curated pathways and continuous performance analysis. Endeavour to measure and understand what skills your employees have and what skills they need and rigorously apply it to recruiting, internal career opportunities and relevant career mentoring as well as

coaching. The sometimes urgent mid-career re-learning is now a lifelong learning pursuit, and learning and re-learning or upskilling skills is the new normal.

Many scholars the likes of Davenport and Kirby (2016) and Ismail et al. (2014) optimistically believe that in this dawn of intelligent enterprises where artificial intelligence and machine learning prevails that unlike the doomsayers promises opportunities for augmentation and a cyber-human learning loop working context. According to them, the new generation workforce increasingly needs to acquire greater digital dexterity meaning the ability to use technology for better business outcomes and integrate and or combine their strengths to achieve more favourable outcomes. Eubanks (2018) convinces further that these outcomes on average are greater than either machine or human could do in isolation and understandingly implies that humans and machines need to learn to work synergistically. Waddill (2018) further contends that as both machines and humans learn humans must lead and anticipate the impact of autonomous technologies on staffing, processes and management and how best to augment and learn from each other.

Davenport & Kirby (2016) elaborate further and describe options for augmentation all which imply need to learn with, ahead of or for machines as follows:

- Stepping up or moving a level above the machines and complimenting the technology in high-level unstructured decisions it is unable to make at this stage, meaning the machine has not mastered the learning yet.
- Stepping aside or choosing to pursue a role that computers are not good at, such as presenting, influencing, selling, creative or inspiring.
- Stepping in or monitoring and improving the computer's automated decisions;
- *Stepping Narrowly* or finding a specialty area in a specific profession that would not be economical to automate;
- Stepping forward or becoming involved in creating innovative technology that supports specialised intelligent decisions in specialist domain.

Many pertinent examples mentioned by Reese (2018) come to mind, however, to mention a few algorithms that can detect cancers as accurately as experienced trained pathologists is often mentioned. Call centre service AI assistants that can mimic human voices to make bookings on behalf of third parties. Robots that can lay bricks at a rate six times faster than human labourers as well as automated 3D designers and architects producing plans and schemata.

Both new generation organisations and their workforces will require employees and human resource development practitioners who are infinitely inquisitive, self-directed, curious, digitally dexterous and learning agile. Dignan (2019) contends that it is necessary in order to demonstrate and cultivate agile digital learning culture which as a continuous process is both boundary and seamless. It is not merely event-driven as the exponential skills shift is real. In order to future-proof their careers, employees increasingly will be required to focus learning like a *T*-shape where they encouraged to embrace and master multiple cross-functional skills together with their in-depth knowledge of a specific functional domain area. This will enable them to strategically accomplish innovative centred business needs. To ensure this, increasingly innovation in leadership learning and growth has democratised learning.

Given these realities, it is more than necessary for practitioners to understand and comprehend the prevailing digital learning technology landscape and range of emerging methodologies. These do not merely support but enable both a differentiated organisational learning culture and an individually sculpted personalised yet significantly relevant digital learning experience. It is important for practitioners to strive to transcend the replacement of humans by machine debate and separate reality from hype. Confidently navigating this hugely and in many ways, disruptive landscape is critical challenge of modern twenty-first-century learning and development practitioner. The objective for many remains to ensure both relevance and extend tenure of both man and machine. This is often described by likes of Dignan (2019) and Wilen (2018) as a race against obsolescence where emphasis is on leadership, innovation and growth.

19.4 Navigate Modern Digital Learning Technology Landscape

In order to enable businesses to stay at the forefront of innovation and for workers to have enough time to gain the skills necessary to use new technology, organisational leaders and managers must according to Jesuthasan and Boudreau (2018) understand that one of the largest challenges is to accept reality of shift from job-based ecosystem to a skill-based one which requires perpetual reinvention and learning with and ahead of pace that technologies specifically artificial intelligence and rate of automation evolves. Disruptive so-called Industry 4:0 technology augmented work processes will become interconnected and seemingly more complex as human engage and interact more seamlessly with reality of hyper-scaled and smart-distributed cyber-physical systems, meaning the technical, organisational and social spheres of work as we understand it will greatly even intuitively overlap.

In order to accomplish this shift in rapid reskilling and upskilling, they propose that leading practitioners be hyper-agile in firstly deconstructing jobs into component work tasks then assessing the relationship between job performance and strategic value and proceed to identify options for recombining tasks. Jesuthasan and Boudreau (2018) continue to emphasise that given integration and renewal of either the new technology or process which ultimately results in the optimisation of work by consolidating all too entirely reinvent jobs. Needless to say the implication and need to identify new emerging skill requirements and reskilling pathways as well as more agile careers should be obvious, especially given World Economic Forum (2018) recently reported that 35% of the job skills required across industries will have changed by 2020. It is well accepted by organisations and practitioners alike that human capital requires continuous investment in order for it to retain its value and even more so in order to establish continuous future fit learning growth culture according to Wilen (2018).

Gartner a global research and advisory company famous for creating term 'hype cycle' espouses the need for all stakeholders to get educated about the promise of an emerging technology within the context of their industry, for purpose of this discussion the learning industry and accordingly follow said learning technology through following five key phases of a technology's life cycle in order to inform and evaluate their strategic decision-making.

19.4.1 Innovation Trigger

A potential technology breakthrough kicks things off. Early proof-of-concept stories and media interest trigger significant publicity. Yet often during this stage few usable products, solutions, etc., are in existence and commercial viability is unproven. At the time of writing good examples within learning domain would be the likes of, blockchain artificial intelligence, and even learning analytics. The potential deployment of these in formal, informal and value in online learning for example are yet to be fully explored what Carson (2017) refers to as return on learning effectiveness meaning the need for more prudent use of accurate data of which blockchain could as per its promises represent a way of keeping a secure ledger of transactions, which could have useful applications for tracking credits in continuing education and certification scenarios. Continuing the use of big data or the so-called learning analytics describe value of learning data its visualisation as well as predicting best approach to optimise learning experience for maximum productivity and value innovation is currently very popular (Marr, 2018). The learning industry is replete with many new business learning intelligence tools and vendors such as Tableau, Knewton, SAP, SABA, etc., all specifically focused on learning data and trigger innovation in practice of talent learning analytics which closely overlaps with notion of artificial intelligence. Accordingly, expectation is that similar voice-activated Chabots and virtual assistants be it Amazon's Alexa or Apple's Siri will learn each employees or learners preferences, aspirations, learning need, career transitions stage and be able like Netflix to guide employees to relevant and abundant personalised learning resources. According to Hart (2018), these will most likely monitor as well as report on time to competence, % of workforce upskilling rate and even skills, knowledge obsolescence and required re-skilling curves. A few apt demonstrations at this stage would be to peruse DigitalLife@Daimler, IBM and Unilever which furthers the notion of accelerated learning via use of employee centred technology for greater agility and innovativeness. Van Dam (2018) emphasises need to continuously recalibrate mindsets and guard against the notion that the more technology connected the less human-connected paradox.

19.4.2 Peak of Inflated Expectations

As mentioned, the hype cycle is very useful tool to discern progress with technologies and methodologies and its specific deployment as learning technologies. Hence, the mention of leading companies that have taken strategic action or are early adopters of what is known as first-generation solutions, products, methodologies and services. Expectations re-scale and its potential valuable impact on business and society (return on leaning effectiveness) of these are high and at times claims re-success, progress and effectiveness is inflated. These technologies are also normally expensive during this stage as many vendors, consultants, suppliers, etc., are attempting to recover R&D costs. Some examples here could include virtual and augmented reality (AR&VR) immersive simulations which can create realistic alternative graphic, multimedia and sensory and gestural rich scenarios with which learners can interact. Many a time learners cannot distinguishing between virtual and or augmented simulation and reality and the learning experience is further aided with specialised headgear (headsets, goggles, etc.) and even some wearable devises and clothes some to monitor biological, physical function even brain and performance-related responses during these simulations. These learning experiences are designed to be immersive, tangible and in many cases, in real time meaning immediate feedback and coaching can be provided. This technology given the era of the ever-connected Internet of everything with prevalence of sensors, wearables even Bots and myriad of devices connected and communicating has potential to further integrate learning experiences into daily work stream and provide for meaningful project-based and collaborative strategic learning according to Pietersen (2010). Discerning readers will, at this stage, notice obvious overlap with the world of video and game-based adaptive learning not to mention equally fast-evolving 3D visual technologies. Although the application of these cannot at length be explored, in this chapter, progressive practitioners would do well to explore Facebook's Oculus Rift, Google's Daydream Labs and Google Expeditions as well as likes of EON Experience and Discovery VR's deployment in medical, engineering, architectural, aviation, mining industries for training and collaborative distance learning purposes. Walmart the major retailer recently also announced that it is Oculus Go headsets to train its employees in retail stores which might prove of interest to explore as well.

Pertinent questions which should be obvious at this juncture given that we have explored second stage of inflated expectations and made mention of few overlapping technologies as per Wilen (2018) are to what extent these technologies are not merely transforming our workplaces but how we are as practitioners intend to optimise these technologies. How do learning practitioners leverage associated digital specific learning strategies to align and integrate with business and workforce needs of the future?

19.4.3 Trough of Disillusionment

During this next stage stakeholder interest in solution, change strategy, product, service and or technology wanes as experiments and implementations fail to deliver tangible value. Regrettably an air of disillusionment follows when people discover and experience the technology not being as fabulous or world-changing, earth moving (or as ready for use) as they thought. In late Steve Jobs parlance, it failed to cause a ding or dent in the universe at least not as stakeholders currently understand, perceive it or experience impact on said learning ecosystem. Notable success stories as well as failures prevail during this stage. In learning ecosystem terms mobile, the cloud and massive open online courses (MOOCS) with its accompanied badges, micro learning, gamification as well as Blockchain credentialing which was earlier mentioned comes to mind as not having fully realised its potential in terms of creating, transferring or renewing skills and knowledge at requisite rate required at time of writing. It is important though to keep in mind that all of these technologies, methods and solutions can shift, accelerate or morph into entirely different stages of technology evolution. The Gant hype cycle merely represents a useful strategic learning planning canvass or at very least plausible cycle. Again at risk of repetition, it is more relevant when practitioners are evaluating evolving technologies and its fit with organisation and learning strategies. It would not be premature to consider how learning culture might have to be reshaped and embraced to leverage chosen modern digital learning methods and technologies according to both Carson (2017) and Hart (2018).

19.4.4 Slope of Enlightenment

Through out the next phase more instances of how the technology, method and or solution can benefit the enterprise becomes widely understood and its impact elevated. Second- and third-generation products appear from vendors, consultants and/or technology providers. Good examples of integrative learning technology here which has potential to provide highly customisable yet personalised and mostly contextually relevant solution to learning anywhere, everything just in time is that of ever-burgeoning learning experience platforms (LX) which in many cases is replacing dated learning management system (LMS) era. The learning management systems of old in which many organisations remain heavily invested as many will be sure to recall provides for cranky learning catalogues which much to employees and their managers dismay employees need to try and navigate for cumbersome list of courses.

Ingham (2017) describes LinkedIn Learning, which presently has more than 17 million corporate users, provides a Netflix, Showmax, or DSTV like friendly user interface which is hugely popular with new-generation workforce who prefer to learn in adaptive, responsive just in time during the moment like fashion. These platforms curate, facilitate multiple formats of content be it audio podcasts, micro-learning videos, collaborative co-designed articles, co-created blogs, articles, comprehensive

training videos, etc. Learning practitioners would do well to further explore this learning experience platform domain the likes of SAP success factors, Degreed, Edcast, Coursera and Pathgather all which are increasingly deploying means to provide fun embedded as well as collaborative and immersive social learning experiences. These in majority are mobile, fun to use, fast and easy to traverse and have great search and embedded learning features which if considering it is fully integrated with LinkedIn has more comprehensive and detailed information about many an organisation employees than they have in their own human resource management information (HRMIS) systems which by reputation we know is hardly friendly or accessible by average employee (Dignan, 2019).

19.4.5 Plateau of Productivity

When mainstream adoption of technology, service or solution starts to take off and the technology is more pervasive even ubiquitous then it is apparent that most stakeholders are comfortable with solution and they are clear regarding the criteria or merits for learning effectiveness in this case. The technology's broad market applicability and relevance are believed to start paying off. Many practitioners might recall a time when e-learning was considered sacrosanct and huge disrupter to the classroom fixated training community. The electronic creation, curation and sharing of knowledge and skills via be it online video, audio and heaven forbid podcasts not to mention social interaction, participation and real-time feedback were considered to be insurmountable obstacles and hardly enablers of learning bur rather inhibitors.

Currently as the new generation of learners utilise Amazon Echo (virtual personalised home chatbots) in their homes to play music from Spotify, update weather and traffic forecasts and read the news for them as well as report their wearable Fitbit fitness tracker results for the day. This all whilst not getting lost navigating Google Maps and other updates in vehicle driving to work or home. Currently, one quickly comes to realise how internet of things, automation, mobile and ever pervasive cloud is indeed richly augmenting our human existence and with it our constantly evolving continuous learning mindset. Needless to say all of which the significant meaningful learning moments like experiences, we can instantaneously and publicly share be it on Twitter, Facebook, Snapchat, Instagram, Skype or Pinterest to name just a few.

In the not so distant past sculpting a comprehensive learning strategy to future-proof an organisation's people or human capital strategy was in many instances considered pixie dust given preponderance with instructor lead content delivery. The modern digital context, however, is characterised by shorter shelf life of knowledge and skills. This has placed a premium on reskilling and upskilling of professional and technical workforce and its leadership. The leadership talent development management cadre needs to accept and leverage fact that technologies to great extent are learning enablers which mostly elevates social learning experience of digital learning communities. This new generation of learners thrive on the opportunity to

contribute, collaborate and co-design their respective learning experiences many a time in parallel and unison with AI and machine learning (Carson 2017).

Learning leadership practitioners will accordingly need to change and transform how they think, act and behave as surprisingly integral to this mesmerising digital learning ecosystem; it is all about culture mindset human behaviour and paradoxically so less re-technology. Might leadership talent management development practitioners need a digital learning transformation roadmap to transverse this disruptive elevated world of digital learning? What might such a learning transformation entail and look like?

Human thriving results from rethinking and sculpting the agile design of employee learning experience as a technology augmented learning journey. Many researchers, scholars and academics the likes of Arney (2017), Arena (2018), (Van Dam et al. 2018) as well as Denning (2018) and Brown (2009) agree that:

Generally, traditional organisations are failing to reap the full benefits that technology offers learning and development functions. They acknowledge that learning innovation has potential to deliver the significant improvements in performance and generate sizeable chunks of shareholder value, however, practitioners agonise regarding cost and a lack of capability which they consider to be some of the greatest barriers to incorporating and leveraging modern learning technology and associated methodologies.

Leading learning organisations are seeing advancements in agility and learning culture that far exceeds other organisations' results as they expediently develop critical thinking skills for evaluating trends. They tend to be more proficient at making talent and data analytically rich decisions. In addition, they easily facilitate 'self-directed' and 'peer learning' through social network generated collaboration.

Agile adaptive learning practitioners support their employees in 'learning how to learn' and how to expediently reflect on his or her learning. They further guide leaders in developing individual and team learning skills so they can facilitate learning among their increasingly divergent and globally dispersed virtual teams.

These organisations curiously tinker, experiment and explore many a time in small open highly connected communities of learning where communication, creativity, innovation and collaboration are highly prized and considered to represent the new renaissance of corporate learning.

19.4.6 Foundation of Learning Experience Design Is Learning Talent Analytics

Both Arney (2017) and Denning (2018) further acknowledge that complex initiatives often fail because companies cannot change their plans fast enough. It is important when considering rapid reskilling and upskilling strategies that practitioners regularly collect and analyse robust data to assess and continually improve their learning initiatives. Digitally relevant industry knowledge and skills are continuously created,

curated, transferred, renewed and deployed to ensure value innovation. This represents a seismic shift in learning culture, learning mindset and requires leadership which can curiously navigate digital learning landscape and courageously lead.

It is considered essential by Marr (2018) and Ferrar et al. (2017) that talent learning data analytics' inform decisions, actions and especially organisation learning and performance outcome directed strategies. They accordingly advance need for robust, deliberate, systematic concentrated focus and methodology to conduct capability assessment.

They further postulate that practitioners should strive to adopt evidence based approaches, the data of which should test the learning programme's alignment with ones organisation's values, culture and strategy. Given legacy and tendency of procuring different HR systems for different processes, e.g. performance management, talent acquisition, succession, learning and development pay and reward; it is often necessary to ensure that data is aggregated, interrelated, analysed and appropriately integrated to best leverage data. This data can be optimised to address current and future workforce challenges and business innovation opportunities. Competencies, capabilities, skills and nimble, agile culture indicators, metrics, etc., need to be individually differentiated and align with strategically digital relevant business context (Van Dam et al. 2018).

Data analytics should examine the business impact of the learning and continually assess if and how learning changed behaviour and performance. Modern mobile experience platforms are able to assess whether specific interventions have led to teams and individuals learning new skills. In addition they are able to determine if these are relevant meaning the correct skills and not obsolete utilising learning data from pre- and post- measurement initiatives. It visually reports whether the returns from those initiatives in cost and productivity terms outweigh the costs in real time, just in time on individual, functional team and organisational level. Reicheld and Markey's (2011) research examined relationship between customer and employee experience and contended that loyal competent employees had direct impact and effect on quality of customer experience. They formulated famous employee net promoter score system (now automated) which is considered one of leading key talent indicators of employee experience in the modern era. This metric is renowned for its simplicity yet profound impact by asking '*On a scale of 0–10, how likely would you be to recommend this company to a friend or colleague as a place to work?*'

A further important consideration in this data-rich and pervasive era of 'big data' is to evaluate each programme and learning experience during employee's lifecycle as a continuous learning journey within organisation and determine whether employee(s) have experienced link between intervention and meaningful sense of renewal of learning career pathway and causal links with improved productivity, engagement, retention, etc. (Morgan 2017).

Both Carson (2017) and (Van Dam et al. 2018) argue that such a differentiated learning strategy needs to ensure that digital learning experiences are contextually relevant, immediate, immersive, adaptive yet personalised. They further extend the

notion that by leveraging insightful and actionable learning analytics, it could lead to responsive design of learning experience as described.

19.4.7 Design Thinking Shifts Paradigm from Content to Human-Centred Learning Experience

In keeping with the reality of what Pine and Gilmore (2011) termed the experience economy and Kolko (2015) who emphasised the need to design interactions with technologies and other complex systems to be simple, intuitive, and pleasurable. A more recent meaning contemporary and modern new alchemy for designing new generation learning is worth exploring. This is especially significant given that they further argued that the lines between business learning strategy and the design of actual learning experience were blurring and difficult to make a distinction between the two.

It is increasingly advocated that learning professionals as architects of learning adopt a design thinking approach to learning as its simplicity implicitly drives a more thoughtful, human approach to business and implicitly workplace learning as it both simplifies and humanises and accordingly makes the workplace more attractive to both current and prospective employees (Kolko 2015).

Brown (2009) further develops the notion that design thinking puts the observation and discovery of often highly nuanced, even tacit, human needs right at the forefront of the learning innovation process. It considers not just the technological system constraints but also the sociocultural and cyber-physical system context. In essence, however, design thinking emphasises focusing on the person and the experience not the process or product but solution. It could indeed significantly alter the manner in which learning and development professionals strive to deliver tangible value as its shifts from programme and content emphasis to this more human-centred method of envisaging the innovative acceleration of corporate learning journey. It is further essential to continue to keep in mind that given impact of digital disruption that the lines between business learning strategy and design of learning experience are not distinct anymore and boundaries if any are blurring and that consumer and employees moment by moment experiences considered and designed in unison.

The usual *Design thinking phases* examined and advanced by Brown (2009) are the following:

Empathise with your employees as customers understanding their needs, frustrations and aspirations specific to learning journey from onboarding and transitions to different functions, levels, locations, etc. Intention with this empathy is about experiencing the feelings of others. Given this empathetic walking in the shoes of the other party, you are able to create more effective solutions. Visualise and imagine yourself in the users' situation and appreciate their context and feel what they feel from their perspective. It is also envisaged that displaying empathy could involve collaborating, co-designing even crowdsourcing solutions with your stakeholders.

Create stories and link ideas into context and give them meaning. Brown (2009) suggests focusing stories on how your organisation fulfils a core human need and encourage use of narratives which demonstrate and create multiple touch points along the user-experiential learning-rich timeline.

Define your user's needs, their problem, and your insights. What does a great employee learning experience look like? Commit time in participation, high involvement with your stakeholder employees and specifically define and articulate problem in need be from external professional multidisciplinary as well as intra-cross-functional perspective. Robustly defining a problem, using personas, and learning journey mapping as tools considered essential to generate invigorating learning solution.

Ideate by challenging assumptions and creating ideas for innovative learning solutions.

Facilitators often ask 'How Might We' type questions in order to catalyse creativity and curiosity, e.g. how might one accelerate digital learning at scale for new world of work?

Generating and conceiving ideas, or ideation is often perceived to represent an overlap with how problem has previously been defined, however, this is where cross-disciplinary, diverse collaboration and insight spawn-rich variety of alternate potential solutions. Ideally, there should be no constraints to either conception of solution or barriers to its experimentation or possible implementation. Ideation should be imbued with spirit of optimism, imagination and inspiration.

Prototype to start creating solutions a prototype is intended as preliminary model of an approach. Prototyping involves hands-on exploration. It provides a way to rapidly try out ideas without a large investment of time and money; Brown (2009) provides further guidance as it relates to prototyping by suggesting not to create ideas in isolation with words alone and emphasise the need for deploying multiple methods for prototypes to develop ideas faster. He insists that even basic early model-type prototypes made with little time and effort can still generate sufficient feedback and data to test viability, scalability, etc.

Injecting innovation into the design of new-generation learning journeys will require professional practitioners to address employee's user experiences. Through aforementioned design thinking approach, a moment by moment experience blueprint can be created.

It is fair to, at this stage, deduct that design thinking is an iterative process that could involve as much imagination as it does repeated testing and modification. Consequently, equal amounts of consultation and collaboration with broad spectre of internal and external stakeholders is recommended to accelerate adoption of learning solutions and advance further insight. Although learning is human centred and immersive in design the competitive realities demanded of digital leadership as it relates to exponential speed of innovation, scale and growth requires appreciation for nimble yet ever agile technology augmented learning ecosystem (Van Dam et al. 2018).

19.4.8 *Cultivate and Enable Agile Learning Culture*

Brown and Thomas (2011) in researching ways to create a new culture of learning came to conclusion that as previously alluded to that world was changing faster than ever and skill sets had a shorter and shorter life cycle. Learning strategies which resist or merely adapt to a constantly changing world were insufficient. These authors further advanced notion that what was essentially required was the need to fundamentally rethink learning and strive for ways to amplify learning in such a way which made it scalable and accordingly cultivated professional practitioners imagination. Organisations which depict notable learning cultures are renowned for their sense of creativity, openness, exploration and experimentation where employees are invigorated as well as empowered to spark new innovative solutions. The likes of Amazon, Facebook, Apple, Google and Microsoft as well as Alibaba and Infosys who have all distinguished and differentiated learning cultures come to mind.

What is further telling is that companies irrespective of size from start-ups to established multinationals often struggle to balance scale and agility. Start-up new organisations tend to naturally be agile and notably excel at innovation. They are further characterised by the ability to quickly change direction by adopting a new business plan or revamping products. They, however, lack the scale that ensures long-term sustainability and or survival. To progress from the start-up stage, a company must build its team, win customers and start generating revenue. Large companies in turn usually have the opposite problem. They excel at leveraging scale by using the influence and reach of their brands, extended customer base and distribution system to pursue global expansion. They need to cultivate agility so they do not risk losing their competitive edge in the face of rapid technological changes and challenges from innovative start-ups hence learning and agility for all considered imperative as per Butler and Tischler (2015).

Meyer (2015) states that in order to establish, build and grow organisational agility, the right kind of continuous learning, strategy which expands company knowledge networks and drives performance needs to be pursued. Develop agile teams through formal and informal learning aimed at stretching capabilities, gaining confidence, and expanding and deepening relationships.

It is further expanded on by Meyer (2015) who believes that organisations strengthen and have professional practitioners appreciate, develop and provide stewardship for following dynamic characteristics of agile working culture:

Responsive—the ability to answer to a situation quickly and with high-quality ideas separates you from the competition. Agile organisations empower employees to act and encourage them to seize opportunities. Layers of bureaucracy and approvals kill agility. Good examples often referred to is asking how a Hilton does or a Marriott compete or respond to Airbnb when the new digitally agile challenger does not even own hotels similarly how to respond to a taxi company that owns no taxis and no drivers.

Relevant—Great organisations know their mission. They assess each decision and opportunity according to its relevance to their purpose and values. They are known

to extend greater autonomy to employees whose actions align with their purpose and values. Nespresso initially focused purely on office segment for well over a decade prior to coming to appreciate and value its relevance to domestic residential consumer.

Resilient—Resilience means bouncing back from setbacks and adapting to new realities. Resilient employees do not give up in the face of adversity. They assess situations realistically and draw on their diverse cross-functional and cross-industry as well as community relationships for solutions.

Resourceful—Resourceful people and organisations make the most of what they have. Many a time volatility and uncertainty is catalyst which ignites creativity. Defining characteristics of twenty-first-century economy is innovative and growth. Complexity should be reduced as often unnecessarily bewilders employees and hampers them in being resourceful in ensuring decisions are implemented down the frontline.

Reflective—Have leadership and employees reflect on their learning and development-related actions and behaviours continuously. Take time to assess completed work, projects and tasks. Explore and question where most agile? Why? Important to ponder, think about how you can learn from every encounter and action. Approach challenges not critically or defensively, but opportunistically encouraging connection and critical constructive conversations re-future skills, work assignments, etc.

19.5 Agile Leaders

According to Eichinger and Lombardo (2013) ‘Learning agility’ is a hallmark of great leaders. The best leaders apply past lessons to unfamiliar situations and learn at the moment they adapt and flourish on ambiguity and paradox of complex simplicity. They assess new situation, apply past knowledge, and adapt to complex and volatile circumstances. Learning agility proves a top predictor of new digital generation’s global multi-cultural leader’s success.

Cultivate and harness your learning agility by challenging your beliefs and your biases, and by asking questions. Consider how things change, seek new threats and reframe them as opportunities. Develop your confidence with stretch projects and initiatives that take you outside personal comfort zone and extend your experience and exposure cross-functionally, cross-culturally.

19.6 Governance of Digital Talent Management Development @ Scale and Speed

The rather frightening yet compelling metaphor used by Bhaduri (2016) to describe the wave after wave of digital transformations in and around organisations and how they were managed was that of a tsunami.

Following on the range of learning technologies, methodologies and their opportunities, challenges as well as implications on cross-skilling, reskilling, upskilling the new generation workforce for the future world of work which in many ways is now. It is therefore appropriate, at this stage, to reflect on the need for prudent end-to-end governance of digital learning leadership strategies.

Although Ashton and Morgan (2005) as well as Silzer and Dowell (2009) have argued that strategic talent management development should be

- Driven by business strategy
- Integrated with other processes
- Managed as a core business process, and
- Engrained as a talent mindset.

A large percentage of interviewed CEOs, business unit leaders and HR executives continue to think that a lack of collaboration across the organisation prevents talent management development from having the necessary degree of impact and/or from delivering tangible business value (Guthridge, Komm & Lawson, 2006).

Talent management development has not been aligned to business strategy because corporate leaders traditionally tend to relinquish the organisation's talent strategy to either market forces (conveniently termed 'business drivers') or to their human resource departments. These functions often blindly copy and perfectly imitate what Pfeiffer and Sutton (2006) refer to as 'causal benchmarking', the famous best practices of high-profile global brands. The caveat is that proper governance, oversight and innovation of these practices and processes are required to ensure that they not only align and fit with requisite distinctive talent development requirements which drive the execution of an organisation's digital strategy, culture and values but that they also leverage the collective skills, abilities and expertise that enable a particular company to digitally out-execute and outperform the competition consistently.

Charan (2005), in describing how the boards of companies are changing to be more progressive, states that progressive boards look to the company's long-range success, beyond the term of any given CEO, 'market opportunity' or 'product cycle'. They exercise active governance, evaluate strategy and management, and take the hiring and firing of the CEO very seriously. He further argues that board meetings will be increasingly more cooperative, lively and pursue more productive relations with the CEO as boards are expected to add value and competitive advantage without wasting management's time.

It is for these reasons that the establishment and promulgation of an influential, progressive digital savvy learning and development governance body and mechanism need to be considered. It will serve as the principal departure point for any strategic

talent management development framework but also essential for talent management to be strategically legitimised, driven and galvanised. Van Dam et al. (2018) contend further that this will ensure impetus to an organisation's strategic talent management efforts. It is useful to position a body such as a digital strategic review and investment board whose principal purpose is to identify, develop, engage, retain and leverage digital specific leadership potential. This will specifically mitigate digital talent supply, demand and sustainability risks.

The Corporate Leadership Council (2005) defines these risks as follows:

- **Vacancy risk:** no mission-critical positions are left vacant.
- **Readiness risk:** no promotions without the requisite capabilities and/or development.
- **Transition risk:** poor assimilation of talent and knowledge transfer across the organisation.
- **Portfolio risk:** no inappropriate placement of individuals.
- **Legal risk:** where relevant, an organisation is able to fulfil its localisation and regulatory labour transformation requirements

The mitigation of aforementioned risks as well as a range of various talent management development and value-based benefits can be achieved via the creation of a governance body or board which could address the following:

- Twice-annually, strategically review and consider requisite digitally specific business capabilities giving comprehensive consideration to alignment with complexity and diversity of global talent pool.
- Strategically align and focus decision-making on key digital talent moves through focused business collaborative led talent reviews and structures at operational and geographical level.
- Review, reflect on and approve digitally relevant talent management retention strategies, tactics and plans from a risk management perspective.
- Reflect on which digital skills will be required to execute business strategy.
- Evaluate internal resourcing effectiveness, for example, how many external versus internal candidates are digitally capable, literate and or ready.
- Accelerate the implementation of realistic and practical digitally relevant career and development plans.
- Review and approve budgets and funds for digital leadership talent development, rotation and deployment.
- Consider a wide range of appropriate pivotal talent and leadership talent management deployment and development recommendations both short term as well as long term.
- Compare costs and time to fill vacancies with external buy recruitment options.
- Review the supply of the right calibre, type and quantity of leaders for future success.
- Develop a willingness within the organisation to share key pivotal talent across businesses, enabling a climate of trust and a 'one-enterprise culture' resulting in high strategic talent mobility.

- Use specific and uniform collective people-intelligence and digital talent analytic profile information to clearly identify developmental roles and positions across the divisions within the organisation to enable flow of digital talent via the use of talent investment matrix (performance x potential) type mechanisms.
- Ensure the retention and development of key individuals.
- Determine and evaluate how retention rates for digital talent compare with those of competitors.
- Evaluate how close the organisation is to 100 per cent compliance with agreed-upon standards and processes for setting goals, evaluating performance and developing digital talent.
- Review appropriate (secondment/expatriate) strategies, tactics and plans by size of business and market share growth, size and demand for head-count growth, FTE turnover, planned retirement, etcetera.
- Explore learning strategies which assist employees to digitally upskill and reflect upon how to improve internal mobility while ensuring rate of internal digital promotions is tracked analytically.
- What no and % of workforce is and needs to be digitally re-skilled or cross-skilled and what provision for learning talent development budget is being made in this regard?

Develop deepened insight into critical digital roles and the risks of filling these.

Review, reflect on and approve external buy (recruitment, resourcing) strategies, tactics and plans for contemporary digital workforce.

In terms of the actual composition and membership of such a governance body, it is highly recommended that it be chaired by the Group Chief Digital Officer or CEO and proactively facilitated by the organisation's most senior HR executive (and preferably one which is represented on the main board) to ensure a high degree of legitimacy, credibility and to safeguard the integrity of strategic development and management of digital talent. The remaining members of this governance and strategic review board need to be executive level official's representative of all operating functions, companies and/or geographic territories. These executives can be invited, when and as required, across functions from within the group and membership can change according to changing strategic business needs and capabilities of the organisation. There remains a competitive need to proactively align requisite strategic digital leadership talent management requirements. It is for this reason that the Digital Strategic Talent Review Board needs to commit to meet at least twice annually either face to face or through the use of video/teleconferencing.

The positioning of this governance body ensures that the management of talent development is foremost in mind for the organisation, and complements and galvanises Ashton and Morton's (2005) systemic view of talent management. This ensures that talent management is driven strategically from the top of the organisation. It further enables the commitment from senior managers, supporting the view of Lawler (2008) and Michaels et al (2001) of clear advocacy for a higher degree of involvement, responsibility and accountability for talent development by the board of directors.

19.7 Conclusion

Notable digital companies' competitive sustainability is greatly impacted by its culture of continuous learning and a passion for innovative reinvention. References to seismic changes which accompany the Fourth Industrial Revolution in many ways already trite and heavily laden even replete with unnecessary and in some cases alarmist platitudes. Refer to mention of Gartner hype cycle.

What is known is that central to all technologies mentioned be it artificial intelligence, the Cloud or Internet of things is fact that large % of existing and new jobs will be digitally enabled and exponential skills shift will propel and sustain organisations of twenty-first century.

Learning leaderships challenge will be to continue sculpting innovative learning solutions which are insight driven, enabling and not just enhance-skilled competence but engender trust and serve the interest of large corporations as well as society at large. As we have come to appreciate the only way to build an organisation that is truly fit for the future is to build one that is truly fit for human beings Hamel (2015). Professional practitioners who are tasked and aspire to ensure they make a contribution towards scaling organisational learning for future world of work would do well to define, articulate and deploy a comprehensive strategic digital learning transformation roadmap. This could as described include need to navigate the learning technology landscape as well as rethinking how to sculpt employee experience in human centred way and last but not least such a transformation roadmap would require need to cultivate and further embed agile learning culture and need to consider the governance of learning @ speed and scale.

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John Ludike is an executive human resource practitioner and has gained majority of his experience within the Financial Services, (FNB, RBS, Mashreq Bank, Barclays) Retail, (Sainsbury's) Telecoms (MTN, Etisalat) and lastly Hospitality (Yum Brands!) industries. He independently consults and specialises in automated digital design, development and facilitation of implementation of human capital systems and accordingly recalibration of leadership talent and organisational development change programmes and solutions. John principally undertakes international consulting assignments in London, Middle East and Asia and aims to seldom experience a winter as he migrates from one assignment to the next in true freelancing gig economy fashion.

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