
EDITED BY
ALEKSANDRA KOSTIĆ
& DEREK CHADEE
TIME PERSPECTIVE
THEORY AND PRACTICE

Time Perspective

Aleksandra Kostić • Derek Chadee
Editors

Time Perspective

Theory and Practice

palgrave
macmillan

Editors
Aleksandra Kostić
Faculty of Philosophy, Department of Psychology
University of Niš
Niš, Serbia

Derek Chadee
Department of Behavioural Sciences and ANSA McAL Psychological Research Centre, Faculty of Social Sciences
The University of the West Indies
St Augustine, Trinidad and Tobago

ISBN 978-1-137-60190-2 ISBN 978-1-137-60191-9 (eBook)
https://doi.org/10.1057/978-1-137-60191-9

Library of Congress Control Number: 2017959266

Cover Credit: MaximImages archive / Alamy Stock Photo

Printed on acid-free paper

This Palgrave Macmillan imprint is published by Springer Nature
The registered company is Macmillan Publishers Ltd.
The registered company address is: The Campus, 4 Crinan Street, London, N1 9XW, United Kingdom

To Professor Emeritus Philip G. Zimbardo for his selfless contribution to the development of psychology and time perspective.

Acknowledgments

We thank the following persons and institutions for their invaluable contributions toward the successful completion of this volume. First, we say thanks to all our diligent contributors: Philip G. Zimbardo, Blaze Aylmer, Albinas Bagdonas, Maria G. Carelli, Nicholas Clements, Nicolas Fieulaine, Jonathan C. Hilpert, Jenefer Husman, Isabel Nunes Janeiro, Antanas Kairys, Elena Kazakina, Umbelina Rego Leite, Audronė Liniauskaitė, Rose McDermott, Jasmina Nedeljković, Victor E.C. Ortuño, Maria Paula Paixão, Vilmantė Pakalniškienė, Thea Peetsma, Marija Pejičić, Rachel Seginer, Jaap Schuitema, Anna Sircova, Maciej Stolarski, Wessel van Beek, Ineke van der Veen, Britt Wiberg, Marie Wiberg, Joanna Witowska, and Zara M. Zimbardo. Special thanks to Diana Williams, Steve Dwarika, and Raecho Bachew for their administrative assistance.

This book is an output of the ANSA McAL Psychological Research Centre of the University of the West Indies. We thank The University of the West Indies and the ANSAMcAL Psychological Research Centre and The Faculty of Philosophy, Department of Psychology, University of Niš (Serbia) for their support. We express our gratitude to the staff at Palgrave publishers. Of all those who provided technical and other kinds of support resulting in this publication, we would like to indicate our deepest appreciation. Of those we may have inadvertently not mentioned, we say thank you for all the encouragement and assistance you rendered.

Contents

List of Figures

List of Tables

1

Time for Time Perspective

Aleksandra Kostić and Derek Chadee

Time is an asset we all wish to possess, the value of which cannot be compared to any other asset (Zimbardo & Boyd, 2008). Time is an essential part of life, a medium in which we spend our life. At the same time, it is one of several essential dimensions of our observable world that significantly influences the shaping of our existence. It is quite clear why time attracts and keeps the attention of scientists who wish to understand and explore nature, role, and significance of time during the human life cycle.

The time we have lived, the time we live now, and the time we anticipate are the products of our personal views intertwined with our experience, based on our individual differences, thoughts, feelings, life stages, and necessary adaptations (Hendricks & Peters, 1986). For each person, time has a unique, personal meaning that is not determined by a simple sequence of events and their measurable duration (Levin & Zakay, 1989).

A. Kostić (✉)
University of Niš, Šumatovačka, Serbia

D. Chadee
The University of the West Indies, St. Augustine Campus,
St. Augustine, Trinidad and Tobago

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_1

We feel that time crawls in and interferes with our lives, while it also determines its foundations, dynamics, and directions. We notice that it flows and brings changes, and that it is filled with different events that have their beginnings, developments, and ends; but we also realize that we cannot make time equal to our observed changes, despite the existence of a close relation to them. However, could we really boast that we fully understand the nature and properties of time, its indirect influence, and the way we treat time and its zones in the world?

In most psychological research (Sturt, 1999), time is not viewed as an objectively realistic entity but, rather, as "psychological time" (Golovakina & Kronick, 1989), an "inner subjective phenomenon" (Gorman & Wessman, 1977), or "subjective experience" (Levin & Zakay, 1989). Aside from whether *time*, as the subject of research, has been treated as a dependent, independent, or intervening variable, the framework of the subjective paradigm has enabled emphasis on personal experience and differences in experiencing time. Boniwell (2008) states that time, in accordance with the interests of researchers, has been studied from very different aspects. Scientists have studied the subjective estimation of time duration and the congruity and subjective use of time, including polychronicity and monochronicity, or time perspective (Boniwell, 2008).

This volume provides a unique contribution to the time-perspective literature, and we are exceedingly honored to have Professor Emeritus Philip Zimbardo contributing to two papers to this book. The direction and depth of studies on time perspective have been enormously influenced and inspired by Philip Zimbardo. As the theory moves to a wider application, there has been sustained and growing interesting into its application, as well as its further development. The contributions to this volume maintain this perspective with a range of authors from around the global, which is a reflection of the great impact of time perspective theory.

Chapter 2 by Philip Zimbardo, Nicholas Clements, and Umbelina Leite, considers the influence of time perspective on financial health, hypothesizing that the effect of this time approach on financial health would be much greater than that of financial literacy. They elaborate on the relationship of each aspect of time perspective to financial decision making and financial vulnerabilities. These implications are discussed in

the context of financial literacy training, which while critical, is not sufficient for achieving a financially healthy life. Rather, this goal can be achieved only by a combination of time perspective training and time perspective introspection.

Chapter 3, by Zara M. Zimbardo, Rose McDermott, and Philip Zimbardo, is a result of increasing interest in practices designed to facilitate immediate and holistic focus on the present. They advance a third dimension of the Present time perspective, which they term the expanded present (XPTP). A subscale measuring this construct was developed and tested; specifically, analyses were conducted to determine whether their idea is internally consistent and empirically distinct. Using an online platform, they administered several scales to 220 respondents, including the Zimbardo Time Perspective Inventory, the SWLS well-being scale, the IPIP Big 5 personality inventory (Openness to Experience subscale), the TEIQue Trait Emotional Intelligence Scale, and the FMI mindfulness scale—scales that might appear to measure a similar underlying factor to the XPTP scale. Their analyses revealed the XPTP scale to have strong internal consistency and to be empirically distinct from the concepts measured by the aforementioned scales. This new contribution allows researchers to explore the relevance of a new time perspective dimension in practice and further research.

Chapter 4, by Britt Wiberg, Anna Sircova, Marie Wiberg, and Maria G. Carelli, provides a deeper understanding of the construct of balanced time perspective (BTP). Specifically, they sought to investigate the stability of the BTP profile, as well as the relationship with main characteristics of individuals with this profile, such as their psychological well-being, life satisfaction, and mental health. Their study shed light on two future time orientations (Future-negative and Future-positive), providing a deeper understanding of the construct of BTP. The findings suggest an awareness about the "now" and a synchronicity between the present and the past, as well as that between the present and the future, with a degree of BTP profile stability over time.

In Chapter 5, Antanas Kairys, Audronė Liniauskaitė, Albinas Bagdonas, and Vilmantė Pakalniškienė explore some of the core issues surrounding the topic of the balanced time perspective. The chapter examines the nature and outcome of time perspectives and ideal approaches to

measuring the balanced time perspective, considering the potential existence of other time profiles. Zimbardo and colleagues have proposed the idea that individuals who can be characterized by a particular combination of time perspectives are more prone to optimal functioning in everyday life; however, researchers have not yet come to an agreement regarding the method or have established a gold standard that would allow identifying the balanced time perspective. Therefore, in their chapter the authors raise and discuss several questions, including: What is the nature of the balanced time perspective? What role does time perspective play in everyday life? How should the balanced time perspective be measured? Are there other profiles of time perspective? What is the relationship between balanced time perspectives and an individual's well-being?

In yet another chapter on the balanced time perspective, Maciej Stolarski and Joanna Witowska in Chapter 6 present initial findings from the very first studies done on temporal cognition. In particular, the authors consider the role of metacognition in temporal perspectives, particularly the balanced time perspective. Applying a widely acknowledged and endorsed conceptualization of the three core facets of metacognition, the Temporal MetaCognition Scale (TMCS) was developed to facilitate the direct measurement of individual differences in the metacognitive characteristics underpinning the BTP. The relationship of this scale to the BTP, life satisfaction, and metacognition were then analyzed. Overall, their study suggests that temporal metacognition provides the basis for development of the BTP, which in turn strongly influences well-being. The chapter ends with a conceptual framework for future investigations.

The way in which we view our past experiences determines the way we see present and future experiences. Since feelings that are caused by memories are actually current memories, past experiences can serve to help us set future goals and to plan activities. Further, since our attitudes toward past experiences simultaneously shape and colors both our present and our future, it is worthwhile to consider what determines our personal attitude toward past experiences. In attempting to assess past experiences, Aleksandra Kostić, Marija Pejičić and Derek Chadee, in Chapter 7, focus on time perspective as the fundamental dimension of a subjective experience of time. They narrow the subject to the past-time perspective, believing that a Past time orientation can also be key to understanding the

individual and social functioning of a person in his or her present and future life. The attempted integration of attachment, self, and personality was undertaken to understand the adopted Past time orientation.

Chapter 8, by Victor Ortuño, Maria Paula Paixão, and Isabel Nunes Janeir**o**, provides some guiding conceptual and methodological ideas on the time perspective literature. The authors focus on the assessment of temporal concepts related to subjective and individual aspects of time. Specifically, they have examined concepts related to individuals' temporal experience, the various approaches to measuring these concepts, and their relations to other factors. They conclude that time perspective is a complex feedback process, with several properties and dimensions. As such, they point to the need for major developments within the literature, inclusive of development of new and innovative measures, execution of longitudinal research, and consideration of cultural variations and various dimensions of time orientations.

Utilizing time perspective to understand risky behavior and specifically, substance abuse, in Chapter 9, Nicolas Fieulaine provides an astute understanding of the relationship between future orientation as a protective factor against substance use, with present time orientation as a risk factor. Intriguingly, he discusses the complexities among self-regulation or risk perception, time perspective, health behaviors, and substance use. As he notes, "on the basis of recent studies, we then explore this complex relation and we propose some theoretical perspectives and a research agenda for a better understanding of—and for more efficient interventions on- substance and cannabis use behaviors."

Centered on the premise that the Future time perspective is associated with students' motivation for learning, Chapter 10, by Thea Peetsma, Ineke Van der Veen, and Jaap Schuitema, demonstrates the applicability of time perspective theory in a school setting. In particular, the effectiveness of the Time perspective Intervention of Motivation Enhancement (TIME)—a tool developed utilizing time perspective theory—was examined in student populations. They review four studies conducted in The Netherlands, all aimed at investigating the effect of this intervention on students' Future time perspectives, motivated learning behavior, achievement goals, and delay of gratification. The researchers argue that TIME is a practical and effective way to improve students' motivated learning

behavior. However, this result appears to occur outside of students' Future time perspectives and achievement goals. Their findings were utilized to generate suggestions for future research, and they give consideration to how such research could be used to improve TIME and to develop other interventions.

Elena Kazakina and Wessel van Beek's Chapter 11 seeks to provide insight into the relevance of empirical findings on time and time perspective for clinical practice. Clinical examples illustrate this relevance. Utilizing clinical case studies, the researchers discuss the usefulness of the concept of "temporal flexibility" in all stages of treatment, allowing for the transition from distress to well-being. Interestingly, five vignettes entailing patients' stories are presented to highlight the potential of temporal mismatch to induce intra- and interpersonal difficulties. In so doing, their examples serve to not only provide clear evidence of the applicability of prior conceptual and empirical developments in clinical settings but also to offer guidance for possible future research directions.

In Chapter 12, Jenefer Husman and Jonathan Hilpert discuss the overemphasis on planning and goal setting in the context of Future Time Perspective (FTP) and its associated shortcomings. Specially, the focus of FTP has been on setting and achieving goals, with less emphasis on the effect of future affect on motivation levels in the present. Utilizing a neurocognitive approach, the authors discuss the alignment of thinking about future with affect state about the future. They adopt an expanded approach, wherein consideration is given to the emotions and sensory images associated with the imagined future self. The chapter encourages the additional development of FTP research.

Jasmina Nedeljković elucidates the relationship between procrastination and time perspective in Chapter 13. Utilizing a sample of 1299 Serbian university students, she assesses the relationship between procrastination and time perspective. Her findings suggest a relationship between academic procrastination and time perspective, particularly for the Present-hedonistic, Past-negative, and Future time perspectives. These findings are discussed in relation to prior theoretical and empirical developments. Her research adds, interestingly, to the procrastination literature within the context of time perspective.

Blaze Aylmer, in Chapter 14, criticizes the overwhelming neglect of time in time perspective research, and calls into consideration the need for a redirection of research efforts. The chapter is critical of the overreliance on cross-sectional designs and postulates that a new approach be adopted, wherein longitudinal research designs are utilized to investigate short-term and long-term dynamics in the time perspective. He suggests that inclusion of time in the time perspective requires a change in mindset, philosophical assumptions, research methods, and study design.

What is the relationship between future orientation and psychological well-being? Using two multiple-step models with psychological well-being conceptualized as both positive psychological functioning and subjective positive feelings, Rachel Seginer in Chapter 15 proposes that Future time orientation is an antecedent of positive psychological functioning, as well as a source of inner strength influencing future orientation. She argues that positive self-feelings serve as an antecedent of Future orientation, and she tests the models using data from studies undertaken with Jewish, Muslim, and Druze adolescents in Israel. Her findings support both models. The *future orientation → psychological well-being* model fitting data pertaining to behavioral indicators of positive psychological functioning such as resilient behavior and academic achievement; the *psychological well-being → future orientation* model fits data pertaining to subjective positive feelings such as self-esteem and self-agency. The chapter concludes with comments on culture and future orientation domain specificity, and offers directions for further research and interventions.

Wessel van Beek presents Chapter 16 to provide a new dimension of time perspective—prenatal time, or the expectations of the parents and family on the development of the unborn child. He argues that prenatal factors, such as parent–unborn attachment, the expectations of parents, the extended family and culture, and the intrapersonal psychological world of the unborn influence postnatal development. His data was collected via (1) content analysis of his journal entries on his life before his wife's pregnancy, during the clinical phase of in vitro fertilization and during his wife's pregnancy; (2) development and distribution of the Prenatal Time Perspective Questionnaire (PTPQ) among expectant mothers and fathers; and (3) clinical cases.

These sixteen chapters make an important contribution to an emerging theory, one that has lain dormant for some time but has recently burst upon the world stage. We hope that these additions to the literature—methodological, theoretical, and application—will spur the development of further contributions to the social psychological literature on time perspective.

In closing, we give special recognition to Professor Emeritus Philip Zimbardo for his systematic and timeless contribution to time perspective.

References

Boniwell, I. (2008). Through the lenses of time: In search of balance and well-being. *The Psychotherapist*, *39*, 6–8.

Golovakina, E. I., & Kronick, A. A. (1989). *Psihologicheskoje vryemya lichnostyi (Psychological time of personality)*. Kiev, Ukraine: Naukova Dumka.

Gorman, B. S., & Wessman, A. E. (1977). Images, values, and concepts of time in psychological research. In B. S. Gorman & A. E. Wessman (Eds.), *The personal experience of time* (pp. 218–264). New York: Plenum Press.

Hendricks, J., & Peters, C. B. (1986). The times of our lives. *American Behavioral Scientist*, *29*(6), 662–678.

Levin, I. & Zakay, D. (Eds.) (1989). *Time and human cognition*. Advances in Psychology Series #59. Elsevier Science Publishers and North-Holland.

Sturt, M. (1999). *The psychology of time*. New York: Routledge.

Zimbardo, P. G., & Boyd, J. N. (2008). *The time paradox: The new psychology of time that will change your life*. New York: Free Press.

2

Time Perspective and Financial Health: To Improve Financial Health, Traditional Financial Literacy Skills Are Not Sufficient. Understanding Your Time Perspective Is Critical

Philip Zimbardo, Nick Clements, and Umbelina Rego Leite

Introduction

Financial Literacy

Financial literacy is a widely publicized and frequently discussed term. Large corporations fund programs to improve it. Policymakers bemoan the lack of it. There is even a month to celebrate it in the United States (April). But what *is* it?

P. Zimbardo (✉)
Stanford University, Stanford, CA, USA

N. Clements
MagnifyMoney.com, New York, NY, USA

U. Rego Leite
Federal University of Pernambuco, Recife, Pernambuco, Brazil

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_2

In the modern world, Wikipedia provides a good starting point for popularly accepted definitions. According to Wikipedia, financial literacy is:

> *the ability to understand how money works in the world: how someone manages to earn or make it, how that person manages it, how he/she invests it (turns it into more).*

With that definition as our foundation, society has concluded that by *teaching people about how money works*, we will help improve financial literacy. Improved literacy will lead to less debt, more savings, greater stability, happiness, and prosperity.

With good intentions, a nonprofit firm dedicated to promoting financial literacy promises in its advertisements to "increase your financial knowledge, and create a *personal action plan of success*." If you enroll in their course, you will learn about:

- How to calculate compounding interest, and its impact on savings and borrowing.
- Inflation, and its impact on your savings.
- Bond prices, and their relationship to interest rates.
- How to create a budget.
- How to create a diversified investment portfolio.
- How to understand your tax obligations.
- How a mortgage works.
- How to plan for retirement, and the tax implications of different strategies.

In countries that value financial literacy, most training and outreach programs focus on similar skills.

All of this hard work is built upon the premise that if you understand how the price of a bond is impacted by interest rates, you will have a more financially prosperous life. Studies are regularly conducted that measure the overall level of financial literacy, and increases in financial literacy are celebrated.

Earlier this year, the Organization for Economic Cooperation and Development (OECD) released the results of "PISA 2012: Students and Money, Financial Literacy Skills for the Twenty-First Century" (OECD, 2014). In the introduction to the results (which laments the low levels of financial literacy), it is written that "financial literacy is thus an essential life skill, and high on the global policy agenda. Shrinking welfare systems, shifting demographics, and the increased sophistication and expansion of financial services have all contributed to a greater awareness of the importance of ensuring that citizens and consumers of all ages are financially literate."

Although financial literacy skills are important, the correlation between traditional financial literacy and financial health seems to be taken for granted.

Nick Clements (co-author of this chapter) spent nearly 15 years creating and marketing financial products to consumers around the world. Based upon the tactics used by banks to market financial products, and the methods used by consumers to make financial decisions, he doubted that algebra and financial education alone would lead to improved financial health.

Although financial products are inherently about money, the tactics used to sell those products usually are not. If you need to borrow money, then the most important consideration is the interest rate. Whether you borrow money from Bank A or Bank B, the situation will be the same (and the money can be used anywhere that the currency is accepted). The only difference is how much it costs to borrow that money. Yet, when you look at the advertisements for credit cards or loans, the interest rate is often buried in the fine print (and even then it is not disclosed; instead, a very wide range is frequently offered). You see pictures of happy, smiling people. You are told that you can borrow the money quickly, or even instantly.

If you are buying a life insurance product, you will want to consider the cost of the insurance relative to the payout of the benefit. In addition, you will want to make sure that the insurance company is strong enough financially to pay the benefit. Yet, if you look at life insurance ads, they rarely discuss such themes. Instead, you will see pictures of people who look secure in their financial future.

The financial health of an individual is the result of countless decisions made during that person's life. Should I buy this or not? Should I put this purchase on my credit card or pay in cash? Should I say *yes* or *no* to this salesman, right now, who is offering me 5% off if I sign up today?

These financial decisions are rarely made sitting at the kitchen table, with a spreadsheet and a list of products to compare. Rather, they are made in the heat of the moment. You are at the dealer, and you see an amazing automobile. You feel your body getting excited by the prospect of driving that car around the neighborhood, and you are ready to do whatever the salesman asks. You are at the bar and, after a few drinks, you feel generous and decide to buy everyone the next round. You are out of money, your daughter wants that dress, and the credit card can help make it happen. You are worried about your children's future, and the credit insurance product offered by the auto dealer sounds like a good way to provide protection in case of the worst.

In order to understand *why* people make poor financial decisions, we really need to understand *how* people make decisions. What influences people at the point of purchase? A growing body of evidence (and the recent subprime mortgage crisis in the United States, and the credit boom in Brazil) has demonstrated that people do not always make rational (mathematically optimal) financial decisions, even if they are equipped with the knowledge and tools to do so. So, if math does not always drive their decisions, what does?

Banks and retailers, over the years, have figured out how to get people to say *yes*. Through trial and error (and armed with hundreds of statisticians and marketers), they have come to understand how people make decisions. With this knowledge, they have designed products and marketing messages that have been incredibly successful in getting people to spend money they do not have to buy things they do not need. And banks in particular have excelled at convincing people they are making prudent financial decisions, when a little bit of research would reveal that they are being ripped off.

If people made mathematically optimal decisions, they would not borrow money with high-cost credit cards or expensive overdraft products. However:

- Americans have over $800 billion in credit card debt.[1] MagnifyMoney.com surveyed Americans nationally, and discovered that 75% of people with credit card debt pay an interest rate *higher* than 15%. Given the level of competition, data, and history in American consumer credit, it is shocking that rational people pay double-digit interest rates to purchase household goods.
- From 2002 to 2012, consumer credit increased dramatically in Brazil. Consumer credit, as a percentage of GDP, increased from 25% to 49%, according to the International Monetary Fund (IMF). And interest rates on the debt, particularly credit card debt, remain obscenely high. Even today, after increased competition in the credit card market, Itau (a leading bank) charged 5.99% interest *per month*. That is an effective interest rate above 70%!

In both the United States and Brazil, there are cheaper ways to borrow than by using credit cards. Why do people, in both countries, buy things they do not need, with money they do not have, at interest rates higher than those charged by the Medici in Renaissance Florence?

As a banker, Clements often had the suspicion that we had become experts in manipulating human psychology to our advantage, without actually realizing it. In banking, we would segment the market and put people into certain categories. For example, you could be an *impulsive indulger* or a *prudent planner*. We would then create products and marketing messages that appeal to your world outlook. The *impulsive indulger* would be told: *The money will be in your account in minutes!* The *prudent planner* would be sold insurance with the message: *Protect your future for the cost of just one Coca-Cola per day!*

We had managed, rather systematically, to categorize people based upon their personalities and sell them products according to their latent desires. People who live in the moment want easy access to credit (and will overpay for it). People who think about the future want protection against downside risk (and will overpay for it).

Nick Clements reached out to Professor Philip Zimbardo to see if together they could find a better explanation for why people make poor financial decisions.

The Time Paradox

Professor Philip Zimbardo has been working for over 40 years on time perspective, and he believes that it could hold the key to understanding how people make financial decisions. More important, time perspective could help diagnose why people make poor financial decisions, and could have the potential to help people make better decisions, in ways other than by studying algebra.

In *The Time Paradox* (2012), Philip Zimbardo and John Boyd reveal how our attitudes toward time impact how we make decisions: "Your attitudes towards time have a profound impact on your life and your world, yet you seldom recognize it. Moderate attitudes towards the past, the present and the future are indicative of health, while extreme attitudes are indicative of biases that lead predictably to unhealthy patterns of living." (Zimbardo and Boyd, 2015).

The book describes three different time orientations: past, present, and future.

The past: Your attitudes toward the past matter more than the events themselves, and how you remember the past can significantly impact the decisions you make today. You can have positive or negative views of the past. If you have a positive memory, then you will likely remember family rituals, personal successes, and pleasures. These warm feelings can provide happiness and a sense of security. If you have a negative view of the past, then your memories will be like a visit to a museum of torment, failure, and regret. In the ideal time perspective, you have a mostly positive attitude toward the past.

If you have excessively negative views of the past, then you are likely to have higher levels of depression, less happiness, and low self-esteem. However, even positive views can be taken to excess; when they are, you become stuck in the past. You will be less likely to take chances and risks, or to try living in new cities, meeting new people, or taking advantage of new job opportunities because you do not want to leave the comforting blanket of your past.

People with a strong past orientation base their decisions and actions on memories rather than current experience.

The future: The mantra of a future orientation is "Meet tomorrow's deadline, complete all the necessary work before tonight's play." Tomorrow's anticipated gains and losses fuel today's decisions and actions. Gratification delayed for a greater reward is always a better bet for the future-oriented, who will trade a bird in the hand for a flock in the future. A healthy future orientation means that you will eat well, exercise regularly, schedule preventive doctor's exams, and have a successful career. But when taken to excess, a future-oriented person is so busy working for tomorrow that he completely misses out on today. These people will regularly sacrifice family, friends, and sex for success. You can identify the person who is excessively future-oriented by that tired look and a long to-do list.

People with a strong future orientation will base their decisions on their expectations of future scenarios.

The present: For someone focused on the present, all that exists is the here and now. This person either enjoys the present (hedonist) or feels trapped in it (fatalist).

The hedonist can be a lot of fun. These people like to enjoy life and can be good friends, lovers, and party guests. But, when taken to an extreme, a hedonist is more likely to engage in risky sexual behavior, gamble, or use drugs than would future-oriented people.

The fatalist feels like life is dictated by influences beyond individual control. If you are a single mother, without a college degree and working for minimum wage, then it is difficult to think about anything other than today. Resignation and cynicism overwhelm a person's hopefulness and optimism.

For people with a strong present orientation, decisions are responses to what is happening in the immediate physical and social environment.

To understand your own time perspective, you can take the Zimbardo Time Perspective Inventory (ZTPI). Based upon your answers to the questions, you will be given a score that shows your orientation to the past, present, and future. And you will be able to compare your results to the ideal time perspective.

The Study

As we learned from the introduction to the OECD global study on financial literacy, there is a widely held belief that being financially literate is a critical skill, one that should help improve financial health. However, Nick Clements believes that literacy skills are not sufficient to help people avoid making poor decisions. He had spent too many years watching highly sophisticated people make poor decisions, while "unsophisticated" people were living financially healthy lives. And he had done many focus groups over the years examining people's financial regret. He would ask people to discuss their biggest financial mistake. He would then ask them how they made that decision that they regret. Rarely was he told that they did the math wrong. Instead, the regret would focus on making emotional, rather than rational, decisions.

The Time Paradox (2012) provides a potentially useful way to understand *how* people make decisions. Specifically, Professor Zimbardo has been demonstrating for more than 40 years that people make decisions based upon their time perspective:

- People with a strong *past* orientation base their decisions and actions on memories rather than current experience.
- People with a strong *future* orientation base their decisions on expectations of future scenarios. (Those expectations—like a belief that housing prices will never go down—can be wrong.)
- People with a strong *present* orientation make decisions that are responses to what is happening in their immediate physical and social environments.

So, MagnifyMoney.com, along with Professor Zimbardo, set out to: (a) create a better, more usable definition of *financial literacy*, and (b) focus on the *how and why* people make poor financial decisions. The study they conducted focused on people in six countries: Brazil, United States, China (Hong Kong), Italy (Sicily), United Kingdom, and Germany. A team of academics were recruited globally to help complete the study. In Brazil, the study was led by Umbelina Rego Leite.

There is a difference between financial literacy and financial health.

The ultimate goal of financial literacy is to ensure that people make good financial decisions and ultimately achieve *financial health*. However, there has been little proof that a high level of financial literacy actually leads to financial health.

Consider the following individuals (all based upon real-world people):

1. The richest woman living in the neighborhood is 70 years old. But no one would imagine how much money she has. As a child, her family went from having a lot of money to having almost no money. That memory never left her. She admits that she is not very good with math, and does not even want to think about the relationship between bond prices and interest rates. However, she knows that she should never spend more money than she makes. And she does not want to take big risks with her retirement money. Her son regularly tells her to spend more money, because she will only be leaving it to her hedonist children. This woman is a classic example of someone who would self-identify as having a low level of financial literacy. She would probably not do well on a test that asks you to calculate the impact of compounding interest on an investment portfolio. Yet she has a very high level of financial health because of her money in the bank and wise spending habits.
2. A highly educated individual is working for one of the world's most prestigious investment banks. He views himself as financially literate and could easily pass the most advanced tests on financial concepts. In fact, he completed advanced calculus classes in his university. However, he likes to enjoy life. A lot. When you go to a bar, he does not want to stand with everyone else. He wants a table, regardless of how much it costs. When he goes on vacation, he wants the suite. In fact, he may make a prudent decision when booking the vacation—but when he arrives at check-in and they offer him an upgrade for a hefty fee, he will take it. When his bonus arrives, he spends all of it (and a bit more) right away. He has admitted to maxing out his credit cards and using short-term borrowing (payday lenders) to get through the year until the bonus arrives. Even though he should be (and he advises other people on how to be), he is not financially healthy.

3. A woman makes minimum wage, and has a couple of children. She is virtually a single mother, because her husband has addiction issues and stopped producing an income. As a part of the working poor, she constantly feels trapped. Everything is a painful trade-off. Should she buy her prescription drug or pay for the rent? Between her long hours of physical work and even longer hours parenting, she is constantly exhausted. If a child is sick, then she misses a day at work—and the pay that comes along with it. To get her through those times, she ends up maxing out credit cards. But she does not spend much time thinking about other financial products that could save her money, because she is certain that the bank will just find a way of taking advantage of her. And because she feels so poor and stuck in her situation, she is certain that no bank will offer her a good product anyway. She has a low level of financial health.
4. A hardworking, successful couple worry about their children. They want to make sure that their children will be protected if anything happens to them. Both mother and father know that they should research life insurance, but they just do not have the time. Their careers and their to-do lists are just too long. But, whenever they buy a product or take out a loan and are offered insurance, they agree to the product, because they worry about their children. As a result, they are paying a lot of money for very little coverage. And, if something were to happen to one of the parents, it would be financially disastrous.

When you consider those profiles, who is the most *financially literate?* And who is the most *financially healthy?*

- The 70-year-old grandmother is not financially literate, but is very financially healthy.
- The investment banker is extremely literate, but very unhealthy.
- The single mother is neither financially literate nor healthy.
- The couple have a high level of financial literacy, but their career obsession means they don't spend enough time taking care of their financial matters. If the wage-earning spouse were to die, the family would face severe financial sickness.

We all know (or can imagine) people like the ones described here. And maybe you can identify with one of them. What is very clear from these descriptions is that just because you are financially literate, that does not mean you will be financially healthy. Most financial decisions are not made with spreadsheets. Your emotional and psychological approach to the world is much more important. So, if our goal is financial health, then just becoming financially literate is probably not enough.

To test our hypothesis, we created the MagnifyMoney Financial Health Test. It focuses on three key questions:

1. *Do you think you are financially literate?* What is your self-perception of literacy? We ask people to rate their own financial literacy on a scale of 1–7.
2. *Can you do the math?* We gave people a quiz on personal finance math. We asked them to calculate the impact of compounding interest on credit card debt. We gave them products to compare, with different fee and duration structures. We basically wanted to see if you could calculate the best deal.
3. *How financially healthy are you?* Financially healthy people would know the interest rate on their mortgages, they would understand the fee structure on their accounts, and they would be able to answer some basic trade-off questions. They are unlikely to have missed mortgage payments, experienced bankruptcy, or suffered from a foreclosure. People with poor financial health would have missed mortgage payments, paid late fees, and paid overdraft fees. They would often wake up in the morning, filled with regret at what they had spent the night before. And the most financially ill people would have filed for bankruptcy, experienced foreclosure, or used non-bank lenders (like payday loan companies) regularly.

We then gave the same people the Zimbardo Time Perspective Inventory, so as to understand their time perspective.

Financial disasters (foreclosure, bankruptcy) are often the result of poor financial decisions. And it is usually not just one big bad decision—it is the culmination of years of bad decisions. If you make $40,000 a year and spend $20 more per day than you should (you just

cannot keep yourself from buying that little treat), then within five years you will likely have credit card debt of over $30,000. So, why are you making all of those $20 mistakes? One of the leading causes of bankruptcy is divorce. But one of the leading causes of divorce is money. And poor financial behavior within the marriage can cause serious financial and psychological harm—not just to the husband and wife but also to the children.

We hypothesized that people's approach to time would have a much bigger impact upon their financial health than would their ability to do math. And, after surveying thousands of people, we found that their time perspective is a much better predictor of their financial health than was their ability to do math.

What does that mean in practical terms? It does not mean that we should stop learning algebra and focus exclusively on rebalancing our time perspective. But it does mean that we need to understand our approach to time and its implication in relation to how we make financial decisions. Working to rebalance your time perspective is a critical step on the path to financial health.

In addition, certain financial products are just bad ideas for certain people. For example, a credit card with a ridiculously high limit, an even higher interest rate, and a marketing message that makes you feel special was designed for someone like our investment banker just described (and all the other present hedonists out there). It is probably a bad idea for him to have that product because it will only lead him to spend more than he should.

A store credit card, sold at the check-out (with promise of a 5% discount) has been especially designed for our working mother, and is common in the United States. The working mother rarely takes time to think about her financial future and comparison-shop for products. Her decisions are based upon what is in front of her at the moment. When checking out at Target, she is offered 5% off if she takes the credit card offer. Store cards have some of the highest interest rates in the country. For instance, presently the Target store credit card starts at a 22.9% interest rate. But our mother will not comparison-shop; she will take the 5% off, use the card when the next emergency comes along, and end up paying an absurdly high interest rate. Her present fatalism is keeping her from

seeing that other options exist. (And there is a shortage of websites that guide someone like her in the right direction, which is why we started our new business.)

This is just a hint of our findings and why they are important. In the rest of this chapter, we will:

- Share the main findings of the survey.
- Provide a deep dive into the Brazil findings.
- Discuss the implications of the findings.

The Results: Time Perspective

As mentioned in the introduction, financial literacy training today is largely focused on teaching people about money. If you enroll in a financial literacy course, you will learn how to calculate compounding interest. You will understand the relationship between bond prices and interest rates. You will study the importance of diversification in an investment portfolio. Banks and banking associations even sponsor financial literacy training programs. It kind of like when the tobacco companies sponsor programs to help people quit smoking.

These financial education programs are designed with good intent. But, we assume, as a society, that being able to do the math means that we will make good financial decisions, and therefore we will exhibit financial health. So, in our survey, we tested people's ability to do the math, and then we looked at their financial health. There was no correlation between the two.

> *If someone has a high level of acumen (they are able to do the math), they are just as likely to be financially sick as they are likely to be financially healthy.*

We also asked people to rate their financial literacy. As mentioned, we asked them, on a scale of 1–7, to rate how financially literate they thought they were. And, surprisingly, *people who had a high self-perception of financial literacy were highly likely to demonstrate poor financial health*.

Apply this to the example of the investment banker. He would do very well on the math test. And he would rate himself highly on financial literacy. But his personal financial life is a mess because of the decisions he makes on a daily basis.

So, what *does* correlate with financial health? Time perspective does. A person's time perspective is a much better tool for predicting the likelihood of making good financial decisions. And that makes sense. Your financial health is the culmination of countless decisions you have made every day of the week. And the way you make your decisions is largely the result of your approach to time.

Perspectives on the Past

> What the person believed to be true was actually more important than the objective, factual truth, if such a thing actually exists. After all, people live their lives based upon their personal memories—based upon what they believe to be true—not upon an officially sanctioned version of events recorded in an objective history.
>
> —Zimbardo & Boyd (2015)

The way you remember the past can have a huge impact on the way you live today. And the way you remember the past is more important than what actually happened. People who have positive memories of the past are often happier, healthier, and more successful. And people who have negative views of the past are more likely to exhibit low self-esteem and be less happy.

As you can imagine, for the ZTPI, the ideal time perspective is a low score (2.1) on the past-negative rating and a high score (3.67) on the past-positive rating.

Scoring lower than 2.1 or more than 3.67 on the ZTPI means that you have an excessively negative or excessively positive view of the past. Either of these can be a bad thing for you personally. Interestingly, someone who is too focused on the past (either positive or negative) tends to be financially healthier. Why is that the case? And does that mean it is okay to be stuck in the past?

Past-Negative Orientation

Past-negative individuals show a high degree of financial health. That may surprise you at first. But past-negative people have (or think that they have) been burned in the past. Maybe they had money and it was stolen from them. Or they lost it in a bad investment. That sense of loss can stick with a person, and keep him or her from taking that next gamble. Remember the example of the 70-year-old grandmother. She knew what it was like to feel poor, so she made sure that she always saved her money and she took few risks. And think about the generation that lived through the Great Depression. Years later, they were famous for their frugality. Financial health means a lack of debt and the negative consequences that come from excessive indulgence or risk-taking. Past-negative people may not be the most fun at a party, but they tend to keep their bank accounts full. *I will never do that again* is the financial cry of the burned past-negative.

When presented with new opportunities, the past-negative person views decisions through the lens of the past. Unfortunately, relying on such a lens can make life horribly painful. Imagine someone who was abused as a child by his or her parents. As a result of that trauma, the individual finds it difficult to trust others. If as a child the persons you are supposed to trust the most are your parents, then why would a child that was abused ever let a stranger into his or her life? Similarly, if children are bullied at school, do not have many friends, or feel unliked, then they start to build an expectation that people will never like them or want to speak to them.

Horrible memories from the past can consume a person, and limit an individual's ability to enjoy the present or plan for the future. People with a highly negative view of the past tend to be skeptical of new ideas, new technologies, and new people. This can lead to a lonely existence, with limited intellectual or social stimulation.

There is one upside to being past-negative, however: you tend not to take excessive (or any) financial risk. In our survey, there was a strong correlation between being past-negative and having financial health. That means past-negative people rarely file bankruptcy, experience foreclo-

sures, or lose all their money on a bad investment. Why is that the case? And does that mean we should all start thinking negatively about our past in order to build our net worth?

Being financially sick usually is a result of either spending more money than you make or making big bad decisions, like buying a house you cannot afford or investing in a stock that has high potential to tank in value.

If you have a highly negative view of the past, you will tend to be skeptical of new ideas. Being risk adverse means that you will not make a lot of money. But, it also means that you will not lose everything.

Think about the following financial decisions that all of us have to make:

- Should I borrow money to buy a home?
- Should I invest my retirement funds in the stock market?
- Should I quit my job and take a bigger role with a different company?
- Should I take an overseas assignment with my company?
- Should I go on that vacation with my friends?
- Should I have a child, when it costs so much money?

If you have a negative view of the past, then you may think about these questions this way:

- It would be crazy to buy a home. Did you see what happened in 2008 with real estate prices?
- The stock market is always crashing. There was a big crash in 1920. And another one in 2008. Why on earth would I put my money into that roller coaster?
- I have been at my current job for 10 years. I have established a reputation and people know me. Why would I start all over? What if they don't like me? Or I don't fit in?
- Everything is different overseas. Why would I leave my family and friends to move to a strange country?
- Social Security is going to be bankrupt by the time I retire: I need to save now if I have any chance at all.

- Raising a child is so expensive. I do not have enough money saved to guarantee a good life for the child. What if I lose my job?

I think by now you get the idea. Whenever you make a big decision, there is a risk involved. The value of your house could go down. The value of your stock portfolio could decline. The new job could be a horrible mistake. You could lose your job, be forced to move, and your child would have a terrible adjustment. Risks are real, and they should always be weighed in a decision. But if there is no risk, then there is no reward. If you are not willing to take any risk, then the potential rewards in life are limited.

Big losses usually come from taking on too much risk and being unprepared for the downside. Think about the following examples:

- Buying a home with no down payment, an interest-only mortgage, and a monthly payment that is 40% of your monthly income (excluding bonuses) is incredibly risky. Putting 20% down, taking out a 30-year fixed-rate mortgage, and making sure your monthly payment is less than 33% of your salary is a much safer risk.
- If you invested all of your money in the stock market in 2007 and sold it all in 2009, then you would have lost a fortune. But if you make steady contributions to your retirement fund every month (called *dollar cost averaging*), diversify, keep your costs low, and don't double down when times are good or sell when there is a panic, then you will achieve solid returns.
- Running off to a new job on a whim, frequently, is not a great way to build a career. But taking advantage of opportunities at new companies when they come along can increase your long-term earning potential.

We can never eliminate risk completely. But taking calculated risks can help improve your financial life. And those risks can also help lead to personal fulfillment.

Being skeptical is a great asset in financial management. Harness that skepticism, and use it to avoid mania while simultaneously taking good financial risks.

Past-Positive Orientation

Having happy memories of the past is a wonderful thing. In fact, we should have a high score for past positive. However, a person can be too fixated on the past, even in a positive way.

With a positive view of the past, you are likely to enjoy family gatherings and family rituals. Past-positive people tend to have a stable sense of self, value cooperation (rather than manipulation for personal gain), and feel safe in their roots. When you are excessively past-positive, however, you risk becoming stuck in your memories of the past and are unable to make new memories.

Think about someone who thought she had found true love, but ended up getting dumped. You notice that she always wanted to eat at the same restaurant; it was the restaurant where she had her first date. Or (more likely in today's world), she spends all of her time looking at her pictures on Facebook, obsessively craving any reminder of the past, when everything was better. Or, she reads through old text messages that were filled with love and excitement.

There is a risk of becoming trapped in those good memories of the past. When that happens, a person loses the ability to enjoy the present. Just like having an excessively negative view of the past, an excessively positive view can trap a person in that past. Rather than seeking pleasure through excessive sex, drugs, or alcohol, they find enjoyment in activities that cost little and they take very few risks that could lead to financial ruin.

However, being moderately past-positive means you are unlikely to spend a lot of money or to take big financial gambles. As a result, you are likely to be financially healthy. Indeed, past-positive individuals exhibit strong financial health. Similar t past-negatives, these individuals take a "better safe than sorry" approach. Even if they do not understand complicated financial concepts, or do not have a lot of money, they tend to make sure they spend less than they have and save some for a rainy day.

Perspectives on the Present

A baby is a little present-oriented hedonist who wants nothing more than to get pleasure and avoid pain.

We begin our time on earth with an intense focus on the present. We push every limit or boundary. We are constantly trying to do what we want, when we want. For many of us, our parents established limits, taught us that actions have consequences, and helped us grow into responsible adults. However, not everyone grows up. Some orientation on the present is required to enjoy life, however too much concentration on the present can actually destroy lives.

The Zimbardo Time Perspective Inventory examines whether a person has too much *present hedonism* or too much *present fatalism*. We discuss each separately.

Present-Hedonism Orientation

People who score high for present hedonism seek out everything that causes pleasure, and they avoid anything that can cause pain. Another way to refer to a present hedonist is an "impulsive indulger."

Imagine the mind of a baby, but in the body of an adult. At best, the hedonist is the life of the party. There are always stories about their crazy antics; constantly seeking stimulation and excitement, they rarely think about the potential negative consequences. Of course, there are positive attributes to this behavior. Hedonists can be great party guests and even better lovers. Financially, the risks they take can sometimes pay off handsomely. However, the odds are against a hedonist for achieving a long-term run of luck. Hedonists are also more susceptible to addiction, likely to catch sexually transmitted diseases, suffer physical injury, and experience bankruptcy.

In our study, there was an inverse correlation between present hedonism and financial health. Or, to say it differently, present hedonists are highly likely to be financially sick.

When we completed the study, we found that the present hedonists often ended up broke, and they were certainly some of the most financially sick people we encountered. Indeed, buying a lot of alcohol and drugs while supporting a mistress can be very expensive. A few lucky bets at the race track or a few big bonuses may keep the party going, but eventually the game ends and the music stops playing. And it often ends badly.

Think about the questions we posed earlier:

- Should I borrow money to buy a home?
- Should I invest my retirement funds in the stock market?
- Should I quit my job and take a bigger role with a different company?
- Should I take an overseas assignment with my company?
- Should I go on that vacation with my friends?
- Should I have a child, when it costs so much money?

If a present-hedonist stops to think about these questions, the answers will almost undoubtedly be *yes* every time. But a present-hedonist often will not have the opportunity to think about them.

The example of the investment banker is the stereotyped present-hedonist. He loves life and the adrenaline produced by meeting new people and celebrating. Present-hedonists are highly susceptible to good marketing, therefore.

If you make the product *easy* for present-hedonists, then they will snatch it. Credit cards were practically invented for present-hedonists. Without thinking, they can buy something they cannot afford. There is no thought to the interest rate, the terms of the purchase, or the long-term implications of spending versus saving. After all, that just is not much fun.

Asking a present-hedonist to borrow money from a bank so as to make a purchase would not happen (too much work). But providing that present-hedonist with plastic and easing him or her into borrowing is a sure path to profitability for a bank.

You can even use your credit card for cash advances at a casino. You would be amazed at the amount of money that is made on those transactions.

Many emerging-market nations, during the boom years of the mid-2000s, became places of present-hedonism. And growth in consumer credit certainly helped fuel the hedonist gold rush. In the BRIC nations (Brazil, Russia, India, and China), consumers could purchase durable consumer goods for the first time—automobiles, refrigerators, washing machines, new homes, and overseas vacations all suddenly became

possible. And to help everyone feel like they were on board, banks were more than ready to finance those consumer purchases with high-cost consumer credit. Indeed, loose credit is the great lubricant for a present-hedonist, and many nations indulged.

Present-Fatalism Orientation

There is a strong correlation between present fatalism and financial sickness.

Present-fatalists feel that the future is inevitable and they are trapped in the present. Think of the single mother example given earlier. She is on the treadmill of life, trying to make it through each day and never getting ahead. Her decisions are based upon what she sees in front of her. Unfortunately, banks and retailers know that. Credit products sold at brick-and-mortar stores (banks call them *push* sales) almost always have higher interest rates and worse terms. They are built to take advantage of shoppers' lack of financial savvy. (The 5% discount is real. But if you end up borrowing money on that credit card, which the present-fatalist is likely to do, then you will significantly overpay for the privilege. There are cheaper credit options out there.) Other banks, like Wells Fargo, have strategically targeted existing customers; if they can get people to say *yes* without comparing, then they can charge more for their financial products and give back less. Present-fatalists are susceptible to this marketing approach.

Present-fatalists are also highly likely to gamble. That gambling can range from the extreme (Macau) to the mundane (the lottery).

In conversations with present-fatalists, we found many people who understood math. In fact, we even found an unemployed math teacher. She lost her job during the financial crisis of 2008, and it took her a year to find a new job. During that time, she ran up nearly $12,000 in credit card debt. The interest rate on that debt was a staggering 21%. Given her personal responsibility and employment level, as well as her credit score, she would have been enable her to find a much better deal than 21%. However, as a present-fatalist, she did not believe she had any other options; she felt trapped in her present situation. And feeling

trapped meant that she would not take action. Lack of action is the dream situation for a bank charging 21%. They hope you stay responsible and stay put. Unfortunately, present-fatalists are highly likely to do exactly this. The result is that present-fatalists stay in expensive financial relationships (like payday loans, high-interest credit cards, title loans, and other expensive short-term forms of borrowing) that financially ruin them over time.

Most financial institutions do not reward loyalty. In fact, they punish it. A bank or financial services company will offer a great sign-on bonus to recruit a customer. But the longer that customer stays with them, the more expensive that relationship usually becomes. Present-fatalists are particularly susceptible to the loyalty trap.

Perspectives on the Future

A future-oriented person will always trade a bird in the hand for a flock in the future.

People with a strong future orientation base their decisions on their expectations of future scenarios. They rate themselves as financially literate. They think about the future and they plan; therefore they believe they are financially literate. However, having a future orientation does not mean that a person exhibits good financial health. There are other factors at play.

The study data showed us clearly that future-oriented people *think* they are financially literate; however, they are just as likely to be financially healthy as they are to be financially sick.

If you have a strong future orientation, you may be so focused on your career that you forget to take care of your personal life. That means your relationships slide. It also means that your personal finances slide. You will work until midnight to make sure your company grows its earnings, but you will forget to pay the utility bill. We all know driven career individuals who never file their expenses with the company's accounting department on time, they do not file their income taxes on time, and they let their other personal finances slip as well.

Remember the example of the husband and wife who are so dedicated to their careers? They are so dedicated that they do not have time to buy life insurance, even though they know that life insurance is necessary to guarantee the future for their family. Indeed, there are countless stories of families who experience financial ruin because those high-powered executives died early in their careers, leaving no or insufficient life insurance.

Conversely, people with a future orientation are also most vulnerable to offers of shady insurance or investment products, particularly if they lack basic financial acumen. We mentioned that an understanding the math is not sufficient for achieving financial health. But if you are a future-oriented individual, then it is very important to understand the math. Whereas a past-fatalist avoids financial ruin by keeping all of the money in a bank account, a future-oriented individual could likely invest in something the person does not understand or purchases insurance that is not needed.

If future-oriented people decide they are going to spend time on their personal finances, then it is critical they find the right tools and obtain the best advice. Future-oriented folks are always short on time, so they can be taken advantage of by those giving poor financial advice or offering unnecessarily complicated financial products. Or by crooks.

Bernard Madoff is perhaps one of the most infamous financial characters in modern history. He had an interesting sales pitch: he promised his investors a steady return (10%) every year. This is not a get-rich-quick scheme, but a steady plan over time. It was the perfect pitch for the future-oriented individual. And Madoff invited only the most "savvy" of investors. If you are future-oriented and care about your career, then you also become conscious of your performance relative to your peers. And if you see a smart and successful colleague investing in an exclusive fund, then *you want in*. And many future-oriented, highly intelligent people invested with Madoff. And he stole from all of them.

We have mentioned repeatedly that traditional financial literacy skills are not sufficient for achieving financial health. However, for people who score high on a future time perspective, this financial knowledge becomes critical. Future-oriented people are more likely to buy insurance, make investments, or purchase homes because those are traditional measures of success. Whereas a past-negative person will likely avoid financial ruin by

avoiding all financial products, a future-oriented person is going to take risks. The areas where future-oriented people need to make sure they do their homework are as follows:

- When purchasing insurance, you should understand how much insurance you need and comparison-shop for the best premiums, while also taking into account the solvency of the issuing institutions.
- When investing, you should avoid chasing returns and following crowds of "smart" people. You need to become grounded in historic data (namely, the probability of beating the market) and know the true cost of investing.
- When making purchase decisions, you should avoid placing too much value on symbols of success. In other words, membership in certain clubs and ownership of certain automobiles can be seen as proof of your success, but these symbols can become prohibitively expensive.

In Conclusion

In our six-nation study involving more than 3000 participants, we were able to show that financial literacy, as traditionally defined, is not sufficient for financial health. Being financially healthy requires making good financial decisions every day. And the way an individual makes decisions is influenced by his or her time perspective. There is a strong correlation between a person's time perspective and his or her financial health.

- People with a highly negative or highly positive view of the past are likely to be financially healthy. Financial ruin is usually the result of excessive risk-taking. Past-negative individuals are some of the most risk-averse people.
- People who are highly present-hedonistic or present-fatalist have a high likelihood of being financially sick. Present-hedonists are likely to buy, spend, invest, and indulge without thinking of the consequences. Present-fatalists feel trapped, and are highly unlikely to compare, switch, or save on financial products.

- Future-oriented people are so busy with their career that they ignore their own financial health, which can have disastrous consequences. They are also likely to invest in the stock market, purchase real estate, and buy insurance because they associate these as important signs of their success. These people need financial literacy skills the most, as they are most at risk of purchasing mere status symbols.

The Brazil Results

Brazil's results in our study do not look good when compared to the other five countries in the sample. Indeed, Brazil displayed the lowest financial health. Table 2.1 shows the percentage of people who were considered financially healthy in each country studied.

Brazil's low level of financial health can be explained as:

- A high level of present-hedonist individuals.
- A low percentage of past-positive individuals.

As mentioned earlier in this chapter, present-hedonists are pleasure seekers. They want anything so long as they can get it now. During the last 15 years, entire nations have become present-hedonistic, as they have raced to enjoy all the trappings of a middle-class life.

Brazil scored high on present-hedonism, with 22.4% of the population demonstrating a very high level of this characteristic. The U.K., which is the most financially healthy country in the sample, showed only 13.9% of its population as scoring high on present-hedonism.

Table 2.1 People's financial health by country

UK	51.90%
Germany	40.90%
US	33.20%
Italy	18.10%
Hong Kong	17.00%
Brazil	14.10%

As mentioned, past-positive individuals tend to be financially healthy. With an almost excessively positive view of their past, these individuals have a natural risk aversion. A country with a high percentage of past-positive people is the U.K., with 72.7% of the population. If you compare that figure to that of Brazil, where only 41.2% of the people scored high on past-positive qualities, you see that without the *anchor* of positive perceptions of the past, present-hedonism can flourish.

The differing recent political histories of the U.K. and Brazil helps explain these dramatically divergent time perspectives and the relative financial health of the two nations. Brazil has had a turbulent modern history, with military rule that has only recently transitioned to democracy. During the 2000s, Brazil experienced tremendous growth in consumer spending and credit. The population enjoyed the material plenty of the present, in sharp contrast to the country's past.

In an environment where people want to celebrate the present and catch up by purchasing household products on credit, it is easy for banks to take advantage of the situation by supplying consumer credit at very high interest rates. During this period, Brazilians bought, at a rapid pace, all the rewards of a middle-class life. Property values doubled in just five years, as readily available mortgages fueled those purchases. By 2011, the automobile industry had experienced record years of sales for five years in a row.

During an economic boom, people feel that tomorrow will be even better than today. In fact, the future orientation of Brazilians in our sample (4.2%) was at the same level as those in the U.K. sample (4.2%).

Unfortunately, the situation could not continue forever, and there are limits to credit expansion. Brazil is already starting to see the beginning of that effect.

Credit-fueled consumer binges unfortunately take along with them the financially literate and the less financially literate. That desire to celebrate the present, coupled with a belief in the future, can seduce even the best mathematician. It is even easier for banks to take advantage of future-oriented individuals, who do not grasp the true power of compounding interest or the likelihood of stock markets and housing markets having limited price growth. At the end of a credit boom, the pain

of the subsequent credit crunch teaches much better lessons than math books.

If the credit boom ends, and is replaced with a credit crunch, along with significant financial difficulty for the overleveraged, then the next ten years could create an entire generation of past-negatives—people who will be far less likely to buy that refrigerator today, at a 70% interest rate. They will know what it feels like to receive collection calls, to be broke and on the receiving end of legal collection activities from the banks, so they will be more likely to save money and avoid assuming credit.

We see that situation already in the United States, where millennials, who started their careers during the Great Recession of 2008, are highly past-negative. As a result, they are buying fewer automobiles and houses than previous generations. They are also saving more. They have seen the foreclosures and bankruptcies; they have experienced the unemployment. That high past-negative weighting leads to a risk aversion that makes them difficult prospects for traditional credit marketing.

The U.K. has an interesting combination of backward looking risk aversion and future-oriented progress. Anyone who has visited or lived in London will recognize that distinct culture when riding from Buckingham Palace to the City of London.

Implications

During the last 15 years, the consumer financial sector has expanded dramatically. The availability of highly complicated products, like adjustable-rate mortgages, term life insurance, revolving credit lines, annuities, and structured investment products has spread rapidly throughout the world. Despite all the recent press, you can still use a Citibank Visa card to purchase a McDonald's Big Mac in Moscow. Fifteen years ago that would have been unthinkable.

However, as a result of this unprecedented growth, millions of people all over the world have become targets of marketing by the financial organizations. And they have responded to that marketing by using these financial products to buy consumer goods. This dramatic growth in credit-financed consumer purchasing has occurred all over the world,

especially in Brazil, where total consumer debt, as a percentage of the country's GDP, has doubled in ten years.

But are people prepared to use these credit products? Do they really understand the power (or tyranny) of compounding interest? Do they grasp how an adjustable-rate mortgage in a foreign currency works? Getting the math wrong could be a disaster, leading to personal bankruptcy. Or, even without bankruptcy, the stress and emotional turmoil of making poor financial decisions can ruin lives and destroy marriages.

The overwhelming response by the global policymaking elite has been to focus on improving the financial literacy skills of the people. By improving the literacy curriculum, we can make sure that people understand those financial products and their true cost. When they have this knowledge, they can then make trade-offs and determine what decisions make sense.

We believe that financial literacy training is important. In fact, it is critical. If someone wants to buy a home or apartment, then that person needs to understand the differences between different types of financing products. However, the results of this study show that financial literacy training is not sufficient. Even after people have gained the mathematical skills, they still have to make a decision. And the way they make that decision is influenced by their time perspective.

The people most at risk of making poor financial decisions are those excessively present-hedonistic or present-fatalistic. So, how can we help these individuals? First, we can only help present-hedonists and present-fatalists if they know who they are. Everyone has a time perspective, and it impacts the decisions we make. Yet, very few of us know our time perspective. So, we need to make it easy for people to understand their time perspective.

And, then, once people know their time perspective, they also know where they are most vulnerable to making poor financial decisions. And they can make good product choices based upon their time perspective.

For example, a present-hedonist would be encouraged as follows:

- To use only cash for purchases, instead of credit cards. Credit cards were designed with a present-hedonist in mind; it is easy to spend

more than you want, and end up borrowing money at a rate you can't afford.
- To set up an automatic savings program. Have money taken out of your account automatically so that savings just happen. Make sure you cannot touch that savings until you really need it.
- Find a passion in your life that gives you that adrenaline rush without costing you money. For example, try running or surfing.

On the other hand, a present-fatalist would be encouraged as follows:

- Take stock of your financial relationships. List your banks, creditors, and lenders from the oldest to the newest.
- Starting with the oldest, look for a better deal. Make the time to compare, switch, and save money. You are not stuck; there are alternatives out there.

At MagnifyMoney.com, we have started work on a consumer-friendly tool that targets people in the United States. People can take the Zimbardo Time Perspective Inventory and see their results. And then we provide personal financial guidance that helps them understand how to make better financial decisions based on their time perspective.

At Brooklyn College, in New York, incoming freshman will be taught a financial literacy course. It will have two components: First, all students will be required to take the financial literacy quiz at http://magnifymoney.com/timeperspective/. Then, they will be taught both the traditional literacy skills (the math) and how their time perspective impacts their decision making.

The ultimate goal is for people to live financially healthy lives. A combination of traditional literacy training and time perspective introspection is critical for achieving that objective. And here's the best thing about the time perspective initiative: it is fun for people to do. People love taking tests to uncover their personality and see how they can improve. They do not tend to like math tests. With this platform, we make it easy for people to learn about themselves and to protect themselves from making poor financial decisions.

Going forward, MagnifyMoney will be working with Professor Zimbardo to continue building tools for consumers and students. We also plan to continue the research in other countries and at-risk population segments. Money, and the decisions we make about money, impact our entire lives. To help people make better decisions requires such a holistic approach. By coupling the technical financial knowledge with the time perspective, we have a tool that can have a significant impact on people's future financial health. It will just require a willingness to expand traditional curricula and recognize that math, while important, is not sufficient for such a financial future.

Notes

1. http://www.federalreserve.gov/releases/g19/current/

Suggested Readings

Amyx, D., & Mowen, J. C. (1995). Advancing versus delaying payments and consumer time orientation: A personal selling experiment. *Psychology and Marketing*, *12*(4), 243–264.

Anong, S. T., & Fisher, P. J. (2013). Future orientation and saving for medium-term expenses. *Family and Consumer Sciences Research Journal*, *41*(4), 393–412.

Boyd, J., & Zimbardo, P. (2012). *The time paradox: Using the new psychology of time to your advantage*. Random House.

Earl, J. K., Bednall, T. C., & Muratore, A. M. (2015). A matter of time: Why some people plan for retirement and others do not. *Work, Aging and Retirement*, 1–9. doi:https://doi.org/10.1093/worker/wau005.

Epstein, L. H., Jankowiak, N., Lin, H., Paluch, R., Koffarnus, M. N., & Bickel, W. K. (2014). No food for thought: Moderating effects of delay discounting and future time perspective on the relation between income and food insecurity. *The American Journal of Clinical Nutrition*, *100*(3), 884–890.

Hershey, D. A., & Mowen, J. C. (2000). Psychological determinants of financial preparedness for retirement. *The Gerontologist*, *40*(6), 687–697.

Howlett, E., Kees, J., & Kemp, E. (2008). The role of self-regulation, future orientation, and financial knowledge in long-term financial decisions. *Journal of Consumer Affairs*, *42*(2), 223–242.

Jacobs-Lawson, J. M., & Hershey, D. A. (2005). Influence of future time perspective, financial knowledge, and financial risk tolerance on retirement saving behaviors. *Financial Services Review*, *14*(4), 331.

Joireman, J., Kees, J., & Sprott, D. (2010). Concern with immediate consequences magnifies the impact of compulsive buying tendencies on college students' credit card debt. *Journal of Consumer Affairs*, *44*(1), 155–178.

Joireman, J., Sprott, D. E., & Spangenberg, E. R. (2005). Fiscal responsibility and the consideration of future consequences. *Personality and Individual Differences*, *39*(6), 1159–1168.

Karande, K., & Merchant, A. (2012). The impact of time and planning orientation on an individual's recreational shopper identity and shopping behavior. *Journal of Marketing Theory and Practice*, *20*(1), 59–72.

Klicperová-Baker, M., Košťál, J., & Vinopal, J. (2015). Time perspective in consumer behavior. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 353–369). Cham, Switzerland: Springer International Publishing.

Misuraca, R., Teuscher, U., & Carmeci, F. A. (2015). Who are maximizers? Future oriented and highly numerate individuals. *International Journal of Psychology*, *51*(4), 307–311.

OECD. (2014). http://www.oecd.org/pisa/keyfindings/PISA-2012-results-volume-vi.pdf

Petkoska, J., & Earl, J. K. (2009). Understanding the influence of demographic and psychological variables on retirement planning. *Psychology and Aging*, *24*(1), 245.

Rabinovich, A., Morton, T., & Postmes, T. (2010). Time perspective and attitude-behaviour consistency in future-oriented behaviours. *British Journal of Social Psychology*, *49*(1), 69–89.

Ryack, K. N., & Sheikh, A. (2016). The relationship between time perspective and financial risk tolerance in young adults. *Financial Services Review*, *25*(2).

Spencer, M., Chambers, V., & Benibo, B. (2014). Scaredy cats to cool cats: How time perspective matters in attitude and intent toward financial decisions. *Journal of Economics and Economic Education Research*, *15*(3), 197.

Wu, C. Y., & He, G. B. (2012). The effects of time perspective and salience of possible monetary losses on intertemporal choice. *Social Behavior and Personality: An International Journal*, *40*(10), 1645–1653.

Yang, T. Y., & Devaney, S. A. (2011). Intrinsic rewards of work, future time perspective, the economy in the future and retirement planning. *Journal of Consumer Affairs*, *45*(3), 419–444.

Zimbardo, P. G., & Boyd, J. N. (2015). Putting time in perspective: A valid, reliable individual-differences metric. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 17–55). Cham, Switzerland: Springer International Publishing.

Philip Zimbardo is professor emeritus at Stanford University and creator of The Stanford Prison Experiment. Dr. Zimbardo has spent over 50 years teaching and studying psychology. He currently lectures worldwide and is actively working to promote his nonprofit project, The Heroic Imagination Project, www.heroicimagination.org. His current research looks at the psychology of heroism. He asks: What pushes some people to become perpetrators of evil, while others act heroically on behalf of those in need? Prior to his heroism work, he served as President of the American Psychological Association, and he designed and narrated the award-winning 26-part PBS series *Discovering Psychology*. He has published more than 50 books and 400 professional and popular articles and essays, among which are *Shyness, The Lucifer Effect, The Time Cure*, *The Time Paradox*, and most recently, *Man, Interrupted*.

Nick Clements is the co-founder of MagnifyMoney, a personal finance website that focuses on improving financial literacy and financial health. Prior to starting MagnifyMoney, Nick spent most of his career in consumer banking. Most recently, he was a Managing Director at Barclays, responsible for the U.K. consumer credit card business. Nick graduated with honors from Stanford University. He received a degree in history and economics, with a minor in Italian. Nick lives in New York City with his wife and two rescue dogs.

Umbelina Rego Leite is a psychologist. She has a Ph.D. from the University of Brasília, Brazil, with emphasis on the elaboration and validation of psychological measures. She is currently an Adjunct Professor at the Federal University of Pernambuco, working in undergraduate education with the disciplines related to psychological evaluation. Her research interests are mainly on time perspective and psychological evaluation.

3

A New Measure of the Expanded Present Time Perspective

Zara M. Zimbardo, Rose McDermott, and Philip G. Zimbardo

Time perspective (TP) can be defined as the partitioning of our personal, ongoing experiences into time frames, time zones, or temporal categories. This process occurs automatically and nonconsciously in most people beginning in childhood. Typically, those experiences form a tripartite assembly of memories of the past and anticipations of the future, combined with living in the present. Zimbardo and Boyd (1999, 2008) have refined these broad categories into subgroups that constitute statistically independent factors with powerful predictive utility over many behavioral domains. The Zimbardo Time Perspective Inventory (ZTPI) consists of five factors: Past-Negative; Past-Positive; Present-Hedonistic;

Z.M. Zimbardo (✉)
California Institute of Integral Studies, San Francisco, CA, USA

R. McDermott
Brown University, Providence, RI, USA

P.G. Zimbardo
Stanford University, Stanford, CA, USA

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_3

Present-Fatalistic, and Future. Recently, that 56-item scale has been reduced to 36 items that demonstrate "universal" applicability in their assessed global utility across 24 nations and 5 continents (Sircova et al., 2014).

However, there is an important dimension of "present time perspective" that is currently missing from the ZTPI. This missing element has been noted in earlier writing about time perspective: "This third attitude toward the present is very different from either present fatalism or present hedonism. Holism is the absolute present, a concept central to Buddhism and meditation, and is very different than the Western linear view of time….The holistic present reflects neither the pleasure-seeking of present hedonism nor the cynicism and resignation of present fatalism." As the authors go on to acknowledge, "The holistic present is a healthy perspective to have" (Zimbardo & Boyd, 2008: 111). This important concept deserves to be fully examined empirically, and so our current research was designed to do just that.

The Zimbardo Time Perspective Inventory (ZTPI)

The ZTPI was first developed in 1999 (Zimbardo & Boyd, 1999), and it has been widely used in varied contexts by many researchers to reveal fascinating aspects of human nature that are temporally bonded. A recently published encyclopedia of time perspective theory, research, and applications highlights the contributions of more than a hundred current researchers, as well as numerous clinical and practical applications taking place across many nations (Stolarski, Fieulaine, & van Beek, 2015).

There is a large body of empirical evidence on the ZTPI, confirming that TP dimensions predict numerous fundamental life outcomes. Among them are: health (see Hall, Fong, & Sansone, 2015), happiness (see Cunningham, Zhang, & Howell, 2015), financial decisions (see Klicperova-Baker, Kost'al, & Vinopal, 2015), and pro-environmental behaviors (see Milfont & Demarque, 2015), among many others. The strength of these relationships, found in diverse countries and cultures, is typically quite impressive. For instance, TP dimensions are often better

predictors of well-being than are any of the Big Five personality traits (Zhang & Howell, 2011). It should also be noted that the correlations obtained between TP factors and a range of measures and behaviors are exceptionally robust. Compared with traditional personality scale intercorrelations in the .20 or .30 range, ZTPI correlations are often in the .60 or even .70 level (Zimbardo & Boyd, 1999).

Numerous investigators of time perspective highlight a construct labeled Balanced Time Perspective (BTP) (see Stolarski, Wiberg, & Osin, 2015). BTP, understood as the optimal mix of time perspective, allows an individual to optimize his or her functioning through flexible switching between adaptive views of each time zone. This remains a core tenet of TP theory (Boniwell & Zimbardo, 2003): temporal balance is a mix of high Past-Positive, moderately high Future, and moderate Present-Hedonism (selected as self-reward for completing tasks or attaining goals), while Past-Negative and Present-Fatalism are low.

Finally, some investigators consider TP to be a fundamental aspect of individual differences. In their review of research on time perspective and personality, Kairys and Liniauskaite (2015: 110) present the strong conclusion: "Summarizing, there are sufficient research findings speaking in favour of time perspective being an independent construct that has additional prognostic value even after controlling for personality traits. It is also evident that time perspective has likeliness to personality traits—it is stable, broad and therefore can be considered as a relatively stable dispositional characteristic."

Development of a ZTPI Subscale to Assess the Expanded Present

As noted earlier, the ZTPI contains two subscales for a present time perspective: Present-Hedonistic and Present-Fatalistic. It is obvious that both scales construct the universe of time with the same temporal focus—that being what goes on in the here and now—so they clearly have that shared focus with an expanded present time perspective. However, they also diverge in some important ways from the concept of an expanded present.

One is the method of obtaining pleasure. With the hedonistic present, unlike the expanded present, reckless and risky acts are methods of inquiring about and acting on the world. In the former, life is best lived on the edge, whereas in the latter, such behavior is not needed in order to derive value. Studied carefully and experienced fully, even the mundane within an expanded present moment becomes a point of departure for enjoyment. Hedonism is appropriate as a descriptor for the hedonistic present because what is important over and above all is enjoyment and excitement, seeking sensation and novelty. Present hedonism may be "living *for* the moment," though that moment may be ethereal and superficial, driving a need for more stimulation. The expanded present construct points to the relaxed depth of experience that intentional slowness may foster, of "living *in* the moment." Qualities of a sense of aliveness stemming from profound, sustained engagement with internal experiences and external surroundings may include being present with, or deliberately turning toward, grief and other powerful emotions that the hedonist may run away from (Kabat-Zinn, 2005; Levine, 1998).

In the fatalistic present, the emphasis is less on the type of present-oriented self-indulgence that characterizes present hedonism, but rather is focused on a surrender to fate, where it does not really matter what you do since it won't make a difference in the outcome anyway. If some of the focus of the expanded present surrounds the notion of the transience of life, given that a key insight from Buddhist psychology is of the ways in which awareness of life's finiteness renders the present moment more precious, then one could imagine some areas of empirical overlap between the two concepts. However, each taps into contrastive underlying perspectives toward mortality: in fatalism, the response is passive and often negative, while in expansion, a sense of wonder and active engagement infuse the awareness of the value of the present moment.

The Present-Fatalistic TP factor is generally negative in its focus on resignation and its acceptance of current misfortunes. The Present-Hedonistic TP factor is usually more positive, especially if it represents a chosen framing for self-rewards after goal attainment. But it can also be negative if the sensation-seeking leads to high-risk activities with negative outcomes. The concept of an expanded present is usually framed in terms

of a positive experience, so we would expect that it would be more highly related to present hedonism than to present fatalism.

Neither the present hedonism nor the present fatalism factors involve living deeply in the present moment, being in the now, experiencing fully and openly one's immediately perceived sensations, the external environment, and one's mental state. And yet it is precisely this present-oriented temporal state that has proved central to forms of meditation and contemplation in both Eastern and Western traditions, in which experiencing the reality of the present dominates the more remote significance of one's past and future (Brown & Ryan, 2003; Davidson et al., 2003; Kabat-Zinn, 1994, 2005; Langer, 2014).

Literature Review of Relevant Constructs

Our goal was to develop and test a new subscale of the ZTPI, which would capture this notion of an expanded present, i.e., a focus on living in the present—not for pleasure, resignation, or avoidance of future planning but as a unique holistic integration of mental, emotional, physical, and spiritual experience. The first step in the development of this subscale was a review of what we believed was the relevant literature on mindfulness, openness, awe, and flow states, all of which illuminate facets of an expanded present time perspective. Additionally, we reviewed work in somatic psychology that focuses on mind–body integration and the value of staying grounded in the present moment. The general themes that emerged from our review are the following:

- Time waiting is not experienced as "lost" or wasted, which triggers *impatience*; rather, time spent waiting can be an *opportunity* to pay attention to oneself, others, and the surrounding situation (Hahn, 1987, 2005; Johnson, 1995; Kornfield, 1993; Levine, 1998).
- A deepening of the moment invites greater *appreciation* of nature, beauty, and sensual information. It inspires awareness of the *richness* of the present moment (Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Hahn, 1987, 2005; Johnson, 1995; Keltner & Haidt, 2003; Kornfield, 1993).

- Time spent feeling the nuances of one's sensory information is time *well spent*. Perception of somatic cues and nonverbal communication may be heightened. *Sensitivity* to what is occurring around an individual and inside of oneself enhances the individual's capacity to pay sustained attention to both internal and external worlds (Davidson et al., 2003; Johnson, 1995; Kabat-Zinn, 1994, 2005; Kornfield, 1993).
- An expansive sense of time, a richness or *fullness*, can be experienced in mundane and spectacular ways. It can engender a sense of both *gratitude* and *generosity*, with time to give, to share, and to volunteer, as opposed to a perception of chronic scarcity or contracted withholding because there is never enough time for oneself. This can promote a sense of *enough-ness*, or the relative satisfaction that comes from the expanded perception of time availability, with time enough for everything—or at least more of it for the things we care about most (De Graaf, 2003; Keltner & Haidt, 2003; Levine, 1998; Menzies, 2005).
- Experiences of *awe* can be part of an expanded present temporal focus, from simple everyday moments to larger experiences between self and world. Awe is defined as the emotion that arises when one encounters something so strikingly vast that it provokes a need to update one's mental schemas (Keltner & Haidt, 2003). Rudd, Vohs, and Aaker (2012) reported that people who experienced awe felt like they had more time, were more likely to volunteer to help others, preferred personal experiences over material products, and experienced more life satisfaction. They found that these changes resulted from the ability of awe to alter a person's sense of time, bringing the individual into the present moment (Keltner & Haidt, 2003; Mikulak, 2015; Rudd et al., 2012).
- With widened perceptions, the expanded present can allow for interconnection with others, with more depth of social interaction and meaningful time spent together. While "time partying with friends" is a high value for a present hedonist dominant perspective, the expanded present also values unrushed time to connect with others, which includes and goes beyond celebratory gatherings. Felt connection to others enhances the conditions for a *compassionate* outlook and emotional intelligence (Hahn 1987, 2005; Kabat-Zinn, 1994, 2005; Levine, 1998).

- Creative expression, inspiration, and improvisation happen in the moment, in what is termed a *flow state* (Csikszentmihalyi, 1998). A ticking clock may be both a hindrance and irrelevant to the flow of inspiration when one is within such a state. Those people who experience expanded time presence are more likely to get into flow states and, reciprocally, being in such a state promotes an expansive presence.

To summarize, the core themes associated with an expanded present include an integral depth of experience, slowed-down time pace, expansive perspectives and emotions, and a sense of "time fullness" or nourishment, all of which result in an elongated time perception of living in the present moment. These themes provide the basic language for the items in our new subscale (see Study 1). We have labeled this new dimension of TP as the *expanded present*, or in keeping with the ZTPI notations, *Present-Expanded*. We renamed this from the earlier, similar conception of "holistic present" in order to remain consistent with the constructions of the other two, previously established, present time orientations.

Current Research

Our empirical research on this new ZTPI Present-Expanded subscale consisted of two separate studies. In Study 1, we developed the items for the subscale, and then assessed whether that set of items met the standards of internal consistency and reliability. We also tested how this third present subscale was related to the two other present subscales (Present-Hedonistic and Present-Fatalistic).

In Study 2, we conducted a replication of Study 1 with a separate sample population. In addition, we assessed whether the Present-Expanded subscale showed a related, but distinct, pattern from scales of related concepts, including mindfulness, openness, life satisfaction, and emotional intelligence.

Our three main hypotheses were that this new Present-Expanded measure would: (1) meet the statistical standards for a valid and reliable subscale; (2) be more strongly related to the Present-Hedonistic subscale than to the Present-Fatalistic subscale of the Zimbardo Time Perspective

Inventory (ZTPI); and (3) be related, but distinct, from measures of relevant constructs that incorporate an element of present-oriented time within them.

Study 1

Scale Development

The first part of Study 1 involved the generation of items for the Present-Expanded subscale, based on the core themes that emerged from our literature review. The phrasing of the items was often derived from the commonly used language in the source materials. For example, we developed items about experiencing nature (e.g., "I really enjoy spending time appreciating the beauty of nature"), slowing down to appreciate the present moment (e.g., "I think it is important to take time to stop and 'smell the roses' in some way most days"), and experiencing a flow state (e.g., "When I am engaged in creative activities, I enter a sense of a flow state where I can easily lose track of time"). After elimination of redundant items, the scale comprised ten positively worded items and two negatively worded ones (the latter were developed to reduce response bias).

Method

The initial 12-item scale was administered, along with the standard 56-item ZTPI, to 168 undergraduates at a large northeastern university. Students took this survey in an online Qualtrics platform in return for course credit and a chance to win two $100 Amazon gift certificates. The class population ranged in age between 18 and 22 and was approximately half female, half white, 40% Asian American, 5% Hispanic, and 5% African American. All respondents provided informed consent, and all participation was voluntary. In addition, after students completed the survey, the instructor provided a course lecture demonstration using their data to explain some of the processes behind the development and administration of survey design; this was directly relevant to the subject being studied in class at the time.

Results

A principal components analysis of the initial set of items indicated that the first principal component accounted for almost 23% of the variance. However, the factor loading for one of the reverse-coded items was less than .05 in absolute value, meaning that it was uncorrelated with the first principal component. After dropping this item from the principal components analysis, we found that the first component captured close to 25% of the variation in these items. The internal consistency of these 11 items was .67, which is close to a commonly accepted standard for establishing the internal consistency of a scale. We then looked at the correlation between this set of 11 items and the two other ZTPI present-oriented scales. The Present-Expanded set of items was significantly correlated with that for the Present-Hedonistic subscale ($r = .31$, $p < .001$), but was not related with the Present-Fatalistic subscale ($r = .08$, ns). This differential correlational pattern is noteworthy when compared with the correlation between Present-Hedonistic and Present-Fatalistic ($r = .35$, $p < .001$).

Study 2

Study 2 had two goals. The first was a replication of the statistical analyses carried out in Study 1, in order to establish the viability of a set of items for a Present-Expanded subscale. The second was a comparison of this new subscale with scores on several other measures of related, present-oriented constructs. For the latter, the assumption was that a Present-Expanded subscale would be positively correlated with these other constructs, but not in a major way. Although these other scales may incorporate an element of present time orientation within them, they do not concentrate specifically on the experience of time itself.

The primary construct that we expected to be related to Present-Expanded was that of mindfulness. First, mindfulness has as its focus the present moment: regardless of whether a thought emerges about the past or the future, people who practice mindfulness are taught to do their best to process experiences, emotions, and thoughts by observing them arise in the present rather than chasing them backwards and forwards in time.

Second, mindfulness trades the kind of self-indulgence that can often be experienced in present hedonism for opportunities to cultivate self-awareness. For that reason, pleasure in mindfulness is more akin to that in the expanded present than it is for the hedonistic present. For our study, we chose the FMI Mindfulness scale (Walach, Buchheld, Buttenmüller, Kleinknecht, & Schmidt, 2006).

Another relevant construct, which contains similarities to mindfulness, is one of the Big Five dimensions: openness to experience. Openness is an ally of mindfulness. For individuals to learn about their mind, they cannot ignore the disagreeable parts that cause discomfort or pain. They must be open to all emotions, judgments, and cognitions that pass through their consciousness, not simply those that make them feel better. The expanded present might be understood as a nuanced exploration of the constituents of the world, which may produce a healthier and more positive relationship with what is occurring around and within us. Consider this in contrast to the hedonistic present, in which individuals self-select elements from reality that most suit them as ways of functioning. The present hedonist may use stimuli as a method of escape, while the expanded present points us to a versatile, deliberate turning toward all experience. To measure openness, we used the 10-item Openness to Experience subscale of the IPIP Big Five personality inventory (Gosling, Rentfrow, & Swann, 2003).

Other relevant constructs included those related to life satisfaction and well-being. One of the assumptions of the expanded present is that through careful regard of the present, people have the chance to make the most of it. On some level, life satisfaction can emerge from a deeper engagement with the expanded present. To assess this construct, we chose the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). However, it should be noted that an expanded present orientation can also involve sustained focus on the whole range of human feelings, so it will not always be linked to positive states.

Another construct associated with life satisfaction and well-being is emotional intelligence. People with skills in recognizing the emotional expressions of both themselves and others should be more attuned to what is taking place in the present situation. If they have greater empathy and understanding of emotions, they should be able to cope effectively

and have greater life satisfaction. We utilized the TEIQue Trait Emotional Intelligence Scale (Petrides & Furnham, 2006) to assess this construct.

Method

The initial set of 12 Present-Expanded items and the 56-item standard ZTPI, as well as the scales assessing mindfulness, openness to experience, life satisfaction, and emotional intelligence, were administered to 209 respondents in an online platform using Qualtrics over the course of three months in 2014. This sample was more diverse, with an age range from 18 to 56, about 60% female, and nearly one-third white, one-third Asian American, one-third Hispanic, and less than 5% African American. Respondents were drawn from undergraduate students at a large northeastern university and two smaller colleges in the San Francisco Bay Area in California. Some students were given a small amount of course credit for their participation. All students provided informed consent, and all participation was voluntary.

Measures of Related Constructs

We used four measures of constructs related to the notion of an expanded present.

The FMI mindfulness scale. This scale is designed to measure a Buddhist notion of mindfulness (Walach et al., 2006.) Respondents evaluate each statement on a 4-point scale from "rarely" to "almost always." Prompts include such items as, "I perceive my feelings and emotions without having to react to them." The longer 30-item form shows a Cronbach alpha of .93 and the shorter 14-item version that we employed in our study has a Cronbach alpha of .86. Correlations with other related measures such as self-awareness are in the low to medium range.

The Openness to Experience subscale of the IPIP Big 5 personality inventory. The Big Five personality scale is the most commonly used personality scale and measures five areas of personality: openness; neuroticism;

conscientiousness; extroversion; and agreeableness. We used the 10-item Openness to Experience subscale (Gosling et al., 2003), which demonstrates a Cronbach alpha of .65. Each item begins with the stem phrase "I see myself as…" and then lists two descriptors (for example, "open to new experiences, complex"). Respondents are asked to answer on a 7-point scale from "disagree strongly" to "agree strongly."

The Satisfaction with Life Scale. This scale is designed to measure one aspect of subjective well-being—specifically, a global sense of satisfaction with life (Diener et al., 1985). This is a 5-item self-report scale, with each item scored on a 7-point range from low to high. Questions include such items as, "In most ways, my life is close to ideal." Inter-item correlations between the five items ranged between .66 and .81. This measure correlates moderately to highly with other measures of subjective well-being and related personality characteristics.

The TEIQue Trait Emotional Intelligence Scale. This scale conceptualizes emotional intelligence as a personality trait, and encompasses four dimensions: emotionality, self-control, well-being, and sociability (Petrides, 2009). The long form is 153 items, but we used the short 30-item version that has an internal consistency of .69. Responses are made on a 7-point scale from "strongly disagree" to "strongly agree," and include items such as, "I'm normally able to 'get into someone's shoes' and experience their emotions."

Results

As with the first sample, we assessed the dimensionality of the initial set of 12 possible items for the Present-Expanded subscale. Overall, the results were fairly similar to those found in Study 1. The first principal component for the 12 items explained 29% of the variance in the items. As in Study 1, the same reverse-coded item had a low factor loading (.03), but in Study 2 the other reverse-coded item had a low loading as well (−.03). On the basis of these results, we decided to delete the two reverse-coded items, and redo the analyses with the remaining set of 10 items.

For this 10-item subscale, we found that the first principal component accounted for 35% of the shared variation in the data, and the Cronbach alpha was .77. The subscale correlated with the Present-Hedonistic

subscale (r = .17, p < .02), but not with Present-Fatalistic (r = −.08, ns). This pattern of correlations replicates that found in Study 1.

Given that both reverse-coded items did not work well as part of this item set, we decided to discard both of them from the final Present-Expanded subscale. Thus, the final form of the subscale and the following data analyses are based on the ten items listed in Table 3.1, using the combined samples of both Study 1 and Study 2 (n = 377). Each of the items loads on the first principal component, which explains 31% of the variance in the data, and the internal consistency of the items is .74. This ten-item Present-Expanded subscale correlates with Present-Hedonistic (r = .23, p < .001), but not with Present-Fatalistic (r = −.01, ns). However, Present-Hedonistic and Present-Fatalistic show a higher correlation with each other (r = .33, p < .001).

The second goal of Study 2 was to assess the validity of the new Present-Expanded subscale by examining its relationship with other relevant

Table 3.1 Factor loadings of 10-item present-expanded ZTPI subscale

Items	Loading
1. I really enjoy spending time appreciating the beauty of nature.	0.40
2. Paying attention to the sensations in my body keeps me present in the moment.	0.37
3. I think it is important to take time to stop and "smell the roses" in some way most days.	0.43
4. I think it is valuable to pay attention not just to what people are saying but also to how they are saying it (such as, facial expression, body language, tone of voice).	0.28
5. I often experience an expansive sense of wonder at the vastness of the world.	0.30
6. The opportunity to spend deep quality time with those I am close to is one of the greatest gifts life can offer.	0.31
7. I have regular practices that help me slow down (such as, focus attention, pay deep attention, meditate, conscious breathing, listen deeply and look inwardly).	0.28
8. When I am engaged in creative activities, I enter a sense of aflow state where I can easily lose track of time.	0.24
9. I am sensitive to how my words and actions affect other people's feelings, and how they affect me.	0.24
10. Being generous with my time toward others makes me feel good.	0.23
Variance explained	31%
Cronbach alpha of scale	0.74
Sample *n*	377

constructs: mindfulness, openness to experience, life satisfaction, and emotional intelligence. For all of these constructs, we hypothesized that they would be significantly correlated with Present-Expanded, but would only account for a relatively small proportion of the shared variance.

The results provided support for these hypotheses. The Present-Expanded subscale was positively correlated with the FMI Mindfulness scale ($r = .35$, $p < .001$), which helps validate the shared construct of "living in the present moment." However, the Present-Expanded subscale explains only 12% of the variance with mindfulness. The Present-Expanded subscale was also positively correlated with the Openness to Experience scale ($r = .41$, $p < .001$), and explained 17% of the variance of this shared construct of being open to all kinds of thoughts and emotions.

A similar pattern was found for the correlations between the Present-Expanded subscale and the Satisfaction with Life Scale ($r = .27$, $p < .001$; 7% of explained variance) and the TEIQue Trait Emotional Intelligence Scale ($r = .24$, $p < .001$; 6% of explained variance). In both cases, the results indicate that these scales have some conceptual overlap with the expanded present construct, as predicted, but are largely distinct from it.

Overall, these data provide empirical support for the predicted similarities between the Present-Expanded scale and its conceptual cousins of mindfulness, openness to experience, life satisfaction, and emotional intelligence. All this evidence is in alignment with prior theorizing and research. At the same time, it is clear that the Present-Expanded time perspective subscale makes an independent contribution to our understanding of the dynamics of temporal perspectives. Not only is it distinct from these related constructs but it is also distinct from the two other present time factors.

Discussion

Our research has provided evidence in support of a new independent ZTPI subscale for assessing an expanded present time perspective. The scale is internally consistent and significantly distinct from the previously existing subscales of the ZTPI Present-Fatalistic and Present-Hedonistic

factors. Moreover, it has appropriate relationships with other relevant concepts, such as mindfulness, openness to experience, life satisfaction, and emotional intelligence. Therefore, we believe the Present-Expanded scale constitutes a viable new subscale for inclusion within the ZTPI.

We believe that this Present-Expanded subscale will provide researchers and practitioners with a novel and useful tool for more systematic measurement and investigation of various aspects of this vital dimension of human experience. The expanded present, in a general sense, represents the temporal perspective of simplicity and profundity, an antidote to fast, transient, adrenalin-seeking superficiality. It shifts the sense of time from a scarce resource that is always draining away, to a sense of abundance, fullness, or "enough-ness." Temporal deceleration can enhance the capacity to quiet down, focus, and tune in to nuanced sensory information. This presents an evocative divergence from hedonism, fatalism, distracted busyness, and constant internal and external noise. In this temporal sense, less can be more. The inclusion of this scale rounds out the wholeness of the ZTPI; it can contribute to fields of social, clinical, organizational, and environmental psychology to further investigate the numerous benefits of expanded present experience and its personal and communal cultivation.

Implications for Practice and Research

Although Zimbardo and Boyd (2008) have underscored that time perspectives typically form within people's worldviews in a nonconscious process, beginning early in life, it is worth considering how the expanded present can be consciously adopted at any age. It is a temporal muscle that can be strengthened with regular training (Buckley, 2014). This could enhance the restorative benefits of living in the now. Slowing down is a multidimensional practice that can be developed as a voluntary reflex, and indeed, it is being increasingly prescribed to adults electing to live their lives with greater personally chosen engagement. It involves exercising our capacity to pay deep and detailed attention. In a world of intensifying multitasking, the act of single tasking can be pragmatically therapeutic. With so many fragmenting draws, divisions, and drains on

our attention, the Buddhist practice of cultivating "one-pointed attention" offers a clear remedy.

Terms such as "time famine," "time starvation," and "time poverty" speak to a widely shared sense of racing without ever being able to catch up in our accelerated time-crunched lives, industries, societies, and media systems suffused with communication and information technologies. Chronic rushing and institutionalized frantic paces have become the "new norm" that plague many people in our era, which exact significant tolls on our well-being (De Graaf, 2003; Rudd et al., 2012). On a societal level, the negative consequences that arise from *not* being in touch with the expanded present are everywhere evident. Increasingly, literature is emerging that cites the costs, measureable and potential, of such sped-up lives. There is growing awareness of the social, physical, and environmental tolls of intensely hurried lifestyles, contrasted with the benefits of slowness, understood as the time it takes to cultivate more holistic relationships, deep listening, ethical engagement, and ecological awareness.

On a mass scale, the proliferation of wide-ranging "slow movements" advocates holistic cultural and institutional shifts toward slowing down life's pace. The famous Slow Food movement, founded in Italy in 1989 as an antidote to fast food, has the aim to restore healthy relationships between people and local food production. Slow movements and philosophies, "Savoring the hours and minutes rather than just counting them. Doing everything as well as possible, instead of as fast as possible." (Honoré, 2004) have recently come to include "slow scholarship," as a meaningful shift away from corporatized academic culture (Berg & Seeber, 2016).

Kabat-Zinn (1994, 2005), who is considered the father of mindfulness-based stress reduction, notes how time pressure exerts a negative impact across a wide range of contexts, and suggests how greater mindfulness can help to address endemic societal anxiety, reduce stress disorders, ameliorate troubled sleeping, and alleviate other widespread forms of psychic suffering (see also, Adshead, 2013; Kramer, Weger, & Sharma, 2013; Sucala & David, 2013). Thus, from many perspectives, there is a spreading recognition of epidemic suffering as a result of the preoccupation with leading time-warped, sped-up lives, as daily experience is shrunk to fit narrowing time constraints. This affects our relationships with our emotions, our bodies, and with others, as well as with our life-sustaining environments.

The implications for therapeutic benefits of an expanded present time perspective are clear and manifold. Oftentimes a serious illness or accident will force a slowing down, requiring a deepened reflection on life. But a sense of present expansion can be practiced in any state or time of life. The wisdom from palliative care nurses is instructive in this regard, in their recognition of the recurring patterns of regret from people on their death bed: to have lived a life more true to oneself; to have let people know they love and appreciate them; to have used time more wisely; to have allowed oneself to be happier and more courageous in expressing feelings (Levine, 1998; Ware, 2012). At a pro-social level, being in the present means having a renewed sense of more time available to use well, to help, to contribute for social and political causes, to support ourselves and each other, to improve our environment (Milfont, Bain, Souza, Gouveia, & Kashima, 2014), and to realize a greater sense of personal well-being and fulfillment (Rudd et al., 2012). Thus, future research might investigate the link between expanded present time perspective and a negative sense of time starvation or time pressure. Studies might also be done on the connections between a sense of expanded present and various outcome measures related to mood, physical and mental health, or quality of social relationships.

It will also be interesting to establish the comparative efficacy of our Present-Expanded subscale and other recently developed scales, such as the Present Eudaimonic scale (Vowinckel, Westerhof, Bohlmeijer, & Webster, 2015) and the Carpe Diem measure (Sobol-Kwapinska, Jankowski, & Przepiorka, 2015) in predicting various behavioral outcomes. The Present Eudaimonic scale is conceptualized as a measure of positive present orientation, incorporating the elements of flow and mindfulness. The Carpe Diem scale constitutes a second measure of dispositional mindfulness. We note that while our scale incorporates some of the elements of mindfulness that these other two scales emphasize, our scale incorporates other aspects of an expanded sense of the present, such as the subjective experience of temporal speed and a sense of awe, missing from these companion measures.

We are pleased to conclude our presentation with what we hope will be an important new contribution to the growing literature on the psychology of time perspective's central role in our lives. It seems apparent that

the inclusion of an expanded present time factor adds new richness to the existing ZTPI scale, and further illustrates links between Eastern and Western traditional conceptions of psychological time.

References

Adshead, G. (2013). The time of our lives: Psychological disorders, time perception and the practice of mindfulness. *European Journal of Psychotherapy and Counseling*, *15*(2), 139–150. https://doi.org/10.1080/13642537.2013.795337

Berg, M., & Seeber, B. (2016). *The slow professor: Challenging the cult of speed in the academy*. Toronto: University of Toronto Press.

Boniwell, L., & Zimbardo, P. (2003). Balancing time perspective in pursuit of optimal functioning. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 165–179). Hoboken: Wiley.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822–848.

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry*, *18*(4), 211–237.

Buckley, R. (2014). Slow time perception can be learned. *Frontiers in Psychology*, *5*, 209. https://doi.org/10.3389/fpsyg.2014.00209

Csikszentmihalyi, M. (1998). *Finding flow*. New York: Basic Books.

Cunningham, K. F., Zhang, J. W., & Howell, R. T. (2015). Time perspective and subjective well-being: A dual-pathway framework. In M. Stolarski, N. Fieulaine, & W. von Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 403–415). New York: Springer.

Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F., & Sheridan, J. F. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine*, *65*(4), 564–570.

De Graaf, J. (2003). *Take back your time: Fighting overwork and time poverty in America*. San Francisco: Berrett-Koehler Publishers.

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*(1), 71–75.

Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, *37*(6), 504–528.

Hahn, T. N. (1987). *Interbeing: Fourteen guidelines for engaged Buddhism*. Berkeley: Parallax Press.

Hahn, T. N. (2005). *Being peace*. Berkeley: Parallax Press.

Hall, P. A., Fong, G. T., & Sansone, G. (2015). Time perspective as a predictor of healthy behaviors and disease-mediating states. In M. Stolarski, N. Fieulaine, & W. von Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 339–352). New York: Springer.

Honoré, C. (2004). *In praise of slow: How a worldwide movement is challenging the cult of speed*. Great Britain: Orion Books.

Johnson, D. H. (1995). *Bone, breath and gesture: Practices of embodiment*. Berkeley: North Atlantic Books.

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life*. New York: Hyperion.

Kabat-Zinn, J. (2005). *Coming to our senses: Healing ourselves and the world through mindfulness*. New York: Hyperion.

Kairys, K., & Liniauskaite, A. (2015). Time perspective and personality. In M. Stolarski, N. Fieulaine, & W. von Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 99–113). New York: Springer.

Keltner, D., & Haidt, J. (2003). Approaching awe, a moral, spiritual, and aesthetic emotion. *Cognition & Emotion*, *17*(2), 297–314.

Klicperova-Baker, M., Kost'al, J., & Vinopal, J. (2015). Time perspective in consumer behavior. In M. Stolarski, N. Fieulaine, & W. von Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 353–383). New York: Springer.

Kornfield, J. (1993). *A path with heart: A guide through the promises and perils of spiritual life*. New York: Bantam Books.

Kramer, R. S. S., Weger, U. W., & Sharma, D. (2013). The effect of mindfulness meditation on time perception. *Consciousness and Cognition: An International Journal*, *22*(3), 846–852. https://doi.org/10.1016/j.concog.2013.05.008

Langer, E. J. (2014). *Mindfulness* (25th ed.). Philadelphia, PA: Perseus Books and Da Capo Press.

Levine, S. (1998). *A year to live: How to live this year as if it were your last*. New York: Bell Tower.

Menzies, H. (2005). *No time: Stress and the crisis of modern life*. Vancouver, BC, Canada: Douglas & McIntyre.

Mikulak, A. (2015). All about awe: Science explores how life's small marvels elevate cognition and emotion. *Association for Psychological Science Observer*, *28*(4), 16–19.

Milfont, T. L., Bain, P. G., Souza, R. V. L., Gouveia, V. V., & Kashima, Y. (2014). Examining how projections about the future of society are related to present-day climate change action. *PSICO*, *45*(3), 359–368.

Milfont, T. L., & Demarque, C. (2015). Understanding environmental issues with temporal lenses: Issues of temporality and individual differences. In M. Stolarski, N. Fieulaine, & W. von Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 371–384). New York: Springer.

Petrides, K. V. (2009). Psychometric properties of the trait emotional intelligence questionnaire (TEIQue). In C. Stough, D. Staklofske, & J. Parker (Eds.), *Assessing emotional intelligence: Theory, research and applications* (pp. 85–101). Springer US.

Petrides, K. V., & Furnham, A. (2006). The role of trait emotional intelligence in a gender-specific model of organizational variables. *Journal of Applied Social Psychology*, *36*(2), 552–569.

Rudd, M., Vohs, K. D., & Aaker, J. (2012). Awe enhances well-being, expands time perception, and alters decision making. *Psychological Science*, *23*(10), 1130–1136.

Sircova, A., van de Vijver, F. J., Osin, E., Milfont, T. L., Fieulaine, N., Kislali-Erginbilgic, A., & Davydova, I. (2014). A global look at time a 24-country study of the equivalence of the Zimbardo Time Perspective Inventory. *Sage Open*, *4*(1). https://doi.org/10.1177/2158244013515686

Sobol-Kwapinska, M., Jankowski, T., & Przepiorka, A. (2015). What do we gain by adding time perspective to mindfulness? Carpe Diem and mindfulness in a temporal framework. *Personality and Individual Differences*, *93*, 112–117.

Stolarski, M., Fieulaine, N., & van Beek, W. (2015). *Time perspective theory: Review, research and application*. New York: Springer.

Stolarski, M., Wiberg, B., & Osin, E. (2015). Assessing balanced harmony: The issue of a balanced time perspective. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 57–72). New York: Springer.

Sucala, M., & David, D. (2013). Mindful about time in a fast forward world: The effects of mindfulness exercise on time perception. *Erdélyi Pszichológiai Szemle*, *14*(2), 243–253.

Vowinckel, J. C., Westerhof, G. J., Bohlmeijer, E. T., & Webster, J. D. (2015). Flourishing in the now: Initial validation of a present-eudaimonic time perspective scale. *Time & Society*. https://doi.org/10.1177/0961463X15577277

Walach, H., Buchheld, N., Buttenmüller, V., Kleinknecht, N., & Schmidt, S. (2006). Measuring mindfulness—The Freiburg Mindfulness Inventory (FMI). *Personality and Individual Differences*, *40*(8), 1543–1555.

Ware, B. (2012). *The top five regrets of the dying: A life transformed by the dearly departing*. London: Hay House, Inc.
Zhang, J. W., & Howell, R. T. (2011). Do time perspectives predict unique variance and life satisfaction beyond personality traits? *Personality and Individual Differences*, *50*(8), 1261–1266.
Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, *77*(6), 1271–1288.
Zimbardo, P. G., & Boyd, J. N. (2008). *The time paradox: The new psychology of time that will change your life*. New York: Free Press.

Zara M. Zimbardo is Interdisciplinary Studies faculty at the California Institute of Integral Studies and Sofia University. For the last twenty years she has been a body-based therapist both in private practice and community health centers. She is a presenter and published writer on topics of the social construction of whiteness, critical media literacy, Islamophobia, subversion of stereotypes in a time of war, social justice comedy, modern monsters and apocalyptic fiction, and representations of gender, race, consumerism and U.S. imperialism/militarism. Zara co-founded the White Noise Collective, an anti-racist feminist training and resource organization. She is a co-founder and Special Projects Director of Partners for Collaborative Change, which supports organizations to become more equitable through democratizing research planning and design, and through diversity and equity facilitation.

Rose McDermott is the David and Mariana Fisher University Professor of International Relations at Brown University and a Fellow in the American Academy of Arts and Sciences. She received her Ph.D. (Political Science) and M.A. (Experimental Social Psychology) from Stanford University and has taught at Cornell, University of California Santa Barbara, and Harvard. She has held fellowships at the Radcliffe Institute for Advanced Study, the Olin Institute for Strategic Studies and the Women and Public Policy Program, all at Harvard University. She has been a Fellow at the Stanford Center for Advanced Studies in the Behavioral Sciences twice and the author of four books, a co-editor of two additional volumes, and author of over two hundred academic articles across a wide variety of disciplines encompassing topics such as experimentation, emotion and decision making, and the biological and genetic bases of political behavior.

Philip G. Zimbardo is professor emeritus at Stanford University and creator of The Stanford Prison Experiment, Dr. Zimbardo has spent over 50 years teaching and studying psychology. He currently lectures worldwide and is actively working to promote his non-profit The Heroic Imagination Project www.heroicimagination.org. His current research looks at the psychology of heroism. He asks: "What pushes some people to become perpetrators of evil, while others act heroically on behalf of those in need?" Prior to his heroism work, he served as President of the American Psychological Association and designed and narrated the award winning 26-part PBS series, *Discovering Psychology*. He has published more than 50 books and 400 professional and popular articles and chapters, among them, *Shyness, The Lucifer Effect, The Time Cure*, *The Time Paradox*, and most recently, *Man, Interrupted*.

4

Balanced Time Perspective: Developing Empirical Profile and Exploring Its Stability over Time

Britt Wiberg, Anna Sircova, Marie Wiberg, and Maria G. Carelli

Introduction

In this chapter, we shed light on the main characteristics of people with a balanced time perspective (BTP) profile. Who are those mythical people? What do they do in their daily life? What type of life do they have? What interests them? Who do they hang out with? What do they do on vacation?

We were also interested in knowing whether the BTP profile would be stable throughout a person's life and which events might be critical in affecting such stability, as well as how the balance differs among time perspectives. Undertaking this study, we tried to fill the gap in the current literature regarding studies with longitudinal design.

B. Wiberg (✉) • M.G. Carelli
Department of Psychology, Umeå University, Umeå, Sweden

A. Sircova
Time Perspective Network, Copenhagen, Denmark

M. Wiberg
Department of Statistics, USBE, Umeå University, Umeå, Sweden

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_4

The existing literature proposes different ways of calculating the balanced profile and then validating those by employing a variety of approaches (correlational studies, SEM, cluster analysis, etc.), but all these studies are data driven and consist of hypothesis testing methodology. Our study, instead, took a slower approach, using a mixed-method case study, for which we combined both qualitative and quantitative methodologies. We adopted a longitudinal design study in which we met our participants on two occasions, with 18 months between those meetings.

Our chapter begins with a brief theoretical overview of the concept of time in psychology and, more specifically, of time perspective. Further, the Swedish operationalization of the future dimension is discussed, followed by a theoretical background on the concept of the balanced time perspective. Finally, we present an overview of approaches to operationalize the BTP profile, including levels of balance, and provide a detailed description of our case study. After a discussion of our results, the chapter ends with a presentation of our ideas on empirical applications and proposals regarding future inquires and scientific directions.

Theoretical Meanings of the Concept of Time, from James to Lewin

In 1890, William James discussed time duration and the passage of time as a core concept in psychology. At almost the same time, the Nobel Prize winner Henri Bergson (1889/2007) discussed time as an intuition of duration, felt through the stream of consciousness. In this, subjective time is conceived as a spatial degradation of "pure" time achieved with a symbolic representation constituting the past, consisting of memory, and the future, formed by expectations. McTaggart (1908) also underlined the *paradoxal status of time* and proposed a distinction between past/present and earlier/later positions in time. Influenced by gestalt theory, Fraisse (1957) published an extensive review of psychological studies on time and proposed that time perception is a *bridge between the past, the present, and the future*, induced by the duration of perception.

Lewin (1942) was one of first scholars to talk about time perspective (TP) theory. He formulated the concept of *time-filled life space*, which emphasizes the meaning of TP from individual circumstances, and he defined time perspective "as the totality of the individual's views of her/his psychological future and her/his psychological past that are existing at a given time" (Lewin, 1951, p. 75). TP is considered part of an individual's orientation of the psychological past and future existing at a given time. According to Lewin, a present-time orientation is focused on immediate events, while a future-time orientation is largely shaped by goals and a tendency to relate to more distant objectives. Lewin also stressed the impact of time on psychological conditions, and maintained that differences and biases in temporal orientation are influenced by the individual's social background and motivational processes.

The concept of a time-filled life space (Lewin, 1951) has been extended by several scientists, including Nuttin and Lens (1985). They point out that "future and past events have an impact on present behavior to extent that they are actually present on the cognitive level of behavioral functioning" (p. 45). They also argue that TP is a dynamic concept, whereby people can choose the TP that best meets their current objectives. Further, time perspective offers an important basis for helping people to understand their experiences and existence in the world, shaping thoughts and affect states in their lives. How an individual perceives time differs among individuals, and distinctive TPs are expected to be shaped by contextual factors. People remember memories and events from the past, experience the present, and look forward to rewards or anticipate punishments in the future. Differences in TP may influence people's present behavior and thoughts as individual decisions and judgments, whether for shorter or longer time perspectives.

Empirical Studies on Developing the Concept of TP

Zimbardo Time Perspective Inventory (ZTPI)

Toward recognizing the centrality of TP, Philip Zimbardo and John Boyd developed a self-rating inventory—the Zimbardo Time Perspective

Inventory (ZTPI; Zimbardo & Boyd, 1999). This instrument was an important innovation in the research field, providing a reliable metric after many previous attempts to operationalize the concept of TP. (See Boyd & Zimbardo, 2005, for a review.) The ZTPI metric allows researchers to measure simultaneously an individual's orientation to the past, the present, and the future. It consists of five distinct time-perspective subscales and contains 56 items. *Past Negative* (PN) scale reflects a pessimistic, negative, or aversive attitude toward the past, and includes items such as, "I think about the good things that I have missed out on in my life." *Past Positive* (PP) scale reflects a warm sentimental, nostalgic, and positive construction of the past, and includes items such as, "It gives me pleasure to think about my past." *Present Hedonistic* (PH) scale mirrors a hedonistic, risk-taking attitude toward time and life; pleasure and enjoyment in the now is more important than future outcomes, and includes items such as, "Taking risks keeps my life from becoming boring." *Present Fatalistic* (PF) scale is characterized by a helpless, fatalistic, and hopeless attitude toward the present, and includes items such as, "Fate determines much in my life." Finally, the *Future* (F) scale, which reflects a general future orientation, where one is striving for future goals and rewards, includes items such as, "I believe that a person's day should be planned ahead each morning."

The ZTPI is a multidimensional measure and responses are given on a five-point Likert scale (1 = very uncharacteristic, 5 = very characteristic). The instrument is robust and reliable; especially, it exhibits high test-retest reliability, as well as good convergent and discriminant validity (Boniwell, 2009; Worrell & Zeno, 2007). The stability and validity of ZTPI were recently shown in a cross-cultural study involving 24 countries (Sircova et al., 2014).

Swedish Zimbardo Time Perspective Inventory (S-ZTPI)

Zimbardo and Boyd (1999) were aware of the necessity to include another future dimension. Quite recently, an extended version of the ZTPI was developed and validated in Sweden: the Swedish Zimbardo

Time Perspective Inventory (S-ZTPI; Carelli, Wiberg, & Wiberg, 2011). The S-ZTPI consists of six subscales and contains 64 items, where four scales (PN, PP, PH, and PF) are identical to the ZIPI described subscales. In addition, there are two new scales: *Future Negative* (FN) and *Future Positive* (FP). FN embodies a negative view of the future associated with worry and anticipating the negative outcomes. Two of the original F-items ("If things don't get done on time, I don't worry about it") and the reverse-coded item ("It upsets me to be late for appointments") were placed in the FN scale together with eight new items (e.g., "The future contains too many boring decisions that I do not want to think about"). FP reflects a positive view to the future with goals and rewards. The remaining 11 original items in the F scale were used in the new FP scale.

As in the ZTPI, the participants were asked how characteristic or true the item is for them, using a five-point Likert scale (1 = very uncharacteristic, 5 = very characteristic). Internal consistency ranges from .84 for the PN scale to .70 for the FP scale, and test-retest reliability is significant for all scales and ranges from .85 to .60 (Carelli et al., 2011).

Since the publication of the S-ZTPI, the results of several research studies in different areas of psychology such as clinical (see Carelli & Wiberg, 2012; Carelli, Wiberg, & Åström, 2015; Wiberg, Wiberg, Carelli, & Sircova, 2012; Åström, Wiberg, Sircova, Wiberg, & Carelli, 2014) and neuropsychology (Carelli & Olsson, 2015) seem to suggest that both negative and positive feelings about the future constitute a central dimension of TP.

Theoretical Views of the Construct of BTP

Several theorists and researchers have tried to explore the relationship between different types of personality and time. Shostrom (1964, 1974) formulated the concept of *time competence*, suggesting that a "self-actualizing person" is an individual who is primarily time competent: concerned with living fully in the present, but uses the past and future to make the present more meaningful and understands that memory

and anticipation are acts in the present with the past and future providing the background. Even Litvinovic (1998) used the construct of *productive time orientation*, aiming a person's positive and dynamic evaluation of her past and the future, but in consonance with her present.

Finally, Zimbardo and Boyd (1999) proposed their view of personality—that is, time characteristics—arguing that although people have access to three temporal zones (past, present, and future) to various degrees, they may often be particularly directed to one time perspective and have a specific *biased time perspective*, meaning that it is not adaptive across situations. In contrast to this view, Zimbardo and colleagues proposed the concept of *balanced time perspective* (BTP)—an idealized mental framework that enables people to flexibly switch between their present, past, and future depending on task features, demands, situational considerations, personal resources, and social evaluations. Boyd and Zimbardo (2005, pp. 101–103) proposed hypotheses about the "ideal trio"—Past Positive, Present Hedonistic, and Future.

Attempts to Operationalize the Construct of BTP

Zimbardo and Boyd (2008) proposed that an individual with an "ideal" or optimal BTP profile should exhibit high scores on PP (raw scores at 4.60), moderately high scores on F (raw scores at 4.0) and PH (raw scores at 3.9), and low scores on PN (raw scores at 1.95) and PF (raw scores at 1.5) (see www.timeparadox.com/surveys/).

Over the years, many researchers have tried to empirically operationalize the BTP construct with different statistical analysis, including cluster analysis (Boniwell, 2005; Boniwell, Osin, Linley, & Ivanchenko, 2010), cut-off point approach (Drake, Duncan, Sutherland, Abernethy, & Henry, 2008; Sircova & Mitina, 2008), and SEM analysis (Sircova & Mitina, 2008). However, Boniwell et al. (2010) point out that the cut-off point approach is unsatisfactory, since the criteria were chosen arbitrary; similarly, Wiberg, Sircova, Wiberg, & Carelli (2012) discuss the arbitrary criteria chosen for operationalized BTP with cluster analysis.

Studies of the BTP Profile as a Multidimensional Construct

Addressing these concerns about applied statistical analysis, Stolarski, Bitner, and Zimbardo (2011) developed a special formula called *Deviation from Balanced Time Perspective* (DBTP), which is not sample dependent. It is a measure of difference between an individual's time perception and the optimal time perspective profile as stated by Zimbardo and Boyd (2008). The DBTP assumes that the BTP is normally distributed and indicates how ill-balanced the TP of each person is (Stolarski, Wiberg, & Osin, 2015). Results from Zhang, Howell, and Stolarski (2013) suggest that this DBTP method has a significantly better predictive validity with regard to people's well-being than the earlier cut-off point approach (Drake et al., 2008) or cluster analysis (Boniwell et al., 2010). In summary, the results of the proposed operationalizations (Boniwell et al., 2010; Drake et al., 2008; Zhang et al., 2013) describe both strengths and weaknesses for each approach, but also indicate that the BTP construct is not yet completely explored and clarified (Stolarski et al., 2015).

Quite recently, an alternative view of BTP operationalization has been proposed by Wiberg, Sircova, Wiberg, & Carelli (2012), based on the theoretical model proposed by Zimbardo and Boyd (2008). This view is, in our opinion, innovative for at least three reasons. First, there was need for an operationalization of BTP, which can be used independently of an obtained sample. Previous attempts to operationalize the BTP were empirically driven and depended on the sample and data used in the former studies. The second reason concerns the ecological validity of the BTP model, whereby BTP is conceptualized as a multidimensional construct rather than a binary, since an individual is seldom either balanced or not balanced. More specifically, Marie Wiberg and colleagues (2012) consider different levels of balance (ranging from 0 to 6) to be closer to the everyday complexity of the BTP construct. An individual is believed to have a TP, which is more or less balanced in life depending on his level of balance. The third reason is that when BTP is seen as a multidimensional construct, it is more satisfactory from a measurement point of view. The different levels of BTP can be matched with different psychological measures and self-report questionnaires, and also give opportunities for a deeper understanding through narratives in interviews.

BTP and Well-Being

Based on these different operationalizations of the BTP construct, previous quantitative studies have shown that people with BTP are happier, highly satisfied with life, very optimistic, and confident in their abilities to achieve goals (Boniwell et al., 2010). They are more mindful (Drake et al., 2008), and seem to cope more effectively with stressful life situations; they have sense of direction and beliefs that give their life purpose (Sircova & Mitina, 2008). BTP people tend to have psychological and physical health, with higher levels of well-being (i.e., happiness) (Boniwell & Zimbardo, 2004)—these qualities are considered to be optimal for societal functioning (Boyd & Zimbardo, 2005). Although research on psychological correlates of BTP are increasing, it is also essential to conduct additional exploratory *case studies* with the aim of developing a working, rather than a hypothetical, profile of individuals with a balanced TP. There is almost no research that deals with multifaceted constructs, such as BTP using profile analyses of the complex of factor scores for each individual (Boniwell & Zimbardo, 2004). The aim of the research outlined here was an attempt to fill that gap.

The Present Study: A Quantitative and Qualitative Case Study of People with BTP Profiles in Sweden

The purpose of this longitudinal case study was to obtain a deeper understanding of the BTP construct measured by S-ZTPI (Carelli et al., 2011), and also to describe and explore its stability or change over time, according to the level of BTP studied by Marie Wiberg et al., 2012. A semi-structured interview was designed to gain information about participants' general background, health, and actual life situation (economy, professional, interests, and eventually actual family), including life goals and spirituality. Together with in-depth interviews, there were different kinds of measures included: self-report measurements; Swedish Zimbardo Time Perspective Inventory (S-ZTPI); Scales of Psychological Well-Being (SPWB), Satisfaction With Life Scale (SWLS), Life Events scale, Beck

Depression Inventory-II (BDI-II), Symptom Check List-90, (SCL-90), and a projective test (Cottle's Circles test).

More specifically, the present study aimed to answer the following research questions:

1. To which degree is the BTP construct, measured by S-ZTPI, stable over time (18 months) according to the calculation of the level of BTP (Marie Wiberg et al., 2012) in our study cases?
2. How do BTP people report themselves in terms of psychological well-being and satisfaction with life (measured by SPWB and SWLS)?
3. Are these BTP people mentally healthy people (measured by BDI-II and SCL-90)?
4. How, through in-depth interviews, do BTP people describe themselves and others according to their time perspective? Is the "ideal trio" (i.e., Past Positive, Present Hedonistic, Future, following Boyd and Zimbardo [2005, pp. 101–103]) present in their narratives?

BTP Case Studies

Procedure and Participants

The overall sample consisted of 50 participants, recruited through flyers; all received payment for being part of the study. The S-ZTPI scale was administered to all participants. Only seven obtained a fully balanced TP profile (level 5 or level 6) according to Marie Wiberg and colleagues (2012). More specifically, in the stringent case, these participants had:

Low scores on PN, PF, and FN. Participants scored 1 or 2 on most items.
Moderate scores on PH. Participants scored 3 on most items.
Moderately high scores on FP. Participants scored 3 or 4 on most items.
High scores on PP. Participants scored a 4 or a 5 on most items.

As a next step, those seven people with BTP profiles were contacted and all gave their written consent to participate, and all came to the first study occasion. After 18 months they were contacted again and invited to

participate in the follow-up study, to which they all agreed. Both study occasions took place in the same room at Umeå University, Sweden. This longitudinal case study was done in accordance with the Declaration of Helsinki and was approved by the Regional Ethical Review Board at Umeå University, Sweden (Archive number: 09-218 m 2009-1424-31).

Seven persons—one female and six male persons, ages between 23 and 55 years (M = 29 years) participated in both study occasions. Five of the participants were students, one was retired due to sickness, and one was working full time. All participants had some university education. Three persons were married, two persons were living together with intended spouses, and two were single; six were heterosexual and one was homosexual.

Measurements

All 50 participants in the original sample answered the Swedish Zimbardo Time Perspective Inventory (S-ZTPI). The seven people with BTP (level 5 or level 6) according to Marie Wiberg and colleagues (2012) were answering the following self-report questionnaires: Scales of Psychological Well-Being, Satisfaction With Life Scale, Life Events scale, Beck Depression Inventory, Symptom Check List-90, and interviews together with Cottle's Circles Test at both study occasions. The measurements were as follows:

- ***Swedish Zimbardo Time Perspective Inventory*** (S-ZTPI; Carelli et al., 2011, 2015) was used at both study occasions to answer the research question "To which degree is the BTP construct, measured by S-ZTPI, stable over time (18 months) according to the calculation of the level of BTP (Marie Wiberg et al., 2012) in our study cases?" Carelli and colleagues (2011) reported that test-retest reliabilities of the subscales of the ZTPI and S-ZTPI were established with a sample of 30 participants, where the time span was two weeks between the two study sessions. All reliabilities were significant, with $p<.05$. The highest test-retest reliability was observed for the PN (.85), followed by PH (.74), PF (.71), PP (.69), FN (.69), F (.64), and FP (.60). Both the Past and Future Negative subscales showed greater retest correlations than the corresponding Positive subscales.

- ***Scales of Psychological Well-Being*** (SPWB; Ryff, 1989) was used for answering the research question, "How do BTP people report themselves in terms of psychological well-being?" SPWB is a theoretically grounded instrument, which specifically focuses on measuring the following six dimensions: Positive relations with others (PRwO), Autonomy (A), Environmental Mastery (EM), Personal Growth (PG), Purpose in Life (PiL), and Self-Acceptance (SA). Here, we used the 14-item scale and the responses are given on a six-point Likert scale (1 = strongly disagree, 6 = strongly agree). Seiffert (2005) reported the test-retest reliability for the subscales PRwO (.83), A (.88), EM (.81), PG (.81), PiL (.82), and SA (.85).
- ***Satisfaction With Life Scale*** (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) was used for measuring the overall subjective life satisfaction for these BTP people. The SWLS consists of five items that participants respond on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). The SWLS has been examined for both reliability and sensitivity. The SWLS has shown strong internal reliability and moderate temporal stability. Diener et al. (1985) reported a coefficient alpha of 0.87 for the scale and a two-month test-retest stability coefficient of 0.82.
- ***Life Events scale*** (Paykel, 1983) is a self-reporting scale that consists of items about relationships, separations, losses, mobbing, health, sickness, education, work, and economy. The participant marks each life event with the age when it occurred and how the event was perceived (Negative (−), Neutral (0), or Positive (+)).
- ***Beck Depression Inventory*** (BDI-II; Beck, Steer, & Brown, 2006) was administered for checking eventually depressive symptoms and for answering the research question, "Are these BTP people mentally healthy people?" The BDI is a self-report scale and includes both psychological and physical symptoms for quantifying levels of depression. It includes 21 items and uses a four-point scale (0 = symptom not present, 3 = symptom very intense). The BDI had a one-week test-retest reliability of $r = .93$ and an internal consistency of $\alpha = .91$.
- ***Symptom Check List*** (SCL-90; Derogatis, 1977; Derogatis, Lipman, & Covi, 1973) was administered in order to check for possible psychic symptoms and answer the research question, "Are these BTP people

mentally healthy people?" Participants were required to respond to the 90 items using a five-point rating scale. Test-retest reliability has been reported at .80 to .90, with a time interval of one week.

- ***Interviews together with Cottle's Circles Test*** (Cottle, 1967, 1976) was administered at both study occasions. The interviews started with Cottle's projective circles test, whereby the participant was asked to make three circles on a blank paper—one circle for the present, one circle for the past, and one circle for the future. Then the participant decided in which order she wanted to talk about her past, present, and future. Every TP started with the same question: "How do you view your own past/present/future"? Then the next question followed: "What does past/present/future consist of for you?" The questions about the past delved into the original family, relatives, celebrations of birthdays and holidays, and significant life events. The questions about the present touched upon the actual life situation (economy, professional, interests, etc.). The questions about the future concerned planning for the future according to education level, career choice, and family situation, as well as expectations and fears about the future. The participant was encouraged to describe freely and then the interviewer asked more follow-up questions about specific events. The question, "In what way has your attitude toward past/present/future changed during your life?" was also asked. The follow-up interview (18 months later) was conducted in the similar manner, with the participant prompted to reflect on the past, present, and future using the Cottle's Circles Test in the beginning of the interview and expanding on what has happen during the last 18 months.

Data Analysis

Our overall strategy was to perform an in-depth case study with seven people, to analyze the interviews, and to summarize all the self-report results, looking for overlapping patterns. We used regular scoring procedures to calculate the scores for the self-report inventories (SPWB, SWLS, Life Events, BDI-II, and SCL-90) and we used the procedure by Marie Wiberg et al. (2012) to calculate the BTP level on the S-ZTPI.

The interviews were video-recorded and transcribed carefully at both study occasions. The transcripts were analyzed using Interpretative Phenomenological Analysis (IPA; Smith, Flowers, & Larkin, 2009). Interview analysis was also done according to the hypotheses of "ideal trio"—Past Positive, Present Hedonistic, Future—from Boyd and Zimbardo (2005, pp. 101–103) in order to get empirical narratives from the participants.

Keeping the Balance over Time

As expected, our sample of seven people with *a fully balanced TP profile* (level 5 or level 6) according to Marie Wiberg and colleagues (2012) were free of any psychopathological symptoms (low scores on SCL-90) and free of depressive symptoms (low scores on BDI-II). They were satisfied with their lives (high to very high scores on SWLS) and had high to very high scores on all six subscales of the Scales of Psychological Well-Being (SPWB); PRwO, A, EM, PG, PiL and SA (see Fig. 4.1).

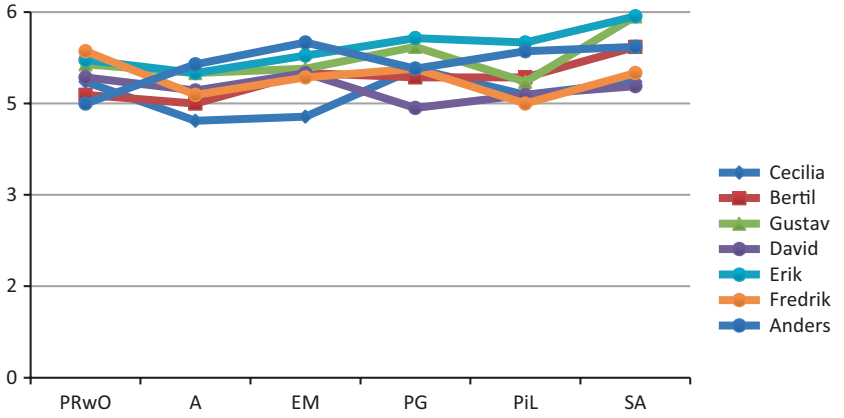

Fig. 4.1 Scores on the subscales of the Scales of Psychological Well-Being (SPWB) for each participant with BTP profile in the study. *Notes: *Names of the participants are fictive in alphabetical order; ** Name of the subscales of SPWB: PRwO = Positive Relations with Others; A = Autonomy; EM = Environmental Mastery; PG = Personal Growth; PiL = Purpose in Life; SA = Self-Acceptance*

The results show that people with BTP profiles have positive, warm, satisfying, and trusting relations with others (Positive Relations with Others; M = 4.9); they are concerned about the welfare of others; capable of strong empathy, affection, and intimacy. They are autonomous (Autonomy; M = 4.7), self-determining and independent; able to resist social pressures to think and act in certain ways; regulate behavior from inside; and evaluate the self by personal standards. They have a sense of mastery and competence in managing the environment (Environmental Mastery; M = 5.0); control complex array of external activities; make effective use of surrounding opportunities; and are able to choose or create contexts suitable to personal needs and values (Personal Growth; M = 5.1). This provides a feeling of continued development; they see their self as growing and expanding; are open to new experiences; have a sense of realizing their potential; see improvement in the self and behavior over time; and change in ways that reflect more self-knowledge and effectiveness. They have goals in life and a sense of directedness (Purpose in Life; M = 4.9); they feel there is meaning to their present and past life; they hold beliefs that give life purpose; and they have aims and objectives for living. They have a positive attitude toward the self; acknowledge and accept multiple aspects of the self, including good and bad qualities; and feel positive about their past life. Their scores are highest on the Self-Acceptance subscale (M = 5.3) in comparison to the other subscales on the SPWB.

We observed that four of the seven participants had a stable BTP profile—that is, they had the *same level* of BTP over the 18-month period (see Table 4.1): level 6 (Bertil, David) and level 5 (Cecilia, Gustav). One participant (Erik) achieved an *increased level of balance*, and two other participants (Anders, Fredrik) experienced a *decrease in their level of balance*. Further, we provide excerpts from the interviews, our observations, and interpretations, which we hope will give a fuller picture of the BTP profiles and lead to deeper understanding.

Dynamics of Those Who Kept the Same Level of Balance—Level 6

Bertil, 25: In the follow-up interview, he indicated that student parties had become less important; however, he had become more impulsive (higher PH) and less worried about making a wrong decision (lower FN).

Table 4.1 Means for every six subscale of S-ZTPI and levels of balance for the S-ZTPI from first study occasion (T1) and second study occasion (T2)

Subscales S-ZTPI	*Past Negative* (PN)		*Past Positive* (PP)		*Present Fatalistic* (PF)		*Present Hedonistic* (PH)		*Future Negative* (FN)		*Future Positive* (FP)		BTP level (M. Wiberg et al., 2012)	
Limit scores	1.00<X>2.50		3.50<X>5.00		1.00<X>2.50		2.70<X>3.30		1.00<X>2.50		3.00<X>4.00		0->6	0->6
Study occasion	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
Anders	1.80	1.40	4.22	4.11	1.78	1.33	2.73	**2.60**[a]	**2.70**[a]	**2.50**[a]	3.91	**4.09**[a]	**5**	**3**
Bertil	1.40	1.20	4.00	4.33	1.56	1.89	3.13	3.27	2.30	1.60	3.09	3.18	**6**	**6**
Cecilia	1.80	2.10	4.22	4.67	1.89	1.67	2.93	3.20	2.20	**2.50**[a]	**2.82**[a]	3.18	**5**	**5**
David	2.00	1.70	4.00	4.22	1.67	1.56	2.80	3.00	2.30	1.90	3.27	3.45	**6**	**6**
Erik	1.60	1.40	**3.44**[a]	4.11	1.56	1.11	2.73	3.00	2.00	1.70	3.55	3.82	**5**	**6**
Fredrik	1.80	1.70	4.11	**3.11**[a]	**2.89**[a]	2.44	3.13	2.73	1.90	1.60	3.18	**2.91**[a]	**5**	**4**
Gustav	1.90	1.40	4.22	4.44	**2.67**[a]	1.67	3.20	**2.33**[a]	2.00	2.00	3.73	3.45	**5**	**5**

[a]Means falling outside the limit scores are marked with bold print

[b]Names of the participants are fictive and are presented in alphabetical order

According to the Life Events scale and interviews, a year ago he was afraid that his girlfriend might have gotten pregnant. "Relationship changes the sense of time—future gets bigger and more concrete." He reevaluated the fact that he was not accepted to the police program and now he sees this in a more positive light.

David, 23: In the follow-up interview, he had a more positive reevaluation of the past (higher PP), the present got a higher hedonistic accent (higher PH), some important decisions were made over the year and he feels more relaxed (lower FN, lower FP). According to the Life Events scale and interviews, he broke up with his girlfriend, was feeling relieved, and was more free to talk with other people now, to speak to other girls, and to step outside his comfort zone—he had a homosexual experience with a relative as a means of self-exploration and a desire to try something new.

Dynamics of Those Who Kept the Same Level of Balance—Level 5

Cecilia, 29: In the follow-up interview, there was a slight change of focus, the participant felt less excitement, and was more in the present moment (higher PH). She had reevaluated some issues, was less worried about the future, and had a slight dissatisfaction with the current work situation (PF, higher FN); she indicated some signs of stress at work, early signs of burnout. She became better at planning her work activities (higher FP), making more realistic judgments on how much time should be taken, and continued to keep a work-leisure balance. According to the Life Events scale and interviews, there were some positive changes in working conditions and working hours, and she got married.

Gustav, 27: Between the two data-collection periods, he became more independent and more confident (lower PN), less hedonistic (lower PH), something important had happened during the year, and he was feeling more relaxed, self-confident, and had more personal agency (lower PF), as well as was goal directed and felt more flexibility (lower FP). According to the Life Events scale and interviews, his girlfriend became pregnant and it was a desired pregnancy. Gustav during the interview expressed that "It is the present where I create the future."

Dynamics of the Increased Level of Balance (from level 5 to level 6)

Erik, 25: Participant showed more positive evaluation of the past (higher PP), a slight increase in excitement (higher PH), more precision and emphasis on having things get done on time, planning activities (higher FP). According to the Life Events scale and interviews, he got married and had his first sexual intercourse. His overall attitude was that of embracing the future and viewing it as full of new possibilities.

Dynamics of Those Who Achieved a Decreased Level of Balance

Fredrik, 52: His level of balance decreased (from 5 to 4). In the follow-up interview he displayed a less idealistic self-image (lower PP), and more frustration (PN), where he scored 4 on both the item "My decisions are mostly influenced by people and things around me" and the item "Things rarely work out as I expected." He had a less risk-taking attitude and excitement (lower PH), and less worry (PF), and he scored 4 on the item "You can't really plan for the future because things change so much."

Anders, 24: His level of balance decreased (from 5 to 3). He became more content (lower PP, lower PN, lower PF), started a relationship, and became busier, had more things to keep up with, moved to a different city, and got into a desired study program.

Testing the "Ideal Trio"

So far, many of the different theoretical ideas of what BTP is and how it can manifest itself have been presented in the literature. In this section, we summarize the main hypotheses derived from Boyd and Zimbardo's article (2005) regarding the idealized balanced time perspective and the "ideal trio" of Past Positive, Present Hedonistic, and Future. We present our empirical material that taps into those outlined hypotheses, but also what we have discovered beyond those hypotheses. The quotations from Boyd and Zimbardo (2005, pp. 101–103) appear in italic print, accompanied by a descriptive summary. In the

descriptions, we used the information from the self-rating Life Events scale and from the two interviews. We also illustrate some points by direct citations. Participants' fictitious names are present, but real ages are indicated.

Past Positive

> "*Past Positive brings past happiness and positive sense of self into the present; it is a reminder that painful periods are transitory, and it provides positive, optimistic expectations for the future*."

The participants clearly express a very positive outlook on their past. They all come from full families with siblings. Their upbringing ensures they feel equal with their parents and older relatives. They feel attached to a specific place, such as a family's summer cabin, where they recall good times with their parents and other family members. They actively participate in family traditions and recurring events. Despite having some troubles in the past, they don't have regrets and recall mostly positive things; they express a certainty that "One can learn from the past" (Cecilia, 29). They have confidence, faith, and a positive attitude about the future; although it is fairly uncertain, they don't feel worried or anxious.

> Past—not something I want to forget, I want it with me as much as possible. … Based on past experience—it will work out in the end. (David, 23).
>
> Somehow provide me good opportunities, to have a good future, I can feel. (Bertil, 25)

> "*To the extent that people have developed a Past Positive TP they become their own positive role model, brimming with self-esteem and a high sense of self-efficacy*."

Participants have strong personal agency in and responsibility for things they do. They are very determined, they accept different situations that happen to them, and they have the ability to extract positive views from them.

> … the older you get, more often you see that the plans don't always work out, but these changes are not always negative, they can be positive. … The point is to have something to aim for. (Gustav, 27)
>
> Past and childhood is something positive for me that I feel has shaped me into who I am today. (David, 23)

"*An additonal interesting aspect of Past Positive time perspective is its developmental history, of either being blessed with a supportive family and social environment in which more good than bad events were experienced, or cognitively rising above more negative or traumatic early life experiences by recasting them as learning experiences to be avoided or modified in the future.*"

The interviews supported both of these quotations. Six out of seven participants mentioned that they come from a full family with two parents and their families were very supportive. They considered that having a stable and secure home environment is "the key to good life" (David, 23). They expressed gratitude for their good past and a wish to secure the same for their own children (Gustav, 27). This past secure base makes them feel confident about a positive future. Furthermore, it transforms the feeling of future: "it gets bigger and more concrete" (Bertil, 25).

Two participants also demonstrated their ability to cognitively transform their negative/traumatic early life experiences. For example, Gustav listed several negative events (mental illness, abuse, economic problems, etc.) when responding on the Life Events scale, but during the interview he said: "I am spoiled, I don't have so much negative…. I almost feel guilty in front of other people who were not as lucky." He transmitted self-confidence, he worked through those negative events in his life, and he transformed them into a source of knowledge and a resource for personal growth. He also had a certain image of himself in the future and was continuously comparing it to the present state. He continuously was reevaluating own goals and aims. Another participant (Fredrik, 52) had suffered a major back injury earlier in life that affected him dramatically. Currently, it is an everyday struggle for him to accept himself as he is right now, and to accept the meaning of this injury. He relies heavily on his current family, but strives to keep up the positive spirit and remains active utilizing most of his abilities.

Present Hedonistic

"*Present Hedonistic allows individuals to enter a greater range of daily "flow" experiences, to feel and experience life to the fullest*."

Participants are very active people and have a wide range of interests, and they take part in a variety of events and activities. They also have a wide social network owing to their engagement in different activities: team sports, choir, church, and the like. They are aware of the present and enjoy it greatly.

> Present is where I am, here and now … is absolutely the greatest. … It is in the present where I create the future. (Gustav, 27)

"*Present Hedonistic enables adults to sustain some of the childlike wonder at novelty and seek ever-new stimulation*."

Participants were very socially engaged and some expressed a clear novelty and sensation seeking through their sporting activities (e.g., skiing, football, mountaineering), enjoying the adrenaline rush of a risky new sport, or expressing a desire to travel and see new places. Others had a different way of expressing this: through "little things, try to do something a little different from what has previously made. … Never stopping exploration of one-self, for example, a homosexuality episode with a relative once the heterosexual relationship was over" (David, 23). And "It gives a boost to solve the problem—a bit of an adventure" (Bertil, 25).

"*Present Hedonistic enables to take pleasure in nature, in our solitude, as well as in intense friendships and romance*."

Indeed, these participants expressed interest in being in nature (outdoor sports, walking the dog, observing nature on their own) or having time for themselves, staying at home, watching a movie, knitting, reading, and reflecting in solitude. And at the same time, they enjoy deep friendships and group activities (team sports, choir, meetings, discussions over coffee).

Future

"*The high future component ensures that individuals will avoid risks, when possible, will prepare for the negative consequences of unavoidable risks, and will temper their enjoyment of the present with an eye toward possible future consequences*."

These BTP people emphasized the role of having a clear future plan, with specific goals and set priorities. All the plans have a reality check on them—these are all achievable plans within a specific time frame. Plans range from general career goals to specific trips. Plans incorporate a risk assessment: 27-year-old Gustav, for example, likes to travel and mountaineer, but not without proper preparations; 25-year-old Bertil enjoys active sports, but would not do something self-destructive—whatever risky sports he's doing, he's doing them with security.

I think I have influence on my life, over my choices and my choices have consequences. I think I'm controlling my life. (Cecilia, 29)

Society won't work if I'll be always doing only what's fun, education is important! (Bertil, 25)

"*Future TP provides a rationale and strength in coping with the inevitable challenges of life*."

Participants expressed confidence and positive outlook toward the future. They approach the future with an analytical perspective, weighing all the pros and cons and deciding on something specific. They showed understanding that life can bring some unexpected changes into their plans, but they want to be very well prepared for them, so despite the changes they could still achieve what they have originally planned. For example, Fredrik understands that his condition will worsen with time, thus he attends aqua aerobics classes to maintain his physical form.

… of course, things can be changed anyway; I see only myself as an obstacle in achieving something. (Gustav, 27)

"*Future focus also means taking care of business and the business of life, and increases probability of attaining one's goals*."

Participants expressed commitment to their plans; they feel enjoyment and are energized by what they have planned for themselves. Achieving steadily their future goals gives them positive energy. Although, theoretically, they see many opportunities for fun and entertaining activities, they prioritize the activities connected to their long-term goal. They also commit to the deadlines they set for themselves.

> It's not that I can't be spontaneous, but I think it's good that you can plan. (David, 23)
>
> I want to finish the studies, one of those things I have to do, feel good I'm studying something, I'll become something, getting it done … labor market looks good. … Pretty good track, sound track of where I am, which road I want to take. (Gustav, 27)
>
> … I put studies on the first place … otherwise the whole purpose of being here falls. (Bertil, 25)

> "*Overreliance on or exclusive use of Future TP may block the full experience of life's emotions and the joys of playfulness and intimate human connections*."

Although respondents are quite future oriented, they do not express a total commitment to that orientation. They "have time to be spontaneous when done" (David, 23) with their main task. For example,

> I create opportunities to live in the present. (Bertil, 25)
> Present is a combination of coincidences and plans I have. (Gustav, 27)

Looking Beyond the "Ideal Trio"

Besides looking at the Boyd and Zimbardo's (2005, pp. 101–103) theorization, we wanted to see what else our participants would talk about. Here, we present our own empirical discoveries: *Nostalgic About the Past, Extended Present/Mindfulness, Longer Future Horizon*, and *Continuity*.

Nostalgic About the Past

Some of the participants expressed vividly a very warm attitude toward their past, with a note of nostalgia about it. Although only 23 years old,

David clearly stated that he is nostalgic about the time when he was 8 or 9 years old, but doesn't get the same feeling about his time in high school. He goes through old photo albums. He grew up and feels equal with his parents and other older relatives, and through dialogue with them he feels even more connected to his childhood. On the other hand, 52-year-old Fredrik is also nostalgic about his past, but owing to a different reason—in his past he was healthy and a fully capable adult, and if not for the injury, his life could have been very different.

Extended Present/Mindfulness

Some of the respondents described states that can be called Extended Present or Mindfulness, experiencing a flow that is sometimes trancelike. This is a fully present state for what may be a future-focused activity, but they enjoy the process and do not focus only on the product of their efforts. Meditative experience can come from being engaged in some activity, such as a sport or doing something around the house (Bertil, 25), or in being alone in the dark, with no sounds of TV or music and in a contemplative mood. Fredrik experiences mindfulness while walking his dog, at night, or when he is in pain; while walking, he pays attention to what is around him at the moment: trees, small noises, smells.

> I can sit on the bus and look out of the window and philosophize, and time stands still. (David, 23)

Longer Future Horizon

> "*Projecting oneself into the future, imagining life after the person is no longer there—longer Future time perspective horizon*."

During the interviews, we encountered participants who have a longer future TP horizon. They have a feeling of how life will be in the nearest five or six years: "I can see I have a job and that I and Y are together and we continue our journey and that we have children; that we meet with my brother" (Gustav, 27). Some also have long-term plans for the next 20 to 30 years (career plans, retirement plans), but they are less clear. They

tend to project themselves into the future. For example, "sometimes I think how it is/feels to be 70 or 80 years old" (David, 23). They are aware of death. Bertil's grandparents are quite old and can be gone soon, and he accepts his own mortality: "I'm not afraid to die. I will definitely reflect on my relatives, but I don't exist then and I don't worry about myself" (Gustav, 27). They extend their future in care for the environment, so that the planet is still livable after they are gone. For example, 29-year-old Cecilia sorts garbage and is a vegetarian because she wants to reduce the ecological effect of meat production: "although that is small, but I do it anyway." Fredrik, 52 years old, has dreams about the future: to become a pilot and to renovate the camper van for traveling around Europe. In his case, his goals are like a driving engine, and he takes baby steps toward achieving it, despite his physical condition.

> … sometimes I get into philosophical mood and can think about that someone will die from my family. (David, 23)

Continuity

The participants have a positive evaluation of their past and future, and this grants them a sense of continuity. There is congruence between their life goals and their life activities.

> You can find the present moment in the past. (David, 23)
> Past was supposed to be almost the same, for it's where you are now, because of what you have been. (Gustav, 27)

Discussion

The aim of this longitudinal case study was to obtain a deeper understanding of the construct of BTP. We selected seven people with the BTP profile according to our operationalization model (Marie Wiberg et al., 2012). We employed in-depth interviews and several self-report instruments, as well as a projective test. In addition, by testing the participants

on two occasions over a period of 18 months, we investigated the stability of the BTP construct. Finally, through the participants' narratives, we tested the "ideal trio" (Past Positive, Present Hedonistic, Future) in order to compare that with what previous literature has suggested (cf. Boyd & Zimbardo, 2005).

Our study is an in-depth case study (seven people), in which we were looking for overlapping patterns. Our results suggest that BTP people are mentally healthy, not depressed, and are satisfied with their life, scoring high to very high on the life satisfaction and psychological well-being inventories. These findings seem to confirm previous correlational studies in which people with BTP are not depressed, do not suffer from any kinds of disorders, and have high levels of psychological well-being and satisfaction with life.

In our Swedish BTP, the dominant view seems to be the present. This finding converges with Shostrom's (1968, p. 353, ref. in Bühler & Massarik, 1968) concept of *time competent person* in which the self-actualizing person is an individual who is primarily time competent. He or she is concerned with living fully in the present, but uses the past and future to make the present more meaningful.

Our interview analyses provided support for what we call Boyd and Zimbardo's (2005, pp. 101–103) hypotheses. Individuals with BTP have a clear and strong base in their positive attitude toward their past. It is built on being brought up in a family with siblings and actively participating in family traditions. Such a base encourages strong personal agency, self-esteem, and a sense of self-efficacy. These people often express gratitude for their past, but also they have the ability to extract positive thoughts and feelings by different events that happen in their life. They have clear and realistic goals for the future that motivate them to go further and pursue those goals, but when needed, they can also resist the temptations of the present moment.

People with the BTP profile can easily set priorities and deadlines, and their plans are realistic and achievable. They are confident in their future and have a practical and analytical perspective. However, they are not totally engulfed by the future; they live in the present, and they enjoy being spontaneous when they have completed their tasks. They enjoy

different kinds of activities, including sports, choir, traveling, cooking, and discussions. They have a rather large social network and equally enjoy spending time with their friends and having time for themselves.

Beyond Boyd and Zimbardo's (2005, pp. 101–103) theoretical hypotheses, we have discovered a few additional dimensions. The Boyd and Zimbardo (2005) hypothesis of "Present Hedonistic valuing every moment of life's journey before we get to our ultimate destination" was not directly expressed by the participants, but they showed how they took take care of themselves in a good way and valued every present moment. They have a tendency to have a longer future TP horizon, often projecting themselves into the future for five or six years—or even 20 to 30 years, when they are 70 or 80 years old, or when they are gone, thinking about what will happen to the planet. Regarding the BTP people's view of the past, they seem to have a warm and deep relationship to their past, which is sentimental and nostalgic. They also experience extended present and mindfulness. These results support the notion of a Holistic Present (Zimbardo & Boyd, 2008) and the notion of an "extended now."

Lastly, they feel that different time frames are interconnected, creating a sense of continuity. Litvinovic (1998) refers to this continuity as *productive time orientation*, which includes a positive evaluation of the past and the future while dwelling in the present. There is a sense of continuity in all three time perspectives, but also a continuity between the Past Positive and the Future Positive. The analysis of the interviews showed that the participants were aware of the "now" and have a synchronicity between the present and the past and also between the present and the future.

Finally, we tested stability of the BTP profiles over time. We compared the level of balance between the study's two time periods and analyzed item by item their S-ZTPI responses and the impact of different life events on their levels of balance. In four out of seven participants, the level of balance did not change over the period of time; in two participants, the level of balance decreased owing to various life events discussed earlier; and in one participant, the level of balance increased with connection to a life event.

In summary, our results indicate a certain degree of stability in the BTP profile over time, suggesting that reaching a temporal balance and

keeping it for a certain period has "adaptive value." In other words, people feel better adjusted to their environment by feeling well and being satisfied with their life. A stable BTP profile facilitates the sense of richer involvement with life, and developing a sense of continuity between temporal zones facilitates the process of finding deeper meaning in one's existence.

Interestingly, it is not the events per se, but their personal interpretation within the personal context, that influences the TP. One participant in our BTP subsample almost got to be a father, and that created tension; whereas for another person it was a desired pregnancy that made him more relaxed and self-confident. For one person, being in a relationship creates balance and for another, breaking up with a girlfriend achieved that result. Not only do the life events themselves matter, but so does the greater context in which they evolve.

Boniwell and Zimbardo (2004) mention that flexibility and switchability are essential components of a BTP person, while evidence seems to suggest that temporal flexibility is important in dealing mostly with extreme circumstances; it does not tell us why such flexibility may be important in dealing with everyday life. According to Epel, Bandura, and Zimbardo (1999, p. 590), "the optimal time perspective depends upon the demands of the situation and its task and reward structure." It may be better to be present-oriented when dealing with an acute crisis. While a future-oriented TP allows a greater degree of self-efficacy and fosters one's optimism for future gains, a present orientation may be more effective in opening oneself to finding solutions to current challenges.

Contrary to previous BTP operationalization methods, our BTP subsample had only one woman and six men, with an average age of 30 and a majority being students. A limitation of this study is that it was conducted with only seven people who qualified for a BTP profile, and we did not have a non-BTP matching sample. At the same time, as we specified in the first part of the chapter, our way to conceptualize a BTP profile as an actual mirror of everyday life was to consider different levels of balance. Our results seem to match that view, in that different BTP levels correspond to different psychological profiles. In general, to consider and operationalize BTP in terms of levels of balance appeared to be useful,

especially in studying its stability over time. In the reality of everyday life, a person is more likely to hold "a nuanced" picture of time perspective, which might increase or decrease as time passes.

This kind of case study is typical in clinical psychology and does not have a control group. Our work seems to fit perfectly this purpose: an explorative and descriptive study that often helps further studies. It is important in explorative study to be careful in drawing conclusions; we do not know if the non BTP group actually would differ from the characteristics we found in the BTP group. In fact, the BTP group was contrasted with the non-BTP group in our level of balance. When we did use a quantitative approach, then we had a control group.

Further, the study was carried out in Sweden, which has a unique history. For the past 200 years there have been no wars on the Swedish territory, and that has allowed society to build an efficient and strong social welfare system, which also provides for a more stable economy. Education is free, and students also get support from the state. Such an economic base provides an additional feeling of security that things will work out positively in the future. Everyone is certain to find a job that she or he wants with compensation enough to provide for a family, as well as being able to count on the state for support in difficult times. Thus, characteristics of the well-known Swedish welfare system could be responsible for providing a special sociocultural background for our BTP sample. Therefore, it is important that similar studies are carried out in other countries, thereby allowing for cross-cultural comparisons. We believe it would be especially interesting to have studies undertaken outside of Western industrialized societies with high GDPs. Such alternative studies will assist in answering such questions: How do people find their balance in unstable economies? How do people find balance if they are religious, but not Christians? How do people find balance and continuity when they have to flee their home countries?

Now that we have discovered some bits of what it actually means to have a balanced time perspective, it is of outmost importance that we find ways to teach people how to find this balance in their own lives, to help them overcome the stresses and anxieties of daily life. We also believe it is important to link the level of balance found in this study with the

actual health of people. Who tends to lead a healthy life and who is at risk of developing chronic noncommunicable diseases (such as diabetes, hypertension, and coronary diseases)? Is there a way to prevent these noncommunicable diseases by balancing out one's time perspective? In our sample, we have seen that people with the BTP tend to be more oriented toward a healthy environment and sustainability, which is of outmost importance in our time. Therefore, helping people to develop balance in their own lives can also have an impact for all of us living on this planet.

References

Beck, A. T., Steer, R. A., & Brown, G. (2006). *Beck depression inventory—Manual, svensk version*. Sandviken: Psykologiförlaget AB.

Bergson, H. (1889). *Essai sur les données immédiates de la conscience*. Translation (2007) *Time and Free Will*. Paris: Presses Universitaires de France.

Boniwell, I. (2005). Beyond time management: How the latest research on time perspective and perceived time use can assist clients with time-related concerns. *International Journal of Evidence Based Coaching and Mentoring*, *3*(2), 61–74.

Boniwell, I. (2009). Perspectives on time. In S. J. Lopez & C. R. Snyder (Eds.), *The Oxford handbook of positive psychology* (2nd ed., Chapter 27, pp. 295–302). New York: Oxford University Press.

Boniwell, I., Osin, E., Linley, P. A., & Ivanchenko, G. V. (2010). A question of balance: Time perspective and well-being in British and Russian samples. *The Journal of Positive Psychology*, *5*(1), 24–40.

Boniwell, I., & Zimbardo, P. G. (2004). Balancing time perspective in pursuit of optimal functioning. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (Chapter 10, pp. 165–178). New Jersey: John Wiley & Sons.

Boyd, J. N., & Zimbardo, P. G. (2005). Time perspective, health, and risk taking. In A. Strathman & J. Joireman (Eds.), *Understanding behavior in the context of time: Theory, research and application* (pp. 85–107). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Carelli, M. G., & Olsson, C. J. (2015). Neural correlates of time perspective. In M. Stolarski, N. Fieulaine & W. van Beek. (Eds.), *Time perspective theory; Review, research and application—Essays in honor of Philip G. Zimbardo* (1st

ed., pp. 231–242). Cham, Switzerland: Springer International Publishing. ISBN: 978-3-319-07367-5.

Carelli, M. G., & Wiberg, B. (2012). Time out of mind temporal perspective in adults with ADHD. *Journal of Attention Disorders*, *16*(6), 460–466.

Carelli, M. G., Wiberg, B., & Åström, E. (2015). Broadening the TP profile: Future negative time perspective. In M. Stolarski, N. Fieulaine & W. van Beek (Eds.), *Time perspective theory; Review, research and application—Essays in honor of Philip G. Zimbardo* (1st ed., Chapter 5, pp. 87–97). Cham, Switzerland: Springer International Publishing. ISBN: 978-3-319-07367-5.

Carelli, M. G., Wiberg, B., & Wiberg, M. (2011). Development and construct validation of the Swedish Zimbardo time perspective inventory. *European Journal of Psychological Assessment*, *27*(4), 220–227.

Cottle, T. J. (1967). The circles test: An investigation of perceptions of temporal relatedness and dominance. *Journal of Projective Techniques & Personality Assessment*, *31*(5), 58–71.

Cottle, T. J. (1976). *Perceiving time: A psychological investigation with men and women*. New York: Wiley.

Derogatis, L. R. (1977). *The SCL-90 manual I: Scoring, administration and procedures for the SCL-90*. Baltimore: Johns Hopkins University School of Medicine, Clinical Psychometrics Unit.

Derogatis, L. R., Lipman, R. S., & Covi, L. (1973). SCL-90: An outpatients psychiatric rating scale—a preliminary report. *Psychopharmacological Bulletin*, *9*, 13–28.

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*(1), 71–75.

Drake, L., Duncan, E., Sutherland, F., Abernethy, C., & Henry, C. (2008). Time perspective and correlates of wellbeing. *Time & Society*, *17*(1), 47–61.

Epel, E., Bandura, A., & Zimbardo, P. G. (1999). Escaping homelessness: The influences of self-efficacy and time perspective on coping with homelessness. *Journal of Applied Social Psychology*, *29*, 575–596.

Fraisse, P. (1957). La période réfractaire psychologique. *L'année Psychologique*, *57*(2), 315–328.

James, W. (1890). *The principles of psychology* (Vol. 1). New York: Henry Holt and Co. (Reprint, 1950, New York: Dover).

Lewin, K. (1942). Time perspective and morale. In G. Lewin (Ed.), *Resolving social conflicts* (pp. 103–124). New York: Harper.

Lewin, K. (1951). *Field theory in the social sciences: Selected theoretical papers*. New York: Harper.

Litvinovic, G. (1998). *Perceived change, time orientation and subjective well-being through the life span in Yugoslavia and the United States*. Unpublished doctoral dissertation, University of North Carolina, Chapel Hill.

McTaggart, J. E. (1908). The unreality of time. *Mind*, *17*(68), 457–474. Retrieved from http://www.jstor.org/stable/2248314

Nuttin, J. R., & Lens, W. (1985). *Future time perspective and motivation: Theory and research method*. Leuven: Leuven University Press & Lawrence Erlbaum.

Paykel, E. S. (1983). Methodological aspects of life events research. *Journal of Psychosomatic Research*, *27*(5), 341–352.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069–1081.

Seifert, T. A. (2005). The Ryff scales of psychological well-being. Center of Inquiry Home. University of Iowa. Recuperado de. Retrieved from http://www.liberalarts.wabash.edu/ryff-scales

Shostrom, E. L. (1964). An inventory for the measurement of self-actualization. *Educational and Psychological Measurement*, *24*, 207–218.

Shostrom, E. L. (1968). Time as an integrating factor. In C. Bühler & F. Massarik (Eds.), *The course of human life: A study of goals in the humanistic perspective* (Chapter 20, pp. 351–359). New York: Springer Publishing Company, Inc.

Shostrom, E. L. (1974). *Manual for the personal orientation inventory*. San Diego, CA: Educational and Industrial Testing Service.

Sircova, A., & Mitina, O. (2008). *Balanced time perspective (BTP) as a resource of person's optimal functioning*. Paper presented at the 4th European Conference on Positive Psychology, Opatija, Croatia.

Sircova, A., van de Vijver, F. J., Osin, E., Milfont, T. L., Fieulaine, N., Kislali-Erginbilgic, A., … Boyd, N. J. (2014). A global look at time—A 24-country study of the equivalence of the Zimbardo time perspective inventory. *Sage Open*, *4*(1), 1–12. https://doi.org/10.1177/2158244013515686

Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. London: SAGE Publications Ltd.

Stolarski, M., Bitner, J., & Zimbardo, P. G. (2011). Time perspective, emotional intelligence and discounting of delayed awards. *Time & Society*, *20*(3), 346–363.

Stolarski, M., Wiberg, B., & Osin, E. (2015). Assessing temporal harmony: The issue of a balanced time perspective. In M. Stolarski, N. Fieulaine & W. van Beek (Eds.), *Time perspective theory; Review, research and application—Essays in honor of Philip G. Zimbardo* (1st ed., Chapter 3, pp. 57–71). Cham, Switzerland: Springer International Publishing. ISBN: 978-3-319-07367-5.

Wiberg, B., Wiberg, M., Carelli, M. G., & Sircova, A. (2012). *A qualitative and quantitative study of seven persons with balanced time perspective (BTP) according to S-ZTPI*. Poster presentation at the Ist International Conference on Time Perspective and Research: Converging Paths in Psychology Time Theory and Research (pp. 120–120). ESPACOBRANCO.

Wiberg, M., Sircova, A., Wiberg, B., & Carelli, M. G. (2012). Operationalizing balanced time perspective in a Swedish sample. *The International Journal of Educational and Psychological Assessment*, *12*(1), 95–107.

Worrell, F. C., & Zeno, R. M. (2007). The reliability and validity of Zimbardo time perspective inventory scores in academically talented adolescents. *Educational and Psychological Measurement*, *67*(3), 487–504.

Zhang, J. W., Howell, R. T., & Stolarski, M. (2013). Comparing three methods to measure a balanced time perspective: The relationship between a balanced time perspective and subjective well-being. *Journal of Happiness Studies*, *14*(1), 169–184.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, *77*, 1271–1288.

Zimbardo, P. G., & Boyd, J. N. (2008). *The time paradox: The new psychology of time that will change your life*. New York, NY: Free Press.

Åström, E., Wiberg, B., Sircova, A., Wiberg, M., & Carelli, M. G. (2014). Insights into features of anxiety through multiple aspects of psychological time. *Journal of Integrative Psychology and Therapeutics*, *2*(1), 3.

Britt Wiberg obtained a Ph.D. in Applied Psychology (1990) from Umeå University with the dissertation "The First Hour of Life," and since 2011 she has been an Associate Professor in Psychology. She is a licensed Clinical Psychologist, licensed Psychotherapist, and authorized Supervisor of Psychotherapy. Her clinical and research interests and expertise are in attachment, psychopathology, psychotherapy, supervision, time perspective, and the outcome and processes in psychotherapy—areas where she has published many articles. She is affiliated with the Psychology Clinic, Department of Psychology, Umeå University, UMEÅ, Sweden.

Anna Sircova is Co-Founder and Head of the Board at Time Perspective Network, as well as an external lecturer at DIS: Study Abroad in Scandinavia,

Founder of and Director at Creative Time Studio, editor of the Time Talks online journal, and main organizer of the Celebrating Time: 3rd International Conference and Festival on Time Perspective, currently based in Copenhagen, Denmark. Passionate about cross-disciplinary approach, open access, photography, and other creative endeavors, Dr. Sircova brings together the psychology of time and creativity theories, developing interventions that fuel the innovative processes and change. Twitter @anna_bki website: https://creativetime.dk/.

Marie Wiberg is Professor in Statistics with a specialization psychometrics. Her research interest includes general psychometrics, statistical methods for psychological tests, large-scale assessments, and achievement tests. She is a research leader for psychometric research at the Department of Statistics, Umeå School of Business and Economics, Umeå University, Sweden.

Maria G. Carelli is Professor at the Department of Psychology, Umeå University, Sweden. Her current research interests are in the field of developmental, cognitive, and clinical psychology. She has authored numerous research articles and book chapters on temporal information processing in children and adults, and on the role of children's schematic knowledge on different aspects of language, concept formation, and memory. She heads two research projects on the role of time perspective in personality, psychopathology, and neuropsychological contexts. Both projects are funded by the Swedish Research Council.

5

Balanced Time Perspective: Many Questions and Some Answers

Antanas Kairys, Audronė Liniauskaitė, Albinas Bagdonas, and Vilmantė Pakalniškienė

The idea of balance has been fascinating humankind for centuries: balanced composition, Yin and Yang, financial balance, or work and leisure time balance. It seems that the idea of balance carries a positive connotation in many contexts and therefore is something to strive for. That could be at least some of the reasons why the popularity of balanced time perspective ideas has increased among those studying time perspective.

Zimbardo and Boyd (1999), in their seminal paper based on Lewin tradition, emphasize the dynamic aspects of time perspective (TP). The authors argue that people tend to overemphasize one or another time perspective, which leads to a cognitive bias that causes a distortion of further perceptions and decisions. Zimbardo and Boyd (1999) contrast the idea of balanced time perspective (BTP; Zimbardo & Boyd, 1999, p. 1272) to those cognitive biases. This idea of a balanced time perspective

A. Kairys (✉) • A. Bagdonas • V. Pakalniškienė
Vilnius University, Vilnius, Lithuania

A. Liniauskaitė
Klaipėda University, Klaipėda, Lithuania

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_5

is defined as "an idealized mental framework that allows individuals to switch flexibly temporal phases among past, future, and present depending on situational demands, resource assessment, or personal and social appraisals" (Zimbardo & Boyd, 1999, p. 1272).

In the process of developing and operationalizing this idea of balanced time perspective, Zimbardo and Boyd (2008) have proposed that the BTP concept can be identified as a specific combination of time perspectives, or profiles (which is measured by Zimbardo's time perspective inventory—ZTPI; Zimbardo & Boyd, 1999). They believe that a person with balanced time perspective would score high on Past-positive, moderately high on Future and Present-hedonistic time perspective, and low on Past-negative and Present-fatalistic time perspectives. The ideal profile was introduced (see Fig. 5.1, www.timeparadox.com, or Stolarski, Wiberg, & Osin, 2015) to make the definition of balanced time perspective even more specific. Zimbardo and Boyd (2008) argue that this particular combination of time perspectives warrants optimal personality functioning, rooted in a sense of identity in the past. The profile implies coming up

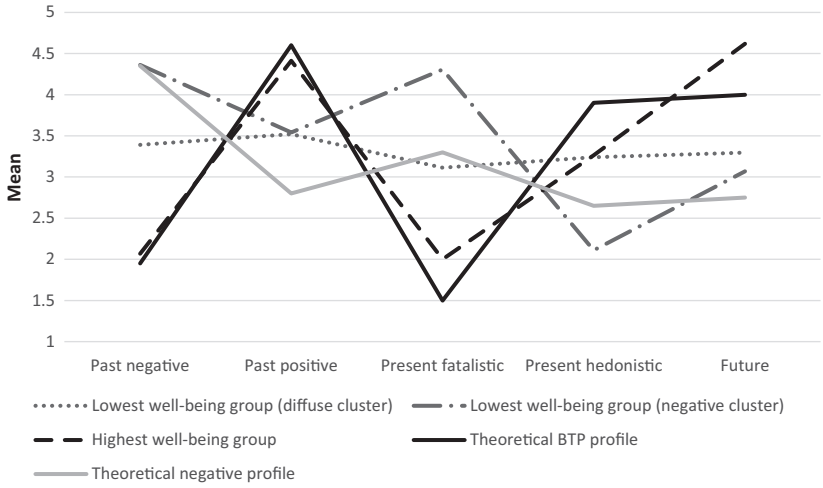

Fig. 5.1 Theoretical profiles of balanced negative time perspective and balanced negative and diffuse time perspective in a Lithuanian sample. *Values of the theoretical time perspective profile were obtained from Stolarski et al. (2015); values of the theoretical negative time perspective profile were obtained from Zimbardo, Sword, & Sword (2012)*

with constructive goals and pursuing them, developing the ability to experience joy and pleasure, and preventing negative emotions and feelings of helplessness. This specific concept of time perspective has been widely accepted and employed by the majority of scientists (e.g., Zhang, Howell, & Stolarski, 2013). Interestingly, 10% of participants with the highest rates of well-being in a Lithuanian representative sample are characterized by a time perspective profile that is very similar to the one proposed by Zimbardo and Boyd (see Fig. 5.1 and chapter appendix for details).

Since its appearance in Zimbardo and Boyd's (1999) article, the idea of balanced time perspective has attracted the attention of many and has generated a substantial body of empirical research. The topics we raise in this chapter are whether we are getting the answers to fundamental questions such as: What is the nature of time perspective? What are the effects of it? How should balanced time perspective be measured? Are there other profiles of time perspective? We examine each of those issues and offer some conclusions.

What Is the Nature of Time Perspective?

Eighteen years after Zimbardo and Boyd's (1999) conceptualized balanced time perspective, most authors in the field still follow the proposed definition. In a nutshell, a balanced time perspective is the ability to switch flexibly from one time perspective to another depending on the demands of the environment. But is there any evidence that the nature of the balanced time perspective is flexibility?

To begin to answer this question, an assessment of the nature of time perspective will be instructive. Zimbardo and Boyd (1999) propose that time perspective is usually an unconscious flexible cognitive process that has a tendency for bias. This biased attachment to a specific time period creates persistent individual differences. Based on the manner in which time perspective is studied, we feel that time perspective more resembles a personality trait (Kairys & Liniauskaitė, 2015). We do not have evidence of flexible cognitive processes that would constitute a flexible nature of time perspective.

The same conclusion can be applied to balanced time perspective when studied as a profile of stable biases or traits (Stolarski et al., 2015).

Flexibility or "switch-ability" (Boniwell & Zimbardo, 2004) is a very attractive and theoretically sound idea (Boniwell & Zimbardo, 2004; Zimbardo & Boyd, 1999); however, we were unable to detect *any* empirical research that confirms the proposition that individuals with balanced time perspective are able to flexibly switch between time perspectives depending on the demands of the situation.

The reality appears to be the opposite, and we are seeing more evidence that balanced time perspective has either a traitlike dispositional structure or a traitlike component. It is similar to dispositional mindfulness (i.e., individual differences in "natural tendency to be aware of their moment to moment experience in an open and non-judgmental way" [Barnhofer, Duggan, & Griffith, 2011, p. 960]).

What Are the Effects of Balanced Time Perspective?

Beginning research on balanced time perspective was influenced by positive psychology (Boniwell, Osin, Linley, & Ivanchenko, 2010; Drake, Duncan, Sutherland, Abernethy, & Henry, 2008). Currently, some popular textbooks on positive psychology contain chapters on time perspective (Boniwell, 2012; Boniwell & Zimbardo, 2004; Hefferon & Boniwell, 2011). Therefore, it seems only natural that balanced time perspective is being related to well-being and other constructs of positive psychology.

Current studies support the claim that balanced time perspective is related to various aspects of optimal functioning; this applies to both hedonic and eudaimonic aspects of well-being (Boniwell et al., 2010; Daukantaitė, 2015; Zhang et al., 2013), satisfaction with life (Gao, 2011; Stolarski, Vowinckel, Jankowski, & Zajenkowski, 2016), happiness (Drake et al., 2008), and positive orientation (Sobol-Kwapinska & Jankowski, 2015). Boniwell and Zimbardo (2004) posed the question: "Are people with a balanced TP likely to be happier than the rest of us? There is no consistent empirical data we can rely on for a firm 'yes,' but

reasonable conjecture pushes us in that direction" (Boniwell & Zimbardo, 2004, p. 168).

At present, we can assume that the evidence for a relation between balanced time perspective and well-being is sound and consistent. Even more, these relationships are established in various samples: students (Boniwell et al., 2010; Gao, 2011; Zhang et al., 2013), general population (Drake et al., 2008; Zhang et al., 2013), and representative samples (see Fig. 5.1). Even though the majority of empirical research is from Western cultures, there is some data from Taiwan (Gao, 2011). Based on the reviewed literature, we can conclude that there is enough evidence for the relation between BTP and well-being. However, there is no proof of causality yet, and it is possible, therefore, that well-being may balance out the time perspective.

Another construct of interest to many scientists is that of mindfulness. Kabat-Zinn (1994) states that mindfulness "means paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (Kabat-Zinn, 1994, p. 4). The most common components of mindfulness are internal regulation of attention, focus on the present moment, and specific attitude toward experience characterized by curiosity, openness, and acceptance (Bishop et al., 2004; Shapiro, Carlson, Astin, & Freedman, 2006). The very definition of mindfulness implies that it is a temporal phenomenon in its essence. Mindfulness is also related to cognitive, emotional, and behavior flexibility (Shapiro et al., 2006). That places mindfulness quite close to BTP, so it seems only natural that empirical research also provides evidence of a relationship between BTP and mindfulness (Drake et al., 2008).

Two empirical studies are worth mentioning concerning this relationship: Stolarski et al. (2016) found that balanced time perspective partly mediates the relationship between mindfulness and satisfaction with life, thereby supporting the idea that mindfulness possesses a time component and allows for identification of a relatedness to balanced time perspective. Stolarski et al. (2016) in conclusion assume that "mindfulness can be considered as an individual disposition facilitating this development of meta-cognitive temporal self-regulation ability. This ability may provide foundations for the development of BTP, which in turn results in

elevated life satisfaction" (Stolarski et al., 2016, p. 30). Seema and Sircova (2013) also confirm the interrelatedness of mindfulness and BTP; however, they extend their ideas further by proposing that, in its essence, mindfulness "as a holistic time perspective is paradoxically a time perspective and also awareness of one's time perspectives" (Seema & Sircova, 2013, p. 17).

Exploring the relationship between balanced time perspective and affective functioning is yet another direction taken in the field. The studies are rare (Garcia, Sailer, Nima, & Archer, 2016; Stolarski, Matthews, Postek, Zimbardo, & Bitner, 2013), but the direction seems promising. For instance, Stolarski et al. (2013) showed that balanced time perspective is linked to positive mood states. Garcia and colleagues (2016) discovered that not only does balanced time perspective interact with the affective profile but also the two mutually interact and affect well-being. So, we can conclude that even though research on balanced time perspective and affective functioning is at its beginning, these studies can provide valuable insights into how time perspective is related to emotional regulation.

This review would be inconsistent if we overlooked other studies that mention the positive relationship between balanced time perspective and optimal functioning. To counter that, consider a study by García and Ruiz (2015) that showed individuals with balanced time perspective recognize more various benefits from recreation activities, have less spare time, participate less in passive resting and taking time-outs, and are less likely to choose activities like drinking and nightlife. The research by Oyanadel and Buela-Casal (2014), with a clinical sample, confirmed that participants with balanced time perspective had better physical health and felt less hopelessness. It is worth noticing that the studies on the biological backgrounds of those with balanced time perspective have been initiated. The first results show that balanced time perspective is linked to cortisol dynamics; that is, a nonadaptive profile of time perspective was related to hypocortisolism, whereas an adaptive time perspective profile was linked to hypercortisolism (Olivera-Figueroa, Juster, Morin-Major, Marin, & Lupien, 2015).

In summary, we can conclude that existing studies strongly suggest that balanced time perspective, perhaps by the means of interaction with effective self-regulatory mechanisms and dispositional mindfulness, is related to optimal functioning and well-being, or at least for influencing states of well-being.

How Can Balanced Time Perspective Be Measured?

From the very beginning, questions about measuring balanced time perspective have been central to current research in this area. In their newest essay on balanced time perspective, Stolarski et al. (2015) dedicate at least half of the text to ways of distinguishing balanced time perspective.

Current Methods of Measurement

We can name five methods for identifying the balanced time perspective.

Rational method. Some of the researchers follow the principle, "if it looks like balanced time perspective, it is the balanced time perspective." Using correlational, regression analysis or structural equation modeling, researchers establish relationship patterns between time perspective and other constructs (e.g., well-being, mindfulness). If the pattern resembles theoretical assumptions about balanced time perspective (e.g., positive links between well-being and Future, Present-hedonistic, and Past-positive, at the same time negative correlation with Past-negative and Present-fatalistic are evident), then it is considered to be the indicator of balanced time perspective. Garcia et al. (2016), using SEM analysis, identify a link between time perspective and well-being and interpret the findings in the context of balanced time perspective, for example.

The method of terciles. Drake and colleagues (2008) propose the first empirical way of identifying BTP. They use terciles as cut-points and brought the rating of each TP scale under three strips (low, moderate, high). The combination of low scores on Past-negative and Present-fatalistic, moderate to high on Past-positive, Present-hedonistic, and Future was considered to be BTP.

The method of profiles. Quite a few researchers (Boniwell et al., 2010; Daukantaitė, 2015; García & Ruiz, 2015; Kairys, Urbanavičiūtė, Pociūtė, & Liniauskaitė, 2013; Seema & Sircova, 2013) have employed one or another cluster analysis method to identify groups of participants of various time perspectives. One of those perspectives is usually recognized as the balanced time perspective group.

The method of deviation from a balanced time perspective. As has been mentioned, Zimbardo and Boyd present the values for Zimbardo time perspective inventory (ZTPI) scales (see Stolarski et al., 2015), which correspond to the profile of a person with balanced time perspective. Based on Stolarski, Bitner, and Zimbardo's (2011) proposed method, Euclidean distance is used to calculate the difference between the ideal profile of BTP (according to ZTPI scales values) and participants' ratings. This difference is considered the deviation from a balanced time perspective (DBTP).

Balanced time perspective scale. This scale is presented by Webster in 2011. The scale consists of two subscales: Past and Future. Using median-split method and dividing each scale into two groups according to the levels of time perspective, four groups appear: low-low; high-high; low-high: high-low. The groups of individuals, who fall into High Past and High Present time perspective units, are named *time expansive group* by Webster (2011) and identified as a balanced time perspective group.

One more way of measuring balanced time perspective, even though it is not traditional in this particular field, is worth noticing—the qualitative method. This approach may be of use in gaining an understanding of how individual experiences the balanced time perspective, as well as the dynamics of this perspective. However, we were able to find only one such study. Wiberg, Wiberg, Carelli, and Sircova (2012, p. 120), by using

interpretative phenomenological analysis, found that participants with balanced time perspective are characterized by consciousness about the "now" and "a *synchronicity* between the present and the past and also between the present and the future."

Advantages and Disadvantages of These Methods

The rational method, being the simplest, manages to capture and measure the balanced time perspective only indirectly. It can be of service in identifying the significant fields of research; after that, more refined means of analysis for measuring balanced time perspective should be used. Another problem with the rational method is that it overlooks the interactions of time perspectives when univariate methods (e.g., correlation), and not multivariate statistics, are employed. In essence, the idea of balanced time perspective reflects the interactions between different time perspectives. Based on univariate statistics, it is impossible to predict the effects on links between specific time perspectives and external criteria while also controlling for other time perspectives—those links may disappear or become stronger.

Similarly, the method of terciles has its drawbacks. Even though it is theoretically supported and allows for distinguishing the participants with balanced time perspective, it has not gained much popularity among researchers, allowing for only a few participants to be assigned to the BTP category (Boniwell et al., 2010; Wiberg, Sircova, Wiberg, & Carelli, 2012; Zhang et al., 2013). Therefore, we believe the method of terciles is too stringent for practical use.

The balanced time perspective scale (Webster, 2011), although it had been used in some studies (Webster, Bohlmeijer, & Westerhof, 2014; Webster & Ma, 2013), has not gained much recognition, either. We can assume that, in comparison with the most popular alternative—ZTPI, this scale is too simplified: the authors omit the present time perspectives, and cut-points are used for the balanced time perspective. It seems that the researches miss the Present time perspective subscale, as there are attempts to combine the BTP scale with Present time perspective measures (Vowinckel, Westerhof, Bohlmeijer, & Webster, 2015). Therefore,

we conclude that the balanced time perspective scale is an alternative (shorter) measure to evaluate BTP for those who have Past and Future time orientations and not those with Present time orientation. We submit that this way of measuring cannot be considered unless we renounce the traditional concept of BTP or reconceptualize our understanding of BTP to be consistent with the measure. This latter point is allowing the cart to drive the horse.

Researchers mostly choose the methods of profiles and deviations from the balanced time perspective. The DBTP method is attractive because of its simplicity and is quite popular with scientists (Oyanadel & Buela-Casal, 2014; Stolarski et al., 2013; Vowinckel et al., 2015). This method is appealing for its convenience as an index. And further empirical research has supported this method (Zhang et al., 2013). However, the method is not without its drawbacks. First, by using Zimbardo and Boyd's ideal BTP profile values, one assumes that balanced time perspective is the same in all cultures and subgroups. This undermines the assumption that BTP depends on situational demands (Zimbardo & Boyd, 1999); furthermore, that view brings us closer to seeing balanced time perspective as a trait and not as a dynamic interaction of time perspectives. First, even though the results of studies show that the balanced time perspective profile is similar in various cultures (Sircova et al., 2015 and see Fig. 5.1 for Lithuanian data), the number of such studies is not sufficient. Second, this ignores other possible profiles of time perspective that have been identified by researches (e.g., Sircova et al., 2015), and there are more than one of these (see later section "Are There Other Profiles of Time Perspective?"). The fact that researchers are also using another index—the deviation from negative time perspective profile (Oyanadel & Buela-Casal, 2014; Zimbardo et al., 2012)—proves that profiles other than the balanced time perspective are of interest. Despite these problems, DBTP nevertheless is a good candidate for routine screening studies on BTP.

The method of profiles has one substantial drawback, and that is subjectivity. Researchers not only can choose from a great variety of statistical procedures (e.g., hierarchical cluster analysis, k-means method, two-step clustering, etc.) but can also decide on how many clusters should be selected. There is a possibility that profiles similar to balanced time per-

spective cannot be identified (e.g., Kairys et al., 2013). In that case, one has to find out if that is because of group peculiarities or problems with the statistical procedures. On the positive side, the method of profiles deals with drawbacks of the DBTP method: first, using cluster analysis means there is no ideal profile a priori, and it is possible to consider the peculiarities of the group; second, profiles other than balanced time perspective can be identified by this method. These profiles can be of interest and would provide important insights in the field of time perspective as well.

To summarize, scientists currently working in the field of balanced time perspective can choose from several methods, of which the profiles and DBTP methods stand out. Even more, the results obtained using those various methods are more similar than distinct in their nature (Zhang et al., 2013).

Are There Other Profiles of Time Perspective?

Many researchers, who apply various cluster analysis techniques, would probably agree that combinations of time perspectives other than the balanced time perspective also exist. Various scientists report from two (Gao, 2011; Zhang et al., 2013) to seven (Daukantaitė, 2015) profiles. The most common number is five (Boniwell et al., 2010; Kairys & Liniauskaitė, 2010; Kairys et al., 2013; Sircova et al., 2015).

Those who distinguish two profiles of time perspective traditionally name one of them the balanced time perspective and the other the non-balanced time perspective (Gao, 2011). The latter resembles the negative time perspective profile (and the search for the deviation from it; Olivera-Figueroa et al., 2015; Oyanadel & Buela-Casal, 2014; Zimbardo et al., 2012) that was discussed earlier. In cluster analyses that is not limited to two profiles, some kind of negative time perspective profile is distinguished, as well (Boniwell et al., 2010; Daukantaitė, 2015; Kairys & Liniauskaitė, 2010; Kairys et al., 2013; Sircova et al., 2015). The negative time perspective profile emerges from combination of high scores on Past-negative and Present-fatalistic and low scores on Past-positive, Present-hedonistic, and Future time perspectives. The authors claim that

this profile of time perspective is related to nonadaptive emotional stress (Olivera-Figueroa et al., 2015) or certain mental health issues (Oyanadel & Buela-Casal, 2014). Two time perspective profiles were identified in 10% of participants with lowest scores on well-being in the Lithuanian representative sample (Fig. 5.1; check chapter appendix for details). One of the profiles resembled the negative profile, even though scores on Present-fatalistic scale were significantly higher than those proposed by Zimbardo et al. (2012). The second profile differed from the prototypical negative profile and were more similar to the diffuse profile (Boniwell et al., 2010). These results assume the existence of several combinations of time perspectives related to low well-being; however, further research is needed to test this research assumption. One can notice that even though the negative time perspective profile has theoretical and primary empirical backgrounds, it is still being explored.

What about other profiles? In 2005, Boyd and Zimbardo proposed five possible profiles of time perspective, and some scholars (Boniwell et al., 2010) use these profiles to analyze the results. However, Boyd and Zimbardo's profile did not receive wide support; the primary reason is that the past time perspective is not covered in this classification. Various researchers have shown that other profiles of time perspective exist. For example, Sircova et al. (2015), Kairys et al. (2013), Kairys and Liniauskaitė (2010), and Boniwell et al. (2010) distinguish a Future-oriented time perspective profile. However, in Daukantaitė's study (2015), such a clear profile does not emerge; Daukantaitė (2015) distinguishes a diffuse time perspective profile similar to that identified in the Boniwell et al. (2010), Kairys et al. (2013), and Kairys and Liniauskaitė (2010) studies; this profile did not emerge in the Sircova et al. (2015) research. Sircova et al. (2015) distinguish a moderately fatalistic profile that is similar to a diffuse profile, yet a "pure" moderately fatalistic profile does not emerge in any other analyses. Summary of studies that employ cluster analysis is presented in Table 5.1.

It is still problematic to establish the reasons for the differences in profiles that have been distinguished in various studies. Those reasons can be related to peculiarities of the sample, the statistical analyses that were used, and cultural or other factors. It is evident that we still lack information on the distinctiveness of various time perspective profiles.

Table 5.1 Most common time perspective profiles in current research

Profile	TP expression	Characteristic features	Studies in which profiles emerged					
			a	b	c	d	e	f
Future oriented	High F TP	Better career adaptivity[c], higher career decision self-efficacy[c], less smoking[f], less alcohol abuse[f], worse evaluation of health[f], low openness, high agreeableness and conscientiousness[f]	+	+	+	+[1]	+	+
Diffuse/risk taking	All TP are moderately expressed	High (enough)scores on career decision self-efficacy[c]; better health evaluation[f], low extraversion, neuroticism and openness[f]	+	+	+	+[1]		
Moderately fatalistic	All TP are below average, PF and F are closest to average						+	
Present-oriented/ hedonistic	High espression of both present, or only PH TP	Relatively high well-being[db], more frequent smoking[f], more frequent alcohol abuse[f], better health evaluation[f], low neuroticism, higher extraversion and openness[f]	+	+	+	+	+	
Negative	High PF and PN TP	Low well-being[db], frequent smoking[f], frequent alcohol abuse[f], worse evaluation of health[f], high neuroticism, low conscientiousness[f]		+	+	+	+	

Note: BTP profile emerged in all presented studies except Kairys et al., 2013;, this profile was discussed earlier. TP—Time perspective; F—Future, PH—Present-hedonistic, PF—Present-fatalistic, PN—Past-negative. 1—three profiles distinguished: diffuse, diffuse-Future oriented, risk-taking

Sources: a. Boyd & Zimbardo, 2005; b. Boniwell et al., 2010; c. Kairys et al., 2013; d. Daukantaitė, 2015; e. Sircova et al., 2015; f. Kairys & Liniauskaitė, 2010

Conclusion: What We Know and What Is Yet to Be Discovered

- *We know* that balanced time perspective is related to an individual's well-being and quite possibly is one significant mechanism of well-being.
- *We have yet to find out* if the nature of balanced time perspective is indeed dynamic—that it has the ability to flexibly switch from one perspective to another based on situational factors.
- *What is needed* is studies that test if individuals with balanced time perspective are indeed able to switch flexibly from one time perspective to another. Research on biological aspects of balanced time perspective have been initiated (Olivera-Figueroa et al., 2015), as well as intercultural studies of the topic (Boniwell et al., 2010; Sircova et al., 2015). It will take time to obtain sound answers, as these studies are at their inception.
- *We know* that there are at least two reliable ways to distinguish the balanced time perspective: the method of profiles and the method of deviation from balanced time perspective.
- *We have yet to find out* whether the time perspective is dynamic and flexible. Both of these methods are not suitable to test this, as each has its flaws.
- *What is needed* is a third way to solve the problem. But perhaps that would be too simple. It is more likely that qualitative and experimental methods will allow for better understanding of the nature of balanced time perspective.
- *We know* that other profiles of time perspective also exist.
- *We have yet to find out* more about the negative time perspective profile. It has been tested, yet we lack basic knowledge about this perspective, let alone other profiles.
- *What is needed* is to continue research on time perspective profiles, as other profiles can be as important as the balanced time perspective.

Appendix: The Lithuanian Study

Participants. 1202 participants (45% males) aged 16 to 89 years (M = 45.5, SD = 18.7) participated in the research. The sample corresponds with the Lithuanian population of 16–89-year-olds by gender,

age, education, ethnicity, area of residence, and distribution by counties. The research took place from November 2011 to March 2012.

Measurements. Lithuanian well-being scale (LPGS-S; Kairys, Bagdonas, Liniauskaitė, & Pakalniškienė, 2013) was used to measure well-being. It is a 59-item instrument that measures various eudaimonic and hedonic aspects of well-being. General score of the scale was used in this study. Scale's Cronbach alpha is 0.86.

The short Lithuanian version (Liniauskaitė & Kairys, 2009) of Zimbardo's time perspective inventory (Zimbardo & Boyd, 1999) was used to measure time perspective. The inventory measures five time perspectives. Out of the 56 items on the full version of ZTPI, 15 items were selected, 3 items representing each perspective. The team of experts selected the items based on factor analysis and ensured those items represented the best each time perspective and covered the main aspects. Cronbach alpha varied from 0.55 (Present Fatalistic perspective) to 0.76 (Future time perspective). Cronbach alpha of Present hedonistic was 0.35.

Analysis. Based on the scores of LPGS–S, 10% of participants with highest level of well-being and 10% of participants with lowest levels of well-being were selected. Each group consisted of 95 subjects. The average of each time perspective was calculated in each group.

In order to test the homogeneity of the low well-being group, hierarchical cluster analysis was employed (using Squared Euclidean distance and Ward method; number of clusters was identified based on distance change). Two clusters were identified in a group of low well-being participants. Diffuse time perspective cluster consisted of 71 participants, and negative time perspective cluster consisted of 24 participants.

References

Barnhofer, T., Duggan, D. S., & Griffith, J. W. (2011). Dispositional mindfulness moderates the relation between neuroticism and depressive symptoms. *Personality and Individual Differences*, *51*(8), 958–962. https://doi.org/10.1016/j.paid.2011.07.032

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., … Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice*, *11*(3), 230–241. https://doi.org/10.1093/clipsy/bph077

Boniwell, I. (2012). *Positive psychology in a nutshell: The science of happiness*. Maidenhead: Open University Press.

Boniwell, I., Osin, E., Linley, A. P., & Ivanchenko, G. V. (2010). A question of balance: Time perspective and well-being in British and Russian samples. *The Journal of Positive Psychology*, *5*(1), 24–40. https://doi.org/10.1080/17439760903271181

Boniwell, I., & Zimbardo, P. (2004). Balancing time perspective in pursuit of optimal functioning. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 165–178). New Jersey: John Wiley & Sons.

Boyd, J., & Zimbardo, P. G. (2005). Time perspective, health, and risk taking. In A. Strathman & J. Joireman (Eds.), *Understanding behavior in the context of time: Theory, research, and applications* (pp. 85–107). Mahwah: Erlbaum.

Daukantaitė, D. (2015). Time perspective and mental health continuum: What are the time perspective profiles of flourishing, moderately mentally healthy, and languishing individuals? *Social Inquiry into Well-Being*, *1*(2), 12–24. 10.13165/SIIW-15-1-2-02

Drake, L., Duncan, E., Sutherland, F., Abernethy, C., & Henry, C. (2008). Time perspective and correlates of wellbeing. *Time & Society*, *17*(1), 47–61. https://doi.org/10.1177/0961463X07086304

Gao, Y.-J. (2011). Time perspective and life satisfaction among young adults in Taiwan. *Social Behavior and Personality*, *39*(6), 729–736. https://doi.org/10.2224/sbp.2011.39.6.729

Garcia, D., Sailer, U., Nima, A. A., & Archer, T. (2016). Questions of time and affect: A person's affectivity profile, time perspective, and well-being. *PeerJ*, *4*, e1826. https://doi.org/10.7717/peerj.1826

García, J. A., & Ruiz, B. (2015). Exploring the role of time perspective in leisure choices: What about the balanced time perspective? *Journal of Leisure Research*, *47*(5), 515–537. 10.18666/JLR-2015-V47-I5-5876

Hefferon, K., & Boniwell, I. (2011). *Positive psychology*. Maidenhead: Open University Press.

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life*. New York: Hyperion.

Kairys, A., Bagdonas, A., Liniauskaitė, A., & Pakalniškienė, V. (2013). *Lietuviškoji psichologinės gerovės skalė [Lithuanian psychological well-being scale]*. Vilnius: Specialiosios psichologijos laboratorija.

Kairys, A., & Liniauskaitė, A. (2010). *The search for balanced time perspective*. 15th European Conference on Personality. Program and Abstracts/Ed. by M. Blatny, M. Hrebickova, S. Kourilova, A. Slezackova, P. Kveton, D. Voboril (p. 158). Brno: European Associacion of Personality Psychology.

Kairys, A., & Liniauskaitė, A. (2015). Time perspective and personality. In M. Stolarski, F. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 99–115). Cham: Springer.

Kairys, A., Urbanavičiūtė, I., Pociūtė, B. M., & Liniauskaitė, A. (2013). Vyresniųjų klasių mokinių ir studentų laiko perspektyvos ir karjeros planavimo gebėjimų sąsajos [High school students' and university undergraduates' career planning abilities and their relation to time perspective]. *Acta paedagogica Vilnensia*, *31*, 30–46.

Liniauskaitė, A., & Kairys, A. (2009). The Lithuanian version of the Zimbardo time perspective inventory (ZTPI). *Psichologija*, *40*, 66–87.

Olivera-Figueroa, L. A., Juster, R. P., Morin-Major, J. K., Marin, M. F., & Lupien, S. J. (2015). A time to be stressed? Time perspectives and cortisol dynamics among healthy adults. *Biological Psychology*, *111*, 90–99. https://doi.org/10.1016/j.biopsycho.2015.09.002

Oyanadel, C., & Buela-Casal, G. (2014). Time perception and psychopathology: Influence of time perspective on quality of life of severe mental illness. *Actas Españolas de Psiquiatría*, *42*(3), 99–107.

Seema, R., & Sircova, A. (2013). Mindfulness—A time perspective? Estonian study. *Baltic Journal of Psychology*, *14*(1, 2), 4–21.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology*, *62*(3), 373–386. https://doi.org/10.1002/jclp

Sircova, A., van de Vijver, F. J. R., Osin, E., Milfont, T. L., Fieulaine, N., Kislali-Erginbilgic, A., … 54 members of the International Time Perspective Research Project. (2015). Time perspective profiles of cultures. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application. Essays in honor of Philip G. Zimbardo* (pp. 169–187). Cham: Springer.

Sobol-Kwapinska, M., & Jankowski, T. (2015). Positive time: Balanced time perspective and positive orientation. *Journal of Happiness Studies*, 1–18. https://doi.org/10.1007/s10902-015-9656-2

Stolarski, M., Bitner, J., & Zimbardo, P. G. (2011). Time perspective, emotional intelligence and discounting of delayed awards. *Time & Society*, *20*(3), 346–363. https://doi.org/10.1177/0961463X11414296

Stolarski, M., Matthews, G., Postek, S., Zimbardo, P. G., & Bitner, J. (2013). How we feel is a matter of time: Relationships between time perspectives and mood. *Journal of Happiness Studies*, 1–19. https://doi.org/10.1007/s10902-013-9450-y

Stolarski, M., Vowinckel, J., Jankowski, K. S., & Zajenkowski, M. (2016). Mind the balance, be contented: Balanced time perspective mediates the relationship between mindfulness and life satisfaction. *Personality and Individual Differences*, *93*, 27–31. https://doi.org/10.1016/j.paid.2015.09.039

Stolarski, M., Wiberg, B., & Osin, O. (2015). Assessing temporal harmony: The issue of a balanced time perspective. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application. Essays in honor of Philip G. Zimbardo* (pp. 57–73). Cham: Springer.

Vowinckel, J. C., Westerhof, G. J., Bohlmeijer, E. T., & Webster, J. D. (2015). Flourishing in the now: Initial validation of a present-eudaimonic time perspective scale. *Time & Society*. https://doi.org/10.1177/0961463X15577277.

Webster, J. D. (2011). A new measure of time perspective: Initial psychometric findings for the balanced time perspective scale (BTPS). *Canadian Journal of Behavioural Science*, *43*(2), 111–118. https://doi.org/10.1037/a0022801

Webster, J. D., Bohlmeijer, E. T., & Westerhof, G. J. (2014). Time to flourish: The relationship of temporal perspective to well-being and wisdom across adulthood. *Aging & Mental Health*, *18*(May 2014), 1–11. https://doi.org/10.1080/13607863.2014.908458

Webster, J. D., & Ma, X. (2013). A balanced time perspective in adulthood: Well-being and developmental effects. *Canadian Journal on Aging/La Revue Canadienne Du Vieillissement*, *32*(4), 433–442. https://doi.org/10.1017/S0714980813000500

Wiberg, B., Wiberg, M., Carelli, M. G., & Sircova, A. (2012). *A qualitative and quantitative study of seven persons with balanced time perspective (BTP) according to S-ZTPI*. In M. P Paixao, V. E.C. Ortuno, P. Cordeiro, R. David (Eds.), 1st International Conference on Time Perspective and Research: Converging Paths in Psychology Time Theory and Research (p. 120). Coimbra: Espaco Branco.

Wiberg, M., Sircova, A., Wiberg, B., & Carelli, M. G. (2012). Operationalizing balanced time perspective in a Swedish sample. *The International Journal of Educational and Psychological Assessment*, *12*(1), 95–107.

Zhang, J. W., Howell, R. T., & Stolarski, M. (2013). Comparing three methods to measure a balanced time perspective: The relationship between a balanced time perspective and subjective well-being. *Journal of Happiness Studies*, *14*(1), 169–184. https://doi.org/10.1007/s10902-012-9322-x

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective. A valid, reliable individual-difference metric. *Journal of Personality and Social Psychology*, *77*, 1271–1288.

Zimbardo, P. G., & Boyd, J. N. (2008). *The time paradox*. New York: Free Press.
Zimbardo, P. G., Sword, R., & Sword, R. (2012). *The time cure: Overcoming PTSD with the new psychology of time perspective therapy*. San Francisco, CA: Jossey-Bass.

Antanas Kairys is Associate Professor at the Institute of Psychology at Vilnius University, Lithuania. Research interests are: nature of time perspective, links between time perspective and personality traits, career development and time perspective, and aging.

Audronė Liniauskaitė is Professor in the Department of Psychology at Klaipėda University, Lithuania. Research interests are: time perspective and well-being, career development and time perspective, and developmental psychology.

Albinas Bagdonas is Professor at the Institute of Psychology at Vilnius University, Lithuania. Research interests are: time perception and time perspective, evolutionary psychology, and aging.

Vilmantė Pakalniškienė is Associate Professor at the Institute of Psychology at Vilnius University, Lithuania. Research interests are: well-being, Internet psychology, and aging.

6

Balancing One's Own Time Perspective from Aerial View: Metacognitive Processes in Temporal Framing

Maciej Stolarski and Joanna Witowska

Introduction

Although research on time perspective (TP) can be traced back to classic work by Kurt Lewin (1942), the construct remains somewhat vague and elusive. On the one hand, TP clearly has a robust cognitive processual component, associated with the unique human ability to perform mental time travels (Suddendorf & Corballis, 2007). On the other hand, we may observe some relatively stable individual differences in tendencies or biases to take particular temporal perspectives. In their seminal work, Zimbardo and Boyd define TP as "the often nonconscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help to give order, coherence, and meaning to those events" (Zimbardo & Boyd, 1999, p. 1271), emphasizing the processual nature of TP. However, their empirical operationalization of TP—that is, the Zimbardo Time Perspective

M. Stolarski (✉) • J. Witowska
University of Warsaw, Warszawa, Poland

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_6

Inventory (ZTPI; Zimbardo and Boyd, 1999)—is a typical self-report of traitlike characteristics. Probably owing to the fact that measuring the stable tendencies is far easier than monitoring the process of online temporal framing, the vast majority of research has focused on individual differences in TP as assessed by the ZTPI and their consequences/correlates (see Stolarski, Fieulaine, & van Beek, 2015). In many cases such an approach is reasonable and justified, as momentary temporal focus remain under influences of individual predispositions to act in a given way. However, most of TP researchers tend to ignore intraindividual dynamics of TP, even if they refer to the earlier mentioned definition. This problem refers also to the issue of balanced time perspective (BTP), which became one of the core concepts of positive psychology (Boniwell & Zimbardo, 2004), and proved to be one of the most powerful predictors of well-being (Zhang, Howell, & Stolarski, 2013).

Central to whole TP theory (Zimbardo & Boyd, 1999, 2008), BTP is defined as the ability "to switch effectively among TPs depending on task features, situational considerations, and personal resources, rather than be biased towards a specific TP that is not adaptive across situations" (Zimbardo & Boyd, 1999, p. 1285). We clearly see that a processual nature of BTP is even more obvious and clear than in regard to the TP definition: a *dynamic* process of switching between particular time horizons constitutes the essence of BTP. However, the initial way in which balance was illustrated by Zimbardo and Boyd (2008; see also www.timeparadox.com) was simply an "optimal" TP profile, with a high score on Past Positive, moderately high on Future and Present-hedonistic, and low scores on Past-negative and Present-fatalistic. Thus, at least at first glance, it does not indicate dynamic switching or any form of time-horizon plasticity. Although such a "positive" TP profile clearly seems to be adaptive, and obviously provides a proper background for switching (if the three positive TPs are on sufficiently high levels, they are probably quite easily accessible for an individual), we cannot be sure whether it is a sufficient condition for effective use of TPs in various life situations. We believe that hitherto research and theory has overlooked a fundamental TP-related phenomenon that directly refers to the problem of conscious self-regulation of one's own temporal focus— namely, temporal metacognition.

Metacognition

In the last 35 years, the concept of metacognition has assumed a prominent role in both psychological theory and research. The observation that people are able to become aware of their own cognitive processes was initially made by Flavell (1979) in developmental and educational contexts. The increasing popularity of the construct attracted the attention of scientist representing various areas of psychological science, including neuropsychology (Shimamura, 2000), clinical (Cooper, Grocutt, Deepak, & Bailey, 2007), and social psychology (Lories, Dardenne, & Yzerbyt, 1998). Naturally, the principal domain dealing with the theoretical and empirical side of metacognition is cognitive psychology, with a key role being research on metamemory (Nelson & Narens, 1990, 1994), executive functions (Fernandez-Duque, Baird, & Posner, 2000), and self-regulation (Salonen, Vauras, & Efklides, 2005). Recently, metacognition has gone far beyond its domain of origin, and has been used with reference to emotions (metaemotion; Gottman, Katz, & Hooven, 1996; Norman & Furnes, 2016) and mood (metamood; Mayer & Gaschke, 1988), implying that meta-level processing may cover not only pure cognitive aspects of psychological functioning but also the "hot" area of affective processes (see Zeidner, Matthews, & Roberts, 2004). A number of theoretical and empirical works in various areas of psychology suggest a significant impact of metacognition on various levels of humans functioning (for a review, see Metcalfe & Shimamura, 1994). It is also worth noting here that metacognition has been already linked to specific time-related phenomena, such as mindfulness (Jankowski & Holas, 2014) and subjective passage of time (Lamotte, Chakroun, Droit-Volet, & Izaute, 2014).

Thus, TP clearly has a robust cognitive component. The ability to perform mental time travel is mainly cognitive, with a pivotal role played by episodic and working memory processes (Suddendorf & Corballis, 2007). Individual differences in tendencies to use particular TPs also are associated with various types of cognitive ability (Stolarski, Bitner, & Zimbardo, 2011; Zajenkowski, Stolarski, Maciantowicz, Malesza, & Witowska, 2016). As already mentioned, the concept of BTP has also been defined in terms of a quasi-cognitive ability. Therefore, we assume that metacognitive processes may prove essential

for developing a balanced TP profile and, especially, for an ability to perform the online TP switching as a response to changing situational conditions. Some initial findings regarding associations between metacognition and TP were reported by Zajenkowski, Carelli, and Ledzińska (2015). The authors showed that particular TPs may be associated with metacognitive skills and dysfunctional metacognitive beliefs. In their exploratory study, adaptive cognitive control was positively associated with the Future dimension, whereas elevated levels of negative metacognitive beliefs were related to a higher Past-negative dimension. However, the authors did not analyze associations between metacognitive dimensions and BTP. They also did not attempted to answer the question whether we may identify any specific TP-related metacognitive features. In order to analyze possible connections between the areas of metacognition and TPs, particularly BTP, we begin our consideration with a brief overview of major concepts in the area of research on metacognition.

Major Concepts of Metacognition

According to Flavell (1979), metacognition is defined as knowledge and cognition about cognition and concomitant processes of monitoring and control of cognitive enterprises. Other definitions have drawn on the original one. For instance, Nelson (1992) defined it as self-monitoring and self-control of one's own cognition, and also viewed it as a part of self-consciousness that includes knowledge of one's mental states and inner reality. The latter definition is a kind of amplification of its antecedent, which gives cause to think that metacognition may concern a variety of "mental states." Metacognition has been operationalized in many different ways within various theoretical models (see Nelson, 1992; Tarricone, 2011). We base our initial concept of temporal metacognition on the classic and acknowledged model endorsed by Flavell, who distinguished among three components of metacognition—that is, metacognitive knowledge, metacognitive experiences, and metacognitive strategies (Efklides, 2008; Flavell, 1987).

Metacognitive knowledge is defined as declarative knowledge referring to information about one's own and others cognitive processes, as well as tasks, goals, actions, strategies, and experiences (Efklides, 2008; Flavell, 1987). In a general view, metacognitive knowledge may be considered as awareness of information useful for successful dealing with future situations.

Metacognitive experience is any state in which a person is conscious of feelings which appear during cognitive processes or tasks (Efklides, 2008; Flavell, 1987). Metacognitive experiences may take two forms, metacognitive judgments and metacognitive feelings, depending on whether they occur in relation to explicit/conscious or implicit/unconscious cognitive activity (Koriat, 2007; Koriat & Levy-Sadot, 1999). Widespread examples of metacognitive experiences include "feeling of difficulty" in the contexts of learning or task performance, and "feeling of knowing" in case of memory (recalling) processes.

Metacognitive strategies are defined as "deliberate use of strategies (i.e., procedural knowledge) in order to control cognition" (Efklides, 2008, p. 280), and are usually treated as skills (Efklides, 2008). Therefore, this aspect of metacognition is expressed in an ability to use metacognitive knowledge at the appropriate time. Even though metacognitive strategies clearly have some distinctive features, it is worth noting that Flavell (1979) claims that metacognitive strategies may be a part or a variety of metacognitive knowledge.

The definition of metacognitive strategies puts a strong emphasis on controlling one's own cognition—that is, using strategies to regulate one's own behavior. Hence, metacognitive skills are understood in terms of self-regulatory processes (Boekaerts, 1999; Efklides, 2008). Moreover, major researchers in the field of metacognition (e.g., Boekaerts, 1999; Brown, 1987) have stated that all components of metacognition are significant for effective self-regulation. "Self-regulation" is defined as a complex process of controlling one's own behavior in order to achieve goals; it is initiated by a combination of motivation and activating stimuli (Baumeister & Heatherton, 1996). Efklides (2008) claims that "these facets [of metacognition] serve different functions in the self-regulation process, with ME [metacognitive experiences] and MK [metacognitive

knowledge] involved in the monitoring function that informs self-awareness as well as awareness of cognition, and MS [metacognitive strategies] involved in strategy use for the control of cognition" (p. 280). At this point, it is worth noting that, in the present consideration, we use the term "self-regulation" interchangeably with "self-control." Both terms are usually similarly defined in the literature (e.g., Baumeister, Vohs, & Tice, 2007; Hofmann, Rauch, & Gawronski, 2007), even if some differences between self-control and self-regulation have been previously pointed out (Baumeister et al., 2007; Kuhl, 1996). Recently, researchers have explicitly connected self-regulation with executive functions (Hofmann, Schmeichel, & Baddeley, 2012), the latter defined as an ability allowing an individual to reach adopted goals and to override automatic processes (Diamond, 2013). It is widely accepted that executive functions include three basic processes: updating, inhibition, and shifting (Miyake et al., 2000).

Self-regulation processes are typically described as conscious states (Posner & Rothbart, 1998) that direct our attention to another joint feature of metacognition and self-regulation—consciousness. "Metacognition" is closely associated (and even interchangeably used) with "self-awareness" and "consciousness" (see Boekaerts, 1999; Efklides, 2008; Nelson, 1992). Although some authors (Bargh, 2003; Spehn & Reder, 2000) suggest that monitoring processes and experiences associated with metacognition may be unconscious, we support the former point of view. We do agree that some important aspects of metacognitive processing in some situations may remain unconscious. Nevertheless, in our opinion, the vast majority of metacognitive processes take place on the conscious level. For instance, we used our metacognitive abilities while writing this chapter—that is, we thought about what people think of their thinking. The process is highly conscious; according to these definitions, we are using *knowledge about others' cognition about their cognition*. During this task, we are aware of so many higher-level cognitive processes that we may consider this as an example of a meta-meta level of cognition. Therefore, the higher the "meta" level of metacognition, the more consciousness it requires. In the following section, we discuss the possible role of metacognitive self-regulation in the context of TP-related processes, including development of the BTP.

The Role of Metacognitive Processes in Time Perspective

To date, only one work has linked metacognition with human temporality. Lamotte et al. (2014) focuses on the role of metacognitive processes in the experience of the passage of time. The authors developed their Metacognitive Questionnaire on Time to measure awareness of the passage of time (metacognitive knowledge with *attention* and *emotion* components) in the self and in others. The scale is an interesting example of a tool created to explore the importance of time knowledge in time judgments and in time experience. Although in our work we also elaborate on the issue of subjective time, we analyze it within a completely different theoretical framework (the TP theory; see Stolarski et al., 2015) and we focus on a distinct psychological phenomenon—that is, metacognitive processes in temporal perspectives.

A simple shift of one's attention from the "here and now" to the "there and then" requires a variety of complex cognitive functions. To go beyond the present moment one needs to engage processes of episodic memory, which enables one to reexperience the past; to go forward into the future, even more complicated processes of mental simulations are necessary (Suddendorf & Corballis, 2007). The majority of these partitive processes never exceed the threshold of consciousness; however, the act of attention-shifting from the present to the past or future is often conscious and intentional (e.g., when one wants to analyze causes of a failure in a job interview or intends to prepare for a forthcoming business meeting). While assessing the major assumptions of TP theory and the concept of BTP, we recognized that hitherto operationalizations of TP and BTP have generally ignored the possibility of conscious self-directedness in managing one's own temporal focus. Although BTP was defined in a way that clearly suggested the key role of metacognitive ability to switch between time horizons, it was never operationalized in a way that would provide any insight into such self-regulatory processes. This constatation led us to the novel idea of applying the concept of meta-level cognition to the fertile ground of TP theory.

At the very beginning, we drew upon the classic concept of metacognition proposed by Flavell (1979). We took an in-depth look at the potential roles of the three major aspects of metacognition in TP-related processes. We synthesize our deliberations as follows.

Metatemporal Knowledge

Based on the classic concept of metacognitive knowledge, we assume that an individual may develop knowledge about his own tendencies to concentrate on specific time frames (i.e., past, present, future), about difficulties and strengths resulting from these tendencies, and about strategies that may allow the person to overcome these dispositions and to switch between particular time orientations.

Metatemporal Strategies

In our theoretical reflections, metatemporal strategies are understood as abilities, which are associated with metatemporal knowledge and which allow for exerting conscious control and inhibition of automatic dispositions toward particular TPs. The abilities constitute the basis for effective switching between time horizons. They also allow one to effectively inhibit the perspectives that are not adaptive in a given situation, and to effectively "update" one's temporal focus in a response to changing situational conditions. Thus, metacognitive strategies adopt a variety of executive functions in order to effectively manage one's time horizons. This assumption is in line with results demonstrating the importance of executive functions in developing BTP (Zajenkowski, Stolarski, Witowska, Maciantowicz, & Łowicki, 2016).

Metatemporal Experiences

The term "metatemporal experiences" describes a variety of experiences involving being aware of one's own temporal focus. For instance, during a conversation with a friend, you may realize that your thoughts are

completely focused on a forthcoming job interview (future perspective), so that you can hardly pay attention to what your current interlocutor is saying. Of course, such experiences may be also positive—for example, in a situation of mindful focus on pleasurable sensations coming from one's own body in the present. A feeling of connectedness between time horizons (e.g., a reflection that one's present identity is a superposition of past experiences and future goals and dreams) is another example of metatemporal experience. A totality of such experiences may, on the one hand, result in a generalized sense of uncontrollability of one's temporal focus (which may be reflected in Present-fatalistic orientation); on the other hand, it may lead to a self-enhancing sense of temporal harmony. Metatemporal experiences may naturally form bases for metatemporal knowledge (when one draws conclusions from one's accumulated experiences) and indirectly for metatemporal strategies (when one takes advantage of one's knowledge in real-life situations).

Hence, it is clearly visible that the three aspects of temporal metacognition interpenetrate, and it may be difficult to empirically distinguish one from another. Nevertheless, the distinction is theoretically important and became a starting point for development of the Temporal MetaCognition Scale (TMCS).

Toward a New Measure of Temporal Metacognition

We began our efforts by generating a pool of 84 items intended to reflect metacognitive processes in temporal framing. Each of the items was created to indicate some aspects of metacognition with reference to one of hypothesized meta-level processes in TP, as follows:

1. *Temporal interconnectedness*—the sense of connection between particular time horizons. We believe that items developed to measure this aspect of temporal metacognition should reflect metacognitive experiences of continuity and reciprocal influences between subjective time horizons of TPs. While developing these items, we drew mainly on the concept of holistic present, discussed by Zimbardo and Boyd (2008)

as a potential supplement to their initial model of TP. The authors describe holistic present as an "extended now" that contains both the past and the future, is seen without being filtered by either, and is experienced as being one, both interconnected and inseparable. They also explicitly state that this way of experiencing has much in common with mindfulness (Zimbardo & Boyd, 2008; see also Zimbardo, Sword, & Sword, 2012).

2. *Temporal flexibility*—the intentional shifting and exerting of control over the currently "activated" time horizon. Items elaborated to reflect this metatemporal feature are aimed at measuring the temporal plasticity and intentional management of one's own temporal focus. The idea of distinguishing this feature of temporal metacognition was derived directly from the definition of BTP (Zimbardo & Boyd, 1999; Boniwell & Zimbardo, 2004), which emphasizes the ability to switch between TPs in order to effectively adapt to situational demands. At the same time, we believe it should correspond with Flavell's (1979) metacognitive strategies.
3. *Temporal wisdom*—awareness of various aspects of functioning in different time horizons (i.e., awareness of one's own TP tendencies) and knowledge of the utility of particular TPs in various contexts. This feature was initially thought to reflect Flavell's (1979) concept of metacognitive knowledge; however, while generating the items, we recognized that this aspect of temporal metacognition was hardly distinguishable from metatemporal strategies. In general, the observation was in line with Flavell's constatation that metacognitive strategies are, in fact, manifestations of metacognitive knowledge.

The 84 items were subsequently assessed by four competent judges for their (1) intelligibility and (2) correspondence with theoretical assumptions. After the assessment, some items were excluded owing to low ratings on one or both criteria. The remaining statements formed the baseline set of items that was then filled in by a substantial sample of individuals. Exploratory Factor Analysis (EFA) allowed for identification of four factors. One of these factors was hardly interpretable, thus we have excluded it from the final version of the questionnaire, as well as a number of items that did not fulfill typical psychometric requirements[1]

for inclusion in the final version. After applying these procedures, we were left with a set of 26 items, constituting three scales.

The first factor consisted mainly of items reflecting self-efficacy in exerting conscious control over one's own current temporal focus—that is, the effectiveness in taking a temporal perspective desired in a given moment and, particularly, inhibiting those considered unwanted. Sample items from this scale are as following: "I know how to control thoughts that prevent me from being here-and-now" or "When I begin to think about threats that await me in the future, I find it difficult to focus on anything else." This aspect of temporal metacognition is then manifested in a low frequency of intrusive thoughts (Clark & de Silva, 1985) related to "unwanted" time horizons. Individuals scoring high on this dimension effectively manage their current time-horizon focus and are relatively unsusceptible to externally induced, reactive shifts in TP. The content of this scale suggests that it should be positively associated with various aspects of self-control or Pavlovian strength of inhibition (Strelau, Angleitner, Bantelmann, & Ruch, 1990) and negatively with such temperamental traits as emotional reactivity or perseveration (Strelau, 1996). In all, this aspect of temporal metacognition seems mainly to be related to both cognitive and temperamental inhibitory processes that allow avoidance of undesirable temporal perspectives. Thus, within the TP universe, it should prove strongly negatively related to "negative" TPs—that is, Past-negative, Present-fatalistic, and Future-negative. We decided to label this dimension the Metacognitive Temporal Control (MTC).

The second factor consisted of items that were developed either to reflect intertemporal connectedness or to indicate the ability to reconstruct one's memories of the past. It contains items such as: "I know that I may change my point of view on the events from my past" or "Thinking about my future sometimes allows me to change my point of view on what has already happened." A common denominator of statements making up this factor is that they all refer to a sense of "open past"—a conviction that the way in which we perceive past events may evolve or even be intentionally changed. The dimension also clearly has a skill component, as a majority of these items describe an ability to reinterpret the past. Therefore, high levels of this aspect of temporal metacognition indicate both a belief that the past is not entirely fixed (at least at the subjec-

tive psychological level) and a self-efficacy in changing one's own perceptions and interpretations of the past. It is highly possible that this factor to some degree emerges from such traits as a low need for cognitive closure (Webster & Kruglanski, 1994) or high openness to experience (McCrae & Costa, 1997); however, the latter may also underpin two remaining aspects of temporal metacognition. Regarding the factor's potential associations with TP dimensions, it should be associated with Past-positive. We labeled this factor and the respective scale Cognitive Reconstruction of the Past (CRP). Items in this scale are mainly "past-directed," proving that this factor reflects a tendency to connect the present and the future to the past rather than the opposite way.

The third factor included statements that would indicate the sense of connectedness between time horizons or the tendency to consider a given situation from various temporal perspectives. This dimension should promote BTP and help avoid developing a biased TP. At the same time, the items on this scale and were not excluded during early phases of the TMCS development were all somehow related to achieving goals or broadly understood future effectiveness. In other words, the items indicate connectedness, continuity, and reciprocal influence between time horizons, but these features are all "in the service" of the future. Thus, we labeled this scale Goal-oriented Metatemporal Interconnectedness (GMI). The scale includes items such as "I intentionally use my past experience to avoid committing mistakes in the future" and "I know how to reconcile my present desires with my future goals." Therefore, the dimension may be treated as a sort of applied "temporal wisdom," manifested in a meta-level integration of time horizons and taking advantage of using past experiences and mental simulations of the future. Because of the marked instrumental character of this aspect of temporal metacognition, it probably has more in common with the classic Future orientation than with the concept of holistic present (Zimbardo & Boyd, 2008). Most of the items are "future-directed," which shows that the factor represents connecting past and present to the future rather than the opposite way.

It is worth noting that the second and the third factors may in fact reflect two distinct aspects of temporal flexibility. Each of them seems to pertain contentwise to different areas of time-horizon switching—that is,

referring to perceptions of the past (CRP) vs. referring to projections of the future (GMI). However, the ability to link particular TPs and to perceive the connectedness between distinct time horizons is their common denominator.

The Temporal MetaCognition Scale

The three scales make up the final version of the Temporal MetaCognition Scale (TMCS),[2] which was subsequently tested in a validity study. Confirmatory Factor Analysis (CFA), conducted on data collected from another substantial sample of adults, supported the EFA-based three-factor solution with proper fit indices. The internal consistency of the scales was satisfactory, with Cronbach alphas oscillating between .78 and .88. The MTC and GMI were moderately positively correlated (r = .40, p <.001), and displayed rather weak albeit still significant positive relationships with the CRP scale (r = .18, p <.01 and r = .20, p <.01, respectively). Thus, a magnitude of these associations did not seem sufficient for considering calculating a higher-order factor representing global "temporal capacity."

The main rationale for developing the TMCS was to enable direct measurement of individual differences in metacognitive characteristics that underpin development of the BTP, which remains a central concept of TP theory (Stolarski et al., 2015; Zimbardo & Boyd, 1999). Therefore, the first-choice convergent validity indicator of the TMCS was the ZTPI (Zimbardo & Boyd, 1999) scale. It is worth noting that, in the present research, we have used a revised version of the ZTPI, namely the S-ZTPI (Carelli, Wiberg & Wiberg, 2011), which broadens the TP universe by adding the Future-negative factor and displays better fit-to-data than the classic five-factor version (Jochemczyk, Pietrzak, Buczkowski, Stolarski, & Markiewicz, 2017). Deviation from the Balanced Time Perspective (DBTP; Stolarski et al., 2011), a validated ZTPI-based indicator of temporal harmony (see Stolarski, Wiberg, & Osin, 2015), was used as a measure of BTP. Additionally, we measured satisfaction with life (with the Satisfaction With Life [SWL] scale; Diener, Emmons, Larsen, & Griffin, 1985).

Associations between particular subscales of TMCS and the above-mentioned criterion validity variables are provided in Table 6.1. First, it should be noted that all the TMCS scales were significantly related to lower DBTP—that is, to a more balanced TP profile—as well as to higher life satisfaction. A regression analysis (see Table 6.2) predicting DBTP score with TMCS scales showed that each aspect of temporal metacognition predicted an incremental portion of variance in DBTP (all TMCS subscales predicted 36% of variance). Links between the TMCS and

Table 6.1 Associations between TMCS scales and ZTPI scales, BTP, and well-being (n = 253)

	Metacognitive temporal control	Cognitive reconstruction of the past	Goal-oriented temporal interconnectedness
Past-positive	.23***	.19**	.21**
Past-negative	−.57***	−.02	−.22***
Present-hedonistic	.11^{+}	.25***	.00
Present-fatalistic	−.36***	−.12^{+}	−.33***
Future-positive	.12^{+}	.12*	.56***
Future-negative	−.61***	−.02	−.23***
DBTP	−.54***	−.24***	−.42***
SWL	.28***	.14*	.30***

Note. DBTP—Deviation from the Balanced Time Perspective; SWL—Satisfaction With Life scale

*p <.05, ** p <.01, ***p <.001, $^{+}$p <.10

Table 6.2 Predictions of deviation from the BTP with TMCS dimensions (n = 253)

	β	*pr*	*sr*
1. Metacognitive temporal self-regulation	−.43***	−.44	−.40
2. Cognitive reconstruction of the past	−.12*	−.14	−.11
3. Goal-oriented metatemporal interconnectedness	−.23***	−.25	−.21

Note: Multiple linear regression analysis was conducted with DBTP as an outcome variable and TMCS as predictor. Model statistics: $F(3249) = 46.357$, $p < .001$, $R = .60$, $R^2 = .36$, corr.$R^2 = .35$. DBTP indicates how ill-balanced one's TP profile is.

pr—partial correlation; indicates the contribution of each predictor to the multiple correlation (R).

sr—semi-partial correlation; indicates the "unique" contribution of a predictor to the multiple correlation

*p <.05, ** p <.01, ***p <.001

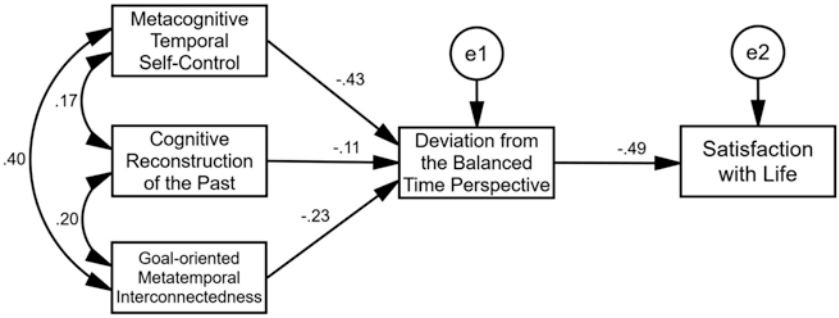

Fig. 6.1 Path model illustrating the associations between TMCS dimensions via BTP ($\chi^2 = 3.296$, $df = 3$, $\chi^2/df = 1.099$, $AGFI = .974$, $CFI = .999$, $RMSEA = .020$). *All paths are significant at least at p <.05 level*

SWL were fully mediated by DBTP, indicating that temporal metacognition influences life satisfaction only indirectly, via balancing one's TP profile. Based on these results, we developed a path model illustrating the mediation (see Fig. 6.1). The model displayed excellent fit, supporting the claim that temporal metacognition provides the basis for the development of BTP, which in turn robustly influences well-being.

Further, it is worth paying attention to relationships between temporal metacognition and particular TPs. MTC manifested pronounced associations with three "negative" TP dimensions: Past-negative, Present-fatalistic, and Future-negative. The results seem to corroborate our prediction that this aspect of temporal metacognition is mainly responsible for inhibiting the maladaptive temporal perspectives, and it has relatively little to do with the "positive" TPs.

CRP was associated with Past-positive, in line with our predictions. However, it was Present-hedonistic that turned out to be the strongest correlate of this metacognitive feature. This somewhat surprising effect is most likely a result of a loading of openness to experience, which is regularly reported for Present-hedonism (Kairys & Liniauskaite, 2015), whereas in the case of the CRP dimension, openness seems crucial for developing the sense of an "open" and "reconstructable" past.

The remaining TMCS dimension—GMI—proved robustly associated with the Future scale, which is fully understandable if we take into account the direct link between goal-orientation and the Future TP

Table 6.3 Associations between TMCS scales and Cantwell's SFQ scales (n = 253)

	Metacognitive temporal control	Cognitive reconstruction of the past	Goal-oriented metatemporal interconnectedness
Adaptive control	.19**	.19**	.34***
Inflexible control	−.25***	−.08	−.13*
Irresolute control	−.42***	.01	−.30***

*p <.05, ** p <.01, ***p <.001

(Zaleski & Przepiórka, 2015). Relationships obtained for the remaining TPs are weaker, albeit one should note a positive association with Past-positive and inverse ones for the "negative" TPs.

Finally, we attempted to link the TMCS scores with one of the established measures of metacognition—the Strategic Flexibility Questionnaire (SFQ; Cantwell & Moore, 1996). Although the measure is not based on Flavell's works, it investigates self-regulatory control, which seemed optimal for testing the convergent validity of our scale. Correlations between SFQ dimensions and TMCS scales are shown in Table 6.3.

The analysis revealed that all TMCS dimensions are associated with elevated levels of adaptive executive control, which is marked by an acknowledgment of the need to adjust processing behaviors in response to changing demands (Cantwell, 1997). The dimension therefore represents a sort of cognitive flexibility. The strongest correlation was obtained for the GMI scale. This result confirms our expectations that the factor represents temporal plasticity in a more pronounced way than do the remaining two TMCS subscales.

The second SFQ dimension—inflexible executive control—represents a tendency to persevere with existing processing behaviors even when these may be perceived as inappropriate (Cantwell, 1997). This aspect of executive control should be, by its nature, linked to an avoidance of unwanted TPs. As we already mentioned, such inhibitory processes are mainly represented by the TMCS control subscale. The obtained results support the expected association between the two dimensions. However, MTC proved even more strongly reflected in the irresolute control subscale of FSQ, which is marked by difficulty in conceptualizing alternative

processing behaviors when processing impasses are recognized (Cantwell, 1997). Such an indecisive and hesitant attitude toward one's own cognitive processes seems characteristic of individuals scoring low on both the MTC and GMI subscales. In all, this preliminary study provides some reasonable evidence for the new scale's convergent validity.

Toward a Temporal Metacognition Theory

This chapter has reported initial findings from the very first studies on temporal metacognition. We have identified three major components of metacognition in the context of temporal perspectives. We have labeled them (1) Metacognitive Temporal Control (MTC), (2) Cognitive Reconstruction of the Past (CRP), and (3) Goal-oriented Metatemporal Interconnectedness (GMI).

Based on key concepts of time perspective theory (Zimbardo & Boyd, 1999, 2008), major theoretical approaches to metacognition (Efklides, 2008; Flavell, 1979), and initial studies conducted using the Temporal MetaCognition Scale (TMCS) questionnaire, we formulated seven statements that may provide a conceptual framework for future empirical investigations of temporal metacognition. The first three points, in fact, recall major postulates of TP theory that became a starting point for this consideration. The remaining four (points 4–7) refer to key assumptions in the concept of temporal metacognition.

1. Time perspective (TP) is a fundamental process exerting a powerful influence on a variety of human mental processes and behaviors. Large amounts of empirical data support the claim that TP may influence a vast majority of human behaviors and psychological states (cf. Stolarski et al., 2015).
2. The process of temporal framing is usually unconscious. Most people in most situations do not pay attention to their currently "active" time horizon. Moreover, most people are generally not aware of the importance of TP in determining their thoughts and behaviors (Zimbardo & Boyd, 2008).

3. Balanced time perspective (BTP), or the ability to switch effectively between temporal horizons, is a key feature for subjective well-being and various aspects of socioemotional adaptation. The crucial role of BTP was demonstrated in numerous studies (e.g., Boniwell, Osin, Linley, & Ivanchenko, 2010; Stolarski, 2016; Zhang et al., 2013).
4. To adaptively switch between particular time orientations, an individual needs to be aware of it—that is, have a metacognitive perspective on their temporal perspectives. We label the totality of such meta-level cognitions about one's own TP *temporal metacognition*. This concept is central to this chapter. It is based on the main concepts of self-regulation emphasizing the crucial role of conscious processes (e.g., Brown, 1987), combined with the core aspect of BTP—namely, switching between time orientations in response to situational demands (Zimbardo & Boyd, 1999; Boniwell & Zimbardo, 2004).
5. Temporal metacognition emerges from some more general metacognitive features, including executive functions and temperamental traits such as plasticity and inhibition. There are no reasons to expect any qualitatively specific aspects of cognitive processes that would underpin temporal metacognition. We assume that the specificity of temporal metacognition results from its content—that is, time perspectives. Studies confirming this assumption need to be conducted; however, we indirectly conclude this from some recent results on studies of BTP. For instance, Stolarski and Cyniak-Cieciura (2016) show that two temperamental traits form the bases for BTP; these are Briskness (which may be treated as an indicator of behavioral plasticity) and Emotional Reactivity (which represents poor emotional control, impulsivity, and a tendency to react with high activation of the nervous system in response to external stimulation, and may be interpreted as an exact opposite to effective inhibitory control). In another study, Zajenkowski, Stolarski, Witowska and colleagues (2016) demonstrated the associations between executive functions and BTP. Naturally, drawing such a conclusion from these results requires another assumption—that BTP is, at least to some degree, representative of temporal metacognition. This assumption constitute the seventh statement (see below).

6. Temporal metacognition contains (at least) three aspects representing diverse features of meta-level processes temporal perspectives:

   a. Metacognitive Temporal Control: The ability to control or intermit an unwanted or intrusive temporal focus that allows for being engaged in the present moment or in another temporal horizon that is wanted by an individual.
   b. Cognitive Reconstruction of the Past: The ability to reconstruct one's perceptions of past live events or to reinterpret them in light of present experiences, combined with a sense of an "open past."
   c. Goal-oriented Temporal Interconnectedness: The ability to cognitively connect temporal horizons and to simultaneously process information and motivations they generate, which enables an individual to effectively achieve life goals and make informed life decisions.

   These aspects of temporal metacognition were identified empirically during our work on the TMCS questionnaire. It is naturally possible that some other aspects of metacognitive processes exist that were not taken into account during the generation of the questionnaire items.
7. Temporal metacognition provides the basis for development of BTP and, as such, becomes a vital prerequisite for well-being. This claim is based on the results of the path analysis demonstrated here. It seems that most of the benefits from temporal metacognition (at least in terms of life satisfaction[3]) take place via BTP. This result is a one more argument for the validity of the DBTP coefficient, as it seems that, despite of the seemingly "static" or traitlike measurement of the balance, it indicates the dynamic, meta-level temporal regulation processes.

Future Directions for Research on Temporal Metacognition

Both the present conceptualization of temporal metacognition and its empirical operationalization are initial and need further theoretical consideration and solid validity studies. Future research should assess whether

the major assumptions of our temporal metacognition theory find support in empirical results. Studies aiming to identify a broader nomological network of TMCS dimensions seem necessary so as to understand and accurately describe the nature of the three identified features of temporal metacognition. Investigating its links with personality traits, intellectual ability, or cognitive styles are only few among a variety of possibilities. Longitudinal studies to determine the causality of the associations between temporal metacognition, BTP, and well-being would provide further evidence for the validity of the novel construct.

As the concept of temporal metacognition seems to provide a particularly valuable framework for interventions aiming to balance the TP profile, it would be highly desirable to apply the measure in clinical psychology research—for example, a PTSD therapy (Zimbardo et al., 2012) or coaching interventions (Boniwell & Osin, 2015).

Finally, it needs to be admitted that both the structure of temporal metacognition and its correlates were identified in Polish samples. Studies replicating these results in other cultures remain our priority.

Notes

1. The excluded items either had low loading of any of the identified factors or displayed similar loading of two of the identified factors.
2. Detailed information about the scale, as well as particular date regarding psychometric properties of the questionnaire will be published in a forthcoming paper by Stolarski, Witowska and Zimbardo (in preparation).
3. Other results obtained recently by our team, not mentioned in the present consideration, provide some evidence for incremental validity of TMCS in predicting important psychological outcomes over and above BTP.

References

Bargh, J. A. (2003). Thinking of you: Nonconscious pursuit of interpersonal goals associated with relationship partners. *Journal of Personality and Social Psychology*, *84*(1), 148–164.

Baumeister, R. F., & Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry*, *7*, 1–15.

Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science*, *16*, 351–355.

Boekaerts, M. (1999). Metacognitive experiences and motivational state as aspects of self-awareness: Review and discussion. *European Journal of Psychology of Education*, *14*(4), 571–584.

Boniwell, I., & Osin, E. (2015). Time perspective coaching. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 451–469). Switzerland: Springer International Publishing.

Boniwell, I., Osin, E., Linley, P. A., & Ivanchenko, G. V. (2010). A question of balance: Time perspective and well-being in British and Russian samples. *The Journal of Positive Psychology*, *5*(1), 24–40.

Boniwell, I., & Zimbardo, P. G. (2004). Balancing time perspective in pursuit of optimal functioning. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 165–178). Hoboken, NJ: John Wiley & Sons.

Brown, A. L. (1987). Metacognition, executive control, self-regulation, other more mysterious mechanisms. In F. E. Weinert & R. H. Kluwe (Eds.), *Metacognition, motivation and understanding* (pp. 65–116). Hillsdale, NJ: Erlbaum.

Cantwell, R. H. (1997). Cognitive dispositions and student nurses' appraisals of their learning environment. *Issues in Educational Research*, *7*(1), 19–36.

Cantwell, R. H., & Moore, P. J. (1996). The development of measures of individual differences in self-regulatory control and their relationship to academic performance. *Contemporary Educational Psychology*, *21*(4), 500–517.

Carelli, M. G., Wiberg, B., & Wiberg, M. (2011). Development and construct validation of the Swedish Zimbardo Time Perspective Inventory. *European Journal of Psychological Assessment*, *27*, 220–227.

Clark, D. A., & de Silva, P. (1985). The nature of depressive and anxious, intrusive thoughts: Distinct or uniform phenomena? *Behaviour Research and Therapy*, *23*(4), 383–393.

Cooper, M. J., Grocutt, E., Deepak, K., & Bailey, E. (2007). Metacognition in anorexia nervosa and nondieting controls: A preliminary investigation. *The British Journal of Clinical Psychology*, *46*, 113–117.

Diamond, A. (2013). Executive functions. *Annual Review of Psychology*, *64*, 135–168.

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*(1), 71–75.

Efklides, A. (2008). Metacognition defining its facets and levels of functioning in relation to self-regulation and co-regulation. *European Psychologist*, *13*(4), 277–287.

Fernandez-Duque, D., Baird, J. A., & Posner, M. I. (2000). Executive attention and metacognitive regulation. *Consciousness and Cognition*, *9*, 288–307.

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, *34*, 906–911.

Flavell, J. H. (1987). Speculation about the nature and development of metacognition. In F. Weinert & R. Kluwe (Eds.), *Metacognition, motivation, and understanding* (pp. 21–29). Hillsdale, NJ: Lawrence Erlbaum.

Gottman, J. M., Katz, L. F., & Hooven, C. (1996). Parental metaemotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology*, *10*(3), 243–268.

Hofmann, W., Rauch, W., & Gawronski, B. (2007). And deplete us not into temptation: Automatic attitudes, dietary restraint, and self-regulatory resources as determinants of eating behavior. *Journal of Experimental Social Psychology*, *43*, 497–504.

Hofmann, W., Schmeichel, B. J., & Baddeley, A. D. (2012). Executive functions and self-regulation. *Trends in Cognitive Sciences*, *16*, 174–180.

Jankowski, T., & Holas, P. (2014). Metacognitive model of mindfulness. *Consciousness and Cognition*, *28*, 64–80.

Jochemczyk, Ł., Pietrzak, J., Buczkowski, R., Stolarski, M., & Markiewicz, Ł. (2017). You only live once: Present-hedonistic time perspective predicts risk propensity. *Personality and Individual Differences, 115,* 148–153.

Kairys, A., & Liniauskaite, A. (2015). Time perspective and personality. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 99–113). Switzerland: Springer International Publishing.

Koriat, A. (2007). Metacognition and consciousness. In P. D. Zelazo, M. Moscovitch, & E. Thompson (Eds.), *The Cambridge handbook of consciousness* (pp. 289–325). Cambridge, UK: Cambridge University Press.

Koriat, A., & Levy-Sadot, R. (1999). Processes underlying metacognitive judgments: Information-based and experience-based monitoring of one's own knowledge. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 483–502). New York: Guilford.

Kuhl, J. (1996). Who controls whom "when I control myself"? *Psychological Inquiry*, *7*(1), 61–68.

Lamotte, M., Chakroun, N., Droit-Volet, S., & Izaute, M. (2014). Metacognitive questionnaire on time: Feeling of the passage of time. *Timing & Time Perception*, *2*, 339–359.

Lewin, K. (1942). Time perspective and morale. In G. Lewin (Ed.), *Resolving social conflicts* (pp. 103–124). New York: Harper.

Lories, G., Dardenne, B., & Yzerbyt, V. Y. (1998). From social cognition to metacognition. In V. Y. Yzerbyt, G. Lories, & B. Dardenne (Eds.), *Metacognition: Cognitive and social dimensions* (pp. 1–15). London: Sage.

Mayer, J. D., & Gaschke, Y. N. (1988). The experience and meta-experience of mood. *Journal of Personality and Social Psychology*, *55*(1), 102–111.

McCrae, R. R., & Costa, P. T. (1997). Conceptions and correlates of openness to experience. In R. Hogan, J. A. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 825–847). San Diego, CA: Academic Press.

Metcalfe, J. E., & Shimamura, A. P. (1994). *Metacognition: Knowing about knowing*. Cambridge, MA: The MIT Press.

Miyake, A., Friedman, N. P., Emerson, M. J., Witzki, A. H., Howerter, A., & Wager, T. D. (2000). The unity and diversity of executive functions and their contributions to complex 'frontal lobe' tasks: A latent variable analysis. *Cognitive Psychology*, *41*(1), 49–100.

Nelson, T. O. (1992). *Metacognition: Core readings*. Boston: Allyn & Bacon.

Nelson, T. O., & Narens, L. (1990). Metamemory: A theoretical framework and new findings. *The Psychology of Learning and Motivation*, *26*, 125–141.

Nelson, T. O., & Narens, L. (1994). Why investigate metacognition? In J. Metcalfe & A. Shimamura (Eds.), *Metacognition: Knowing about knowing* (pp. 1–25). Cambridge, MA: MIT.

Norman, E., & Furnes, B. (2016). The concept of "Metaemotion": What is there to learn from research on metacognition? *Emotion Review*, *8*(2), 187–193.

Posner, M. I., & Rothbart, M. K. (1998). Attention, self–regulation and consciousness. *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, *353*(1377), 1915–1927.

Salonen, P., Vauras, M., & Efklides, A. (2005). Social interaction-what can it tell us about metacognition and coregulation in learning? *European Psychologist*, *10*(3), 199–208.

Shimamura, A. P. (2000). Toward a cognitive neuroscience of metacognition. *Consciousness and Cognition*, *9*, 313–323.

Spehn, M. K., & Reder, L. M. (2000). The unconscious feeling of knowing: A commentary on Koriat's paper. *Consciousness and Cognition*, *9*, 187–192.

Stolarski, M., Bitner, J., & Zimbardo, P. G. (2011). Time perspective, emotional intelligence and discounting of delayed awards. *Time and Society*, *20*, 346–363.

Stolarski, M., Fieulaine, N., & van Beek, W. (Eds.). (2015). *Time perspective theory: Review, research and application*. Switzerland: Springer.

Stolarski, M., Wiberg, B., & Osin, E. (2015). Assessing temporal harmony: The issue of a balanced time perspective. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 57–71). Switzerland: Springer International Publishing.

Stolarski, M. (2016). Not restricted by their personality: Balanced time perspective moderates well-established relationships between personality traits and well-being. *Personality and Individual Differences*, *100*, 140–144.

Stolarski, M., & Cyniak-Cieciura, M. (2016). Balanced and less traumatized: Balanced time perspective mediates the relationship between temperament and severity of PTSD syndrome in motor vehicle accident survivor sample. *Personality and Individual Differences*, *101*, 456–461.

Strelau, J. (1996). The regulative theory of temperament: Current status. *Personality and Individual Differences*, *20*(2), 131–142.

Strelau, J., Angleitner, A., Bantelmann, J. R., & Ruch, W. (1990). The Strelau Temperament Inventory-Revised (STI-R): Theoretical considerations and scale development. *European Journal of Personality*, *4*(3), 209–235.

Suddendorf, T., & Corballis, M. C. (2007). The evolution of foresight: What is mental time travel and is it unique to humans? *Behavioral and Brain Science*, *30*, 299–313.

Tarricone, P. (2011). *The taxonomy of metacognition*. Hove, UK: Psychology Press.

Webster, D. M., & Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology*, *67*(6), 1049–1062.

Zajenkowski, M., Carelli, M. G., & Ledzińska, M. (2015). Cognitive processes in time perspective. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 243–255). Switzerland: Springer.

Zajenkowski, M., Stolarski, M., Maciantowicz, O., Malesza, M., & Witowska, J. (2016). Time to be smart: Uncovering a complex interplay between intelligence and time perspectives. *Intelligence*, *58*, 1–9.

Zajenkowski, M., Stolarski, M., Witowska, J., Maciantowicz, O., & Łowicki, P. (2016). The contribution of executive functions and fluid intelligence to balanced time perspectve. *Frontiers in Psychology*, *7*, 1844.

Zaleski, Z., & Przepiórka, A. (2015). Goals need time perspective to be achieved. In M. Stolarski, N. Fieulaine, & W. Van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 323–335). Switzerland: Springer International Publishing.

Zeidner, M., Matthews, G., & Roberts, R. D. (2004). Emotional intelligence in the workplace: A critical review. *Applied Psychology*, *53*(3), 371–399.

Zhang, J. W., Howell, R. T., & Stolarski, M. (2013). Comparing three methods to measure a balanced time perspective: The relationship between a balanced time perspective and subjective well-being. *Journal of Happiness Studies*, *14*(1), 169–184.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, *77*(6), 1271–1288.

Zimbardo, P., Sword, R., & Sword, R. (2012). *The time cure: Overcoming PTSD with the new psychology of time perspective therapy*. New York: John Wiley & Sons.

Zimbardo, P. G., & Boyd, J. N. (2008). *The time paradox: The new psychology of time that can change your life*. New York: Free Press.

Maciej Stolarski is an Associate Professor in the Faculty of Psychology, University of Warsaw, Poland, where he is a director of the Division for the Study of Intellect and the Positive Psychology in Practice postgraduate studies program. His scientific interests include the psychology of time (temporal perspectives, chronotypes), interplay between cognition and emotion, and individual differences analyzed at the national level. His articles have been published in top-tier peer-reviewed journals such as *Intelligence*, *Personality and Individual Differences*, *Journal of Happiness Studies*, and *Chronobiology International*. He is editor of *Time Perspective Theory: Review, Research, and Application* (Springer, 2015).

Joanna Witowska is a Ph.D. student in the Faculty of Psychology at the University of Warsaw, Poland, where she is a researcher in the Intelligence Cognition Emotion Lab. Her main research interests include the psychology of time, especially time perspective theory, and cognitive functioning (intelligence, executive functions, metacognition). She is also interested in the psychology of religion and cross-cultural psychology. She has published her first articles in top peer-reviewed journals such as *Intelligence* or *Personality and Individual Differences*.

7

Hugging the Past: The Way We Were and the Way We Are

Aleksandra Kostić, Marija Pejičić, and Derek Chadee

Introduction

In this chapter, despite a potential series of very interesting and "open" questions in the field of time research, our interest is focused on time perspective as the fundamental dimension of the subjective experience of time. By narrowing the subject of our interest, we have chosen the time perspective of the *past*, believing that the past time orientation can be the key to understanding the individual and his or her social functioning in the individual's present and future life. Based on our analysis of the results of previous research, we have tried to gain better insight into the nature of the dominant past time orientation by analyzing the phenomena that

A. Kostić (✉) • M. Pejičić
University of Niš, Niš, Serbia

D. Chadee
The University of the West Indies, St. Augustine Campus,
St. Augustine, Trinidad and Tobago

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_7

lead to this orientation, as well as those that stem from the past, believing that the orientation toward this time zone can determine the way we observe, think, feel, and act.

The way in which we view our past experiences determines the way we see present and future experiences. Taking into consideration the fact that the feelings caused by memories are actually current memories, past experiences can serve to help us set future goals and to plan activities. Further, our attitude toward past experiences simultaneously shapes and colors both our present and our future, so it is worthwhile to consider what determines our personal attitude toward past experiences. What determines the place, sequence, meaning, and significance of our past experiences? What enables the integration of earlier and later individual and interpersonal experiences?

When we speak to someone about the parts of our past experiences, when we talk about events that have happened recently, some time ago, or much earlier, when we talk about pleasant or unpleasant memories, we certainly, whether consciously or unconsciously, express our attitude toward those experienced events (Kostić & Nedeljković, 2013). Whether positive or negative, that attitude does not have to be in accord with the foretoken and the content of what has actually happened. In this sense, the attitude toward time can be understood as a personal, mental creation of an individual and his or her subjective experience. It can be filled with sentimental, warm memories and positive interpretations of events that happened or, on the contrary, with a negative, aversive attitude and stories about failures, mistakes, and traumatic experiences (Zimbardo & Boyd, 2008).

How We See and Judge Ourselves

Self-Esteem

The way in which we see ourselves is only partly determined by our cognitive processes. Our self-image is also made of feelings that we develop and nurture toward ourselves, which are connected with our global self-evaluation. This global self-esteem can be very favorable, accompanied by

positive feelings, including the feeling of self-acceptance and self-respect (high self-esteem) or very unfavorable, accompanied by strong negative emotions or nonacceptance of one's self (low self-esteem). Both evaluations of self can be true, although they do not have to be. The individual who highly values his or her achievements, skills, experiences, social relations, and physical attractiveness can have many arguments that are the basis of a relatively accurate idea of him or herself. However, if this is not the case, the individual can be seen as arrogant, unkind, and eager to demonstrate superiority and domination over others. If an individual values his or her own self very low, this can be in accord with the actual condition of that person's total psycho-physical and social capacities, but it can also be a reflection of great insecurity and insufficient integration (Baumeister, Campbell, Krueger, & Vohs, 2003).

Regardless of whether the level of self-esteem is viewed as *a cause* or *an outcome* of a person's most important life achievements and failures, as a universal, individual, or ideological-cultural need, most people understand the importance of self-esteem, and they tend to strengthen and uplift the level of their faith in their own self. The beliefs of an individual shape that person's behavior, which in consequence affects the behaviors and reactions of other individuals in a given social environment.

Numerous researchers in the area of global self-evaluation speak about their interest in studying the nature, origin, and function of the concept of self-esteem. Certain researchers (Branden, 1994; Taylor & Brown, 1988) have, maybe, overestimated the effects of this construct, stating that it has an influence on all significant aspects of an individual's life. Heatherton and Wyland (2003) claim that most people believe it is useful to have a positive opinion of one's self, owing to the fact that individuals who have such evaluation (high self-esteem) most often have happy, productive, and fulfilled lives. This is in accord with the necessity of strengthening, uplifting, and achieving a high level of self-esteem. The achievement of a high level of self-evaluation (high self-esteem) provides the individual with numerous positive and useful outcomes: success in school, at work, in friendships, in romantic relationships, and in leadership.

Baumeister et al. (2003) believe that the aforementioned interrelation is not so direct and stable, but requires more objective measurements that are supposed to show whether high self-esteem, *by itself*, causes only posi-

tive or also causes some negative outcomes. Although most people consider important to what extent they value (i.e., their own personalities, abilities, successes, competences, attractiveness, and popularity), it should not be forgotten that this is only a *perception*, which is based on a *belief* rather than reality (Baumeister et al., 2003).

In certain situations, people want to protect and increase the global evaluation of themselves in order to defend themselves from existential and other fears and threats, so that self-esteem then plays the role of a defense mechanism (Baumeister, Dale, & Sommer, 1998; Ortuño & Vasquez, 2013; Pyszczynski, Greenberg, & Solomon, 1999).

The Origin and Determinants of Self-Esteem

In their attempt to get an overview and to understand the origin and nature of self-esteem, theorists have developed two different models of explanation for this concept: cognitive and affective. We have accepted the affective approach, which states that early affective experiences represent the basis for the development of high or low self-esteem. This certainly does not mean that the level of self-esteem does not change during one's lifetime, but it points to the greater importance of early experiences in relation to those that come later (Brown, 1998). In this, we go back to the adult's past—his or her early childhood, the roots and development of the child's sensibility, and as can be anticipated, the roots of self-esteem.

By studying the origin and nature of human sensibility, as well as the mechanisms of attachment, Bowlby (1969) points out the significance of early interactive experiences between the child and the person who nurtures him or her (most often this is the mother). It turns out that this specific mother–child relationship, which is formed during early childhood, becomes the basis for the interactive functioning of that individual for his or her entire lifetime (Bretherton & Munholland, 1999), but it also is the basis of self-perception, among factors. John Bowlby believes (1969) that affective and behavioral regulation of an individual is based on his or her early experiences and formed patterns of attachment. The theory of attachment, thus, explains very nicely the conditions under

which an individual can accomplish the emotional, social, and behavioral competences.

In contemporary research, attachment is viewed as an *individual* and not as a *relational* property, as was the case shown in early research. This means that there occurs the process of transferring the characteristic features of external interactions between a child and his or her mother (relational) onto the internal, mental representations of that relation (individual). This leads us to the most important element of the theory of attachment, which is considered an *internal working model* (Ainsworth, 1991; Bowlby, 1969).

Everyday interactions with the mother during the first months of life shape the contours of a child's experience, expanding it and thereby enabling the creation of a self-image and the image of the mother. In other words, the repeated interactive experiences of a child become the source of beliefs about the self, as well as about certain experiences. The mother who understands the signals of her child, who meets the child's needs and desires, and who is available and gradually sensitive will create in the child the image of a being who deserves and is worthy of the mother's attention.

The experience of the mother–child relationship is not always positive, based as it is on the experience the child has with his or her mother. What is significant is that the experience of the mother–child relationship provides not only the image of the self but also the image of significant others, which is formed on the basis of observing the behavior of the person who nurtures the child. Based on the experienced quality of the interaction, internal models of the self and of significant others are most often complementary (Bowlby, 1973).

The first dimension of parent attachment is *communication*. Good communication with the mother is based on the exchange of experience elements on both sides, which enables the development and advancement of an affective relationship, representing an important factor in the development of the general dimension of the secure/insecure individual (Armsden & Greenberg, 1987; Barrocas, 2006). As the element of inner representations of attachment, proper communication performs its function of transferring messages, and that is why it is important that it be open and clear, with an adequately selected channel of communication.

The communication dimension is significantly positively related to the trust dimension, and is negatively related to alienation (Kostić & Nedeljković, 2013).

Trust is the second dimension of parent attachment. Trust in the availability and sensitivity of the mother or the person who takes care of the child creates an idea that this person will be a secure support and that she will be interested in the child's needs. This, of course, incites the feeling of acceptance and protectiveness of the child (Kostić & Nedeljković, 2013). Individuals who belong to the secure attachment pattern have a developed feelings of trust in themselves and others, which logically contributes to a more positive view and evaluation of different aspects of the self. When an individual has the insecure attachment pattern, he or she sees himself or herself as a person who is not worthy and who does not deserve the attention from significant others.

The third significant attachment dimension is alienation. It is based on the feeling of distance, insufficient closeness, and insufficient mutual familiarity with those who participate in the affective relationship. This can lead to reduced communication and the lack of a need to exchange more intimate aspects of experiences. Both the mother and the child have the feeling of incompatibility and inadequacy of relations. This is expected in the situation of alienation because there are, probably, complementary inner work models of affective attachment (Kostić & Nedeljković, 2013).

According to researchers who studied the development of self-esteem (Baumeister & Leary, 1995; Epstein, 1980; Sullivan, 1953), the mother–child relationship plays an important role in building one's self-evaluation. As it seems, the origin of self-esteem should be sought within the framework of different attachment patterns. Research confirms that the patterns of attachment can be the predictors of self-esteem (Brown, 1998). It turns out that adolescents who have a secure attachment style have the highest self-esteem. Writing about the nature and development of self-esteem, Brown (1998, p. 11) names several scientists whose research confirms that conclusion including Bartholomew and Horowitz (1991), Brennan and Morris (1997), Collins and Read (1990), Feeney and Noller (1990), Griffin and Bartholomew (1994).

The results of research on a Serbian sample (Kostić & Nedeljković, 2013) indicate a statistically significant correlation between Past-negative

orientation and the representation of affective attachment to parents. The significant positive correlation, of medium strength, is established between the Past-negative time perspective and the dimension of alienation. As we know, our attitude toward the past is determined not only by events that filled that time but also by the way we experienced and interpreted them. It is those first, earliest memories that are colored by cognitive-affective experiences with significant others who shaped those perceptions of self and others. The negative attitude toward the past and early childhood could come from the strong feeling of alienation, because the images of self and significant others signal remoteness, inadequacy, and an absence of closeness. The child's experience with a distant and insensitive mother forms not only the inner representation of the mother but also of the child, as well as their relationship. In an insufficiently harmonious relationship, bad, and remote interaction, each actor can simultaneously experience his or her own or someone else's inadequacy. The creation of the alienation dimension indicates the existence of an insecure attachment, which greatly contributes to low self-esteem.

Another result of research conducted on a sample of the Serbian population completes this image. That is, there is a negative correlation between the attachment dimensions of quality of parent attachment, trust, and communication, and the Past-negative orientation (Kostić & Nedeljković, 2013). Therefore, low trust and communication and high alienation are characteristic for low secure persons and, thereby, for low self-esteem as well.

When it comes to the relationship between the attachment dimensions and the positive attitude toward the past, the results of research on a Serbian sample show the following. The quality of parent attachment is positively correlated to a positive orientation toward the past. Regarding the direction of the correlation, this finding is in full accord with the findings obtained on an Italian sample of 2655 students (Laghi, D'Alessio, Pallini, & Baiocco, 2009); when it comes to the strength of the correlation, the consistency with the aforementioned findings is perceived in the correlation between the quality of parent attachment and the Past-positive orientation.

The positive inner representations of significant figures develop secure attachment, which clearly indicates a high quality of affective relation-

ship with the parents, the existence of trust, sharing, exchange, and closeness. Such experiences speak of the well-grounded and developed closeness with figures who nurture and build the basis for a positive view of the past (Kostić & Nedeljković, 2013). Zimbardo and Boyd (1999) empirically determined that those individuals who have a positive attitude toward the past are more secure, self-assured, less shy, more open, more stable, and more controlled, with more energy and a tendency to plan and set goals. These characteristics of individuals with a prominent Past-positive orientation are, in fact, the features of individuals who have secure attachment, with high scores on attachment dimensions of trust and communication and a low score on the dimension of alienation.

Individuals who possess a secure attachment style are most certainly individuals who have a positive self-image, who value their abilities and achievements, and who respect and value themselves (high self-esteem), which has to be related to the inner working models of self and significant others, which are developed during early childhood. A positive attitude toward the past produces a positive experience of the present, but also a series of positive expectations that are interwoven into the future. This supports, to a great extent, the theory of inner working models, based upon which it is possible to anticipate not only affective relationships but also a global psychological structure (Bowlby, 1973; Mikulincer & Florian, 1998; Wilkinson, 2004).

In regard to trust, a critical dimension of parent attachment, contrary to respondents who have an insecure affective pattern regarding their relationship with their parents (lack of trust, for example), those who have trust in their parents also have a more positive attitude toward the past. In the case of the Serbian respondents, the parents presented a secure base and support for their children (Kostić & Nedeljković, 2013) by helping them view the past, present, and future optimistically and positively. Regarding the direction of the aforementioned correlations, there is consistency with the findings of Italian researchers (Kostić & Nedeljković, 2013; Laghi et al., 2009).

Another critical dimension of parent attachment, communication, is positively correlated with the positive attitude toward the past. This speaks of the inner representations of good, open, clear, and adequate forms of communication with parents, which shape the positive attitude

toward the past. Secure parent attachment, which is based on the dimensions of trust and quality communication with parents, could be the source of positive perception of the past, but also of a positive image of the self (Laghi et al., 2009).

Regarding the third major parental dimension, alienation, it is expected to be negatively correlated with the positive attitude toward the past. Memories from childhood, colored with anger and alienation, a feeling of remoteness from significant other, and the experience of interactive incompatibility are not a good basis for the positive attitude toward the past or the future (Zimbardo & Boyd, 1999).

Self-Esteem and Past Time Orientation

Let us consider now the relationship between the global evaluation of the self and the pronounced attitude toward the past. What implications are there of having an extremely positive or extremely negative attitude toward the past when it comes to one's view of personal abilities, skills, and social relations? Research has shown that a positive attitude toward the past is connected with the perception of oneself as a worthy and happy individual (Zimbardo & Boyd, 1999), who possesses a significant level of energy and a high level of life satisfaction (Goldberg & Maslach, 1996; Kostić & Nedeljković, 2013), a recognizable optimism, and a feeling of self-fulfillment (Brown & Ryan, 2003). On the other hand, the research also suggests that individuals who have a negative attitude toward the past give an impression of being dissatisfied people, who do not accept, appreciate, and respect themselves, who have few friends, and who lack self-respect (Zimbardo & Boyd, 1999). Does that mean that the way we observe, experience, and evaluate ourselves can, among other things, be determined by a positive or negative attitude toward the past?

Ortuño and Vasquez (2013) state that only a few researchers have tried to answer the question about the relationship of time orientation and the concept of self-validation. Some researchers have done it within their own validation studies, and some have directly studied the relationship between time perspectives and self-esteem. The results of two validation studies (Anagnostopoulos & Griva, 2012; Zimbardo & Boyd, 1999)

were similar: they indicated the existence of a negative correlation between self-esteem and the Past-negative orientation, while correlation with the Past-positive orientation was positive and low. A correlation between self-esteem and the Past-negative orientation was also determined in an Italian study (Laghi, Baiocco, D'Alessio, & Gurrieri, 2009). Those researchers established that Italian adolescents who had experienced a suicidal ideation had lower self-esteem and higher scores on the Past-negative and Present-fatalistic orientations in relation to adolescents who had not had such experiences.

Another research (Ortuño & Vasquez, 2013) indicates a significant negative correlation between the self-esteem construct and Past-negative orientation, as well as the Future-negative perspective. Therefore, negative attitudes toward the past and the future create, as expected, the "negative correlation with the *Self-Esteem* construct, in the same way in which these time perspectives, according to the reports of other studies, were negatively correlated with *Emotional Stability* and *Impulse Control* (Zimbardo & Boyd, 1999), *Altruistic Values* (Milfont & Gouveia, 2006), *Big Five Agreeableness* (Dunkel & Weber, 2010), *Satisfaction with Life* (Boniwell, 2005)," as concluded by Ortuño and Vasquez (2013, pp. 120) in their work.

Personality, Self-Esteem, and Past Time Perspective

Certain researchers (Robins, Tracy, Trzesniewski, Potter, & Gosling, 2001) believe that we, in fact, know very little about the characteristics of personality that determine high or low levels of self-esteem. Tracing two strong research paths over the last decades, they have not identified any significant correlation and crossing. While certain researchers have completely focused on individual differences (John & Srivastava, 1999), others (Baumeister, 1993; Harter, 1993, 1998) have vigorously studied the nature and outcomes of self-esteem. However, Robins et al. (2001) stress that it is important to directly investigate the relation between personal characteristics and a global validation self-image, primarily owing to an

understanding of mutual courses of development and mutual influences. Beliefs about one's self can shape a person's behavior the same way as the relatively permanent and consistent forms of behavior can influence one's self-image.

The researchers (Zimbardo & Boyd, 1999), who primarily investigated other phenomena—for example, the subjective attitude toward time, and then discovered personal correlations of those attitudes and, among other things, the relation between past time perspective and a global self-evaluation—should also be mentioned. Testing the reliability of their instrument (the Zimbardo Time Perspective Inventory, or ZTPI), Zimbardo and Boyd (1999), uncovered an entire series of variables (demographic, health-related, behavioral, and personality characteristics) connected in different ways to time perspective; however, they were primarily interested in the predictive power of their instrument (ZTPI), and not in researching the predictors of different time perspectives.

In contrast, a significant positive correlation of neuroticism, as a personality dimension, and a negative attitude toward the past has been confirmed (Dunkel & Weber, 2010; Ely & Mercurio, 2011; Kairys, 2010; Kostić & Nedeljković, 2013; Shipp, Edwards, & Lambert, 2009; van Beek, Berghuis, Kerkhof, & Beekman, 2010; Zhang & Howell, 2011; Zhang, Howell, & Bowerman, 2013; Zimbardo & Boyd, 1999). Therefore, individuals who have a high *N* score have a more prominent negative attitude toward the past.

In their book *The Time Paradox* (2008), Zimbardo and Boyd state the results of their research, claiming that individuals who have high scores on the Past-negative orientation are more anxious, more depressed, more impulsive, less controlled, and are prepared to experience a series of negative emotional conditions; this is also characteristic of individuals with a high *N* score. Continuing with the presentation of other personality traits of those who have a negative attitude toward the past, Zimbardo and Boyd mention their lower working energy, low self-respect, low self-esteem, and low self-control.

In describing the perspective of Past-negative, Zimbardo and Boyd (1999) state that the source of a predominantly negative attitude toward the past does not have to be a real negative or traumatic experience;

rather, it can be a consequence of a negative reconstruction of benign events. According to the cognitive model, it is precisely the way in which the situation is evaluated, and the degree to which we believe that this evaluation is true determines the physiological, emotional, and behavioral reactions (Beck, 2007). Therefore, individuals with more expressed neuroticism are more sensitive to threatening stimuli, so they more often experience negative emotions such as sadness and anxiety. In accordance with the assumption about the significance of the evaluation of events, in a certain study (Chan, 2013), neuroticism is singled out as a significant predictor of depression and anxiety, whereby this effect is achieved through negative automatic thoughts—that is, negative evaluations of events, which are uncritically accepted as truthful. An analysis of facets of this personality dimension (Kairys, 2010) makes the correlation clearer. According to the results of this research, individuals with a negative attitude toward the past are more anxious, hostile, depressed, self-conscious, and vulnerable to stress.

This potentially pathological focus, which is emphasized by Zimbardo and Boyd (1999) as a characteristic of Past-negative perspective, has been confirmed by these authors in their research by discovering a positive correlation between the negative attitude toward the past and anxiety and depression, while the correlation in the opposite direction is related to self-esteem and happiness. Also, the results of one study (Martin, Ward, & Clark, 1983) have shown that individuals with a more expressed trait of neuroticism (as measured by the Eysenck Personality Questionnaire—EPQ) remembered more of their own negative traits, previously presented together with the positive ones, than individuals with less expressed trait. It can be assumed, therefore, that individuals with a high expression of this trait are more prone to ruminate on negative memories. Out of all personality traits tested in Serbian sample, it turned out that neuroticism is the most powerful predictor of a Past-negative time orientation (Kostić & Nedeljković, 2013).

Contrary to this finding, some researchers (Dunkel & Weber, 2010; Ely & Mercurio, 2011; Shipp et al., 2009; van Beek et al., 2010; Zhang & Howell, 2011; Zhang et al., 2013) have calculated a correlation in the opposite direction between neuroticism and Past-positive perspective. However, this relation is not as strong as the one between neuroticism

and a negative attitude toward the past. A dominantly positive attitude toward the past also implies a viewing of negative experiences in the past from a positive perspective, which represents an adaptive coping strategy; on the other hand, this result cannot be expected in anxious individuals, prone to destabilization, with weak adaptation to stress—that is, individuals with high scores for neuroticism. For those individuals who have developed a positive attitude toward the past, Zimbardo and Boyd (2008) have determined that they have a tendency to be happier, healthier, more successful, with more self-esteem, higher energy, and creativity, and are less shy, less depressed, and less aggressive.

The relationship between neuroticism and attitudes toward the past is in accord with assumptions and data obtained by Zimbardo and Boyd (1999) in their research. They started from a hypothesis that Past-positive, as opposed to Past-negative orientation, would be in negative correlation with all behaviors with which the negative orientation toward the past is positively connected. Therefore, in their study, Past-positive perspective was in the negative correlation with anxiety and depression, and in the positive correlation with self-esteem and happiness. However, research by Martin et al. (1983) did not obtain the correlation between neuroticism and the production of positive personal traits.

The positive correlation between extraversion and Past-positive perspective, and the negative correlation between extraversion and Past-negative perspective (Dunkel & Weber, 2010; Ely & Mercurio, 2011; Kairys, 2010; Shipp et al., 2009; van Beek et al., 2010; Zhang & Howell, 2011; Zhang et al., 2013) are also in accord with assumptions about mutually opposite effects for these two dimensions of time perspective. Since extraversion is defined as the ability to generate positive emotions and optimism, a dominantly positive orientation toward the past and a low score for Past-negative orientation were expected in individuals with a high score on this personality dimension. Confirmation for this interpretation is also found in the results of a study (Kairys, 2010) that revealed that individuals with a positive orientation toward the past are warmer and more prone to positive emotions, while Past-negative perspective is negatively correlated to assertiveness, activity, gregariousness, excitement-seeking, and the ability to generate positive emotions. With higher neuroticism scores in individuals with a higher score on the Past-negative

scale—that is, higher anxiety, self-consciousness, and vulnerability to stress—potentially exciting situations and the presence of other people can be triggers for their negative evaluations of not only present but also past events.

In certain studies (Dunkel & Weber, 2010; Ely & Mercurio, 2011; Kairys, 2010; Shipp et al., 2009; Zhang & Howell, 2011; Zhang et al., 2013), it has been found that there is a low to medium correlation, in the negative direction, toward agreeableness and Past-negative perspective, while the relation between this personality trait and Past-positive perspective is not very clear. In a large number of research findings, this relation had a positive sign (Dunkel & Weber, 2010; Ely & Mercurio, 2011; Kairys, 2010; Shipp et al., 2009; van Beek et al., 2010; Zhang & Howell, 2011; Zhang et al., 2013). It is possible that individuals who have trust in people and, therefore, consider them honest and well intentioned, perceive different interpersonal situations in this way—that is, not only do they not show inclination toward negative interpretations of events in the present moment, but they also express a tendency toward idealization when reevaluating past events. Besides, as compassionate, trustful, and prone to idealization, these individuals can have a tendency to forgive and forget, which can also explain the lack of tendency toward the evocation of unpleasant memories.

Individuals with high conscientiousness—that is, individuals with strong will, who are persistent, organized, and self-disciplined when it comes to accomplishing desired goals—are willing to renounce and abstain from temporary satisfactions in order to achieve these goals, which makes them dominantly directed toward the future. When it comes to their attitude toward the past, it can be expected that individuals who have high scores for conscientiousness, high self-confidence, and faith in their own efficiency will be more inclined toward positive interpretations of past events than toward negative interpretations of those events. Also, it can be expected that organized, responsible, meticulous individuals have a past more filled with successes than with failures, as well as being individuals with highly expressed self-discipline, perhaps not allowing themselves to be directed toward the previous negative experiences and toward renewing negative memories. This could be because the negative emotions, caused by this evocation of unpleasant events,

could disturb the accomplishment of goals they have set for themselves and will be set in the future. Instead, they would rather remember the "good old times," which they use to confirm their own competence and to awaken positive emotions, motivating them to stay on the path toward their goal. In this, the correlations between conscientiousness as a personality dimension and Past-negative (Dunkel & Weber, 2010; Ely & Mercurio, 2011; Kairys, 2010; Kostić & Nedeljković, 2013; Shipp et al., 2009; van Beek et al., 2010; Zhang & Howell, 2011; Zhang et al., 2013; Zimbardo & Boyd, 1999) and Past-positive time perspectives (Ely & Mercurio, 2011; Kairys, 2010; Shipp et al., 2009; van Beek et al., 2010; Zhang & Howell, 2011; Zhang et al., 2013) can be explained.

However, there can be no definite conclusion about the correlation between attitudes toward the past and the openness to experience dimension. In research that obtained significant correlations between the Past-negative perspective and this personality dimension (Kairys, 2010; Kostić & Nedeljković, 2013; Shipp et al., 2009; Zhang & Howell, 2011; Zhang et al., 2013), they are found to have low and different relationships. When it comes to Past-positive perspective and openness to experience, the correlations are low and have a positive direction; but in many studies, they have not been found to exist (e.g., Dunkel & Weber, 2010; Ely & Mercurio, 2011; Kostić & Nedeljković, 2013; Shipp et al., 2009; Zimbardo & Boyd, 1999), which is the reason interpretation of this relationship is excluded from this analysis.

The discussed results were obtained in studies in which the time perspective was operationalized through scores on the ZTPI (Zimbardo & Boyd, 1999), while the instruments used for measuring personality traits were different. In most of this research, the sample consisted of students (Dunkel & Weber, 2010; Ely & Mercurio, 2011; Kostić & Nedeljković, 2013; Shipp et al., 2009; Zhang & Howell, 2011; Zhang et al., 2013; Zimbardo & Boyd, 1999), while Kairys's sample (2010) was respondents aged 18 to 60 years and older, while van Beek and associates (2010) conducted their research on a heterogeneous group of patients and individuals who were not part of the treatment at that time and whose average age was 31 years. Therefore, it is possible that differences in the instruments and samples used are partly responsible for the variability of the data. Despite this, the research results are mostly in agreement regarding the

relationship between the past perspective and neuroticism, extraversion, conscientiousness, and agreeableness, thereby confirming the idea of the connectedness of individual differences in personality characteristics and those in the subjective experience of time.

Robins, Tracy, Trzesniewski, Potter, and Gosling state (2001) that several studies directly investigated and discovered the "big five" correlations of self-esteem. On a student sample, it was determined that there is a strong positive correlation between self-esteem and a socially desirable personal dimension of emotional stability. The correlation between self-esteem and dimensions of extraversion and conscientiousness was moderate and positive, while the dimensions of agreeableness and openness to experience expressed a weak positive correlation. Having presented the current situation in this field of research, Robins et al. (2001) refer to studies by the following researchers: Goldberg and Rosolack (1994), Jackson and Gerard (1996), Kwan, Bond, and Singelis (1997), Keller (1999), Robins, Hendin, and Trzesniewski (2001); with these, they pointed out that there were still open questions to which there were no answers. Thus, the differences in the characteristics of female and male personalities who, for example, have high or low self-esteem, has not been determined.

In the aforementioned study by Robins et al. (2001), the sample of respondents was diverse in terms of gender, age, ethnicity, and nationality. There was a difference in personality profiles of individuals with high and low self-esteem. Extrovert, emotionally stable, open to experience, agreeable, and conscientious individuals had very positive self-evaluation (high self-esteem). Despite this, emotionally unstable, neurotic individuals had low self-esteem. Starting from their results, the researchers conclude: "Despite an extensive search for potential mediators and moderators of this general pattern, and despite more than adequate statistical power, the relations between self-esteem and the Big Five largely cut across age, sex, SES, ethnicity, and nationality" (Robins et al., 2001, p. 474).

When it comes to newer research about the relationship between personality traits and self-esteem, researchers Fatemeh and Maryam Amirazodi (2011) confirm the findings of earlier studies (Caspi, Roberts, & Shiner, 2005; Goldberg & Rosolack, 1994; Keller, 1999; Robins et al., 2001; Zimbardo & Boyd, 1999) about the positive and

negative influences of certain characteristics. In a study from 2011, Amirazodi and Amirazodi state that, as was already determined in some earlier studies, personality dimensions such as extraversion, agreeableness, conscientiousness, and openness to experience, as well as personality traits connected to them (expressiveness, dominancy, forcefulness, initiative, sociability) represent significant positive predictors of self-esteem. Extraversion and agreeableness belong to socially desirable traits, which influence the positive self-evaluation and the expression of personal response that are supported by the social environment. Individuals who have high scores on the agreeableness dimension are perceived by the environment as reliable, pleasant, and useful to others (Amirazodi & Amirazodi, 2011). It is easy to understand that individuals who have a pronounced dimension of conscientiousness, who are disciplined, hard-working, and goal-oriented, have a positive global self-evaluation. Caspi et al. (2005) state that the personal dimension of openness implies that the individual is creative, imaginative, introspective, and that he or she quickly masters the learning material influencing positive self-image.

On the other hand, the research by Amirazodi and Amirazodi (2011) found that neuroticism, introversion, antagonism, unconscientiousness, and closure to experience were negative predictors of self-esteem. It was previously determined that neurotic individuals were highly sensitive to stress, were depressed and insecure in social relations, were anxious, and had low self-esteem and weak self-control (Caspi et al., 2005). These individuals are more likely to have lower self-esteem, since the global self-evaluation is negatively correlated with depression and distress (Rosenberg, 1985; Rosenberg, Schooler, & Schoenbach, 1989).

If we recall the traits discovered in respondents who had a prominently positive attitude—that is, a prominently negative attitude toward the past (Zimbardo & Boyd, 1999)—which were later confirmed in many studies on the relationship between personality profiles and the past time orientation, it can be seen that this is the same list of traits as ascribed to individuals with high or low self-esteem. In accordance with the aforementioned matching of personality profiles, it can be concluded that the dominant Past-negative orientation is related to individuals with low self-esteem, who are neurotic, anxious, depressed, impulsive, and uncontrolled, and

who have low self-respect. Individuals who have the Past-positive orientation are characterized by opposite dimensions and personality traits: extraversion, agreeableness, conscientiousness, and openness to experience. Of course, the personality traits that are part of the aforementioned dimensions are also important: forcefulness, greater stability, lower anxiety, decreased depression, a more intense feeling of happiness, increased creativity, greater self-respect, and as expected, a more positive global evaluation of the self.

Conclusion

This chapter has discussed the relationship between time perspective and self and personality factors, acknowledging the importance of attachment in development. As pointed out early in the literature, time orientation is a relatively stable personality characteristic (Gonzalez & Zimbardo, 1985; Zimbardo & Boyd, 1999), with several contributory factors including upbringing, socialization, culture, education, life stressors, and other situational factors (Boniwell et al., 2010; Seginer, 2003; Zimbardo & Boyd, 1999). Future literature contributions should expand the time perspective–personality understanding. A fuller comprehension of the mediating effects of personality and self on the development of time orientation would assist in predicting to what extent hugging the past influences us and our judgment of self.

References

Ainsworth, M. D. S. (1991). Attachment and other affectional bonds across the life cycle. In C. M. Parkes, J. Stevenson-Hinde, & P. Marris (Eds.), *Attachment across the life cycle* (pp. 33–51). New York: Routledge.

Amirazodi, F., & Amirazodi, M. (2011). Personality traits and self-esteem. *Procedia—Social and Behavioral Sciences*, *29*, 713–716.

Anagnostopoulos, F., & Griva, F. (2012). Exploring time perspective in Greek young adults: Validation of the Zimbardo time perspective inventory and

relationships with mental health indicators. *Social Indicators Research*, *106*(1), 41–59.

Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Relationships to well-being in adolescence. *Journal of Youth and Adolescence*, *16*(5), 427–454.

Barrocas, A. L. (2006). *Adolescent attachment to parents and peers*. Dissertation thesis, The Emory Center for Myth. Retrieved March 2008, from http://www.marial.emory.edu/pdfs/barrocas%20thesisfinal.doc

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*(2), 226–244.

Baumeister, R. F. (Ed.). (1993). *Self-esteem: The puzzle of low self-regard*. New York: Plenum.

Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest*, *4*(1), 1–44.

Baumeister, R. F., Dale, K., & Sommer, K. L. (1998). Freudian defense mechanisms and empirical findings in modern social psychology: Reaction formation, projection, displacement, undoing, isolation, sublimation, and denial. *Journal of Personality*, *66*(6), 1090–1092.

Baumeister, R., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529.

Beck, J. S. (2007). *Osnove kognitivne terapije*. Zagreb: Naklada Slap.

Boniwell, I. (2005). Beyond time management: How the latest research on time perspective and perceived time use can assist clients with time-related concerns. *International Journal of Evidence Based Coaching and Mentoring*, *3*(2), 61–74.

Boniwell, I., Osin, E., Linley, P. A., & Ivanchenko, G. (2010). A question of balance: Time perspective and well-being in British and Russian sample. *Journal of Positive Psychology*, *5*, 24–40.

Bowlby, J. (1969). *Attachment. Attachment and loss: Vol. 1. Loss*. New York: Basic Books.

Bowlby, J. (1973). *Attachment and loss, Vol. 2: Separation*. New York: Basic Books.

Branden, N. (1994). *The six pillars of self-esteem*. New York: Bantam Books.

Brennan, K. A., & Morris, K. A. (1997). Attachment styles, self-esteem, and patterns of seeking feedback from romantic partners. *Personality and Social Psychology Bulletin*, *23*(1), 23–31.

Bretherton, I., & Munholland, K. A. (1999). Internal working models in attachment relationships: A construct revisited. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment theory and research* (pp. 89–111). New York: Guilford.

Brown, J. D. (1998). *The self*. Boston: McGraw-Hill.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822–848.

Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and change. *Annual Review of Psychology*, *56*, 453–484.

Chan, C. E. (2013). *Vulnerability factors for emotional problems of adolescents in Hong Kong: A psychometric study on the roles of psychosocial, personality, and cognitive factors*. Postgraduate thesis, The University of Hong Kong.

Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology*, *58*(4), 644–663.

Dunkel, C. S., & Weber, J. L. (2010). Using three levels of personality to predict time perspective. *Current Psychology*, *29*(2), 95–103.

Ely, R., & Mercurio, A. (2011). Time perspective and autobiographical memory: Individual and gender differences in experiencing time and remembering the past. *Time and Society*, *20*(3), 375–400.

Epstein, S. (1980). The stability of behavior: II. Implications for psychological research. *American Psychologist*, *35*(9), 790–806.

Feeney, J. A., & Noller, P. (1990). Attachment style as a predictor of adult romantic relationships. *Journal of Personality and Social Psychology*, *58*(2), 281–291.

Goldberg, J., & Maslach, C. (1996). *Understanding time: Connections between the past and future*. Paper presented at the Annual Conference of the Western Psychological Association, San Jose, CA.

Goldberg, L. R., & Rosolack, T. K. (1994). The big five factor structure as an integrative framework: An empirical comparison with Eysenck's PEN model. In C. F. Halverson, G. A. Kohnstamm, & R. P. Martin (Eds.), *The developing structure of temperament and personality from infancy to adulthood* (pp. 7–35). Hillsdale, NJ: Erlbaum.

Gonzalez, A., & Zimbardo, P. G. (1985). Time in perspective. *Psychology Today*, *19*, 21–26.

Griffin, D., & Bartholomew, K. (1994). Models of the self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology*, *67*(3), 430–445.

Harter, S. (1993). Causes and consequences of low self-esteem in children and adolescents. In R. Baumeister (Ed.), *Self-esteem: The puzzle of low self-regard* (pp. 87–116). New York: Plenum Press.

Harter, S. (1998). The development of self-representation. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology: Social, emotional and personality development* (5th ed., pp. 553–617). New York: Wiley.

Heatherton, T. F., & Wyland, C. L. (2003). Assesing self-esteem. In S. J. Lopez & C. R. Snyder (Eds.), *Positive psychological assessment. A handbook of models and measures*. Washington, DC: American Psychological Association.

Jackson, L. A., & Gerard, D. A. (1996). Diurnal types, the "big five" personality factors, and other personal characteristics. *Journal of Social Behavior and Personality*, *11*(2), 273–283.

John, O. P., & Srivastava, S. (1999). The big-five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (Vol. 2, pp. 102–138). New York: Guilford Press.

Kairys, A. (2010). *Time perspective: Its link to personality traits, age, and gender*. Doctoral dissertation, Vilnius University.

Keller, T. (1999). Images of the familiar: Individual differences and implicit leadership theories. *The Leadership Quarterly*, *10*(4), 589–607.

Kostić, A., & Nedeljković, J. (2013). *Studije vremenskih perspektiva u Srbiji*. Niš: Punta.

Kwan, V. S. Y., Bond, M. H., & Singelis, T. M. (1997). Pancultural explanations for life satisfaction: Adding relationship harmony to self-esteem. *Journal of Personality and Social Psychology*, *73*(5), 1038–1051.

Laghi, F., Baiocco, R., D'Alessio, M., & Gurrieri, G. (2009). Suicidal ideation and time perspective in high school students. *European Psychiatry*, *24*(1), 41–46.

Laghi, F., D'Alessio, M., Pallini, S., & Baiocco, R. (2009). Attachment representations and time perspective in adolescence. *Social Indicators Research*, *90*(2), 181–194.

Martin, M., Ward, J. C., & Clark, D. M. (1983). Neuroticism and the recall of positive and negative personality information. *Behaviour Research and Therapy*, *21*(5), 495–503.

Mikulincer, M., & Florian, V. (1998). The relationship between adult attachment styles and emotional and cognitive reactions to stressful events. In J. Simpson & S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 143–165). New York: Guilford.

Milfont, T. L., & Gouveia, V. V. (2006). Time perspective and values: An exploratory study of their relations to environmental attitudes. *Journal of Environmental Psychology*, *26*(1), 72–82.

Ortuño, V., & Vasquez, A. (2013). Time perspective and self-esteem: Negative temporality affects the way we judge ourselves. *Annales Universitatis Paedagogicae Cracoviensis. Studia Psychologica*, *VI*, 109–125.

Pyszczynski, T., Greenberg, J., & Solomon, S. (1999). A dual process model of defense against conscious and unconscious death-related thoughts: An extension of terror management theory. *Psychological Review*, *106*(4), 835–845.

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg self-esteem scale. *Personality and Social Psychology Bulletin*, *27*(2), 151–161.

Robins, R. W., Tracy, J. L., Trzesniewski, K. H., Potter, J., & Gosling, S. D. (2001). Personality correlates of self-esteem. *Journal of Research in Personality*, *35*(4), 463–482.

Rosenberg, M. (1985). Self-concept and psychological well-being in adolescence. In R. L. Leahy (Ed.), *The development of the self* (pp. 205–246). Orlando, FL: Academic Press.

Rosenberg, M., Schooler, C., & Schoenbach, C. (1989). Self-esteem and adolescent problems: Modeling reciprocal effects. *American Sociological Review*, *54*(6), 1004–1018.

Seginer, R. (2003). Adolescent future orientation: An integrated cultural and ecological perspective. *Online Readings in Psychology and Culture*, *6*(1), 1–13.

Shipp, A. J., Edwards, J. R., & Lambert, L. S. (2009). Conceptualization and measurement of temporal focus: The subjective experience of the past, present, and future. *Organizational Behavior and Human Decision Processes*, *110*(1), 1–22.

Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: Norton.

Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychologlcal Bulletin*, *103*(2), 193–210.

van Beek, W., Berghuis, H., Kerkhof, A., & Beekman, A. (2010). Time perspective, personality and psychopathology: Zimbardo's time perspective inventory in psychiatry. *Time and Society*, *20*(3), 364–374.

Wilkinson, R. B. (2004). The role of parental and peer attachment in the psychological health and self-esteem of adolescents. *Journal of Youth and Adolescence*, *33*(6), 479–493.

Zhang, J., & Howell, R. T. (2011). Do time perspectives predict unique variance in life satisfaction beyond personality traits? *Personality and Individual Differences*, *50*(8), 1261–1266.

Zhang, J. W., Howell, R. T., & Bowerman, T. (2013). Validating a brief measure of the Zimbardo time perspective inventory. *Time and Society*, *22*(3), 391–409.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-difference metric. *Journal of Personality and Social Psychology*, *77*(6), 1271–1288.

Zimbardo, P. G., & Boyd, J. N. (2008). *The time paradox: The new psychology of time that will change your life*. New York: Free Press.

Aleksandra Kostić is Professor of Social Psychology at the Faculty of Philosophy, Department of Psychology, University of Niš, Serbia. Her research interests include nonverbal communication, emotional experience, time perspective, ethnic identity, and similarities and differences between cultures.

Marija Pejičić is a doctoral student and teaching assistant in the Department of Psychology at the Faculty of Philosophy, University of Niš. Her teaching and research areas focus mainly on aspects of intergroup and interpersonal relations, and specifically on communication and emotional experience.

Derek Chadee is Professor of Social Psychology at the Department of Behavioural Sciences and Director of the ANSA McAL Psychological Research Centre, The University of the West Indies, St. Augustine Campus. His current research interests include the social psychology of fear of crime and general fear, antecedents of emotions, copy-cat behavior, and media. He is also a Fulbright Scholar and author of books that include *Theories in Social Psychology* (Wiley-Blackwell).

8

Qualitative and Quantitative Trends in the Assessment of Subjective Temporality

Victor E.C. Ortuño, Maria Paula Paixão, and Isabel Nunes Janeiro

What gets us into trouble is not what we don't know
It's what we know for sure that just ain't so.
—Mark Twain

Since the first moment when humans began asking existential questions, two powerful ideas have dominated: the meaning of life and the existence of God. Still, there is a third idea that has mesmerized humans for as long as history can remember. And that idea is time, a notion that connects with those two first ideas, but also is a structure that brings order to

V.E.C. Ortuño (✉)
University of the Republic, Montevideo, Uruguay

University of Coimbra, Coimbra, Portugal

M.P. Paixão
University of Coimbra, Coimbra, Portugal

I.N. Janeiro
University of Lisbon, Lisbon, Portugal

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_8

human existence (Kant, 1781/1997). According to Dias, "Time is one of the classic concepts whose study still holds a timeless relevance" (2009, p. 42). In part, this is because time, or more specifically the unique human ability to think about the future, has been considered a catalyst for our species's success (Husman & Shell, 2008); it is certainly one of our biggest evolutionary advantages over other species in the planet.

Aside from absolute conceptions about time from ancient Greek philosophers like Zeno or Aristotle, the mechanistic view of Isaac Newton, or the relativistic interpretation of Einstein about temporal phenomena, psychologists and other social practitioners and scientists have another relevant aspect of time to be considered—the individual one. Time genesis as a psychological phenomenon can be understood from a constructivist point of view, as proposed by Piaget (1986). Within this model, the knowledge (in this specific case, temporal) does not come solely from the external objects of the individual (empiricism) nor from endogenous structures already present in him (innateness). Instead, it originates from the interaction of these two components (Piaget, 1986). Through Piaget (1977) experiments, we learned that time is critical in the intellectual development of children, but the opposite is also true: children's intellectual development is crucial for them to understand temporal phenomena. The development of time perspective (TP) is directly influenced by external factors such as socialization, education, and culture (Seginer, 2009).

In this chapter, we focus on assessment of temporal concepts related to the subjective and individual aspects of time, categorized as Time III by Vásquez (2011). In this categorization, psychological time is divided into four categories: Time I, or cosmological time, is related to natural cycles and their effects on the biological aspects of behavior; Time II, or perceptive time, focuses on the study of temporal perception and estimation; Time III, or subjective time, which is connected with individuals´ personal conceptions of time and the cognitive processes grounded in time; and Time IV, or cultural time, relates to the temporal concepts that are developed socially, such as cultural representations of time and the values associated with it.

The definition of subjective time has always been troublesome, with several approaches but no real consensus on its definition, dimensions,

and measurement. If we take into account a broad approach to subjective temporality, we can find a large number of paradigms; some have received more attention than others from the scientific community in the last decades. Some of the concepts proposed are the following: time orientation (Nuttin & Lens, 1985), time perspective (Zimbardo & Boyd, 1999), temporal focus (Shipp, Edwards, & Lambert, 2009), consideration of the future consequences (CFC, Joireman, Shaffer, Balliet, & Strathman, 2012), and future hope (Snyder et al., 1991). According to Lennings (1994), over 100 methods have been developed to measure temporal orientation. McGrath and Kelly (1986) and Boniwell and Zimbardo (2004) also identify the existence of about 211 approaches to time perspective (TP), which taken with the existent lack of efforts to compare results across different assessment instruments in subjective temporality topics (Ortuño & Janeiro, 2009, 2010) makes it "impossible to measure a construct that has as many conceptualizations as there are measurement tools" (Lasane & O'Donnell, 2005, p. 15).

It is relevant to make a clear distinction between two of these time concepts, since several misunderstandings have been created around them: time perspective and time orientation. Time perspective, or TP, is a multidimensional concept related to the use of temporal categories of past, present, and future dimensions. These categories are used to create a coherent organization of the individual's internal and external motivational objects. Time orientation, on the other hand, according to Lasane and O'Donnell (2005) refers to a more circumscribed concept involving individual's preference for a determined temporal dimension (Nuttin & Lens, 1985).

In our understanding, one of the most important concepts regarding the individual's temporality is the concept of TP. First referred to by Frank (1939, as cited by Lewin, 1943), it is a concept related to the individual's life-space and is not limited by the present time. On the contrary, it includes also the individual's remembered past and imagined future. The importance of this concept for psychology is underscored by Lewin (1942) when he states that "the behavior of an individual does not depend entirely on his present situation. His mood is deeply affected by his hopes and wishes and by his views of his own past" (pp. 104). These early approaches to TP conceive it as transitory motivational states that affect

the individual's level of aspiration, mood, constructiveness, and initiative at a given time (Lewin, 1943). Lens (1986) suggests that the operationalization of future time perspective (and consequently TPs) over time has evolved from being considered as a motivational state to its conceptualization as a more stable personality trait.

The theoretical framework for TP proposed by Lewin encouraged a plethora of studies regarding subjective time (Nuttin & Lens, 1985). Also, it served as the foundation for subsequent theoretical models about subjective time, such as Nuttin and Lens's (1985) model of TP. These authors conceive TP as a cognitive-spatial concept—cognitive because it is formed by motivational objects or events that exist on the cognitive level of behavioral functioning, and spatial because these same motivational objects of events are located on a temporal continuum. Individuals perceive these motivational objects as located either in the past, present, or future, even when in fact, physically, those same objects or events are thought of by the individual in the present moment.

TP multidimensionality is based on the independence of the three temporal frames, namely past, present, and future TPs. Still, authors like Nuttin and Lens (1985) suggest specific subdimensions within the future time perspective, such as extension, density, degree of structuration, and level of realism. These subdimensions vary according to each author's conceptualization of TP and are explored in detail later, as we discuss different models.

According to Ortuño (2014), in order to avoid misunderstandings it is important to differentiate between TP temporal dimensions (past, present, and future) and their characteristics or properties. If we take, for example, an individual's temporal extension, it represents an attribute of this same individual past or future time perspective. The same goes for the other properties previously mentioned. Such an approach of the temporal concepts allows organization of the different existing assessment techniques using varied criteria:

1. ***Theoretical basis***: There are instruments like the Thematic Apperception Test (TAT; Wohlford, 1966) or the Circle Test (Cottle, 1976) that are psychoanalytic oriented (since the defense mechanism of projection is on the basis of the evaluation system they adopt); on

the other hand, there are instruments like the Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999) or the Consideration of the Future Consequences Scale (CFCS; Joireman et al., 2012) that follow a more cognitive approach of subjective time assessment.

2. ***Measured construct***: An individual's subjective temporality is composed of several variables (such as TP, CFC, and hope, among many others) and their respective sublevels, dimensions, or properties (like temporal attitude, temporal orientation for TP or the future, and immediate for consideration of the future consequences).
3. ***Temporal scope (partial or complete)***: There are instruments that measure only one temporal dimension, such as the Future Anxiety Scale (Zaleski, 1996), while there are others that try to measure the entire individual's temporal horizon, like the ZTPI (Zimbardo & Boyd, 1999).
4. ***Relation with time***: Some constructs represent concepts directly related with time, such as TP, time attitude, or time orientation while others represent concepts indirectly related with time; some examples are future hope (Snyder et al., 1996) and sensation seeking (Zuckerman, Eysenck, & Eysenck, 1978).

Historically, the first inventories created to measure subjective temporal concepts were story- or graphic-based techniques following psychoanalytic principles. A couple of examples would be the Future Events Test (Kastenbaum, 1961) or the Time Metaphors (Knapp & Garbutt, 1958), although Boniwell, Osin, Linley, and Ivanchenko (2010) say that these approaches had flaws regarding their validity and reliability.

One of the most influential qualitative instruments developed to assess concepts related to subjective temporality is the Motivational Induction Method (MIM; Nuttin & Lens, 1985). In its shortest version, the MIM includes two small booklets with 20 and 10 pages, respectively. On top of each page there is a motivational inducer. These sentence beginnings are formulated in the first-person and the verb always expresses a tendency, effort, desire, intention, and the like. The sentence beginnings in the first booklet are formulated to induce positive motivational objects (e.g., I intensely desire…) while those in the second ask for negative objects, or

objects that are avoided, feared, and so on (e.g., I would not like it if …). Participants are invited to write a full sentence by expressing what they desire or fear. Each goal object expressed in the sentence completions is coded according to both a *content* code, which comprises eight main categories of content analysis (self, self-realization, realization, contact, cognitive exploration, possession, leisure, and transcendental) and some dozens of subcategories, and a *temporal* code comprising calendar units (near future) and social and biological units (intermediate and distant future, as well as the historical future and the open present). Using the MIM, we can calculate several TP indicators, such as future temporal extension and temporal density (Paixão, Abreu, & Lens, 2012).

MIM has been successfully used in a vast number of studies. Bouffard, Lapierre, and Bastin (1989) found an association between future time perspective, socioeconomic status, and level of schooling. It has also been used to assess differences in TP in adolescence, young adulthood, and adulthood in different groups, as well as future time perspective associations with several psychological and behavioral constructs (Paixão, 1996; Vázquez & Rapetti, 2005). Nevertheless, MIM has lost popularity in recent years to shorter instruments that are easier to score and interpret.

Other instruments developed within the qualitative paradigm are the Thematic Apperception Test (TAT; Wohlford, 1966), the Rappaport Time Line (Rappaport, Enrich, & Wilson, 1985), Cottle's Circle Test (Cottle & Klineberg, 1974), and the Life Events Inventory (Nurmi, 1991). Currently, the use of qualitative instruments has diminished drastically, mostly due to a focus on developing instruments with stronger psychometric guarantees.

In the last decades, simpler and more objective approaches to assess TP were carried out (Zimbardo & Boyd, 1999), some examples are the Future Anxiety Scale (Zaleski, 1996; Zaleski, Sobol-Kwapinska, Przepiorka, & Meisner, 2017), the Future Time Orientation Scale (Gjesme, 1979), the Long-Term Personal Direction Scale (LTPD, Wessman, 1973), and the Future Time Perspective Questionnaire (Stouthard & Peetsma, 1999). After an analysis of these inventories, it is possible to agree with Boniwell et al. (2010), who state that these instruments clearly represent an improvement regarding the statistical indica-

tors but it is at the expense of presenting lower assessment capabilities, since they are mostly focused on one predominant time orientation.

Nevertheless, a cursory glance at the subjective time research shows an uneven distribution in the number of publications about each of the three temporal frames (past, present, and future). Most of the studies are focused on the future frame. Shores and Scott (2007) argue that "the bulk of TP research has investigated the relationship of future and present time perspectives to other psychological constructs and behavioural outcomes. Less empirical attention has been given to past orientations" (p. 31). We believe that one cause for the dominance of future over the other two temporal frames is the influence of well-known authors like Nuttin and Lens (1985), Gjesme (1979, 1983), and Nurmi (1991), who have devoted much of their research efforts to studying the influence of future TP on individuals' motivation. Nuttin and Lens (1985), for example, have discussed future time perspective as being the individual's main motivational space.

The influence of future time perspective is especially important when exploring cognitions and/or behaviors profoundly related to planning, anticipation, and achievement. But, as demonstrated by Ortuño and Vásquez (2013), some of the negative temporal frames such as Past-negative and Future-negative are important predictors of self-esteem. Also, emotional states are related to both the Past-negative and Present-hedonist perspectives (Stolarski, Matthews, Postek, Zimbardo, & Bitner, 2014). Ortuño et al. (2013) report that the Past-negative is a significant negative and moderate predictor of satisfaction with life, interpersonal relations, and psychological well-being. We consider that currently there is enough evidence about the important role not only of future time perspective but also of past and present time perspectives in the understanding of cognition and behavior. As such, depending on the nature of the construct that is intended to be studied, researchers should consider different TPs and not only its future frame.

One of the latest TP models that follows Lewin's and also Nuttin and Lens's (1985) theory is proposed by Zimbardo and Boyd (1999). This new approach is characterized by a multidimensional approach to TP. While Nuttin and Lens (1985) acknowledge the existence of the past

and future temporal frames, they decided to focus on the motivational impact of the future time perspective on present behavior, while Zimbardo and Boyd (1999) take an integrative view of all temporal frames, including past, present, and future, as a cognitive-motivational process with large implications not only for motivation but also for objects perceptions.

According to Zimbardo and Boyd (1999), TP is "the often nonconscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help to give order, coherence, and meaning to those events" (pp. 1271). The authors also refer to TP's involvement in all process of encoding, storing, and retrieving of past events, as well as the development of expectations and goals; as such, it has a strong impact at both cognitive and behavioral levels.

The Zimbardo Time Perspective Inventory (ZTPI, Zimbardo & Boyd, 1999) has been one of the most widespread instruments in the last two decades, with more than 1600 citations on the Google Scholar database (Ortuño, Janeiro, Paixão, Esteves, & Cordeiro, in press). The instrument and the theoretical basis presented by Zimbardo and Boyd (1999) redefined research in subjective temporality by demonstrating the independence of the three main temporal frames (the past, the present, and the future) and the importance of studying the complete temporal horizon and not just one of its frames (usually the future). These authors present an inventory that is easy to administer, score, and interpret; it is allied with a coherent structure of five temporal dimensions: Past-positive, Past-negative, Present-hedonist, Present-fatalist, and Future. The ZTPI has been adapted by more than 24 countries and used a series of cross-cultural studies, demonstrating with a sample of about 12,000 participants that the five-factor structure is present in most countries where data were collected (Sircova et al., 2014).

Over time, some adjustments were introduced to Zimbardo and Boyd's (1999) model. The Transcendental-Future Time Perspective Scale (TFTPS, Zimbardo & Boyd, 2008) was the first addition, which comprises 10 statements about the possible life after the death of the physical body. Still, the research body gathered since its conception isn't clear about the relevance of this construct. Few researchers have studied this temporal dimension (Desmmyter & De Raedt, 2012; van Beek & Kairys,

2015), and the results haven't been consistent across studies. A few examples of studies addressing this temporal dimension are presented by Ortuño, Paixão, and Janeiro (2011), who in a cross-sectional study with a sample of college students found a decrease in the average values of TFTP as students advance in school.

Given the nature of its content, the transcendental future time perspective can be partially associated with religious beliefs, since many religions are based on the belief of life after death, of an immortal soul or entity that will be rewarded or punished according to the individual's actions on earth. However, we believe that transcendental future should not be exclusive of religious individuals; it may also exist in individuals who manifest a high degree of spirituality, even if they don't relate to any religious doctrine. Seema, Baltin, and Sircova (2014) argue that TFTPS measures afterlife beliefs but not necessarily a TP related to this temporal frame. New developments in the transcendental time topic, include the Transcendental-Past Time Perspective or as mentioned in Chapter 16 of this book, Prenatal Time Perspective.

A second addition to Zimbardo and Boyd's model follows Lewin's (1939) considerations about the influence of the negative future temporality on individuals. It refers to the future negative, a dimension that only a small body of researchers has addressed (Holman & Silver, 2005) and without reaching a consensus about its measurement. Carelli, Wiberg, and Wiberg (2011) introduced eight items to ZTPI related with a negative view about the future which, according to the presented results, is associated with both dependent and avoidant decisional styles. Janeiro (2012) developed the Time Perspective Scale (TPS), which is formed by four temporal dimensions: Past orientation, Present orientation, Future orientation, and a four-item dimension called Anxious Vision about the Future, which presented good psychometric indicators. This last dimension was included in Zimbardo's model revision by Ortuño et al. (in press), giving a coherent contribution to the model both at the theoretical and at the psychometrical level. Ortuño and Vásquez (2013) demonstrated its predictive power regarding trait self-esteem.

A last approach to Zimbardo's theory is related to the balanced time perspective that represents an individual's ability to flexibly switch between the TPs when considering situational demands. Zhang, Howell, and Stolarski (2013) proposed the Deviation of the Balanced Time Perspective

(DBTP) coefficient, a method to aggregate ZTPI's scores; it includes the optimal scores of the five temporal dimensions and the individual's score in each of these same dimensions. The result allows identifying the individual's proximity or deviance from the optimal TP. Other authors, using different BTP methods, have also found relations between BTP and adaptive constructs, such as subjective happiness and mindfulness (Drake, Duncan, Sutherland, Abernethy, & Henry, 2008), life satisfaction, optimism, purpose in life, and self-efficacy (Boniwell et al., 2010). The three methods proposed by each of these authors present valid solutions to calculate the balanced time perspective and they do not require the use of any additional instrument. Chapters 4 and 5 of this book, develop further in the topic of balanced time perspective.

In a different approach, Webster (2011) designed the Balanced Time Perspective Scale (BTPS) in order to assess an individual's present balance between past and future time perspectives. The interaction between past and future dimensions allows consideration of four temporal categories: Time Expansive, Futurist, Reminiscers, and Time Restrictive. Time Expansive individuals are those with higher values in happiness, subjective well-being, and self-esteem. Yet, as acknowledged by the BTPS author, it doesn't contain a present subscale. This inventory was proposed not as a substitute to ZTPI but, according to its author, to address a flaw related to the measurement of the balanced time perspective. However, although it appears to be a psychometrically and conceptually valid instrument, BTPS lacks dimensions to measure the subjective present (Stahl, 2012); we consider that a complete conceptualization about a balanced time perspective should include dimensions related to the three archetypal temporal frames (past, present, and future).

In order to overcome this limitation Vowinckel, Westerhof, Bohlmeijer, and Webster (2015) developed the Present-Eudaimonic Time Perspective scale, which assesses a positive vision about the present, where personal growth, life's meaning, and living a full and satisfying life are the main aspects to be considered. This new scale was included in the BTPS, with a good factor structure of four components. Through regression analysis, the authors show how the Present-Eudaimonic scale alone makes a significant contribution to the prediction of mindfulness, flow proneness, and positive mental health. For more developments about present time perspective, Chapter 3 present a new scale for measuring the Expanded Present Time Perspective.

The Zimbardo and Boyd model has received several critiques during the years, mostly focused on two aspects: (1) the content validity of the five temporal dimensions, since it include aspects that are not only related with time orientation but also with other temporal considerations. For instance, Webster (2011) mentions that some items of the future subscale are more related with time management than TP; (2) the ZTPI factor structure is not as uniform and culturally invariant as mentioned by previous literature (McKay et al., 2015). Worrel, Mello and Buhl (2013) have also raised concerns about the ZTPI's scarce associations with other temporal phenomena and also with its psychometric characteristics.

Mello and Worrell (2016) present a different model of TP, formed by the dimensions of time meaning, time frequency, time orientation, time relation, and time attitude. These authors propose a new instrument to operationalize these dimensions, called the Adolescent Time Inventory (ATI). Time meaning is referred by its authors as "individuals´ definitions of the past, present, and future" (p. 1). Time frequency refers to how often individuals´ think about the past, present, and future. Time orientation represents the overall tendency of an individual to function in a determined temporal frame. Time relation is the subjective notion of past, present, and future relatedness. And finally, time attitude is related to the affective component associated with each temporal frame. Still, some of these dimensions overlap with previously developed concepts. It is relevant to consider that the ATI has been adapted to several languages and cultures, such as: German (Worrell, Mello, & Buhl, 2013), Hindu, Japanese, Spanish, Swedish, and Chinese, among others. Within the most recent developments in subjective time assessment, ATI is the only instrument that combines quantitative and qualitative approaches.

Husman and Shell (2008) developed an inventory specifically measuring the future time perspective dimensions of value, connectedness, extension, and speed. Specifically, these dimensions referred to are: value is the importance that a goal has for the individual; connectedness represents individuals´ ability to link their activities with its own goals; extension is related to the distance between the present moment and how far away the goals are projected; and speed represents the subjective sense of the speed of time passing. In order to operationalize this model, Husman and Shell (2008) developed the Future Time Perspective Scale (FTPS),

composed of those same four components, and they demonstrate that it reached a strong and coherent factor structure with high reliability (except for the speed component): value (seven items, α = .76), connectedness (15 items, α = .80), extension (six items, α = .74) and speed (five items, α = .66), with a total of 27 items.

More recently, Janeiro (2012) presented the Time Perspective Scales (TPS) as a new proposal to measure TP and some of its dimensions. The psychometric results are positive and allow consideration of TPS as a valid and reliable instrument to measure not only TP in its three temporal frames but also the temporal extension and temporal affectivity, both positive and negative, regarding the future. TPS has already been adapted to Brazilian Portuguese (Janeiro, Bardagi, Teixeira, & Ortuño, 2016). We note two drawbacks regarding this instrument: it lacks the assessment of the negative valence regarding the past and the present time perspectives, and it is still not culturally adapted to languages other than Portuguese (both in Portugal and Brazil).

The capacity to foresee one's personal future and mental time travel is a shared and probably unique human feature. It has been suggested that it is a great adaptive advantage for our species (Suddendorf & Corballis, 2007). But this capacity also posits an internal conflict between immediate and distant outcomes and rewards for our behavior. For example, some people sacrifice an immediate pleasure or benefit for a distant, subjectively better outcome (e.g., not eating dessert now to be slimmer in the summer). To address scientifically how people respond differently to these dilemmas, the concept of CFC was proposed. The study of individual differences in CFC was defined as "the extent to which people consider the potential distant outcomes of their current behaviours and the extent to which they are influenced by these potential outcomes" (Strathman, Gleicher, Boninger, & Edwards, 1994, p. 743). It was shown that the CFCS is a reliable, stable, and valid construct, related to many other psychological and social phenomena. According to Aspinwall (2011), the CFC concept is mostly related to the subjective value of future versus present outcomes. In Zimbardo and Boyd's (1999) study, this concept was positively correlated only with the future time perspective, it correlated negatively with the Past-negative, Present-fatalist, and Present-hedonist, and it showed no correlation with the Past-positive.

The CFCS measures the extent to which individuals reflect and are influenced by the immediate, as well as by the distant outcomes of current behavior (Strathman et al., 1994). It is composed of 12 items (five-point Likert scale), grouped into two subscales (future and immediate). The psychometric properties are good, with internal reliabilities typically ranging from .80 to .86, and test-retest correlations of .76 (two weeks) and .72 (five weeks), with all data relating to the complete, 12-item scale. Strathman et al. (1994) reported exploratory and confirmatory factor analyses supporting the idea of a single underlying factor. However, research carried out later suggests that the scale comprises two factors (Joireman, Balliet, Sprott, Spangenberg, & Schultz, 2008; Petrocelli, 2003; Vásquez, Esteves, Gomes, & Ortuño, 2015). For instance, Joireman et al. (2008) explored the validity of the two-factor solution. They found that the two subfactors differentially predict the trait of self-control—ego depletion and temporal discounting—with the immediate consideration of the future consequences subscale being the best and unique predictor. More recently, Joireman et al. (2012) have successfully tested a 14-item CFCS, with better factor structure and internal consistency.

Concerning the discriminant validity of the English version of the CFCS, Joireman, Strathman, and Balliet (2006) have shown the validity of the CFCS across four domains: (1) health behavior, risk-taking, and academic achievement; (2) aggression; (3) pro-social organizational behavior; and (4) pro-environmental attitudes and behavior. First, it was demonstrated that individuals who scored high on the CFCS scale reported greater general concern with health, exercising more frequently and with a lower substance abuse (Ouellette, Hessling, Gibbons, Reis-Bergan, & Gerrard, 2005). Also, they were less likely to engage in risky sexual practices and more likely to get an HIV test (Dorr, Krueckeberg, Strathman, & Wood, 1999). Second, it was consistently shown that CFCS relates to aggression. The CFC mediates the relationship between impulsivity and aggression, given that impulsive people have less consideration for the consequences of their actions, which makes them more likely to engage in violent behavior. Third, some aspects of organizational behavior are also predicted by the CFCS. Research has shown that CFCS is related to willingness to engage in prosocial organizational behaviour and knowledge sharing in organizations (Joireman, Daniels,

George-Falvy, & Kamdar, 2006, Joireman, Kamdar, Daniels, & Duell, 2006). Lastly, individuals high in CFC are usually more concerned with environmental conditions and the use of natural resources, they have better attitudes to recycling (Lindsay & Strathman, 1997), they tend to defend and be concerned about the environment (Joireman, Lasane, Bennett, Richards, & Solaimani, 2001), and they have stronger preferences for public transportation and for structural solutions for transportation dilemmas (Joireman, 2005; Joireman, Van Lange, & Van Vugt, 2004).

Another concept directly related to individuals´ temporal experience is future hope. Snyder, Feldman, Shorey, and Rand (2002) suggest its assessment via the Adult Hope Scale (AHS), which is a two-dimension inventory composed of 14 items using a four-point Likert response format (1 = definitely false, 2 = mostly false, 3 = mostly true, 4 = definitely true). Eight items are related to dispositional hope (four are designed to measure agency thinking and four pathways thinking); the remaining four items are fillers. Snyder et al. (1991) reported acceptable values of internal reliability (Cronbach's alpha in the total scale from .74 to .84; the agency subscale from .71 to .76; and the pathways subscale from .63 to .80). A similar pattern regarding AHS reliability was reported in previous studies (Pais-Ribeiro, Pedro, & Marques, 2006; Phan, 2013; Rand, 2009; Tong, Fredrickson, Chang, & Lim, 2010). Its temporal stability is also acceptable, since the AHS presented a test-retest correlation of .85 ($p <$ .001) after a three-week interval (Snyder et al., 1991).

Results obtained using AHS showed important and positive correlations with positive traits such as dispositional optimism ($r = .60$, $p <$ .005), desirability of control ($r = .54$, $p < .005$), self-esteem ($r = .58$, $p <$ .005; Gibb, 1990), subjective well-being ($r = .52$, $p < .01$; Melo & Pais-Ribeiro, 2010), and global life satisfaction (Marques, Pais-Ribeiro, & Lopez, 2009). AHS scores are negatively correlated with negative traits as depression ($r = -.60$, $p < .001$), hysteria ($r = -.35$, $p < .001$), psychopathic deviation ($r = -.43$, $p < .001$), schizophrenia ($r = -.46$, $p < .001$), and social introversion ($r = -.59$, $p < .001$; Irving, Crenshaw, Snyder, Francis, & Gentry, 1990). Interventions centered on the hope concept have established its pertinence concerning adaptive cognitions, such as life satisfaction and self-worth (Marques, Pais-Ribeiro, & Lopez, 2011).

Concerning the relation of this concept with other temporal variables, Aspinwall (2011) states that hope is related to the content of future orientation, but there is no reference to the extent of this relation. Phan (2009), through a SEM approach and using a reduced version of ZTPI composed only of future and present dimensions, showed that hope is mainly influenced by present time perspective, while future time perspective exhibits a small influence, but without statistical significance. Still, more evidence is needed in order to fully understand the association between hope and a more complete characterization of the individual's temporal profile, since Snyder et al. (1991) consider that hope is related not only with the future but also with the past and the present.

Some considerations about the two main components of Snyder's hope concept may also be addressed. "Pathway" is defined as an individual's ability to produce means to achieve certain goals (Snyder et al., 2002). We believe that pathway may be related to future time perspective, owing, for example, to the association reported by De Volder and Lens (1982) of the subjective value assigned to long-term goals and the instrumental value of the activities related to those same goals with school motivation and academic results. In the case of agency, Snyder et al. (2002) present it as an individual's cognition regarding his or her ability to successfully achieve his or her goals—structurally different from the concepts of optimism and self-efficacy. Still, we consider that agency is more an affective component of hope, so temporal affectivity would certainly be related to it. Likewise, since self-esteem is considered as the evaluative part of self-concept (Heatherton & Wyland, 2003), and it is negatively correlated with the more TP's negative dimensions (past negative and future negative), we believe that those dimensions of TP will be equally negatively associated with agency, which is a dimension that requires a certain sense of self-evaluation.

The Temporal Focus Scale (TFS, Shipp et al., 2009) is presented as an inventory to measure the concept of temporal focus, which its authors define as "the attention individuals devote to thinking about the past, present, and future" (p. 1). These authors consider it as a component of an individual's TP. Still, in our opinion this concept presents a high resemblance to the concept of temporal orientation, since both are referred to as individual's active use of a specific temporal frame or a com-

bination of them in the present moment. The reported results are positive concerning its factor structure and several validity aspects (construct, convergent, discriminant, and predictive). Yet, we must highlight that the concept of temporal focus is not as wide as the concept of TP, so we further believe that its predictive value will not outgrow TP's.

Among the varied temporal concepts that we have explored in this chapter, we would like to stress two aspects of TP that define very well the extent and importance of its influence not only on behavior but also on several important cognitive processes. The first aspect is concerned with its contribution to the cognitive process of retrieving memories from past events or from motivational objects located in the past, present, or future. That process is highly dependent on the individual's temporal profile or, in other words, on which temporal frame the individual relies on the most. This is because the preferred temporal frames serve as a cognitive-affective filter, which helps in the determination of which memories should be retrieved or which motivational objects should be accessed. All the information, events, memories, or motivational objects that must be encoded, stored, and retrieved are affected by the configuration of the individual's temporal profile.

The second aspect refers to TP's flexibility, since as referred to by Zimbardo and Boyd (1999), as well by other authors, TP is a relatively stable trait, but is also affected by cultural, educational, religious, social, and family variables, and this effect is constant. Thus, TP is a dynamic process constantly affected by other environmental forces, which in turn are affected by TP, at least at a representational level, which brings us back to the former aspect.

Considering those two aspects, it is our understanding that TP is a cognitive-affective-motivational process involved in organizing most of the stimuli that our perceptive system receives, as well as the cognitive inputs–outputs that our cognitive system processes. It is also a process that modifies itself according to the environmental influences, but impacts those same influences in return. We illustrate TP functioning as a feedback process, represented in Fig. 8.1 as an infinite loop in which the present stimuli are both interpreted and affected by past memories and future goals and aspirations, while those same present stimuli have the ability to modify the information contained in the past and future temporal frames.

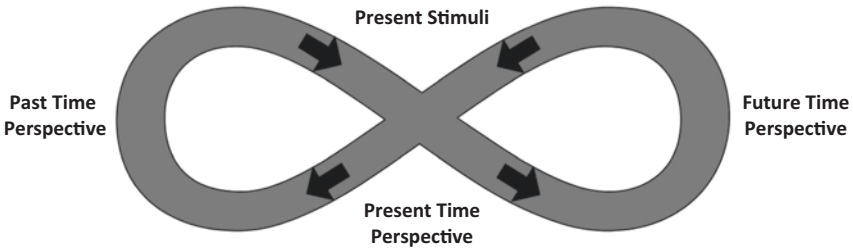

Fig. 8.1 An illustrative model of TP's dimension interaction

As we can see, each new model of TP brings new dimensions and properties to be considered, and this is an expression of the health and dynamism that this field of study possesses at this moment. Yet, there is a long row to hoe if we want to achieve a model that truly represents all the aspects within TP, with both a domain-general and a context-specific outlook.

It is important to keep in mind a subtle but important difference between the psychology of time and subjective temporality. We consider the psychology of time as the broad field that encloses all the studies concerning the time experience at all its levels. Within the psychology of time we can include the four levels proposed by Vásquez (2011), which help in organizing the entire human temporal phenomenology. Subjective temporality, on the other hand, should include all the individual cognitive structures that are indirectly related to temporal concepts (such as sensation seeking) or those that are directly related to the temporal experience (such as TP, time orientation, or the CFC), which within Vásquez (2011) taxonomy is referred, or specifically as Time III.

As the studies about subjective time are becoming more precise, some important aspects should be considered in future studies:

1. If we take into account all the instruments mentioned in this chapter, there is a similarity across them—they are self-report questionnaires. This might imply that participants' responses could be affected by a social-desirability bias or even an emotional bias, in the sense that most of these constructs aren't undoubtedly defined as stable traits or

as emotionally induced states. New measures could include a third-person assessment component, direct behavior observation, or even the use of new methods such as virtual reality, which could facilitate the combination of quantitative and qualitative approaches. Nonetheless, considering the criteria previously proposed to organize and analyze the assessment techniques presented in this chapter, we can observe that each one of those instruments represents a different combination of values among those criteria.

2. At the conceptual level, it is still relevant to trace the differences and similarities among the several temporal concepts present in the literature, since there is a high degree of confusion and superposition between them. Most studies are being developed using a cross-sectional approach—comprehensible due to methodological, economic, and temporal restraints. Yet, this brings, as a consequence, the existence of very few longitudinal studies being published. Hamilton, Kives, Micevski, and Grace (2003) refer to this fact as an actual limitation in temporal research, because of the restricted current understanding about aging and TP. On the other hand, Lasane and O'Donnell (2005) mention the question of participants' cultural variations or nonnormative characteristics, which in most cases are not being considered in the assessment of temporal phenomena. Equally important is the elaboration of comparative studies between instruments, promoting synergies that allow us to reach a better understanding of subjective temporality and its subconcepts, as key in understanding human dynamics. In other words, we recommend the development of comparative studies, discussing why the new methods presented are more adequate than the previous, or in which way they might complement already validated instruments. An effort developed in this direction was presented by Ortuño and Janeiro's (2009) study, when analyzing the differences and complementarities between ZTPI and TPS.
3. Regarding specific contexts of intervention, it's important to develop new models for understanding a more varied array of psychopathologies, since most studies are focused in anxiety disorders, such as posttraumatic stress disorder (see Zimbardo, Sword, & Sword, 2012) or mood disorders, such as depression (see Kazakina, 2013). In temporal research, it is common to focus mainly on temporal orientation variables. Still, human

behavior is not guided only by this aspect of subjective time; is not enough to consider only the individual's temporal preferences in order to analyze the person's cognitions and behavior. New assessment techniques should include a more complete array of temporal dimensions (past, present, and future), but also the properties within these same dimensions (orientation, extension, degree of realism, among others). This scenario allows us to reiterate Boniwell et al. (2010) view on the upcoming development of TP—or subjective temporality—inventories, when they consider that not only the individual's time orientation or preferred temporal frame should assessed but also its dimensions, which we must highlight, it's more appropiate to denominate as properties in order to avoid more confusion among temporal concepts.

References

Aspinwall, L. G. (2011). Future-oriented thinking, proactive coping, and the management of potential threats to health and well-being. In S. Folkman (Ed.), *The Oxford handbook of stress, health and coping* (pp. 334–365). New York: Oxford University Press.

Boniwell, I., Osin, E., Linley, P. A., & Ivanchenko, G. V. (2010). A question of balance: Time perspective and well-being in British and Russian samples. *The Journal of Positive Psychology*, *5*(1), 24–40.

Boniwell, I., & Zimbardo, P. G. (2004). Balancing one's time perspective in pursuit of optimal functioning. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 165–178). Hoboken, NJ: Wiley.

Bouffard, L., Lapierre, S., & Bastin, E. (1989). Extension Temporelle des Projects Personnels au Cours de la Vieillesse [Temporal extension of the personal projects and aging course]. *International Journal of Psychology*, *24*, 265–291.

Carelli, M. G., Wiberg, B., & Wiberg, M. (2011). Development and construct validation of the Swedish Zimbardo time perspective inventory. *European Journal of Psychological Assessment*, *27*(4), 220–227.

Cottle, T. J. (1976). *Perceiving time: A psychological investigation with men and women*. New York: Wiley.

Cottle, T. J., & Klineberg, S. L. (1974). *The present of things future: Explorations of time in human experience*. New York: The Free Press.

De Volder, M. L., & Lens, W. (1982). Academic achievement and future time perspective as a cognitive-motivational concept. *Journal of Personality and Social Psychology*, *42*(3), 566–571.

Desmmyter, F., & De Raedt, R. (2012). The relationship between time perspective and subjective well-being of older adults. *Psychologica Belgica*, *52*(1), 19–38.

Dias, M. (2009). *Em Busca do Tempo Construído: Contributos da Perspectiva Diacrónica [In search for the constructed time: A diachronic perspective contribute]*. Portugal: Editorial Novembro.

Dorr, N., Krueckeberg, S., Strathman, A., & Wood, M. D. (1999). Psychosocial correlates of voluntary HIV antibody testing in college students. *AIDS Education and Prevention*, *11*, 14–27.

Drake, L., Duncan, E., Sutherland, F., Abernethy, C., & Henry, C. (2008). Time perspective and correlates of wellbeing. *Time & Society*, *17*(1), 47–61.

Frank, L. K. (1939). Time perspectives. *Journal of Social Philosophy*, *4*, 293–312.

Gjesme, T. (1979). Future time orientation as a function of achievement motives, ability, delay of gratification, and sex. *The Journal of Psychology*, *101*(2), 173–188.

Gjesme, T. (1983). On the concept of future time orientation: Considerations of some functions´ and measurements´ implications. *International Journal of Psychology*, *18*, 443–461.

Hamilton, J. M., Kives, K. D., Micevski, V., & Grace, S. L. (2003). Time perspective and health-promoting behavior in a cardiac rehabilitation population. *Behavioral Medicine*, *28*(4), 132–139.

Heatherton, T. F., & Wyland, C. L. (2003). Assessing self-esteem. In S. J. Lopez & C. R. Snyder (Eds.), *Positive psychological assessment. A handbook of models and measures* (pp. 219–233). Washington, DC: American Psychological Association.

Holman, E. A., & Silver, R. C. (2005). Future-oriented thinking and adjustment in a nationwide longitudinal study following the September 11th terrorist attacks. *Motivation and Emotion*, *29*(4), 389–410.

Husman, J., & Shell, D. F. (2008). Beliefs and perceptions about the future: A measurement of future time perspective. *Learning and Individual Differences*, *18*, 166–175.

Irving, L. M., Crenshaw, W., Snyder, C. R., Francis, P., & Gentry, G. (1990, May). *Hope and its correlates in a psychiatric inpatient setting*. Paper presented at the 62nd Annual Meeting of the Midwestern Psychological Association.

Janeiro, I., Bardagi, M., Teixeira, M., & Ortuño, V. (2016, July). *Psychometric properties of the ITP: Evidence from two culturally different samples*.

Communication presented at the 31st International Congress of Psychology, Yokohama, Japan.

Janeiro, I. N. (2012). O Inventário de Perspectiva Temporal: Estudo de validação [The time perspective inventory: Validation study]. *Revista Iberoamericana de Diagnóstico e Avaliação Psicológica*, *34*, 117–133.

Joireman, J. (2005). Environmental problems as social dilemmas: The temporal dimension. In A. Strathman & J. Joireman (Eds.), *Understanding behavior in the context of time: Theory, research, and application* (pp. 289–304). Mahwah, NJ: Lawrence Erlbaum.

Joireman, J., Balliet, D., Sprott, D., Spangenberg, E., & Schultz, J. (2008). Consideration of future consequences, ego-depletion, and self-control: Support for distinguishing between CFC-immediate and CFC-future subscales. *Personality and Individual Differences*, *45*, 15–21.

Joireman, J., Daniels, D., George-Falvy, J., & Kamdar, D. (2006). Organizational citizenship behaviors as a function of empathy, consideration of future consequences, and employee time horizon: An initial exploration using an in-basket simulation of OCBs. *Journal of Applied Social Psychology*, *39*, 2266–2292.

Joireman, J., Kamdar, D., Daniels, D., & Duell, B. (2006). Good citizens to the end? It depends: Empathy and concern with future consequences moderate the impact of a short-term time horizon on OCBs. *Journal of Applied Psychology*, *91*, 1307–1320.

Joireman, J., Shaffer, M. J., Balliet, D., & Strathman, A. (2012). Promotion orientation explains why future-oriented people exercise and eat healthy evidence from the two-factor consideration of future consequences-14 scale. *Personality and Social Psychology Bulletin*, *38*(10), 1272–1287.

Joireman, J., Strathman, A., & Balliet, D. (2006). Considering future consequences: An integrative model. In L. Sanna & E. Chang (Eds.), *Judgments over time: The interplay of thoughts, feelings, and behaviors* (pp. 82–99). Oxford: Oxford University Press.

Joireman, J. A., Lasane, T. P., Bennett, J., Richards, D., & Solaimani, S. (2001). Integrating social value orientation and the consideration of future consequences within the extended norm activation model of proenvironmental behaviour. *British Journal of Social Psychology*, *40*, 133–155.

Joireman, J. A., Van Lange, P. A. M., & Van Vugt, M. (2004). Who cares about the environmental impact of cars? Those with an eye toward the future. *Environment and Behavior*, *36*, 187–206.

Kant, I. (1997). *Crítica da razão pura [Critique of pure reason]* (A. Morão, Trans.). Lisboa: Fundação Calouste Gulbenkian. (Original Work Published in 1781).

Kastenbaum, R. (1961). The dimensions of future time perspective, an experimental analysis. *The Journal of General Psychology*, *65*(2), 203–218.

Kazakina, E. (2013). Time perspective of older adults: Research and clinical practice. In M. P. Paixão, J. T. da Silva, V. Ortuño, & P. Cordeiro (Eds.), *International studies on time perspective* (pp. 71–86). Coimbra: University of Coimbra Press. 10.13140/RG.2.1.1602.0008

Knapp, J. H., & Garbutt, J. T. (1958). Time imagery and the achievement motive. *Journal of Personality*, *26*, 426–434.

Lasane, T. P., & O'Donnell, D. A. (2005). Time orientation measurement: A conceptual approach. In A. Strathman & J. Joireman (Eds.), *Understanding behavior in the context of time. Theory, research and application* (pp. 11–30). NJ: Lawrence Erlbaum.

Lennings, C. J. (1994). An investigation of the effects of agency and time perspective variables on career maturity. *The Journal of Psychology*, *128*(3), 243–253.

Lens, W. (1986). Future time perspective: A cognitive-motivational concept. In D. R. Brown & J. Veroff (Eds.), *Frontiers of motivational psychology. Esssays in honour of John Atkinson* (pp. 173–190). Heidelberg, Germany: Springer Verlag.

Lewin, K. (1939). Field theory and experiment in social psychology: Concepts and methods. *American Journal of Sociology*, *44*(6), 868–896.

Lewin, K. (1942). Field theory of learning. *Yearbook of the National Society for the study of Education*, *41*(part 2), 215–242.

Lewin, K. (1943). Defining the field at a given time. *Psychological Review*, *50*(3), 292.

Lindsay, J. J., & Strathman, A. (1997). Predictors of recycling behavior: An application of a modified health belief model. *Journal of Applied Social Psychology*, *27*, 1799–1823.

Marques, S. C., Pais-Ribeiro, J. L., & Lopez, S. J. (2009). Validation of a Portuguese version of the children hope scale. *School Psychology International*, *30*, 538–551.

Marques, S. C., Pais-Ribeiro, J. L., & Lopez, S. J. (2011). "Building hope for the future": A program to Foster strengths in middle-school students. *Journal of Happiness Studies*, *12*, 139–152.

McGrath, J., & Kelly, J. (1986). *Time and human interaction: Towards a social psychology of time*. New York: Guildford Press.

McKay, M. T., Worrell, F. C., Temple, E. C., Perry, J., Cole, J. C., & Mello, Z. R. (2015). Less is not always more: The case of the 36-item short form of the Zimbardo time perspective inventory. *Personality and Individual Differences*, *72*, 68–71.

Mello, Z. R., & Worrell, F. C. (2016). *The adolescent time inventory: Technical manual (version 3)*. San Francisco, CA: Authors.

Melo, V., & Pais-Ribeiro, J. (2010). Relação entre Optimismo, Esperança e Bem-Estar Subjectivo com o Medo do Cancro da Mama em Estudantes Universitárias [Relation between optimism, hope and subjective well-being with breast cancer fear in university students]. In I. Leal, J. Pais-Ribeiro, M. Marques, & F. Pimenta (Eds.), *Proceedings of 8° Congresso Nacional de Psicologia da Saúde: Saúde, sexualidade e género* (pp. 927–934). Lisboa: Instituto Superior de Psicologia Aplicada.

Nurmi, J. E. (1991). How do adolescents see their future? A review of the development of future orientation and planning. *Developmental Review*, *11*, 1–59.

Nuttin, J., & Lens, W. (1985). *Future time perspective and motivation: Theory and research method*. Belgium: Leuven University Press.

Ortuño, V. (2014). *Time perspective stability: Studies with a multidmensional model in the university context*. Unpublished doctoral thesis, Universidade de Coimbra, Coimbra, Portugal.

Ortuño, V., Gomes, C., Vásquez, A., Belo, P., Imaginário, S., Paixão, M. P., & Janeiro, I. (2013). Satisfaction with life and college social integration: A time perspective multiple regression model. In M. P. Paixão, J. T. da Silva, V. Ortuño, & P. Cordeiro (Eds.), *International studies on time perspective* (pp. 101–106). Coimbra: University of Coimbra Press. 10.13140/RG.2.1.1602.0008

Ortuño, V., Janeiro, I., Paixão, M. P., Esteves, C., & Cordeiro, P. (2018). Um novo modelo multidimensional da Perspectiva Temporal [A new multidimensional model of time perspective]. *Revista Iberoamericana de Diagnostico y Evaluación Psicologica*, 45(1).

Ortuño, V., & Vásquez, A. (2013). Time perspective and self-esteem: Negative temporality affects the way we judge ourselves. *Annales Universitatis Paedagogicae Cracoviensis. Studia Psychologica*, *VI*, 109–125.

Ortuño, V. E., & Janeiro, I. N. (2009). Estudo Comparativo de duas medidas de Perspectiva temporal: IPT & ZTPI em foco [Comparative study of two measures of time perspective: IPT & ZTPI in focus]. In *Proceedings of X Congresso Internacional Galego-Português de Psicopedagogia*. Braga: Universidade do Minho.

Ortuño, V. E., & Janeiro, I. N. (2010). Análise das Diferenças na Perspectiva Temporal em Vários Grupos Etários através do IPT e do ZTPI [Analysis of the differences on time perspective in several age groups through the IPT and the ZTPI]. In C. Nogueira, I. Silva, L. Lima, A. T. Almeida, R. Cabecinhas, R. Gomes, C. Machado, A. Maia, A. Sampaio, & M. C. Taveira (Eds.), *Proceedings of VII Simpósio Nacional de Investigação em Psicologia* (pp. 35–46). Braga: Universidade do Minho.

Ortuño, V. E., Paixão, M. P., & Janeiro, I. (2011). Tempo e Universidade: A Evolução da Perspectiva Temporal ao Longo do Percurso Universitário [Time and university: Time perspective's evolution along the university course]. In L. Faria, A. Araújo, F. Morais, E. Sá, J. Pinto, & A. Silva (Eds.), *Carreira, Criatividade e Empreendedorismo* (pp. 217–225). Braga: APDC Edições.

Ouellette, J. A., Hessling, R., Gibbons, F. X., Reis-Bergan, M., & Gerrard, M. (2005). Using images to increase exercise behavior: Prototypes versus possible selves. *Personality and Social Psychology Bulletin*, *31*, 610–620. https://doi.org/10.1177/0146167204271589

Pais-Ribeiro, J., Pedro, L., & Marques, S. (2006). Contribuição para o estudo psicométrico e estrutural da escala de esperança (de futuro) [Contributes for the psychometric and structural study of the future scale of hope]. In I. Leal, J. Pais-Ribeiro, & S. Neves (Eds.), *Proceedings of 6° Congresso Nacional de Psicologia da Saúde* (pp. 75–81). Lisboa: ISPA.

Paixão, M. P. (1996). *Organização da Vivência do Futuro e Comportamento de Planificação. Compreensão dos Processos Motivacionais e Cognitivos na Elaboração e Avaliação de Projectos Pessoais [The organization of the subjective future and planning behavior. Comprehension of the motivational and cognitive processes involved in the elaboration and evaluation of personal projects]*. Unpublished doctoral dissertation, University of Coimbra, Portugal.

Paixão, M. P., Abreu, M. V., & Lens, W. (2012). Motivation, future time perspective and vocational planning behavior. In D. Leontiev (Ed.), *Motivation, consciousness, and self-regulation* (pp. 41–63). NY: Nova Science Publishers, Inc.

Petrocelli, J. V. (2003). Factor validation of the consideration of future consequences scale: Evidence for a short version. *The Journal of Social Psychology*, *143*(4), 405–413.

Phan, H. P. (2009, November). *Examination of time perspective, hope, self-efficacy, and ethnic identity: A structural equation model*. Paper presented at the Australian Association for Research in Education, Canberra, Australia.

Phan, H. P. (2013). Examination of self-efficacy and hope: A developmental approach using latent growth modeling. *The Journal of Educational Research*, *106*(2), 93–104.

Piaget, J. (1977). *Problemas de Psicologia Genética [Genetic psychology problems]*. Lisboa: Publicações Dom Quixote. (Original work published in 1972).

Piaget, J. (1986). *A Epistemologia Genética [The genetic epistemology]*. Lisboa: Moraes Editores. (Original work published in 1979).

Rand, K. L. (2009). Hope and optimism: Latent structures and influences on grade expectancy and academic performance. *Journal of Personality*, *77*(1), 231–260.

Rappaport, H., Enrich, K., & Wilson, A. (1985). Relation between ego identity and temporal perspective. *Journal of Personality and Social Psychology*, *48*(6), 1609–1620.

Seema, R., Baltin, A., & Sircova, A. (2014). Transcendental future—Is it a healty belief or a time perspective? The transcendental-future time perspective inventory (TTPI) in Estonian. *Trames*, *1*, 57–75.

Seginer, R. (2009). *Future orientation: Developmental and ecological perspectives*. New York: Springer.

Shipp, A. J., Edwards, J. R., & Lambert, L. S. (2009). Conceptualization and measurement of temporal focus: The subjective experience of the past, present, and future. *Organizational Behavior and Human Decision Processes*, *110*(1), 1–22.

Shores, K., & Scott, D. (2007). The relationship of individual time perspective and recreation experience preferences. *Journal of Leisure Research*, *39*(1), 28–59.

Sircova, A., van de Vijver, F., Osin, E., Milfont, T., Fieulaine, N., Kislali-Erginbilgic, A., … 54 members of the International Time Perspective Research Project. (2014). A global look at time: A 24 country study of the equivalence of the Zimbardo time perspective inventory. *SAGE Open, 4*(1), 1–12. https://doi.org/10.1177/2158244013515686

Snyder, C. R., Feldman, D. B., Shorey, H. S., & Rand, K. L. (2002). Hopeful choices: A school counselor's guide to hope theory. *Professional School Counseling*, *5*(5), 298–307.

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., … Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, *60*(4), 570.

Snyder, C. R., Sympson, S. C., Ybasco, F. C., Borders, T. F., Babyak, M. A., & Higgins, R. L. (1996). Development and validation of the state hope scale. *Journal of Personality and Social Psychology*, *70*, 321–335. https://doi.org/10.1037/0022-3514.70.2.321

Stahl, M. (2012). *An exploratory study on the relation between time perspective, positive mental health and psychological distress across the adult lifespan*. Unpublished master dissertation, University of Twente, The Netherlands.

Stolarski, M., Matthews, G., Postek, S., Zimbardo, P. G., & Bitner, J. (2014). How we feel is a matter of time: Relationships between time perspectives and mood. *Journal of Happiness Studies*, *15*(4), 809–827.

Stouthard, M. E. A., & Peetsma, T. T. D. (1999). Future-time perspective: Analysis of a facet-designed questionnaire. *European Journal of Psychological Assessment*, *15*(2), 99–105.

Strathman, A., Gleicher, F., Boninger, D. S., & Edwards, C. S. (1994). The consideration of future consequences: Weighing immediate and distant outcomes of behavior. *Journal of Personality and Social Psychology*, *66*, 742–752.

Suddendorf, T., & Corballis, M. (2007). The evolution of foresight: What is mental time travel, and is it unique to humans? *Behavioral and Brain Sciences*, *30*, 299–351.

Tong, E., Fredrickson, B., Chang, W., & Lim, Z. (2010). Re-examinig hope: The roles of agency thinking and pathways thinking. *Cognition & Emotion*, *24*(7), 1207–1215.

van Beek, W., & Kairys, A. (2015). Time perspective and transcendental future thinking. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 73–86). Cham, Switzerland: Springer International Publishing.

Vásquez, A. (2011). Experiencia subjetiva del tiempo y su influencia en el comportamiento: revision y modelos. *Psicologia: Teoria e Pesquisa*, *27*(2), 215–223.

Vásquez, A., Esteves, C., Gomes, C., & Ortuño, V. (2015). Portuguese validation of the consideration of future consequences scale. *Spanish Journal of Psychology*, *18*, E7. https://doi.org/10.1017/sjp.2015.5

Vázquez, S. M., & Rapetti, M. V. (2005). Future time perspective and motivational categories in Argentinean adolescents. *Adolescence*, *41*(163), 511–532.

Vowinckel, J. C., Westerhof, G. J., Bohlmeijer, E. T., & Webster, J. D. (2015). Flourishing in the now: Initial validation of a present-eudaimonic time perspective scale. *Time & Society*. https://doi.org/10.1177/0961463X15577277.

Webster, J. D. (2011). A new measure of time perspective: Initial psychometric findings for the balanced time perspective scale (BTPS). *Canadian Journal of Behavioural Science*, *43*(2), 111–118.

Wessman, A. E. (1973). Personality and the subjective experience of time. *Journal of Personality Assessment*, *37*, 103–114.

Wohlford, P. (1966). Extension of personal time, affective states, and expectation of personal death. *Journal of Personality and Social Psychology*, *3*, 559–566.

Worrell, F. C., Me llo, Z. R., & Buhl, M. (2013). Introducing English and German versions of the Adolescent Time Attitude Scale (ATAS). *Assessment*, *4*, 496–510. https://doi.org/10.1177/1073191110396202

Zaleski, Z. (1996). Future anxiety: Concept, measurement, and preliminary research. *Personality and Individual Differences*, *21*(2), 165–174.

Zaleski, Z., Sobol-Kwapinska, M., Przepiorka, A., & Meisner, M. (2017). Development and validation of the dark future scale. *Time & Society*. https://doi.org/10.1177/0961463X16678257.

Zhang, J. W., Howell, R. T., & Stolarski, M. (2013). Comparing three methods to measure a balanced time perspective: The relationship between a balanced time perspective and subjective well-being. *Journal of Happiness Studies*, *14*(1), 169–184.

Zimbardo, P., Sword, R., & Sword, R. (2012). *The time cure: Overcoming PTSD with the new psychology of time perspective therapy*. New York: John Wiley & Sons.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual differences metric. *Journal of Personality and Social Psychology*, *77*, 1271–1288.

Zimbardo, P. G., & Boyd, J. N. (2008). *The time paradox: Using the new psychology of time to your advantage*. London: Rider.

Zuckerman, M., Eysenck, S. B. G., & Eysenck, H. J. (1978). Sensation seeking in England and America: Cross-cultural, age and sex comparisons. *Journal of Consulting and Clinical Psychology*, *46*, 139–149.

Victor E. C. Ortuño is Assistant Professor at the Faculty of Psychology, University of the Republic, Uruguay. He is a Researcher of the Cognitive and Behavioural Center for Research and Intervention, Faculty of Psychology and Education Sciences, University of Coimbra, Portugal. Member of Researchers National System (Uruguay), and the International Thematic Research Network on Time Perspective. Editor of the book International Studies on Time Perspective and organizer of the Ist International Conference on Time Perspective (ICTP2012), held in Coimbra, Portugal. His main research interests are time perspective, subjective temporality, psychometrics and motivation.

Maria Paula Paixão is Associate Professor at the Faculty of Psychology and Education Sciences, University of Coimbra, Portugal. She is an integrated member of the R&D Unit Cognitive and Behavioural Center for Research and Intervention, where she is part of the research group on Cognitive and Behavioural Processes and Change: Health and Psychopathology in Different Settings, which focuses on vulnerability, maintenance, and protective processes involved in mental health, and on empirically validated interventions. Editor of the book International Studies on Time Perspective and organizer of the Ist International Conference on Time Perspective (ICTP2012). Her main research interests are counseling psychology, lifelong guidance, motivation, and time perspective.

Isabel Nunes Janeiro is Assistant Professor at the Faculty of Psychology, University of Lisbon, Portugal. Organizer of the Ist International Conference on Time Perspective (ICTP2012). Her main research interests are vocational psychology, educational psychology, motivation and school adaptation, time perspective, and research methodology.

9

Time Perspective and Cannabis Use: Why and How It Is More Complex Than We Think

Nicolas Fieulaine

Time Perspective in Substance Use

Growing research in the last decade has evidenced that time perspective (TP) is a strong psychosocial predictor of many behaviors, particularly in the field of health (Boyd & Zimbardo, 2005; Crockett, Weinman, Hankins, & Marteau, 2009; Guthrie, Butler, & Ward, 2009; Henson, Carey, Carey, & Maisto, 2006). From the perspective of Zimbardo and Boyd (1999), who postulate that TP consists of five factors based on orientation and attitudes toward time frames, several studies have shown that present orientation, in a hedonistic and sensation-seeking attitude (Present-hedonistic time perspective, or PHTP), and future orientation, in a planning and goal-oriented attitude (Future time perspective, or FTP), are the most predictive factors in health behaviors and in substance use (Apostolidis, Fieulaine, Simonin, & Rolland, 2006; Keough, Zimbardo, & Boyd, 1999; Wills, Sandy, & Yaeger, 2001). While individuals

N. Fieulaine (✉)
University of Lyon, Lyon, France

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_9

focused on future time perspective (FTP) are more likely to engage in health-protective behaviors and to avoid risky ones, individuals predominantly possessing a present hedonistic time perspective (PHTP) are more likely to adopt risky behaviors (e.g., Crockett et al., 2009; Henson et al., 2006).

Early work by Smart (1968) shows that alcoholics have a less extensive and coherent FTP than social consumers. Patients included in an addiction management program are less motivated by the future than a student population (Lavelle, Hammersley, & Forsyth, 1991). Alvos, Gregson, and Ross (1993) found that current injecting drug users had a truncated FTP, a perspective of loss and isolation compared to previous drug users. In several studies, direct links have been established between TP, as measured by ZTPI, and substance use. Thus, a future orientation appears to be protective of substance use, whether heroin, cannabis, alcohol, or tobacco (Adams & Nettle, 2009; Apostolidis, Fieulaine, & Soulé, 2006; Barnett et al., 2013; Daugherty & Brase, 2010; Fieulaine et al., 2011; Guthrie et al., 2009; Hall et al., 2012; Henson et al., 2006; Keough et al., 1999; Klingemann, 2001; MacKillop, Mattson, MacKillop, Castelda, & Donovick, 2007; Petry et al., 1998; Wills et al., 2001). These findings on the protective role of FTP apply either to lowering consumption or for more frequent (and successful) quitting attempts, whereas the present orientation was related to a more frequent and intense substance use (Adams & Nettle, 2009; Apostolidis et al., 2006; Chavarria, Allan, Moltisanti, & Taylor, 2015; Daugherty & Brase, 2010; Fieulaine & Martinez, 2010; Fieulaine et al., 2011; Guthrie et al., 2009; Hall et al., 2012; Henson et al., 2006; Keough et al., 1999; Klingemann, 2001; MacKillop et al., 2007; Milfont, Andrade, Pessoa, & Belo, 2008; Petry et al., 1998; Wills et al., 2001).

The hypothesis underlying the consideration of the temporal dimension in this field of research is that health behaviors fundamentally involve temporal dilemmas (Hall & Fong, 2007), creating conflicts between immediate benefits and future costs (in the case of risk-taking behaviors), or between immediate costs and future benefits (in the case of health-protective ones). Time preference and time orientation thus appear as dispositional or personality variables likely to influence, more or less directly, the decision-making process. While time preference corresponds specifically to the

differential value attached to outcomes in relation to temporal location for a particular behavior or event (Chapman, 2001; Chapman & Coups, 1999; Chapman et al., 2001; Fuchs, 1982), temporal orientation corresponds to the attention paid to the past, present, and future time frames across a broader range of situations (Cottle, 1968; Finke, 2005; Zaleski, 1994). Both have been extensively acknowledged in relation to preventive and risky health behaviors, and from these studies it emerges that future time preference and orientation (as opposed to present preference and orientation) are associated with less risky and with more preventive behaviors, and this for a variety of health behaviors (e.g. Agnew & Loving, 1998; Björgvinsson & Wilde, 1996; Chapman & Coups, 1999; Orbell & Kyriakaki, 2008; Strathman, Gleicher, Boninger, & Edwards, 1994).

Temporal Dilemmas

These findings are interpreted in relation to a variety of models and theories, but usually they are seen as the result of a reduction of future time horizons leading to increased preference for immediate positive effects at the expense of potential and long-term risks in the future (Petry et al., 1998). This temporal myopia or "presentism" is responsible for a reduced sensibility to long-term risks and an increase in the discounting of delayed consequences of substance use. Then, immediate gratifications such as alleviating pain related to dependency or spending a good moment with friends are valued in comparison with long-term benefits of abstinence, reduced consumption, or cessation (good health, longer living, dependence reduction, financial savings, and so on). The aversive effects (diseases, dependency, social and legal risks, etc.), meanwhile, are devalued because they are generally delayed in time. Hence, the shortening of time horizons minimizes their subjective probability, whereas the immediate benefits are made more present in mind. On the other side, regarding substance use cessation, reduction, or abstinence, the costs are immediate (resisting temptations, being excluded by a group, lasting pain or depressive mood) while the benefits are delayed. Then the temporal dilemma individuals face when confronted with substance use is as shown in Table 9.1:

Table 9.1 Temporal dilemma in relation to substance use (Note: these trade-offs can differ from one substance to another)

	Present	Future
Benefits	Use	Abstinence or cessation
Costs	Abstinence or cessation	Use

These temporal dilemmas are also deeply influenced by the neural, social, and emotional consequences of substance use (Lende & Smith, 2002). Depending on which substance is consumed (Barnett et al., 2013), at which level, and under which conditions, these addictive behaviors may have an impact on individuals' relation to time. Hence, emphasis on the present and loss of interest in the future have been repeatedly observed in drug users. Also, group norms in substance abusers have to be in line with the necessity to maintain group practices as identity, and therefore to normalize a risk denial based in part on presentism and temporal myopia. The neural consequences of substance use and of addiction also buffer the capacity to delay gratification, to self-control in relation to future outcomes, and to regulate impulsivity and craving. In relation to illegal drug use, the legal risks and punitive policies for drug users increase instability and insecurity in everyday life, and therefore the capacity to envision the future with confidence. This lack of future perspective is at odds with prevention and treatment of addictions, as will be illustrated.

Beyond the economic models of addiction, where time perspective is conceived as a factor in rational trade-offs between temporally located costs and benefits, the impact of time perspective on health behaviors has been related to a variety of behavioral theories. Hence, the temporal basis of individuals' decisions and behaviors is related to the theory of self-regulation (Hall & Fong, 2007), to self-determination theory (Wininger & DeSena, 2012), the theory of planned behavior (Richard, van der Pligt, & de Vries, 1996), or in the early description of the social cognitive theory by Bandura (1991). In a recent provocative editorial, Sniehotta and colleagues, while suggesting to "retire" the theory of planned behavior, identified promising avenues of theory development to explain health behaviors, included "theories with emphasis on temporal dynamics … and temporal frames adopted by individuals" (Sniehotta, Presseau, & Araújo-Soares, 2014, p. 5).

A More Complex Relation: The Case of Cannabis Use

Nevertheless, results are sometimes inconsistent with this general statement (Adams & Nettle, 2009; Guthrie et al., 2009), and several studies have shown no links between time perspective and substance use. One reason for this inconsistency may be the intervention of other variables, which can buffer, reinforce, or reverse this relation. In recent research, TP was related to other self-regulatory constructs and to risk perceptions to explain how and why individuals' relation to time may intervene in substance-use behaviors.

Cannabis use is a good illustration of such a complexity. Cannabis is the most widely used substance labeled as a "drug," and its usage is largely normalized in youths and adults despite its illegal status in many countries. Its usage questions the balance between health, social and legal risks, and the benefits associated with social inclusion, group identity, and the palliative role in facing depressive or anxious states. Users have the major risk of being labeled as deviant or they accept this social status and build a culture around it. Despite these specificities, cannabis use is repeatedly related to time preference, orientation, or perspective. Beyond the simplistic hypothesis defining the future orientation as a protective factor and the present orientation as at risk, several studies have been designed to explore further the underlying processes involved.

The Role of Self-Regulation

Among the potential intervening variables, self-control appears to be of particular importance, given its central role in self-regulation processes. Hence, in self-regulation theories, a key predictor of self-regulation capacities is the way individuals differ in their basic styles of self-control (Baumeister, Vohs, & Tice, 2007). Self-control relates to the process through which people manage their dispositional tendencies and control their thoughts, feelings, impulses, and task performance in order to be consistent with their goals and standards of behaviors; it is a basic element

of the capacity to self-regulate (cf. Baumeister, Gailliot, DeWall, & Oaten, 2006; Rasmussen, Wrosch, Scheier, & Carver, 2006). As various studies have evidenced, people with high abilities to self-control are less vulnerable to impulsivity and delay more gratification than people with low self-control (DeRidder & DeWitt, 2006), opening a way for alternative interpretations of the impact of the temporal factor. Therefore, people with low capacities to regulate appear as more susceptible to engage in substance use, to sustain their consumption, and to have difficulties in quitting (Wills, Ainette, Stoolmiller, Gibbons, & Shinar, 2008; Wills & Stoolmiller, 2002; Wills et al., 2001). Beyond its main effect on substance use (Brody & Ge, 2001; Wills, Walker, Mendoza, & Ainette, 2006), self- control repeatedly appears as a buffering agent in relating risk factors to substance-use behaviors (Wills, Pokhrel, Morehouse, & Fenster, 2011; Wills et al., 2008). In these studies, having good (or high) self-control appears to be negatively related to substance use and to reduce the impact of risk factors on substance use. This buffering effect of self-control on the impact of risk factors to substance use has been extensively acknowledged for different populations, using a variety of methods (see Wills et al., 2008 for a review).

In relation to time, self-control, and self-regulatory capacity in general, is deeply temporally based (Hall & Fong, 2007) and shaped (Joireman, Balliet, Sprott, Spangenberg, & Schultz, 2008; Wills et al., 2001). Balancing short-term and long-term consequences of decisions and behaviors can be considered as the core definition of self-control, and several studies suggest that TP and self-control are not only intercorrelated but also interact in their impact on behaviors (Barber, Munz, Bagsby, & Grawitch, 2009; Joireman et al., 2008).

Hence, some studies related to self-regulation theory have found evidence of the buffering effect of self-control on substance use with regard to risk factors (Wills et al., 2006). In these studies, having good (or high) self-control appears to be negatively related to substance use and to reduce the impact of risk factors on substance use (e.g. Wills et al., 2008). In two independent studies, we demonstrated that the relation of time perspective on cannabis use could be reversed when taking into account a self-regulatory construct—namely the desire for control (DC; Burger & Cooper, 1979). It corresponds to the desire or motivation to maintain

control, make one's own decisions, and be in charge of one's activities. DC is presumed to be a source of motivation for control, varying from situation to situation but resulting in a general and measurable level, and is depicted as an important dispositional factor within various phenomena, such as achievement, psychological adaptation, stress, or health (Burger, 1992; Gebhardt & Brosschot, 2002). DC is also distinct from other measures related to perceptions or beliefs about control, given that it examines the degree to which control is attractive, desirable, and valuable, while other measures generally assess the level to which, and how, control is attained (cf. Skinner, 1996).

The first study (Fieulaine & Martinez, 2010), conducted with a sample of 240 people from the general population in France and using measures of TP (Present-hedonistic, or PHTP, and Future, or FTP, subscales of the ZTPI), desire of control (Burger & Cooper, 1979) and cannabis use demonstrated that the more people are focused on PHTP, the more they report substance use, while the more they are focused on FTP, the less they consume. No relation appeared between DC and substance use. But when testing for a potential buffering effect of desired control in the relation of TP to cannabis use, it appeared that the positive relations between PHTP and substance use, and the negative ones between FTP and substance use, are lowered and even disappeared in some cases when individuals scored low on dimensions of desire for control. Thus, if TP is a risk (for PH) and a protective (for F) factor in substance use, it is dependent on another psychological construct related to self-regulation. In relation to personal experiences, values, and living conditions, TP and DC interact in establishing what one can considered social-psychological vulnerability profiles for substance use (Fieulaine & Martinez, 2010, p. 6).

This first study (Fieulaine et al., 2011) was completed by a second one, designed as prospective, with measures of DC, TP, and planned behavior components assessed at Time 1, and cannabis perceptions and behavior assessed one week later (Time 2). Participants were 690 high school students, recruited in all classes of two high schools located in a metropolitan area of central France; it included 664 at follow-up, a response rate of 96.3%. We used the full ZTPI scale in order to uncover the potential effect of other time perspective dimensions beyond the PH and F.

Results revealed that several TP subscales were significantly related to predictors of cannabis-use intention. Hence, PHTP appeared as positively related to attitudes toward cannabis use, to perceived norms and control favoring cannabis use, whereas FTP is negatively related to these constructs. Results also revealed a significant negative relation of PPTP to predictors of cannabis-use intention (attitude and control, diminishing intentions). They also revealed that if PHTP is positively related to cannabis-use intention or behavior, it is through its impact on attitudes, subjective norms, and perceived control related to this behavior. FTP, on the other hand, remains a direct significant predictor of intention after having entered the TPB variables. Therefore, FTP has a direct impact on intention, which in turn mediates its relation to behavior.

These results confirmed, using a prospective study design, the predictive role played by time perspective in cannabis use, as a distal dispositional construct leading to greater positive views on cannabis use, and to higher subsequent intentions and behaviors. But in further analyses, it appeared that the TP × DC interaction was a direct predictor of intention, indicating a buffering role of control in the relation of TP to cannabis-use intentions. Hence, in line with previous findings, the positive relation of PH and the negative of FTP to intention was enhanced when individuals scored higher on the DC dimension.

In these studies, the well-established predictive role of FTP and PHTP in substance use appears to be conditioned by the level of desire for control. High desire for control thus supports the protective role of the Future orientation, but simultaneously reinforces the risk factor that the Present-hedonistic orientation represents.

As a consequence, self-control, as broadly defined, may bring confusion between time and control, and lead to counterproductive interventions, and thus there is a strong need to further our understanding of the role psychological time and control play in self-regulation processes, particularly in substance use. These results lead to questions of the role desire for control may play in the impact of TP as a dispositional risk factor for substance use. To focus on sensation-seeking and pleasure in the present, with low concern for future consequences, is related to highest substance use only for those who simultaneously are motivated to control their lives and situations. In the same way, being focused on future issues in a

planning and conscientious attitude is linked to lower substance use only when simultaneously related to a high desire to control one's life. More important in a self-regulation perspective, motivation to control has no main effect on substance use, but it acts as a buffering agent, enhancing or reducing the impact of TP on substance use. Hence, if DC has to be considered as fuel in self-regulation processes, this is through its activating or inhibiting role on a dispositional factor such as time perspective. Therefore, these distal predictors of behavioral edification seem to find their energetic role as a mixture of fuels for the proximal muscular activity of self-regulation.

The Role of Risk Perceptions

Other constructs of interest, susceptible to contributing to our understanding of how and why TP impacts substance use, are risks perceptions, particularly in the case of cannabis. Indeed, the double face of cannabis—normalized and illicit or dangerous—establishes a specific relationship to the substance, to conciliate the private dimension of the practice with its institutional definition as illegal and deviant (Hammersley et al., 2001). Hence, a main goal in substance perceptions is to get away from the "risky" label, which generally defines behavior and individuals as "deviant" and/or "drug-takers." Because of the risk of stigmatization, neutralization strategies are established, which in fact create a distinction between cannabis and other drugs perceived as "hard" (Peretti-Wattel, 2003), and therefore a denial of risks, particularly in consumers. Thus, risk perceptions appear essential when analyzing the development of consumer behaviors: their increase, quitting, or relapses (Boney-McCoy et al., 1992). Beyond the denial of risks, risk perceptions are considered one of the key factors in explaining risky behaviors (Brewer, Weinstein, Cuite, & Herrington, 2004) such as substance use (Virgili, Owen, & Severson, 1991). Previous and recent increases or decreases in cannabis use have been explained first by the changes in people's views of the substance and in perceived risks (Bachman, Johnson, & O'malley, 1998; Terry-McElrath, O'Malley, Patrick, & Miech, 2017). Hence, higher perceived risks have been associated with lower levels of consumption,

whereas lesser perceived risks have been associated with higher levels of use (occurrence, frequency, quantity; e.g., Kilmer, Hunt, Lee, & Neighbors, 2007). Economic models relate behaviors to the individual's trade-off between costs and benefits, and the more recent take into account the temporal discounting of delayed rewards of risks (Svenson & Karlsson, 1989). Personality models relate TP to risk propensity (Jochemczyk, Pietrzak, Buczkowski, Stolarski, & Markiewicz, 2017) or similar constructs (e.g., sensation seeking; Lennings, 1991), whereas cognitive approaches relate TP to the sensitivity and awareness of future consequences (Strathman et al., 1994). For substance use, TP could act as a potential predictor of risk perceptions, to be considered in explaining models. Surprisingly, only a very few studies explored systematically the relation of TP and risk perceptions (e.g., Griva, Anagnostopoulos, & Potamianos, 2013), despite the fact that previous findings have illustrated the intervention of similar broad constructs in the link between behaviors and risk perceptions associated with the substance (e.g., sensation-seeking; Rosenbloom, 2003), and that the relation of personality variables to health behaviors appeared to be mediated by proximal cognitive factors (Wills et al., 2001).

We performed two independent studies to explore how TP influences cannabis risk perceptions, cannabis use, and their relation. In a first study, conducted with a sample of 280 adolescents, we assessed FTP, cannabis perceptions, and cannabis use, and we observed the well-established negative relation of FTP with cannabis use (usage and level), but also a significant relation of TP to cannabis perceptions. In subsequent meditational analyses, we established the meditational role of cannabis perception in the link between TP and cannabis use. Hence, if future-oriented adolescents were less prone to use cannabis and to use it infrequently, it was in large part because they perceived the cannabis as a drug and as a risky substance (Apostolidis et al., 2006).

In a second study performed with a sample of 198 students, and using the full ZTPI, we observed that higher scores on FTP decreased the odds of consuming cannabis, while higher scores on PHTP increased them; but also that the more the subjects were oriented toward FTP, the less they denied the risks associated with cannabis use and the more they

emphasized a "risk acceptance," which is the opposite for PHTP. Hence, TP is related to risks perceptions in directions that make FTP a protective factor. In congruence with the literature, we observed a decrease in the acceptance of risk and an increase in its denial among the most frequent consumers.

More surprisingly, moderating analyses showed that the positive relationship between consumption level and deny of risk was weaker for present-oriented subjects and was stronger when individuals were more future-oriented. As consumption increases, focusing on the future leads to a larger denial of risks, whereas an emphasis on the present (whether fatalistic or hedonistic) improves the acceptance of risks. Thus, if FTP constitutes, and is generally considered as, a break in the initiation of consumption, it may in fact facilitate a more regular consumption by supporting cognitive adjustments represented by the denial of risks. Actually, far from establishing a consumption barrier, FTP can support adhesion to a vision of the substance—that is to say, more denial and less assimilation to "hard" drugs, resulting in acceptability and maintenance of consumption.

Together, these findings suggest how complex the relation of TP is to substance use, as well as its intervention in determining addictive behaviors. In a very simplistic approach, FTP can be qualified as a protective factor, and Present TP as a risk factor for substance use. But a closer look and further exploration indicates that these relations are far more nuanced and are related to a variety of other constructs. Hence, FTP can become much less protective when related to a low desire for control, or when it reinforces a denial of risks in cannabis users. Or, PHTP can lower vulnerability to substance use and abuse when associated with a low desire for control or when it allows cannabis users to accept risks associated with consumption. There might be counterproductive effects in nudging future orientation in any case, without a closer look at the other variables involved, or without more integrative models of the process through which TP impacts substance use and health behaviors in general. Among others, putting emphasis on the desirability of a future orientation may lead to the wrong choices in intervention designs, as well as a lack of attention to and acceptance of the various temporal orientations of the targeted publics.

How the Temporal Frame Matters

In 1998, Orbell and colleagues conducted a series of studies to explore how individual differences in time orientation (using the concept of consideration of future consequences; Strathman et al., 1994) intervene in the receptivity and the sensibility to health-promotion messages (Kees, 2010, 2011; Orbell & Hagger, 2006; Orbell & Kyriakaki, 2008; Orbell, Perugini, & Rakow, 2004). They varied the temporal framing of costs and benefits associated with promoted behaviors, so in one time frame, negative consequences are presented as short term and the positive consequences as long term; conversely, a second time frame used short-term positive consequences and long-term negative consequences. Findings revealed that future-oriented individuals were more sensitive to health communications and have greater intentions to engage in healthy behavior when the long-term consequences are positive and the short-term consequences are negative. In contrast, present-oriented individuals had greater intentions to perform the promoted behavior when positive outcomes were presented as immediate and negative outcomes were delayed into the future.

These findings seem to be logical and almost intuitive. For decades, psychology and marketing have demonstrated that a tailored persuasive communication is more effective than a one-size-fits-all strategy. But if this is applied to existing massive health-promotion campaigns, it suggests that they could be ineffective for a large part of the public, in an arbitrary manner depending on which time frame is privileged by the designers of the campaign. Hence, some of the differences observed in cannabis use in relation to individuals' orientations may be for a part related to the differential impact of health campaigns. This is what we tested using an existing campaign promoting information-seeking for excessive cannabis use. We presented the campaign to groups of students (N_{total} = 155) as it was designed by default, emphasizing mainly the *long-term benefits* of being aware of the *long-term risks* of cannabis use. In a first step, participants were invited to fill in the CFC scale (Strathman et al., 1994) to assess their individual time orientation. After we introduced the session, participants were invited to listen cautiously to the health-promotion message presented by a research assistant introduced as a health educator. Finally,

participants gave their evaluation through measures of message reception (attitudes, willingness to perform the promoted, recall of risks evoked). As in previous research, we found higher receptivity for the message in future-oriented subjects than in present-oriented ones. This result is quite disturbing, since the subjects who are the most at risk to be concerned about excessive substance use are those less sensitive to health communication intended to prevent excessive use.

And it may be the case for a large number of campaigns for health promotion or prevention that no one among their designers nudges the campaign to be more sensitive to high-priority target groups. Temporal framing is in this context a particularly important dimension, just as is the necessity to assess the time perspective of the targeted populations. Fortunately, survey tools exist, in long and short forms, that have been validated in many countries and by many studies; we just need the will to add this dimension to inform the design of such better-health campaigns.

Conclusions: New Look, New Research, New Practices

Taken together, these research findings suggest the need for a more nuanced view of how the way we project ourselves in time may influence our behavior, particularly in the context of risky behaviors like substance use. To keep an eye on the future may be optimal, but under certain circumstances only, and may be counterproductive in some other cases. Being focused on the present can mean being at risk in a variety of cases, but also can be protective in some specific conditions. We, as researchers, must be cautious in the way we present research results, as the necessary simplification may have unfortunate consequences. Two research avenues seem to have been opened as a result of this review. First, we have to further our understanding of how TP relates to self-regulation theories. The interaction between control and time deserve particular attention, so as to establish which configuration is more desirable under which circumstances. For instance, we need to know how not only the desire for control but also self-control, perceived control, and other control

constructs are related to time perspective, and therefore how they explain self-regulation processes, capacities, or relapses. An interesting pathway to be investigated could be through the impact of temporal distance on construal level (Trope & Liberman, 2003) and its link with self-control (Fujita et al., 2006) How is time a condition that makes a behavior intentional or unintentional, activating one or another of the dual processes (automatic or controlled)? There also is a need to fill the gap between TP and risk perception fields of research. Delay discounting and intertemporal choices offer a good basis for exploring and testing how individuals' time orientations can determine their choices when faced with temporal dilemmas. Temporal framing is a relatively deserted topic since the foundational studies done by Orbell, but it is for sure a critical question to address the issues of social inequalities in health and how underinformed campaign designs can at least maintain social disparities, or at worst create social inequalities in health. A simple way to ensure complete examination of alternative messages in relation to their temporal frames is to use a temporal framing canvas, as presented here.

Temporal Framing Canvas

	Long term	Short term
Costs		
Benefits		

Filling in all the boxes might be a good start toward avoiding a reliance on one's own temporal bias to design communications, and therefore to create implicit disparities in message acceptability. Moreover, associated with a standard procedure to collect information on the temporal orientation of the target population (using time perspective measures, similar samples data, or proxies), this can allow for a scientifically based tailoring of health communications, now made much easier with new communication technologies.

More basically, research in the field of TP, as in other fields related to personality in relation to contexts, makes clear how behavior is in many cases the result of an interaction between the person and the situation.

Present-oriented people are not "bad apples," destined for difficulties in managing their health, education, environmental issues, and so on. Surely there are "bad barrels," or some contexts where the time frame is designed the wrong way, and so can be not only ineffective but eventually dissuasive. Practitioners and scientists can gain overall by working together to design new tools, messages, and approaches, thereby improving the ecological validity of our nascent models in TP research, and introducing evidence-based practice that can prevent creation of inadvertent inequalities.

References

Adams, J., & Nettle, D. (2009). Time perspective, personality and smoking, body mass, and physical activity: An empirical study. *British Journal of Health Psychology*, *14*(1), 83–105.

Agnew, C. R., & Loving, T. J. (1998). Future time orientation and condom use attitudes, intentions, and behavior. *Journal of Social Behavior and Personality*, *13*, 755–764.

Alvos, L., Gregson, R. A. M., & Ross, M. W. (1993). Future time perspective in current and previous injecting drug users. *Drug and Alcohol Dependence*, *31*(2), 193–197.

Apostolidis, T., Fieulaine, N., Simonin, L., & Rolland, G. (2006). Cannabis use, time perspective and risk perception: Evidence of a moderating effect. *Psychology and Health*, *21*(5), 571–592.

Apostolidis, T., Fieulaine, N., & Soulé, F. (2006). Future time perspective as predictor of cannabis use: Exploring the role of substance perception among French adolescents. *Addictive Behaviors*, *31*, 2339–2343. https://doi.org/10.1016/j.addbeh.2006.03.008

Bachman, J. G., Johnson, L. D., & O'malley, P. M. (1998). Explaining recent increases in students' marijuana use: Impacts of perceived risks and disapproval, 1976 through 1996. *American Journal of Public Health*, *88*(6), 887–892.

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, *50*(2), 248–287.

Barber, L. K., Munz, D. C., Bagsby, P. G., & Grawitch, M. J. (2009). When does time perspective matter? Self-control as a moderator between time

perspective and academic achievement. *Personality and Individual Differences*, *46*, 250–253.

Barnett, E., Spruijt-Metz, D., Unger, J. B., Rohrbach, L. A., Sun, P., & Sussman, S. (2013). Bidirectional associations between future time perspective and substance use among continuation high-school students. *Substance Use & Misuse*, *48*(8), 574–580.

Baumeister, R. F., Gailliot, M., DeWall, C. N., & Oaten, M. (2006). Self-regulation and personality: How interventions increase regulatory success, and how depletion moderates the effects of traits on behavior. *Journal of Personality*, *74*, 1773–1801.

Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science*, *16*, 396–403.

Björgvinsson, T., & Wilde, G. J. S. (1996). Risky health and safety habits related to perceived value of the future. *Safety Science*, *22*, 27–33.

Boney-McCoy, S. B., Gibbons, F. X., Reis, T. J., Gerrard, M., Luus, C. A., & VonWald Suka, A. (1992). Perceptions of smoking risk as a function of smoking status. *Journal of Behavioral Medicine*, *15*, 469–488.

Boyd, J. N., & Zimbardo, P. G. (2005). Time perspective, health, and risk taking. In A. Strathman & J. Joireman (Eds.), *Understanding behavior in the context of time* (pp. 85–107). Mahwah: Erlbaum.

Brewer, N. T., Weinstein, N. D., Cuite, C. L., & Herrington, J. E. (2004). Risk perceptions and their relation to risk behavior. *Annals of Behavioral Medicine*, *27*(2), 125–130.

Brody, G. H., & Ge, X. (2001). Linking parenting processes and self-regulation to psychological functioning and alcohol use during early adolescence. *Journal of Family Psychology*, *15*, 82–94.

Burger, J. M. (1992). *Desire for control: Personality, social and clinical perspectives*. New York: Plenum.

Burger, J. M., & Cooper, H. M. (1979). The desirability of control. *Motivation and Emotion*, *3*, 381–393.

Chapman, G. B. (2001). Time preferences for the very long term. *Acta Psychologica*, *108*(2), 95–116.

Chapman, G. B., Brewer, N. T., Coups, E. J., Brownlee, S., Leventhal, H., & Leventhal, E. A. (2001). Value for the future and preventive health behavior. *Journal of Experimental Psychology. Applied*, *7*(3), 235–250.

Chapman, G. B., & Coups, E. J. (1999). Time preferences and preventive health behavior. *Medical Decision Making*, *19*(3), 307–314.

Chavarria, J., Allan, N. P., Moltisanti, A., & Taylor, J. (2015). The effects of present hedonistic time perspective and past negative time perspective on substance use consequences. *Drug and Alcohol Dependence*, *152*, 39–46.

Cottle, T. J. (1968). The location of experience: A manifest time orientation. *Acta Psychologica*, *28*, 129–149.

Crockett, R. A., Weinman, J., Hankins, M., & Marteau, T. (2009). Time orientation and health-related behaviour: Measurement in general population samples. *Psychology & Health*, *24*(3), 333–350.

Daugherty, J. R., & Brase, G. L. (2010). Taking time to be healthy: Predicting health behaviors with delay discounting and time perspective. *Personality and Individual Differences*, *48*(2), 202–207.

De Ridder, D., & De Wit, J. (2006). Self-regulation of health behavior: Concepts. Theories and central issues. In D. De Ridder & J. De Wit (Eds.), *Self-regulation in health behavior* (pp. 1–23). Chichester: Wiley.

Fieulaine, N., & Martinez, F. (2010). Time under control: Time perspective and desire for control in substance use. *Addictive Behaviors*, *35*, 799–802. https://doi.org/10.1016/j.addbeh.2010.03.022

Fieulaine, N., Martinez, F., & et al. (2011). About the fuels of self-regulation: Time perspective and desire for control in adolescents substance use.

Finke, M. S. (2005). Time orientation and economics. In A. Strathman & J. Joireman (Eds.), *Understanding behavior in the context of time* (pp. 109–123). Mahwah: Lawrence Erlbaum.

Fuchs, V. R. (1982). Time preference and health: An exploratory study. In V. R. Fuchs (Ed.), *Economic aspects of health* (pp. 93–120). Chicago: University of Chicago Press.

Fujita, K., Trope, Y., Liberman, N., & Levin-Sagi, M. (2006). Construal levels and self-control. *Journal of Personality and Social Psychology*, *90*(3), 351.

Gebhardt, W. A., & Brosschot, J. F. (2002). Desirability of control: Psychometric properties and relations with locus of control, personality, coping, mental and somatic complaints. *European Journal of Personality*, *16*, 423–438.

Griva, F., Anagnostopoulos, F., & Potamianos, G. (2013). Time perspective and perceived risk as related to mammography screening. *Women & Health*, *53*(8), 761–776.

Guthrie, L. C., Butler, S. C., & Ward, M. M. (2009). Time perspective and socioeconomic status: A link to socioeconomic disparities in health? *Social Science & Medicine*, *68*(12), 2145–2151.

Hall, P. A., & Fong, G. T. (2007). Temporal self-regulation theory: A model for individual health behavior. *Health Psychology Review*, *1*(1), 6–52.

Hall, P. A., Fong, G. T., Yong, H. H., Sansone, G., Borland, R., & Siahpush, M. (2012). Do time perspective and sensation-seeking predict quitting activity among smokers? Findings from the international tobacco control (ITC) four country survey. *Addictive Behaviors*, *37*(12), 1307–1313.

Hammersley, R., Jenkins, R., & Reid, M. (2001). Cannabis use and social identity. *Addiction Research and Theory*, *9*, 133–150.

Henson, J. M., Carey, K. B., Carey, M. P., & Maisto, S. A. (2006). Associations among health behaviors and time perspective in young adults: Model testing with boot-strapping replication. *Journal of Behavioral Medicine*, *29*(2), 127–137.

Jochemczyk, Ł., Pietrzak, J., Buczkowski, R., Stolarski, M., & Markiewicz, Ł. (2017). You only live once: present-hedonistic time perspective predicts risk propensity. Personality and Individual Differences, 115, 148-153. https://doi.org/10.1016/j.paid.2016.03.010.

Joireman, J., Balliet, D., Sprott, D., Spangenberg, E., & Schultz, J. (2008). Consideration of future consequences, ego-depletion, and self-control: Support for distinguishing between CFC- immediate and CFC-future subscales. *Personality and Individual Differences*, *48*, 15–21.

Kees, J. (2010). Temporal framing in health advertising: The role of risk and future orientation. *Journal of Current Issues and Research in Advertising*, *32*(1), 33–46.

Kees, J. (2011). Advertising framing effects and consideration of future consequences. *Journal of Consumer Affairs*, *45*(1), 7–32.

Keough, K. A., Zimbardo, P. G., & Boyd, J. N. (1999). Who's smoking, drinking, and using drugs? Time perspective as a predictor of substance use. *Basic and Applied Social Psychology*, *21*(2), 149–164.

Kilmer, J. R., Hunt, S. B., Lee, C. M., & Neighbors, C. (2007). Marijuana use, risk perception, and consequences: Is perceived risk congruent with reality? *Addictive Behaviors*, *32*(12), 3026–3033.

Klingemann, H. (2001). The time game: Temporal perspectives of patients and staff in alcohol and drug treatment. *Time & Society*, *10*(2-3), 303–328.

Lavelle, T., Hammersley, R., & Forsyth, A. (1991). Personality as an explanation of drug use. *Journal of Drug Issues*, *21*(3), 593–604.

Lende, D. H., & Smith, E. O. (2002). Evolution meets biopsychosociality: An analysis of addictive behavior. *Addiction*, *97*(4), 447–458.

Lennings, C. J. (1991). The Schalling sensation seeking and impulsivity scales: Their relationship to time perspective and time awareness, a preliminary report. *Psychological Reports*, *69*(1), 131–136.

MacKillop, J., Mattson, R. E., MacKillop, E. J. A., Castelda, B. A., & Donovick, P. J. (2007). Multidimensional assessment of impulsivity in undergraduate hazardous drinkers and controls. *Journal of Studies on Alcohol and Drugs*, *68*(6), 785–788.

Milfont, T. L., Andrade, P. R., Pessoa, V. S., & Belo, R. P. (2008). Testing zimbardo time perspective inventory in a Brazilian sample. *Interamerican Journal of Psychology*, *42*(1), 49–58.

Orbell, S., & Hagger, M. S. (2006). Temporal framing and the decision to take part in type 2 diabetes screening: Effects of individual differences on persuasion. *Health Psychology*, *25*, 537–548.

Orbell, S., & Kyriakaki, M. (2008). Temporal framing and persuasion to adopt preventive health behavior: Moderating effects of individual differences in consideration of future consequences on sunscreen use. *Health Psychology*, *27*, 770–779.

Orbell, S., Perugini, M., & Rakow, T. (2004). Individual differences in sensitivity to health communications: Consideration of future consequences. *Health Psychology*, *23*, 388–396.

Peretti-Wattel, P. (2003). Neutralization theory and the denial of risk: Some evidence from cannabis use among French adolescents. *British Journal of Sociology*, *54*, 21–42.

Petry, N. M., Bickel, W. K., & Arnett, M. (1998). Shortened time horizons and insensitivity to future consequences in heroin addicts. *Addiction*, *93*(5), 729–738.

Rasmussen, H. N., Wrosch, C., Scheier, M. F., & Carver, C. S. (2006). Self-regulation processes and health: The importance of optimism and goal adjustment. *Journal of Personality*, *74*, 1721–1747.

Richard, R., van der Pligt, J., & de Vries, N. (1996). Anticipated affect and behavioral choice. *Basic and Applied Social Psychology*, *18*(2), 111–129.

Rosenbloom, T. (2003). Risk evaluation and risky behavior of high and low sensation seekers. *Social Behavior and Personality*, *31*, 375–386.

Skinner, E. A. (1996). A guide to constructs of control. *Journal of Personality and Social Psychology*, *71*, 549–570.

Smart, R. G. (1968). Future time perspectives in alcoholics and social drinkers. *Journal of Abnormal Psychology*, *73*(1), 81.

Sniehotta, F. F., Presseau, J., & Araújo-Soares, V. (2014). Time to retire the theory of planned behaviour. *Health Psychology Review*, *8*, 1–7.

Strathman, A., Gleicher, F., Boninger, D. S., & Edwards, C. S. (1994). The consideration of future consequences: Weighing immediate and distant outcomes of behavior. *Journal of Personality and Social Psychology*, *66*(4), 742.

Svenson, O., & Karlsson, G. (1989). Decision-making, time horizons, and risk in the very long-term perspective. *Risk Analysis*, *9*(3), 385–399.

Terry-McElrath, Y. M., O'Malley, P. M., Patrick, M. E., & Miech, R. A. (2017). Risk is still relevant: Time-varying associations between perceived risk and marijuana use among US 12th grade students from 1991 to 2016. *Addictive Behaviors*, *74*, 13–19.

Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review*, *110*(3), 403.

Virgili, M., Owen, N., & Severson, H. H. (1991). Adolescents' smoking behavior and risk perceptions. *Journal of Substance Abuse*, *3*(3), 315–324.

Wills, T. A., Ainette, M. G., Stoolmiller, M., Gibbons, F. X., & Shinar, O. (2008). Good self-control as a buffering agent for adolescent substance use: An investigation in early adolescence with time-varying covariates. *Psychology of Addictive Behaviors*, *22*(4), 459–471.

Wills, T. A., Pokhrel, P., Morehouse, E., & Fenster, B. (2011). Behavioral and emotional regulation and adolescent substance use problems: A test of moderation effects in a dual-process model. *Psychology of Addictive Behaviors*, *25*(2), 279.

Wills, T. A., Sandy, J. M., & Yaeger, A. M. (2001). Time perspective and early-onset substance use: A model based on stress-coping theory. *Psychology of Addictive Behaviors*, *15*, 118–125.

Wills, T. A., & Stoolmiller, M. (2002). The role of self-control in early escalation of substance use. *Journal of Consulting and Clinical Psychology*, *70*, 986–997.

Wills, T. A., Walker, C., Mendoza, D., & Ainette, M. G. (2006). Behavioral and emotional self- control: Relations to substance use. *Psychology of Addictive Behaviors*, *20*, 265–278.

Wininger, S. R., & DeSena, T. M. (2012). Comparison of future time perspective and self-determination theory for explaining exercise behavior. *Journal of Applied Biobehavioral Research*, *17*(2), 109–128.

Zaleski, Z. (1994). *Psychology of future orientation*. Lublin: Scientific Society.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual- differences metric. *Journal of Personality and Social Psychology*, *77*, 1271–1288.

Nicolas Fieulaine is an Associate Professor of Social Psychology at the Institute of Psychology at the University of Lyon, France. He earned his BA, MA, and PhD from Provence University and worked with Phil Zimbardo to develop and structure time perspective research worldwide. He was awarded with several

research grants for applied studies, and is the program director of the Master of Applied Social Psychology at the University of Lyon. His earliest research interests dealt with psychological correlates of socioeconomic precariousness, which he studied using quantitative and qualitative methods. His findings rapidly brought him to be interested in the social roots and psychological implications of time perspective, mainly in the fields of inequalities related to health and access to rights. He is also interested in applying psychology to social issues through action-research, field experiments, or professional training. He is currently studying the role of psychological field properties on people's experiences, decisions, and behaviors.

10

Use of TIME: Time Perspective Intervention of Motivation Enhancement

Thea Peetsma, Ineke Van der Veen, and Jaap Schuitema

Introduction

Adolescence and school are not always a fruitful combination: students' declining motivation for school in their early adolescence has been observed for many years in different European countries and in the United States (Midgley, Feldlaufer, & Eccles, 1989; Peetsma, Hascher, van der Veen, & Roede, 2005). Some decline in motivation for school has also been found later in adolescence (Peetsma, 1997; Van der Veen, Peetsma, Triesscheijn, & Karssen, 2013). Adolescence is a very important life stage for learning; in many countries, youngsters have to stay in school until their late teens. Loss of motivation during adolescence can

T. Peetsma (✉) • J. Schuitema
Department of Child Development and Education, University of Amsterdam, Nieuwe Achtergracht, Amsterdam, The Netherlands

I. Van der Veen
University of Amsterdam,
Plantage Muidergracht, Amsterdam, The Netherlands

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_10

thus have undesirable consequences, such as having to attend a lower school level than appropriate for the student's age or having to leave school early.

As time perspectives on school and professional career have also been found to decline in the same stages of life (Van der Veen & Peetsma, 2009; Van der Veen et al., 2013) and students' present, short-term, and future time perspectives have proved to be a good predictor of their motivated learning behavior (Peetsma & Van der Veen, 2011), influencing the development of adolescents' time perspectives could be a fruitful approach to enhancing their motivation for learning. Furthermore, people's time perspectives develop from early adolescence on (Piaget, 1955) and so might still be amenable to influence during these early years. Awareness of this possibility, in addition to the motivational character of time perspectives, led us to take time perspective (TP) theory as the starting point for development of an intervention to increase early adolescent students' and, later on, also older Dutch students' motivation for school. The intervention is called TIME (Time perspective Intervention of Motivation Enhancement).

In our first study, TIME was used with students starting pre-vocational education at age 12. Pre-vocational education was chosen, as students' motivation in this type of education has been reported to be quite low and the percentage of early school leavers is relatively high. Students with less positive time perspectives on a school and professional career were selected for the study (Peetsma & Van der Veen, 2009). In a second study, a random sample of first-year students in two pre-vocational schools participated in the intervention (Peetsma & Van der Veen, 2015). In a third study, students in the first two years of all types of secondary education in the Netherlands were engaged in the intervention and, as TIME was designed for, trained teachers also performed the intervention with the students for the first time (Schuitema, Peetsma, & Van der Veen, 2014). In a fourth study, the intervention was tested with students in the first year of upper secondary vocational education. This is a type of education for older adolescents that has a drop-out rate over ten times higher than in secondary education in general in the Netherlands (http://www.vsvverkenner.nl/landelijk). The results of these studies with the TIME intervention are described

here, followed by a discussion of the usefulness of the intervention in educational practice, as well as implications for the theory of time perspective.

Future Time Perspective

Future time perspective is generally defined as a representation of a particular life domain in terms of time or the anticipation in the present of future events (Nuttin & Lens, 1985). Future time perspective is characterized by extension and valence (Gjesme, 1996; Husman & Lens, 1999). "Extension" refers to the period in the future in which an event or life domain is represented in someone's perspective. For students, the period after finishing school and the current school year seem to be meaningful terms with respect to time that is important for motivation (Peetsma & Van der Veen, 2011).

The valence of the future time perspective indicates a person's appreciation of a certain life domain in the future. Time perspective was conceptualized by Peetsma (1992) in terms of three components: affect, cognition, and behavioral intention aimed at a certain life domain. *Cognition* consists of ideas or expectations with regard to the future. *Behavioral intention* refers to the extent to which people are inclined to act in certain ways with a view toward achieving future goals. *Affect* is interpreted as an expression of feelings toward a particular life domain in the future. This conception of future time perspective is broader than most other concepts of future time perspective, which are mainly cognitive with a strong focus on perceived instrumentality of learning tasks. By adding an affective component to the concept, future time perspective represents students' internalization of valued goals in the present or in the future and the determination to reach those goals. In other words, future time perspective becomes a motivator.

As mentioned in the introduction to this chapter, positive correlations have been found between students' future time perspective and their motivation for learning and motivated learning behavior in the present. Several studies have found relationships between future time perspectives and present achievement goals (e.g., Phan, 2009; Simons, Dewitte, &

Lens, 2003). In addition, research has documented positive relationships between future time perspective and motivated learning behavior, such as school investment (e.g., De Bilde, Vansteenkiste, & Lens, 2011; Van der Veen & Peetsma, 2009) and delay of gratification or (meta) cognitive learning strategies (e.g., De Bilde et al., 2011). The motivational role of future time perspective for motivated learning behavior and achievement has been shown again in a recent metaanalysis (Andre, Van Vianen, Peetsma, & Oort, submitted). Peetsma (2000), which defined future time perspective as a conceptualization of a particular life domain. Future time perspectives have been found to differ within individuals when it comes to the life domain of school and professional career and other life domains, such as the life domain concerning leisure time (e.g., Peetsma & Van der Veen, 2011). The future time perspective on leisure had a negative correlation with motivation and development of motivated learning behavior, while the future time perspective on personal development, social relations, and in particular on a school and professional career appeared to predict developments in learning behavior (Peetsma, 2000; Peetsma & Van der Veen, 2011).

The development of TIME was based on the assumption that future time perspective in the domain of school and professional career is an important motivator for school students because TIME connects learning behavior in the present with the fulfilment of future goals. When students believe that learning tasks contribute to achieving important future goals, this may enhance the personal relevance of learning tasks in the present and may help them identify with the necessary learning activities (Husman & Lens, 1999). In this way, future goals can positively affect the internalization of present learning behavior.

Two aspects seem to be important in this process of internalization of present goals. First, it is important that the connection between future goals and present behavior is perceived as a contingent path consisting of several intermediate steps (Raynor & Entin, 1983). Oyserman, Bybee, Terry, and Hart Johnson (2004) investigated the role of possible selves (possible futures people can visualize for themselves) in student motivation. Possible selves appeared to guide behavior as a roadmap to the future. Their study showed that it is important that students have realistic ideas about the future and that the path to the future should be broken

down into small, manageable steps. Miller and Brickman (2004) also argued that to perceive present learning tasks as relevant for the future, students need to have a system of proximal or intermediate subgoals related to more distant goals. Students need to construct meaningful paths that guide their progress toward personal valued future goals. In addition, Oyserman et al. (2004) found that it is important for students not only to have a clear conception of the steps that should be taken to achieve the goals but also an idea of what should be avoided.

Another aspect that affects present goal striving is the degree to which future goals are personally valued and endorsed. When students feel that future goals are imposed by others, a stronger focus on future goals may contribute to a sense of inner pressure to achieve these future goals and lead to less adaptive learning behaviors. On the other hand, when future goals are personally endorsed, future time perspective may contribute to the internalization of present learning behavior. Research has indeed shown that highlighting the personal value of future goals can enhance mastery goals, motivated learning behavior, and achievement (e.g., Simons et al., 2003).

TIME

TIME is a person-centered intervention to enhance student motivation for learning based on future time perspective theories. The intervention was originally developed by Peetsma and Van der Veen (2009) for students in the first year of pre-vocational education, as motivation for school appeared to be most problematic in that particular level of secondary education.

The aim of TIME is to support students' future time perspective on school and professional career and to strengthen the connection between present behavior and future prospects. During the intervention, the personal relevance of future goals in the domain of school and professional career is emphasized in order to foster the internalization of these goals and the behavior required to achieve them.

The intervention is based on Peetsma's time perspective concept (Peetsma, 2000), and includes cognitive, intentional, and affective components with

regard to the domain of school and professional career. Students' future goals are discussed and why they consider them to be possible and important (cognition). In addition, attempts are made to arouse positive feelings toward these goals (affection) in order to stimulate internalization. Finally, the intervention aims to help students discuss what should be done and what should be avoided to achieve their goals for the future (behavioral intention). The design of TIME uses possible selves, whereby students have to visualize possible futures for themselves. The connection between present school work and future goals is broken down into smaller intermediate steps. In this way, the intervention aims to help students construct a pathway of contingent steps toward future goals. The intervention also incorporates motivation for potentially competing life domains, such as maintaining friendships and how the adolescents spend their free time. The idea of accepting "delay of gratification" was used for this.

It is important to talk about future goals in a way that supports students' autonomy instead of in a controlling way in which future goals are imposed upon them (Simons, Vansteenkiste, Lens, & Lacante, 2004). A mainly indirect intervention was chosen in order to avoid negative effects as far as possible. Students were approached indirectly through role-play involving a nonschool topic and an imaginary classmate. Only at the end were the students asked what this could mean for them.

TIME was developed to be applied in a school setting and consists of one-on-one talks of 30 to 45 minutes. The intervention involves an interviewer and a student. The interviewer can be a class mentor, a teacher, or a school coach. TIME consists of three parts. The interviewer makes sure that four aspects come up in the conversation in all three parts of the intervention:

- Cognition—knowledge about and opinions on reaching the goals
- Affect—feelings toward the goals and activity
- Behavioral intention—including small and big steps to be taken to reach the goals
- Distraction—how to deal with distractions (delay of gratification)

The first part of TIME is a role-play assignment about an imagined future in a nonschool domain (indirect intervention). Three different

versions have been developed for this part, covering different topics (high jump, music, and acting). Different version were developed in order be able to provide the intervention to the same student several times. In the high jump case, the students read a short text in which they are asked to imagine that they would like to participate in an athletics tournament set to take place in two years' time (long-term goal). For this they have to get through a selection procedure to be held in one year (intermediate goal); be good at high jump, even though practice is needed to be able to improve (cognition); like high jump, and dream about it a lot and have a good feeling about it (affect). They have to develop a training program with the trainer and not miss training sessions (behavioral intentions) and give high jump priority over other rewarding activities (distractions/delay of gratification). The text was summarized for the students in our study, who were then interviewed and asked to take the role of the high jumper. Students were encouraged to contribute ideas of their own that did not emerge from the text, and the interviewer made sure that the four aspects (cognition, affect, behavioral intentions, and avoiding distractions) were discussed. The other two versions followed a similar pattern. The version for music was about playing in a band and being selected to play at a music festival; the version about acting was about taking acting lessons and auditioning for a play.

The second part of TIME also includes a role-play assignment. Students are asked to imagine a classmate who really wants to progress to the next year and get a diploma. Again, three versions have been developed. The classmate is described as either insecure, overconfident, or with a dislike of certain subjects. The students are asked what they would advise the imaginary classmate to do to reach the goals (move up to the next year and get the diploma), bearing in mind the things that had been discussed in the role-play in the first part of the intervention. Once again, the interviewer encourages the student to reflect on the four aspects (affect, cognition, behavioral intention, distraction).

The third part of the TIME intervention concerns the students themselves and takes the most time (20–30 minutes). The students are asked whether they recognize themselves in the imaginary classmate and then the school and their possible professional careers are discussed. Each student is asked about his or her future goals and about how these goals

could be achieved. Once again, the interviewer makes sure that the four aspects (affect, cognition, behavioral intentions, distractions) are covered. Multiple future goals are discussed with the student, highlighting the personal relevance for them by trying to make those goals more concrete and real. The affective component is particularly important for this process. By focusing on positive emotions that students may experience when thinking about those goals, we assume that they will feel more engaged with those goals and internalize the learning behavior required to achieve them. The interviewer encourages the student by, for example, giving compliments and suggesting alternatives. For example, when a student has problems with a classmate or with a teacher, we suggest he or she could go to the mentor or seek other help instead of just letting these troubles continue. The connection between future goals and school work in the present is highlighted by discussing the different steps that would have to be taken to achieve those future goals. This includes talking about learning behavior in school in the present and the near future, such as the use of learning strategies and investment in school.

Assumptions Underlying TIME

During the third part of TIME, students' desired future goals or study and professional career aspirations are discussed, including the usefulness and necessity of their present school career. We assumed that highlighting the importance of school for a desired future goal or study and professional career would enhance their motivated learning behavior, as previous research has always found positive correlations with time perspectives on a study and professional career. We expected that the commonly found decline in motivation and learning behavior over the school career would be reduced or even disappear as an effect of TIME. Early dropout should be reduced as an effect of TIME. Furthermore, because we focused on the personal relevance of school for the students' future goals, study, and professional career, and the steps in between, more internal regulation of learning behavior was expected and a positive effect on the quality of motivation, especially with regard to students' achievement goals (Dweck, 1986; Nicholls, 1984), was anticipated. Achievement goal

theory consists traditionally of two approach goal orientations: mastery and performance orientations. A mastery orientation focuses on attaining task-based competence while a performance orientation focuses on competence relative to others. High mastery-approach–oriented students have been found to be better self-regulated learners and to have higher achievements (Urdan & Midgley, 2000). Students' performance goals have been linked to less adaptive outcomes (Pintrich & Schunk, 1996), but high performance-approach orientations in combination with high-mastery approach goals showed even more positive correlations with students' learning behavior than high-mastery approach goals alone (Van der Veen & Peetsma, 2009). A positive effect on a mastery approach for learning was expected, possibly combined with a positive effect on a performance-approach goal. We expected that TIME could increase the importance students attached to the future time perspective in the domain of school and professional career itself, decreasing the commonly found decline over the school career. It could also be that making the student focus on necessary steps toward aspired goals for the future does not make the future time perspective itself more positive, but improves the student's motivated learning behavior, the first goal of TIME.

Effectiveness of Time: Four Studies

The effectiveness of TIME for students' motivation and motivated learning behavior was investigated in four studies.

All of the studies were conducted in the Netherlands. In the Dutch education system, children of approximately 12 years of age leave primary school and move on to different levels of secondary education. Students are selected for the different levels based on their primary education performance. The lowest level of secondary education is prevocational education, a four-year program of study preparing students for secondary vocational education. The latter is a form of upper secondary school and a one- to four-year program of study for students aged 16 and over. There are two types of general secondary education: lower secondary education is a four-year program that also prepares for secondary vocational education, and higher general secondary education is a

five-year program preparing for higher professional education. The highest academic level in secondary education is pre-university education: a six-year program that prepares students for university.

TIME, as explained, was developed for pre-vocational education and the first two studies were conducted with students in the first year of pre-vocational education (Peetsma & Van der Veen, 2009, 2015). Considering the promising results at this level, a third study investigated the effectiveness of TIME in all levels of secondary education (Schuitema et al., 2014). A fourth study examined the effects of TIME with older adolescents (16–20 years) at the start of upper secondary vocational education, as the dropout rate is relatively high in this type of school (Van der Veen et al., 2013).

All four studies adopted a longitudinal design in which the effects of TIME were investigated by administering the intervention to the same students two or three times over a period ranging from six months to two years. Self-report questionnaires were used to investigate the longitudinal effects of TIME on the development of students' motivated learning behavior, achievement goals, and future time perspective. Different aspects of motivated learning behavior were measured. First, we measured school investment using a scale developed by Roede (1989) measuring the onset of student action, the degree of intensity of action, and perseverance with action. With a view to possible differences in investment between subjects, we converted the scale to render it domain-specific. We chose mathematics because this is a subject all students take and it is usually considered to be an important subject. However, in upper secondary vocational education, math is not a mandatory subject for all students. For this reason we used the fourth study to measure general investment in school. A second aspect of motivated learning behavior that we investigated in the four studies was the use of metacognitive strategies such as planning and comprehension monitoring. To measure this we used a scale adapted from Pintrich and De Groot (1990) and Pintrich, Smith, Garcia, and McKeachie (1991). We assessed students' ability to delay gratification using a scale based on the Academic Delay of Gratification Scale of Bembenutty and Karabenick (1998). In addition, we examined the effects of TIME on the dropout rate of students in secondary vocational education in the fourth study.

To investigate whether TIME had an effect on the extent to which students attach importance to future goals we measured future time perspective on school and professional career using a questionnaire developed by Peetsma (1992, 2000). This questionnaire measures the attitudinal components of cognition, affect, and behavioral intentions toward school and professional career in the long term (after leaving school) and the short term (this school year). In all four studies, the effects of the intervention on students' achievement goals were examined. Achievement goal orientation theory attempts to explain why people engage in certain behavior (Kaplan & Maehr, 2007), and makes a distinction between mastery- or task-oriented goals and performance or ego goals (Ames, 1992; Nicholls, 1984), as described earlier in this chapter. Mastery goal-oriented students focus on mastering learning tasks and on developing competence. In contrast, performance-oriented students are concerned with demonstrating their ability to others. As mentioned, mastery approach goals have been associated with positive outcomes (Eccles & Wigfield, 2002; Kaplan & Maehr, 2007; Wolters, 2004), but a performance approach in combination with a mastery approach can also be beneficial for motivated learning behavior (Van der Veen & Peetsma, 2009). To measure mastery approach and performance approach, we used a scale from Seegers, van Putten, and de Brabander (2002).

In the first study, TIME was performed twice during the first year of secondary education and in the second study twice during the first half-year. In both studies, students filled in the self-report questionnaires on four measurement occasions. The third study extended the period of time in which the effectiveness of TIME was investigated: the intervention was performed three times in the first two years of secondary education and students filled in questionnaires on five occasions. In the fourth study, the intervention was performed twice and questionnaires were administered four times during one year. In the first two studies, researchers performed the intervention with the students. However, the intervention was developed to be eventually used by school staff, and so in the third and fourth study teachers were trained to perform TIME with their students. We then investigated whether the effects of the intervention performed by teachers differed from the effects of the interventions performed by researchers.

In all four studies, students were randomly selected for the intervention. In the first study only, a random selection was made from the students with lower average scores (≤ 4; maximum was 5) on both short- and long-term future time perspective on school and professional career at the first measurement. For the other studies, there were no such score restrictions. In each study, the effectiveness of the intervention was studied by comparing questionnaire results on students who participated in the intervention with those who did not. In every study, we made a second comparison between students who participated in the intervention and students who were interviewed about their motivation for school. This comparison allowed us to investigate to what extent simply focusing attention on motivational aspects had a positive effect. If, for instance, we found that both the intervention and the interview had a positive effect on motivation, this would permit the conclusion that it was simply giving attention to motivational aspects in a talk or interview with a student and not the specific TIME intervention itself that was effective.

Table 10.1 shows the results for every study on the key concepts the intervention focused on. Two columns are presented for each study. The left column shows the results for the first comparison (students who took part in the intervention versus students who did not) and the right column indicates whether results found in the left column could indeed be ascribed to the TIME intervention (and not merely to giving positive attention to motivational aspects, such as in an interview).

The main purpose of TIME was to connect present learning behavior with meaningful future goals in order to enhance students' motivated learning behavior. Indeed, the most consistent finding across the four studies was the effect of the intervention on students' motivated learning behavior. In three of the four studies, we found that TIME had positive effects on investment in mathematics. Only in study 4, which concerned students in upper secondary vocational education, did we not find any effect on investment. TIME also seemed to influence students' academic delay of gratification in a positive way. We found positive effects in all four studies. However, in studies 1 and 2, the effects of TIME on delay of gratification could simply have been caused by giving attention to motivational aspects while talking to the student, as these positive effects were also found with students who were only interviewed about their

Table 10.1 Results of intervention for four studies on key concepts

	Study 1 n=765 (interventi on: n=30) prevocational education		Study 2 n=224 (interventi on: n=40) prevocational education		Study 3 n=766 (interventi on: n=65) All secondary school levels		Study 4 n=835 (interventi on: n=182) Secondary vocational education	
	first year		first 6 months		First 2 years		First year	
	Interventi on (<4) compariso n (<4)	Does result 'remain' after interview comparison?	interventi on comparison	Does main effect 'remain' after interview comparison?*	interventi on comparison	Interventi on interview	interventi on compariso n**	Does effect 'remain' after interview comparison?
Maths investment***	+	Yes	+	Yes	+	Yes	ns	
Metacognition	Ethn. minority +	No	+ Boys +	No	+	No	ns	
Academic delay of gratification	Ethn. minority + Girls +	No	Boys +		+	Yes	+	yes
Course drop out							+	yes
TP school short	Girls +	Yes	ns		ns		Students with low educated parents +	yes
TP school long	ns		ns		ns		ns	
Mast approach	Girls +	Yes	ns		ns		ns	
Perf approach	+ Ethn. minority +	Only ethn. minority +	ns		+	Yes	ns	

*Not tested for interaction effects by gender and ethnic background
**Only study that tested for interaction effects by parental education
***For study 4, this concerned general school investment
Shaded gray means not applicable (e.g., data not gathered in that study) and for second column not mentioned as there were no significant effects to test for.
ns = not significant

motivation for school ("interview effect"). Positive effects of TIME on the use of metacognitive strategies were also found in three of the four studies, but in all three these effects seemed to be "interview effects," as they were also found for students who were only interviewed about their motivation for school. Interviewing students and talking about learning behavior in school seemed to be equally effective for enhancing metacognitive strategy use as the intervention itself. Only in study 4 did we investigate the effects of TIME on course dropout, and we found that fewer

students who participated in the intervention dropped out of their course than did students who did not participate in the intervention or who were interviewed on their motivation for school. TIME seemed to reduce the risk of course dropout in secondary vocational education.

We expected that influencing the students' future time perspective would influence their goals, which in turn would increase their motivated learning behavior. We did indeed find that TIME had an effect on motivated learning behavior, but the effects on students' achievement goals and on future time perspective were less clear. As Table 10.1 shows, the intervention did not have an effect on the long-term future time perspective on school and professional career itself. In two studies, we found that the intervention had a positive effect on the short-term future time perspective on school and professional career, but only for certain groups of students. In the first study, we found a positive effect for girls and in the fourth study, there was a positive effect for students in upper secondary vocational education whose parents had a low level of education. With respect to achievement goals, we expected that highlighting the importance of school for a future career would increase achievement motivation in general. However, because we focused on the personal relevance of future goals and attempted to enhance internal regulation of behavior, we also anticipated an effect on the quality of motivation. We expected a stronger effect on mastery goals, but we did not find consistent evidence that the intervention had an effect on mastery approach goals. Only in the first study, in which students with lower scores on future time perspective participated in the intervention, did we find an effect on mastery goals, and only for girls. There were some indications that the intervention had an effect on performance goals. In two of the four studies, we found positive effects on performance goals.

To summarize, TIME seemed to influence the students' motivated learning behavior in school directly without increasing their future time perspectives and without influencing their achievement goals. This raises questions about what makes TIME effective for the learning behavior of students. It may have strengthened the connection between learning in school and future goals by helping students to construct a contingent path of intermediate steps. The intervention might have made the necessary steps to reach possible futures for themselves more clear for the

students. This might have helped them to attach more importance to motivated learning behavior in school without necessarily increasing the future time perspectives on a school and professional career in the present or the long-term future and without making those future goals more positive.

TIME Administered by Teachers

TIME was developed to be eventually used by school staff. We, therefore, investigated the possibility of implementing TIME in school settings. In studies 3 and 4, teachers were trained to use TIME with their students. They were trained in groups or individually. A leaflet with information on the background of the intervention and the intervention itself was sent to them before the training. The purpose of the intervention and how it should be administered were explained during the training. Teachers were then given the opportunity to practice the intervention on each other or on a researcher. Each training took approximately two hours. The results showed that with relatively little training teachers were able to produce the same results as researchers.

What is important in this respect is the pleasure teachers often showed after having used TIME with their students. The information they received from their students was new to them. When teachers or other school staff have to use an intervention, it is important that they feel good about it. Indeed, from their perspective, administering the intervention proved to be useful to them.

Further Research Directions and Recommendations

As the TIME intervention seems to be effective in enhancing the motivated learning behavior of both young and older adolescents, further and deeper study of the intervention is to be recommended. The researchers who developed TIME also see benefits to be gained from handing the intervention over to the schools and anticipate that this intervention

could be studied by other researchers. There is much still to be done. For research purposes, some questions remain to be answered. For instance, is it possible to use TIME at a group (class) level, as well as with individual students? Could an electronic version of the school staff training or the intervention itself be designed? Obviously, these new versions would have to be tested for effectiveness.

Focusing on the theory used in TIME, it would be interesting and worthwhile to study which of the four components in the intervention (affect, cognition, behavioral intentions, or distractions) is the most effective. Or, it might be that the whole of the three components of the time perspective concept (affect, cognition, behavioral intentions), possibly together with the distractions component, lead to an internalization of learning goals that motivates students to learn.

This kind of research could also provide information on the process by which TIME influences motivated learning behavior. Further study of the process is needed to gain a better understanding of the working of the intervention. Furthermore, an understanding of how TIME exerts an influence could be very useful for other interventions yet to be developed.

It would be worthwhile focusing on the usefulness of TIME and on possible differences in effectiveness for students from different backgrounds. Do gender, age, and school level, for instance, affect the intervention's effectiveness? The effectiveness of TIME for students with different social and ethnic backgrounds, parental educational level, or mother tongue could be studied in more detail, as we found differences in effectiveness in some of our studies for students with different individual and social backgrounds. Research focusing on these differences would be a good next step to take.

In addition to its usefulness for students from different backgrounds, the effectiveness of TIME in schools with different educational concepts could be interesting line of investigation for both learning practice and theory. Many schools nowadays work with innovative educational concepts, where students have more choice about what they learn and how, where the usefulness of what they learn, for now and for later, is incorporated in the educational concept. It is possible that TIME would be less useful at such schools than at schools with a rather traditional educational

philosophy. After all, students at schools adopting such innovative approaches might already see more clearly the connection between their school work and benefits to them now and later.

The four studies found little effect on achievement goals or on the time perspective itself. It could be that TIME did not make achievement goal orientations and future time perspectives on school and a professional career more positive, but only made the students show more motivated learning behavior, as mentioned in the last paragraph. It could also be that effects of TIME could be found if other measures of achievement goals or of future time perspectives, such as observations or student essays, had been used. Such measures might also provide information on the process behind the found effects on motivated learning behavior.

Conclusion

The results of our study affirm that the TIME intervention is a practical and effective intervention to stimulate students' motivated learning behavior in school. The intervention seems to strengthen the connection between learning in school and future goals by helping students to construct a contingent path of intermediate steps. TIME is easily implemented and can be used by teachers with a relatively short training of about two hours, which makes the intervention very user friendly. In addition, positive reactions of teachers after they used the intervention with their students are very important for the use of TIME in schools. Teachers told us that they learned things from their students that they had never heard before, so what they experienced was useful.

We conclude by arguing that it is at least worthwhile for schools to consider paying attention in some way to the motivation for school of individual students. The TIME intervention is of course only one of many possibilities for schools to provide care and guidance for their students. For example, the results of our studies also indicated that only interviewing students about their motivation for school had some positive effects on students' motivated learning behavior. Also, in our study with TIME in upper secondary vocational education, we found that the interviews significantly reduced dropouts from the course after the first

year, although the effect of TIME on the dropout rate was stronger. The results from the four studies with TIME and the interviews provide enough reason to recommend that schools pay attention to individual students' motivation.

References

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, *84*, 261–271.

Andre, L., Van Vianen, A., Peetsma, T., & Oort, F. (submitted). *Motivational power of future time perspective: Meta-analyses in education, work, and health.*

Bembenutty, H., & Karabenick, S. A. (1998). Delay of gratification. *Learning and Individual Differences*, *10*, 329–346.

De Bilde, J., Vansteenkiste, M., & Lens, W. (2011). Understanding the association between future time perspective and self-regulated learning through the lens of self-determination theory. *Learning and Instruction*, *21*, 332–344.

Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, *41*, 1040–1048.

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values and goals. *Annual Review of Psychology*, *53*, 109–132.

Gjesme, T. (1996). Future-time orientation and motivation. In T. Gjesme & R. Nygard (Eds.), *Advances in motivation* (pp. 210–222). Oslo: Scandinavian University Press.

Husman, J., & Lens, W. (1999). The role of the future in student motivation. *Educational Psychologist*, *34*, 113–125.

Kaplan, A., & Maehr, M. L. (2007). The contributions and prospects of goal orientation theory. *Educational Psychology Review*, *19*, 141–184.

Midgley, C., Feldlaufer, H., & Eccles, J. S. (1989). Student/teacher relations and attitudes toward mathematics before and after the transition to junior high school. *Child Development*, *60*, 981–992.

Miller, R. B., & Brickman, S. J. (2004). A model of future-oriented motivation and self-regulation. *Educational Psychology Review*, *16*, 9–33.

Nicholls, J. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, *91*, 328–346.

Nuttin, J. R., & Lens, W. (1985). *Future time perspective and motivation, theory and research method*. Leuven/Hillsdale, NJ: Leuven University Press/ Erlbaum.

Oyserman, D., Bybee, D., Terry, K., & Hart Johnson, T. (2004). Possible selves as roadmaps. *Journal of Research in Personality*, *38*, 130–149.

Peetsma, T., & Van der Veen, I. (2009). Influencing students' motivation for school; The case for first-year students in the Netherlands in the lowest level of secondary school. In M. Wosnitza, S. A. Karabenick, A. Efklides, & P. Nenniger (Eds.), *Contempory motivation research: From global to local perspectives* (pp. 299–320). Göttingen/Bern/Toronto/Cambridge: Hogrefe.

Peetsma, T., & Van der Veen, I. (2011). Relations between the development of future time perspective in three life domains, investment in learning, and academic achievement. *Learning and Instruction*, *21*(3), 481–494.

Peetsma, T., & Van der Veen, I. (2015). Influencing young adolescents' motivation in the lowest level of secondary education. *Educational Review*, *67*(1), 97–120. https://doi.org/10.1080/00131911.2013.830593

Peetsma, T. T. D. (1992). *Toekomst als motor?; toekomstperspectieven van leerlingen in het voortgezet onderwijs en hun inzet voor school*. Academic dissertation, SCO Universiteit van Amsterdam, Amsterdam.

Peetsma, T. T. D. (1997, August). *Decline in pupils' motivation during secondary education*. Paper presented at the 7th European Conference for Research on Learning and Instruction in Athens, Athens.

Peetsma, T. T. D. (2000). Future time perspective as a predictor of school investment. *Scandinavian Journal of Educational Research*, *44*(2), 179–194.

Peetsma, T. T. D., Hascher, T., van der Veen, I., & Roede, E. (2005). Relations between adolescents' self-evaluations, time perspectives, motivation for school and their achievement in different countries and at different ages. *European Journal of Psychology of Education*, *20*(3), 209–225.

Phan, H. P. (2009). Amalgamation of future time orientation, epistemological beliefs, achievement goals and study strategies: Empirical evidence established. *British Journal of Educational Psychology*, *79*, 155–173.

Piaget, J. (1955). The development of time concept in the child. In P. Hoch & J. Zubin (Eds.), *Psychopathology of childhood* (pp. 34–44). New York: Grune & Stratton.

Pintrich, P. R., & De Groot, E. V. (1990). Motivation and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, *82*(1), 33–40.

Pintrich, P. R., & Schunk, D. H. (1996). *Motivation in education: Theory, research, and applications*. Englewood Cliffs, NJ: Prentice Hall.

Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the motivated strategies for learning questionnaire (MSLQ)*.

Ann Arbor: University of Michigan, National Center for Research to Improve Postsecondary Teaching and Learning.

Raynor, J. O., & Entin, E. E. (1983). The function of future orientation as a determinant of human behavior in step-path theory of action. *International Journal of Psychology*, *18*, 463–487.

Roede, E. (1989). *Explaining student investment, an investigation of high school students' retrospective causal accounts of their investment in school*. Academic dissertation, SCO, Universiteit van Amsterdam, Amsterdam.

Schuitema, J., Peetsma, T., & Van der Veen, I. (2014). Enhancing student motivation: A longitudinal intervention study based on future time perspective theory. *The Journal of Educational Research*, *107*(6), 467–481. https://doi.org/10.1080/00220671.2013.836467

Seegers, G., van Putten, C. M., & de Brabander, C. J. (2002). Goal orientation, perceived task outcome and task demands in mathematics tasks: Effects on students' attitude in actual task settings. *British Journal of Educational Psychology*, *72*(3), 365–384.

Simons, J., Dewitte, S., & Lens, W. (2003). "Don't do it for me. Do it for yourself!" stressing the personal relevance enhances motivation in physical education. *Journal of Sport and Exercise Psychology*, *25*, 145–160.

Simons, J., Vansteenkiste, M., Lens, W., & Lacante, M. (2004). Placing motivation and future time perspective theory in a temporal perspective. *Educational Psychology Review*, *16*, 121–139.

Urdan, T., & Midgley, C. (2000, May). *Developmental changes in the relations among goal structures, motivational beliefs, affect, and performance*. Paper presented at the 7th WATM, Leuven.

Van der Veen, I., & Peetsma, T. (2009). The development in self-regulated learning behavior of first-year students in the lowest level of secondary school in the Netherlands. *Learning and Individual Differences*, *19*(1), 34–46.

Van der Veen, I., Peetsma, T., Triesscheijn, B., & Karssen, M. (2013). *Een poging tot verbetering van motivatie en studieloopbaan in het mbo*. Amsterdam: Kohnstamm Instituut.

Wolters, C. A. (2004). Advancing achievement goal theory: Using goal structures and goal orientations to predict students' motivation, cognition, and achievement. *Journal of Educational Psychology*, *96*(2), 236–250. https://doi.org/10.1037/0022-0663.96.2.236

Thea Peetsma is Professor and holds a chair in Motivation for Learning at the University of Amsterdam. Her major research interest is motivation, with a specific interest in the relationship between students' time perspective and their investment and performance in learning. She has also researched motivation in innovative learning contexts and has developed interventions for students' learning motivation.

Ineke van der Veen is a senior researcher at the Kohnstamm Institute of the University of Amsterdam. Her research interests include the development of motivation for schoolchildren and adolescents from different ethnic and socioeconomic backgrounds and factors influencing this development. She has studied motivation in innovative learning contexts and has developed interventions to enhance students' learning motivation. Citizenship education is another of her research focuses.

Jaap Schuitema is an Assistant Professor at the Research Institute of Child Development and Education at the University of Amsterdam. His research interests include the enhancement of student motivation, self-regulated learning in educational settings, and citizenship education. He has published articles on the longitudinal effects of (innovative) learning environments on the development of student motivation and has studied the effects of interactive teaching strategies in citizenship education.

11

Temporal Focus in Psychotherapy: Clinical Tales of Past, Present, and Future

Elena Kazakina and Wessel van Beek

Introduction

This chapter demonstrates to researchers of time and time perspective the practical value of their work: how theory and empirical findings can be applied in clinical settings to help people in distress on their path to well-being. We share with clinicians interested in time "the art and craft" of clinical interventions enriched by temporal concepts. We also highlight how clinical observations and discoveries can expand familiar time concepts, raising new questions for research. Finally, our modest but heartfelt intention is to engage scholars and clinicians outside of the time community in seeing how we can add "time" as an important factor in both theoretical considerations and the practice of counseling and psychotherapy.

E. Kazakina (✉)
Private practice (Licensed Clinical Psychologist), East Brunswick, NJ, USA

W. van Beek
GGZ Veenendaal, Veenendaal, The Netherlands

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_11

We discuss aspects of time perspective theory that guide our clinical work and are particularly relevant to the included clinical material. Clinical cases constitute most of this chapter and are accompanied by brief theoretical comments that illustrate the temporal dimensions of psychological interventions. We chose somewhat an unusual design that favors clinical material in the hope that time theory will become more tangible and shine through the stories of real people. Our patients' identities are disguised to protect confidentiality.

Key Concepts of Temporal Framework in Clinical Work

One of the key concepts of our theoretical framework is *temporal focus*. The concept originated in the multidimensional study of time perspective (Kazakina, 1999) that discerned temporal correlates of positive functioning which had to be evaluated and enhanced in counseling with the focus on all three time orientations in an individual's experience of time (see Kazakina, 1999, 2013). The seminal contribution of Zimbardo and Boyd (1999) that had not been published at the time of this research has revealed resonating concepts and temporal dimensions that advanced our thinking and have been incorporated into our clinical practice (Kazakina, 2013, 2015; Van Beek, 2012; Van Beek, Kerkhof, & Beekman, 2009).

Of course, time concepts are not new in therapy, but most often notions of time are used implicitly as a matter of fact or metaphorically without much attention to the movement of temporal frames and the temporal dimensions involved. One notable exception is the work of Hans Loewald—one of the major psychoanalytic thinkers who emphasized the centrality of time in human life and psychoanalysis (1980a, 1980b). We fully share this view that is akin to our theoretical grounding in Kurt Lewin's (1943/1997) broad conceptualization of time perspective as a foundational process in both individual and societal functioning, which was advanced by Zimbardo & Boyd's (1999, p. 1271) time perspective theory.

We further develop here the concept of temporal focus or temporal awareness in psychotherapy. We understand temporal focus as systematic awareness of and purposeful attention to psychological concepts of past, present, and future, and their interactions that underlie our clinical interventions. Furthermore, in our approach to psychotherapy, we consider time perspectives of patients, clinicians, and those prevalent in families and society, as they are relevant to the patients' problems and treatment. We also view the therapy process itself as a live entity with its own coordinates of past, present, and future.

Temporal focus is connected with our ability to flexibly switch from one temporal frame to another to achieve an optimal decision in a specific situation (Zimbardo & Boyd, 1999). This ability was conceptualized as a temporal flexibility necessary for "balancing time perspective in pursuit of positive functioning" (Boniwell & Zimbardo, 2004, p. 165). By and large, "people are rarely aware" of their time perspective's "subtle operation, influence or biasing powers" (Zimbardo & Boyd, 1999, p. 1272). In contrast, we apply *purposeful switching* of temporal frames—past, present, and future—to help our patients better understand their experience in the present and how it is affected by their recollections or behavioral patterns from the past or their thoughts and emotions about the future.

An individual's faculty to mentally project himself backward to relive, or forward to pre-live or mentally construct potential future episodes, is regarded as one of the fundamental advantages of human development, and is termed *Mental Time Travel* (Suddendorf & Corballis, 1997). In a way, our temporal approach in psychotherapy emphasizes our conscious and purposeful use of mental time travel, which otherwise can remain fleeting, implicit, and/or outside of conscious awareness both in life and in psychotherapy. We move back and forth in time with full awareness, as one patient phrased it, "slow down where it hurts." The pain can be located in the past (traumas), or in the future (fears), but it is always experienced in the present (complaints). It can originate from personal experiences, but it can also stem from familial, (sub)cultural, or collective experiences (Van Beek, 2017).

It is very important to emphasize that although, at every given moment our attention in therapy is anchored in one particular time period, we

also hold in our awareness other time orientations and their interactions. This in itself presents a challenge to a clinician and demands even greater temporal flexibility. That is why we suggest that clinicians use temporal flexibility as *a tool*, whereas for patients achieving temporal flexibility becomes *a goal or one of the outcomes of psychotherapy*. That is, patients acquire ability to move *mindfully* (Dreyfus, 2011; emphasis added) from one time region to another as a result of psychotherapy, as they move from distress to well-being. As their orientations to the past, present, and future become more balanced and interconnected, and their overfocus or underfocus on a certain time period adaptively changes, they gain greater awareness of the unconscious operation of temporal forces. Clinical cases provide examples of this dynamic, as well as a more nuanced distinction among the nonconscious processes at work in time perspective.

Temporal focus is directed to the facets of time perspective that transitioned from our research to clinical practice (Kazakina, 1999, 2013, 2015). They include emotional tone of time orientations, whether they are full or empty (Density), extended or shrunk (Extension), connected or disconnected (Temporal Continuity), balanced or imbalanced (Temporal Balance). For example, see conceptualizations, major empirical findings, and examples of clinical applications of these temporal dimensions in Kazakina (2013, 2015).

We continue to monitor a specific type of temporal balance—that of positive experiences, thoughts, and feelings across time orientations. In the beginning of treatment, our patients often demonstrate a striking imbalance in positive experiences across time periods when, for example, all "good things" are grouped in one temporal region, no matter whether they are in the past, present, or future. Clinical material reveals the changes in this temporal variable as patients' conditions improve.

Following a breakthrough in conceptualization and measures of balanced time perspective with the Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999) and its modifications (Stolarski, Wiberg, & Osin, 2015), we include in our temporal framework a profile of a balanced time perspective associated with positive functioning (Boniwell & Zimbardo, 2004; Zimbardo & Boyd, 1999). An "ideal" or "optimal" profile includes high prominence of Past-positive, moderate Present-hedonism, moderately high Future-positive, and low scores on

Past-negative, Present-fatalistism, and Future-negative (Stolarski et al., 2015; Wiberg, Sircova, Wiberg, & Carelli, 2012). We do not measure these variables in psychotherapy, but keep them in mind while trying to understand and modify our patients' temporal experience and troubling symptoms.

Temporal Continuity—the ability to see one's past, present, and future as meaningfully connected—has been a longstanding pillar of our temporal framework (Kazakina, 1999, 2013, 2015). We have repeatedly pointed out—conceptually and empirically—the role of interconnectedness of time orientations in distress and well-being, as well as proposed its theoretical connections with such concepts as Holistic Present (Zimbardo & Boyd, 2008), Time Expansion (Webster, 2011), and Temporal Holism (Sirois, 2012) (see Kazakina, 2015, p. 511). However, Temporal Continuity seems to have been strikingly omitted in TP studies (an exception is found in Mello & Worrel's (2015) notion of Time Relation). Therefore, it is encouraging to see a "discovery" of this temporal variable in the current volume (Stolarski & Witowska, 2017; Wiberg, Sircova, Wiberg, & Carelli, 2017). Other aspects of time perspective that we include in our consideration are Prenatal Past (Van Beek, 2017), Transcendental Future (life after death) (Zimbardo & Boyd, 2008), and Mindful Present (Vowinckel, 2012).

Finally, we would like to address the interpersonal differences in the patterns of time perspectives. "Temporal mismatch" is a term we have suggested to address and label the sometimes significant differences between people in their experiences of past, present, and future (Kazakina, 2014, 2016). These differences may often lead to conflicts and distress in couples and families. Helping clients recognize the distinctions in their time perspectives, and how their temporal differences affect their relationships ultimately leads to their better understanding of themselves and their significant others.

It may be of interest to our readers that at the Third International Conference on Time Perspective, held in Copenhagen, Denmark, in August 2016, at the suggestion of Philip Zimbardo and with his participation, we designed and conducted a live experiment "Time Perspective in Families" (see Kazakina, Zimbardo, & van Beek, 2016). Our family session on stage revealed the dynamic qualities and differences in time

perspective of participants interacting as if they were a family unit. In the role of psychotherapist, one of us (E.K.) had to address and help to resolve the "temporal mismatch" as it profoundly exacerbated family tensions. In this chapter we elaborate on the notion of interpersonal temporal mismatch and provide clinical examples.

In addition, we point out the intraindividual temporal mismatch, highlighting distinct individual experiences that can exist within one person and relate them to different time periods in his or her life. One example is a variation in a person's experience of subjective age versus chronological age. The notion of temporal mismatch can be also instrumental in exploring one of the essential aspects of the therapy process: the unconscious tendency of a patient or therapist to assign to others in the present environment feelings and attitudes associated with significant persons in one's earlier life (respectively transference and countertransference reactions). Clinical cases provide examples of different types of temporal mismatch.

Clinical Tales of Past, Present, and Future

Here, we demonstrate the practical application of time concepts and temporal dimensions in psychotherapy sessions. We present clinical cases, some of which include brief theoretical comments. Our clinical approach in therapy is informed by several theoretical perspectives, such as cognitive-behavioral, psychodynamic, and existential (see more in Kazakina, 2015). We add elements from the Mindfulness Based Stress Reduction program (Kabat-Zinn, 2013) that can be effectively integrated in psychotherapy (Germer, Siegel, & Fulton, 2005). We believe that temporal focus in clinical interventions can be applied by clinicians working within different theoretical perspectives. In our work, we are guided by time perspective theory and are cognizant of temporal dimensions that have proved valuable in research.

We need to point out that time perspectives are mostly unconscious. As an adjective, *unconscious* refers to mental content not available to conscious awareness at a given time (Moore & Fine, 1990, p. 201). Some

content that can be evoked by focusing attention, then, is known as preconscious (Moore & Fine, 1990). We may perform certain tasks—like brushing our teeth or driving a car—without being consciously aware of them. If necessary, individuals can easily draw attention to them, however. In contrast, some mental and emotional content can be repressed and inaccessible by the simple act of paying attention. It requires special therapeutic techniques to unlock and explore difficult emotional conflicts. We highlight that Zimbardo and Boyd carefully indicated that the processes operating in time perspective are "*often nonconscious*" (1999, p. 1271; emphasis added). This seems to address both aspects of the unconscious.

It brings us to the question, of course, of how to transport the thoughts and feelings about time into consciousness. Some of them are implicit but not repressed, and our patients become relatively quickly aware of their time patterns. Our belief is that psychotherapy should not aim to directly address deeper unconscious aspects. One of the traditional ways to make unconscious aspects recognizable for the patient is to symbolize them, and we usually do that by verbalizing them. So, one of the many aspects of therapy is to help patients connect words to their internal processes (emotions and cognitions), and the external processes (behavior and interaction).

Therefore, in our sessions we bring up temporal concepts very carefully, because in order to build a therapeutic alliance we have to stay close to the language our clients use to describe their issues. Only gradually, once we believe that time language can resonate with their experience, may we highlight temporal trajectories and time dimensions to enhance their overall awareness. It is essential that from the first encounters with our clients we directly promote the need for their self-observation. The awareness of temporal coordinates of their experiences and, eventually, awareness of their own temporal patterns reflects the progress we make in treatment. In the clinical material that follows, the reader will see how we focus on one time orientation, and then explore the connections with other temporal regions to better understand the patients' struggles and help them to achieve greater well-being.

Case 1. Anna: Why Resume Therapy? Understanding Life Backwards but Living It Forward

This case illustrates a famous idea of Kierkegaard that life can only be understood backwards but it must be lived forwards (Kierkegaard, 1843/1997, p. 306). Facilitation of meta-reflection ("how we think about what we think about") in Empathic Therapy Present is shown as well.

Anna is a 43-year-old married professional woman with three children under 8 years old. She explains why she wants to resume our sessions, which had been interrupted by her recent circumstances. Often, when caught in the moment, she feels confused, unable to see the situation clearly as if her vision is "blurred." She fails to cope with her emotions in the process of the immediacy of unfolding experience, and she needs to make sense of it, eventually dealing better with present and future challenges. Anna points out that neither writing in her journal nor feedback from her husband or mother helps. Yet, she emphasizes, it is in our sessions that she obtains a *clear vision* and feels that *her own interpretation is fortified* (emphasis added).

What exactly happens in treatment that contributes to this outcome? In our discussions, Anna removes herself from the immediacy of the present and we both look at her experience from a later point in time. This creates temporal distance, which is interestingly experienced by her as a spatial distance (see research on the interchangeability of spatial and temporal aspects of psychological distance in Maglio, Trope, & Liberman, 2015). How is this view backwards at her recent past different from Anna's self-reflection in her journal that also takes place at a later point?

We believe that the major distinction touches upon a fundamental characteristic of the therapeutic process. The examination of the patient's experience is conducted together, by both of us: our verbal and nonverbal exchange, insights and emotional connections create the "empathic present of therapy session" (Kazakina, 2015). Anna's experience of being understood in the context of our relationship strengthens her sense of self (Kohut, 1971), and her capacity for self-reflection is facilitated further. Together, we observe the temporal trajectory of our exploration: we are focusing on her recent and distant past to discover her adaptive and maladaptive patterns to regulate emotions and cope with stressors. Then,

we shift our attention to the future to consider her anticipated challenges. Through cognitive rehearsal and role-play, Anna learns to recognize the past patterns that interfere with her present efforts. She also observes how easily her maladaptive patterns can transition into the future. Anna rehearses how to live her life forward after she examined her life backwards!

We believe that our facilitation of Anna's greater awareness of temporal frames of past, present, and future and their interactions help her to "gain a clear vision' of her problems and start changing her behaviors. Her sense of personal agency and strength and her ability to form meta-representations that are important facets of the self (Klein & Gangi, 2010) are reinforced in our sessions as well.

Case 2. Samantha: Time Left: Positive Image of the Limited Future

This clinical case shows the role of time in aging (shortened future extension), balance and continuity of positive aspects of time orientations, and awareness of self in time.

Samantha, a 74-year-old female, initiated psychotherapy owing to symptoms of depression and anxiety associated with her caregiving for a chronically ill husband. She is no longer hopeless, as she was in the very beginning of treatment, but she feels worn out by stress and believes it affects her health and potentially shortens her life. However, her keen awareness of mortality motivates her to improve the quality of life she has left. In fact, future time orientation serves as an independent variable expediting my patient's health decision to have shoulder surgery in order to eliminate pain, become more active, and get more enjoyment of remaining life.

In older age, the heightened awareness of time left and the approach of endings direct people's attention to emotionally meaningful goals, helping them to concentrate on the most significant and enjoyable relations and activities (Carstensen, Isaakowitz & Charles, 1999). In our sessions, we discovered aspects of the positive future that Samantha was eager to secure within the acute realization of her life's finality. Some of them were

continuation of her positive present, such as spending time with her beloved granddaughters. However, other attractive future experiences came from our exploration of her positive past. Going back to her family of origin allowed Samantha to appreciate her love of nature and beauty, such as gardening. Surgery gave her hope that she would be able to do her gardening again. This activity would also allow her to enjoy solitude—another pleasant memory from her childhood. Solitude is often an overlooked aspect of well-being (Storr, 2005). Enjoyment of solitude, as well as "nature's hedonic benefit" (Nisbet & Zelenski, 2011), contributes to our patient's well-being. Zimbardo's concept of Present Hedonism, which describes risk-taking and a pleasure-oriented attitude toward life (Zimbardo & Boyd, 1999), can be thus expanded.

Positive aspects of Samantha's past, present, and future have been solidified and connected in therapy (based on recommendations to enhance temporal balance and temporal continuity (Kazakina, 1999, 2013). Her awareness of these connections as our focus shifted through time zones was essential. She felt herself again. Her long-forgotten tender childhood memories informed her dreams and plans about the future. Her feelings of self-deprivation associated with caregiving subsided. One of the leading facets of self, according to Klein and Gangi (2010), an experience of continuity through time, was achieved.

Case 3. Theo: Jealousy of the Future

Theo is a 36-year-old scientist, married with two children. He came into my office sobbing, intending to divorce his wife after he read letters from her ex-boyfriends. In fact, his wife shared these letters with him after she accidentally discovered them in their attic. She was shocked and devastated by his reaction to the letters because they had discussed their ex-partners before.

Any psychologist would want to know the nature of his terrible upset, and many may find the route that has been taken in this case to be familiar. However, I highlight the trajectory of past, present, and future coordinates in the exploration of this patient's experience and the role of temporal awareness in his insight.

It was not the past of his wife that came alive in the letters that triggered his jealousy (my initial hypothesis) but, rather, her future. He began seeing himself as one of many, another chapter in his wife's life, being easily replaceable once he dies. His own significance was brought into question—he experienced a severe reaction typical for narcissistic injury. Indeed, shifting the temporal focus into Theo's past revealed that he felt most loved when he demonstrated intellectual and educational achievements. He realized that he did not fully believe in his own uniqueness and significance without constantly proving it. The letters stirred his fragile self-esteem rooted in his childhood and resurfaced in his present.

Another salient part of Theo's experience was his sense of a looming death, almost as if his life were predestined—one of the aspects of Present-fatalism, according to Zimbardo and Boyd (1999). Why was Theo so confident in his early death? Why was his future extension so dramatically shortened? It was in contrast with his active plans, positive expectations, and his career being on the rise. He denied suicidal/homicidal intentions and had no serious health problems.

Switching temporal frames, we soon discovered that his expectation of the future was permeated with the image from his past. This image fueled both his present identity and his anticipation of the future. It turned out that Theo adored his late grandfather, who was larger than life, took care of the whole family, and died in his forties. Since childhood, the family's physical, intellectual, and emotional resemblance was the source of Theo's pride and identity. He carried it as a badge of honor from his past to the present, and even further—into the future. Identifying with his beloved grandfather, he assumed that his life would similarly stop prematurely.

We underscore that this reaction was not entirely unconscious, but was an implicitly held, never questioned or examined assumption. The use of time language—the concepts of past, present, and future facilitated Theo's insight into his implicit beliefs and identity. He was amazed to capture the trajectory of the temporal coordinates in our explorations of his experiences. Theo's future opened up, and the continuity of his identity with his grandfather was liberated from the unhealthy sense of urgency and doom. His wife will have him for a long run, as he is not disappearing from her future, allowing new partners to come in. Theo's smile signaled that we were making progress.

It is interesting that in further sessions, our focus moved to Theo's present. He became motivated to improve his self-care and health, and he resumed running—his long forgotten passion of college years. He intended to live longer! Couples therapy explored his experience of being important and loved in the marital relationship within the context of his troubled earlier attachments.

It appears that the awareness of temporal coordinates of this experience facilitated Theo's insight into a mismatch between his childhood and his adult self. In other words, tracking the movement from past to the present, and also into the future, helped him to gain insight into his outburst of severe jealousy. It was a transfer of his vulnerable and insecure childhood self into his adult present, and also into his images of the future. This illustrates the notion of intratemporal mismatch introduced earlier.

Case 4. Beverly: Coping with Empty Present: "Temporal Mismatch" in a Transference Reaction (Unconscious Displacement from the Past)

Beverly, a 75-year-old widow of four years, complains of grieving for her husband, depressed mood, concerns about her own mortality, loneliness, and trouble sleeping. She wanted to resolve her grief and move on with her life. In the initial stage of treatment she spoke a lot about her husband, her sense of loss and appreciation of their life together. She said he would have wanted her to move on with her life. But she was not able to. Why? Every day she wanted to do something but could not, and her insomnia made her miserable. She was referred by a psychiatrist who prescribed her an antidepressant and sleep medication that did not seem to help.

I suggested that we look closer at her trouble sleeping. It turned out that she goes to bed too early, when she is not sleepy and after she wakes up in the morning, she stays in bed for hours—"to take away from the day." It is known that excessive time spent in bed without sleeping exacerbates insomnia (Perlis, Jungquist, Smith, & Posner, 2008). However, for Beverly her bed and sleep were an escape: "There are so many hours in the day! I can't fill them with myself."

Our intervention was to carefully help Beverly to recognize that her sleep pattern was indeed a defense against the emptiness of her days and of her life in general. Sleep problems are often affected by existential issues—this is not uncommon in my practice. Another way for Beverly to cope with her Empty Present and bring some excitement into her days was to immerse herself in reading. She swallowed one romance book after another. While reading she would be carried away and lose herself in time. It seemed similar to a famous phenomenon of "flow," often connected with positive aspects of functioning such as creativity (Csikszentmihalyi, 1996). However, this experience left Beverly confused: yes, she felt excitement, but she remained disappointed because she still stayed in her house alone. In fact, our exploration led her to discover that her "over-reading" was another way to cope with her Empty Present. However, Beverly was also helped to distinguish a promising sign for the future in her passion for novels: matters of the heart were alive and well in her own heart. She realized that her loyalty to her husband's memory would not be compromised if she meets a gentleman friend.

Beverly, however, remained puzzled why she was unable to do things she felt genuinely motivated to do: to make new social connections, to go out to participate in multiple activities offered by her senior citizen center. She would dress up ready to go out, and then stay in the house. The change of seasons and the days becoming longer made her anxious: "I like when it is darker and I have an excuse to stay in the house and not to do things." I asked, "What do you think stops you? This question took Beverly to her past. Thinking in the Empathic Present of our sessions, she discovered that it was a fear of rejection and a poor view of herself. She recalled how her parents told her that she was not of college material. We discovered how she literally transferred her old fear of rejection to her many new encounters with the external world. For example, she would not attend an interesting lecture or take a bus tour to a historic site because she was afraid that nobody would talk to her.

It was helpful to Beverly to think of her reaction as a temporal mismatch—she transferred her old pattern from the past to the present, and saw the critical eyes of her mother in her new acquaintances or neighbors. It is interesting that these patterns were dormant and did not interfere with her life so dramatically when her husband was alive and they were raising their children. It is consistent, though, with the psychodynamic

view that earlier anxieties "may emerge throughout the lifespan right through to old age in times of transition and pressure" (Davenhill, 2008, p. 474).

Beverly received a lot of support and understanding of her difficulties, and she felt more motivated to try to get out of the house more. Together we worked out plans that varied in their extension into the future (daily, weekly, monthly), but necessarily reflected her genuine interest, often rooted in her positive past. We mentally rehearsed her ride to the seaside—engaging her senses and projecting into the mindful experience of the ocean. She anticipated feeling lonely and looking weird in the eyes of others; however, she was quickly able to recognize her past habit to expect rejection from others. She also made a mental note of how she was transferring her fears into her near future. (You see here temporal dimensions of the transference reaction and the patient's increased self-awareness.) However, positive projections into the future that we formed in session calmed her anxiety about taking that ride. The next therapy session would address her real experience and our temporal focus will shift to her recent past.

This case demonstrates how we have been purposefully switching temporal frames, changing the focus not only from one time orientation to another but also within one orientation—for example, from recent to distant past, from near to mildly extended future. The issues of insomnia made us consider the coordinates of past, present, and future within a cycle of 24 hours.

The integration of cognitive, behavioral, existential, and psychodynamic perspectives, as well as elements of mindfulness training within the context of temporal awareness, is manifested in this case. As treatment progressed, Beverly's flexibility in switching temporal attention increased, as did her self-observation, insight, and confidence. Her presenting symptoms, including insomnia and depression, were significantly diminished.

Case 5. Martin: Suicide as an Escape from the Present

Martin, a 21-year-old college senior, came to my office complaining about being depressed and having obsessive thoughts of suicide. He was upset and puzzled: "I definitely do not want to die. What is wrong with

me?" He had promising job offers, a steady and understanding girlfriend, and an intact and concerned family. It was a dramatic presentation and initially it appeared that his struggles might be about the future and an underlying fear of transition into the adult world. Prior to exploring this hypothesis, it was necessary to take a history and context of his suicidal ideation and plans.

Martin had quite a history of urges to kill himself, usually around exam times or deadlines. He struggled with his studies: "If I die I would not have to do any of that." He would immerse himself in the detailed elaborations of how he could kill himself and, strangely, these thoughts would calm him down and he would fall asleep. These imaginary suicidal projections into the future from the stressful present were his strategy to regulate his distress and fears of failure.

Martin came to realize that he exercised control over "the unlivable moment" (Van Beek & Chistopolskaya, 2015, p. 478) by escaping into imaginary death. Although he was able to get decent grades, he had to work twice as hard because he did not like engineering and was not good at it. He dreamed about being a physical therapist, but for his parents who came to the United States as young adults, that was a less prestigious occupation: their American dream put only engineers and doctors on the pedestal.

My understanding of Martin was informed by the concept of a prenatal past that is regarded as a mixture of cultural, intergenerational, and familial influences, traditions, and expectations projected onto the unborn (Van Beek, 2017). Martin was born and grew up in America, and although he questioned the values and preferences of his parents, he incorporated their vision of his professional future. So, his longer-term future perspective was aligned with his parents, though his short-term perspectives operated as a defense against the "unlivable moment" in his present. In our sessions, we developed another time perspective that included his past interests and realistic professional goals combining engineering with studies of human body.

Working with Martin made me aware of my own time perspective, my immigrant experience, and the pressures of family and larger community to "make it" in America. In my two roles as a child of my parents and a parent myself, I could identify with Martin's struggles. I had to be cognizant of how my own emotions and expectations of the future may unintentionally interfere with the course of treatment. We add a temporal

dimension of the future to the countertransference reaction—clinicians' unconscious tendency to bring into the present environment feeling and attitudes from their own earlier experiences with significant others.

Case 6. Camila and Philip: Mental Time Travel vs. Mourning about Loss (Failure of Empathy)

Camila reported depression, stress at work, and strange and confusing episodes of "travel to her past." She would mentally transport herself to the streets of Buenos Aires, her city of origin that she left 20 years ago at age 12. Obsessive and meticulous memories involved all her senses and a very broad affective tone: sad, happy, disturbing, funny, neutral.

Camila was reliving rather than remembering. This travel to the past made her very sad and depressed; she was always crying, describing her "nostalgic travel." She adored her native city and disliked suburbs where she resided at this time. I understood that these episodes were about her loss and mourning. But was there anything else? What meaning might they have had for her present life? "At least they are not boring," Camila stated.

As painful as her mental travel was, it added meaning and interest to her present. We explored multiple paths to enhance her well-being and self-realization, yet her fears of change and criticism were among her powerful internal barriers. Suddenly life itself brought her a dramatic and unexpected change. Her 5-year-old son started to develop symptoms of gender dysphoria, insisting he was a girl. The family was in shock, yet after several consultations with top specialists in the country, and overcoming their own distress and confusion, the parents started the social transition of their child to the opposite gender.

Soon Camila became a knowledgeable and passionate advocate for her child—now a daughter. She got involved in transgender support groups, volunteered to participate in research and public education, and helped other parents. She wished her life were less stressful and complicated: she was often frustrated and exhausted having to deal with the continuing resistance of her extended family and friends. However, her obsessive

mental travel to the past disappeared. She had no regrets: her past did not need to fuel her present; her life was no longer devoid of meaning.

However, Camila felt deeply upset about her husband's "strange reaction." She genuinely seemed unable to understand why Philip, who eventually accepted the child's new gender, often appeared grim and withdrawn. Moving from one temporal frame to another revealed that Camila was in the future already, envisioning a more accepting society and their child successful transitioning into a girl. Initially, it was mental time travel to the past that served her as an emotional regulator: it has been saving her from the boring and meaningless present. Then by jumping into the positive future, she was bringing herself hope and sustaining herself in the present. This patient's "hyper-functioning of Mental Time Travel (MTT) (Brune, 2006) served her as a coping strategy, sometimes maladaptive (nostalgic travel to the past), but more adaptive in her travel to the future. Except that the latter caused marital tensions owing to the spouse's temporal mismatch.

Our exploration of Philip's time perspectives revealed that he continued to mourn the loss of his son (by birth gender) who came into this world with "prenatal past" (Van Beek, 2017)—expectations derived from the first-born son hopes of Philip's family of origin. Philip was mourning the loss of the future with his son as he had imagined it. In addition, Philip's past included traumatic memories of being bullied for his transient stuttering in elementary school.

Philip was worried about his child's future as a transgender individual who can be potentially vulnerable for ridicule and abuse because of being different. Camila's and Philip's future time perspectives that colored their experience in the present did not match each other. Camila was helped to realize that her husband's future was informed by his realistic concerns, but also by his own painful past; in addition, he was bothered by the loss of his dreams about the potential excitement of raising a son. Philip better understood his wife's optimistic vision of the future for their daughter. It appeared that the language of time and the notion of temporal mismatch sounded accurate and acceptable to this couple to bridge their differences and facilitate mutual empathy.

Temporal Mismatch: Additional Clinical Illustrations

Temporal mismatch is a relatively new concept, therefore we provide here more short clinical examples to give the reader a sense of temporal differences between people and within the same individual. In some vignettes, we omit or only briefly mention the direction of treatment or the impact of temporal mismatch on various aspects of these patients lives.

Vignette 1. Internal Temporal Discrepancy: Intraindividual Temporal Mismatch

Martin is 36 years old and works as an information technology consultant. He suffers from mood problems, and is often depressed and agitated. Therapy makes it clear that Martin still experiences himself as a 16-year-old boy who loves to play video games and listen to music. Martin feels he was forced into life as an adult, but he resists, protests, feels that life has forced him to be someone whom he never wanted to become. This gap between a 16-year-old and a 36-year-old makes him angry and sad. He feels like someone stole a part of his life.

This is an interesting example of an intra-individual temporal mismatch. Martin feels his everyday life takes place in a different reality from that which he experiences as a person. However, this discrepancy is not a sign of a psychotic process.

Vignette 2. Parenting Issues: Father and Teen Son (Planful Future vs. Exciting Present)

A father, a successful professional who came to the United States as a child, is in serious distress about his 14-year-old son's slightly dropped grades. "You throw your future away," He said. The son is becoming withdrawn and hostile. The father was helped to appreciate his son's age-appropriate intense focus on the present, filled with new friendships and a passion for sport.

A common parenting failure is to see children as little adults (Phelan, 2016) who have to consistently work for future goals. Their conflict was interpreted as a temporal mismatch, as a difference in time perspectives, between overfocus on the future (father) and overfocus on the present (son). It helped the father to repair the damage in their closeness: joining his son in his present sport's activities and letting go the worry that every minute should be spent on college preparations. Also, his son was helped to shift his temporal focus to his family history of relocation and cultural transition when his father was 14 years old. The boy became cognizant of the mismatch between his present and his father's present at a similar age. As a teenager, his father did not like his life's circumstances and could not wait to reach his future.

Vignette 3. Older Mother and Adult Daughter: Differences in Dimensions of Future Orientations

Here was an overly anxious and organized mother (in her 50s) and an efficient yet relaxed daughter. The mother was relentless in her future planning that significantly interfered with their daily pleasant interactions. The daughter was operating on the weekly or day-by-day basis, while her mother demanded the details of the months ahead and could not tolerate the uncertainty of not knowing every detail of planned activities. The density and extensions of their future orientations did not match each other.

However, the root of their temporal differences was in the present and past. The mother never developed the ability for a hedonistic present; she always felt she has to deserve love by being efficient. This discovery occurred when we moved temporal frames from her "overcrowded" present and future to her past. The childhood relationship with her own mother revealed that being idle and relaxed meant being fearful of losing her mother's love.

We gradually experimented with allowing fewer plans and involvements in her present. The mother focused on things that were most meaningful and enjoyable for her. For example, she reduced the number

of her volunteer activities. However, her associates did not stop liking her. The daughter understood better her mother's struggle and reported her mother as becoming less tense and able to tolerate uncertainty.

Vignette 4. Couple: Fights on Vacation (Present Hedonism vs. Future Efficiency)

She could not understand why her husband was wasting time making new friends whom he never was going to see again. She was into planning activities that always give tangible results. The couple was helped to see their conflict as a temporal mismatch with his overfocus on hedonistic present and her overfocus on the future (future bias).

We often say that partners have to borrow from each other's time perspectives. It is not easy, because differences in time perspectives reflect steady individual differences. However, time perspective training may help to navigate the marital tensions caused by these differences. She was helped to see that her husband's present was being extended and enlivened by exciting new encounters. They energized him and broke routine, even without delivering any concrete outcomes. However, he needed to monitor his tendency "to be carried away" in the present, without judgment but with a curious mind (mindfulness exercise).

He also had to "reside" in her time perspective (empathy exercise), purposefully projecting himself into the future of her expectations of the unfolding day, even on vacation. She needed to develop her focus on the hedonistic and mindful present, allowing herself to appreciate "being" rather than "doing" (an essential element of mindfulness training). Beyond this short vignette is the impact of their temporal mismatch on other areas of their life and its consideration in therapy.

Vignette 5. A Professional Couple with Three Children: Sacrifice for the Future vs. Present Bliss

He earns money and works hard for his family future; she wants to have another baby—mainly because she is entirely enraptured by the bliss and pleasure of nursing and connecting with a baby in the present. What is

absent in their current relationship and in her life that may give her this sense of ultimate intimate connection and joy? His ingrained value is that the present has to be sacrificed for the future; she has to understand why his future perspective is so biased.

In fact, his future perspective was affected by his past: having immigrated from another country, he had a family history of struggles and deprivations. He needs to make time for his wife in the present, and both of them have to revisit her career aspirations. Looking back at her not-so-distant past, she realized that her focus on motherhood was less intense when her career gave her a sense of fulfillment.

It is interesting that the term "temporal mismatch" and temporal language facilitated their understanding of each other and put a more positive and hopeful spin on their conflicts about money, attention, home chores, and careers. For example, he agreed to spend money on beautification of their backyard with plants and on children's toys that "were not necessary for survival." Their present became more enjoyable because he gradually got to recognize his pervasive, often unconscious bias to sacrifice the present for their better future.

Conclusion

In this chapter we have described the role of temporal focus and temporal awareness in psychotherapy. We hope to attract the attention of researchers to this clinically important aspect of time and also to promote temporal focus and awareness in the mainstream of clinical practice. We demonstrated how in therapy we *intentionally* shift from one time frame to another—for example, from present to future or past, or from future to past and back to present.

Our application of the concept of temporal flexibility in clinical practice extends Zimbardo and Boyd's formulation (1999) adding our conscious, intentional, and systematic attention to the operation of time perspective. Conceptual and empirical investigation of temporal flexibility is long overdue, and its consideration in this volume is welcome (Stolarski & Witowska, chap. 6). The collaboration between research and clinical practice may provide further discoveries in regard to this central temporal phenomenon.

While listening to patients' narratives, or while choosing where to move with patients next in session, we monitor the temporal coordinates in their experiences. As our clinical cases show, we have been purposefully switching temporal frames, changing the focus not only from one time orientation to another but also within one orientation—for example, from the recent to distant past, from a near to a mildly extended future. One patient's symptom of insomnia made us consider the coordinates of past, present, and future within a cycle of 24 hours. The clinical cases attest to how we kept in mind the temporal dimensions that proved important in research, such as affective tone of time orientations, whether they are full or empty, extended or shrunk, connected or disconnected, balanced or imbalanced (Kazakina, 1999, 2013, 2015).

Zimbardo's time perspective model (Zimbardo & Boyd, 1999, 2008) renewed our personal and professional interest in time perspective and allowed us to advance our approach by integrating this theoretical framework. For example, the profile of balanced time perspective and its role for the positive functioning, the variables of a hedonistic present and transcendent future. Some further developments in TP research were incorporated as well: mindful present (Jonte Vowinckel, 2012) and prenatal past (Wessel van Beek). Our clinical material elicited new dimensions of the the present time orientation that can be worthy of further empirical examination—for example, the positive role of solitude and the hedonistic benefit of nature.

A temporal view provides a more comprehensive understanding of transference and countertransference reactions, showing that significant aspects of one's past—unconscious feelings and behaviors—are being transferred not only to the present but also to the anticipated future. Our patients' stories revealed how this dynamic can be a source of troubling symptoms and interpersonal difficulties. Monitoring with patients their trajectory of their experiences across the past, present, and future, and using the language of time, facilitates patients' insight into their unconscious behavior. "Rehearsal" of imagined future experiences added a behavioral element to our sessions. The signature of our clinical approach remains the integration of cognitive, behavioral, existential, and psychodynamic perspectives, as well as elements of mindfulness training within the context of temporal awareness.

We offered a notion of temporal mismatch to highlight the sometimes disturbing differences in time perspectives between significant others and also within the same individual. In every clinical case of mismatch, there is a bias—an overfocus or underfocus on one of the time orientations; however, as evidenced, there may be also a mismatch in the extensions, density, or emotional tone of these time orientations. The term "temporal mismatch" resonated with our patients' experience, facilitated their access to unconscious thoughts and feelings, and most important, depathologized their struggles and conflicts. The clinical tales showed the therapeutic advantages of this concept.

We hope that clinicians of different theoretical persuasions can benefit from integrating this temporal focus into their clinical interventions. We are on a mission to bring temporal awareness to psychotherapy. This temporal awareness should include time perspectives of patients, clinicians, and societal and familial attitudes to time, without forgetting attention to interindividual differences in time perspectives as they are reflected in temporal mismatches.

It was beyond this chapter to discuss cultural differences in temporal dimensions. However, our cases clearly reveal the impact of the immigrant experience on those of our patients (or their families) who undertook relocation and cultural transition. Making it in another country may lead to overfocus on the future and a temporal mismatch between significant others; even a clinician may share an immigrant experience, but may have a dissimilar profile and emotional tone of time orientations.

In the future we would like to share the importance of awareness of such temporal aspects of therapy as pace, frequency, and duration of clinical interventions, as well as the arbitrary duration of the therapeutic hour (WvB). We would also like to share our experience with temporal awareness and dimensions of time perspective in empathy and communication skills training (EK). Further research should focus on the implicit nature of temporal attitudes in investigating distinctions between unconscious and preconscious aspects of temporal awareness. Also, we welcome the investigation of temporal phenomena involving subjective psychological distance—for example, the sense of closeness of distant past events and various temporal experiences (time being wasted, time flying) in the context of time perspective research.

Finally, we emphasize the intentional and systematic temporal awareness of our approach to psychotherapy and our facilitation of patients' mindful monitoring of temporal trajectories in their experiences. Together we engage in "mental time travel"—remembering particular past events and thinking about personal future happenings (Tulving & Kim, 2007, p. 335) but unlike often in life and frequently in clinical settings, we do it with keen awareness and purpose. We hope that the stories of our patients included here show how temporal focus in all stages of treatment sharpens our clinical skills and ultimately serves our patients in their journey from distress to well-being.

References

Boniwell, I., & Zimbardo, P. G. (2004). Balancing time perspective in pursuit of optimal functioning. In P. A. Liney & S. Joseph (Eds.), *Positive psychology in practice* (pp. 165–178). Hoboken, NJ: Wiley.

Brune, M. (2006). The evolutionary psychology of obsessive-compulsive disorder: The role of cognitive metarepresentation. *Perspectives in Biology and Medicine*, *49*(3), 317–329.

Carstensen, L. L., Isaakowitz, D. M., & Charles, S. T. (1999). Taking time seriously. *American Psychologist*, *54*(3), 165–181.

Csikszentmihalyi, M. (1996). *Creativity*. New York: HarperCollins.

Davenhill, R. (2008). Psychoanalysis and old age. In R. Woods & L. Clare (Eds.), *Handbook of clinical psychology of ageing* (2nd ed., pp. 472–487). England: Wiley.

Dreyfus, G. (2011). Is mindfulness present-centred and non-judgmental? A discussion of the cognitive dimensions of mindfulness. *Contemporary Buddism*, *12*(1), 41–54.

Germer, C. K., Siegel, C. K., & Fulton, P. R. (2005). *Mindfulness and psychotherapy*. New York: The Guilford Press.

Kabat-Zinn, J. (2013). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness*. New York: Bantam Books.

Kazakina, E. (1999). *Time perspective of older adults: Relationships to attachment style, psychological well-being and psychological distress*. Unpublished doctoral dissertation, Columbia University.

Kazakina, E. (2013). Time perspective of older adults: Research and clinical practice. In M. P. Paixao et al. (Eds.), *International studies in time perspective* (pp. 71–86). Coimbra, Portugal: Coimbra University Press.

Kazakina, E. (2014). *Mental time travel in clinical practice: The voyage from distress to well-being*. "Mental Time Travel" Symposium, Pre-Conference at Society for Personality and Social Psychology Convention. February 26–28, 2015, Long Beach, California, USA (abstract was accepted but not published: available from author by request).

Kazakina, E. (2015). The uncharted territory: Time perspective research meets clinical practice. Temporal focus in psychotherapy across adulthood and old age. In M. Stolarski, N. Fieulaine & W. van Beek (Eds.), *Time perspective theory; Review, research and application—Essays in honor of Philip G. Zimbardo* (1st ed., pp. 499–516). Switzerland: Springer. ISBN: 978-3-319-07367-5.

Kazakina, E. (2016). *The voyage from distress to well-being: Time perspective in clinical practice and beyond*. In A. Sircova & S. Konowalczyk (Eds.), Third International Conference on Time Perspective: Celebrating Time. Book of Abstracts (p. 119). Copenhagen, Denmark (TPCPH2016-Book-of-Absrtacts.pdf).

Kazakina, E., Zimbardo, P. G., & van Beek, W. (2016). *Temporality and family conflicts*. In A. Sircova & S. Konowalczyk (Eds.), Third International Conference on Time Perspective: Celebrating Time. Book of Abstracts (p. 92). Copenhagen, Denmark (TPCPH2016-Book-of-Absrtacts.pdf).

Kierkegaard, S. (1843). *Journalen JJ:167, Søren Kierkegaards Skrifter* (1997—, Vol. 18, p. 306). Copenhagen: Søren Kierkegaard Research Center.

Klein, S., & Gangi, C. (2010). The multiplicity of self: Neuropsychological evidence and its implications for the self as a construct in psychological research. *The Annals of New York Academy of Sciences*, *1191*(Issue: The Year in Cognitive Neuroscience, March), 1–15. https://doi.org/10.1111/j.1749-6632.2010.05441.x

Kohut, H. (1971). *The analysis of the self*. Madison, CT: International Universities Press.

Lewin, K. (1943/1997). Defining the "field at a given time". In D. Cartwright (Ed.), *Field theory in social science. Selected theoretical papers. In resolving social conflicts. Field theory in social science* (pp. 200–211). Washington, DC: American Psychological Association. (Original work published 1943).

Loewald, H. W. (1980a). Superego and time. In H. W. Loewald (Ed.), *Papers on psychoanalysis* (pp. 43–52). New Haven, CT: Yale University Press. (Reprinted from *International Journal of Psycho-Analysis,* 1962, 43).

Loewald, H. W. (1980b). The experience of time. In H. W. Loewald (Ed.), *Papers on psychoanalysis* (pp. 138–147). New Haven, CT: Yale University Press. (Reprinted from *The Psychanalytic Study of the Child,* 1972, 27).

Maglio, S. J., Trope, Y., & Liberman, N. (2015). From time perspective to psychological distance (and back). In M. Stolarski, N. Fieulaine & W. van Beek (Eds.), *Time perspective theory; Review, research and application—Essays in honor of Philip G. Zimbardo* (1st ed., pp. 143–154). Switzerland: Springer. ISBN: 978-3-319-07367-5.

Mello, Z. R., & Worrell, F. C. (2015). The past, the present, and the future: A conceptual model of time perspective in adolescence. In M. Stolarski, N. Fieulaine & W. van Beek (Eds.), *Time perspective theory; Review, research and application—Essays in honor of Philip G. Zimbardo*. (1st ed., pp. 115–129). Switzerland: Springer. ISBN: 978-3-319-07367-5.

Moore, B. E., & Fine, B. D. (1990). *Psychoanalytic terms and concepts*. New Haven: The American Psychoanalytic Association; Yale University Press.

Nisbet, E. K., & Zelenski, J. M. (2011). Underestimating nearby nature. Affective forecasting errors obscure the happy path to sustainability. *Psychological Science*, *22*(9), 1101–1106.

Phelan, T. W. (2016). *1-2-3-Magic: Effective discipline for children 2-12* (6th ed.). Naperville, IL: Sourcebooks.

Perlis, M. L., Jungquist, C., Smith, M. T., & Posner, D. (2008). *Behavioral treatment of insomnia: A session-by-session guide* (1st ed.). New York: Springer.

Sirois, F. (2012). *What was, is, and will be: Temporal holism, well-being, and the pursuit of goals*. In M. P. Paixao et al. (Eds.), First International Conference on Time Perspective: Converging Paths in Psychology Time Theory and Research. Book of Abstracts (p. 72). University of Coimbra, Portugal.

Stolarski, M., Wiberg, B., & Osin, E. (2015). Assessing temporal harmony: The issue of a balanced time perspective. In M. Stolarski, N. Fieulaine & W. van Beek (Eds.), *Time perspective theory; Review, research and application—Essays in honor of Philip G. Zimbardo* (1st ed., pp. 57–71). Switzerland: Springer. ISBN: 978-3-319-07367-5.

Stolarski, M., & Witowska, J. (2017). Looking at own time perspective from an aerial view: On the role of metacognitive processes in temporal framing (In this volume).

Storr, A. (2005). *Solitude: A return to the self*. New York: Free Press.

Suddendorf, T., & Corballis, M. C. (1997). Mental time travel and the evolution of the human mind. *Genetic, Social, and General Psychology Monographs*, *123*(2), 133–167.

Tulving, E., & Kim, A. (2007). Evolution of foresight: What is mental time travel, and is it unique to humans? *Behavioral and Brain Sciences*, *30*(3), 334–335.

Van Beek, W. (2012). *What was, what is, and what will be: Temporal thinking in suicidal individuals and how to change it in therapy*. In M. P. Paixao et al. (Eds.), First International Conference on Time Perspective: Converging Paths in Psychology Time Theory and Research. Book of Abstracts (p. 49). University of Coimbra, Portugal.

Van Beek, W. (2017). Prenatal past (In this volume).

Van Beek, W., Kerchief, A., & Beekman, A. (2009). Future oriented group training for suicidal patients: A randomized clinical trial. *BMC Psychiatry*, *9*, 65. https://doi.org/10.1186/1471-244X-9-65

Van Beek, W., & Chistopolskaya, K. (2015). Friend or foe? Escape from death or death as an escape? In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective; Review and application—Essays in honor of Philip G. Zimbardo* (1st ed., pp. 471–480). Switzerland: Springer. ISBN:978-3-319-07367-5.

Vowinckel, J. C. (2012). Balanced time perspectives and mindfulness. Universiteit Twente. Retrieved March 2, 2017, from http://essay.utwente.nl/62422/1/Vowinckel,_J.C._-_s0160067_(verslag).pdf

Webster, J. D. (2011). A new measure of time perspective: Initial psychomentric findings for the balanced time perspective scale (BTPS). *Canadian Journal of Behavioral Science*, *43*(2), 11–118. https://doi.org/10.1037/a0022801

Wiberg, M., Sircova, A., Wiberg, B., & Carelli, M. G. (2012). Operationalizing balanced time perspective in a Swedish sample. *The International Journal of Educational and Psychological Assessment*, *12*(1), 95–107.

Wiberg, M., Sircova, A., Wiberg, B., & Carelli, M. G. (2017). Balanced time perspective: Developing empirical profile and exploring its stability over time (In this volume).

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, *77*, 1271–1288.

Zimbardo, P. G., & Boyd, J. N. (2008). *The time paradox*. New York: Free Press.

Elena Kazakina is a licensed psychologist in independent private practice in East Brunswick, New Jersey. She holds a doctorate in Counseling Psychology from Columbia University and has worked as a supervising psychologist, clinician, and consultant in various clinical settings in the New York Metropolitan

area. Dr. Kazakina has been applying temporal concepts and empirical findings in counseling and psychotherapy since her dissertation research on time perspective in 1999. Her scholarly interests include the interplay between time research and clinical practice, and further elaboration of concepts of temporal balance and temporal flexibility as they relate to enhancing psychological well-being. She develops the notions of temporal focus and temporal awareness of both clinicians and patients to facilitate the effectiveness of strategies in working with individuals, couples, and families.

Wessel van Beek is affiliated with GGZ Veenendaal, Veenendaal, The Netherlands. His main research interests are time and behavior, suicidology, and temporal coherence. He was co-editor of *Time Perspective Theory*; *Review, Research and Application* (Switzerland: Springer, 2015). He combines research with psychotherapy and management.

12

Extending Future Time Perspective Theory through Episodic Future Thinking Research: A Multidisciplinary Approach to Thinking About the Future

Jenefer Husman and Jonathan C. Hilpert

Introduction

Psychologist and philosopher Henry James provides a description of the need to plan for the future. "In each kind of self, material, social, and spiritual, men distinguish between the immediate and actual, and the remote and potential. One must forgo of present bodily enjoyment for the sake of one's general health: one must abandon the dollar and hand

Author Note
Jenefer Husman, Department of Educational Studies, University of Oregon. Jonathan C. Hilpert, Department of Curriculum Foundations and Reading, Georgia Southern University;
Funding for the current work was provided by National Science Foundation Grant, REC-0960551, CAREER: Connecting with the Future: Supporting Career and Identity Development in Post-Secondary Science and Engineering.
Correspondence concerning this chapter should be addressed to Jenefer Husman, Department of Education Studies, College of Education, 5277 University of Oregon, Eugene OR 97403 E-mail: jhusman@uoregon.edu

J. Husman (✉)
University of Oregon, Eugene, OR, USA

J.C. Hilpert
Georgia Southern University, Statesboro, GA, USA

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_12

for the sake of the hundred dollars to come" (1918, p. 315). James articulates aspects of planning for the future: delaying gratification in the present for the benefit of obtaining goals in the future. Researchers within personality, social, and developmental psychology have demonstrated the importance of our ability to self-regulate the delay of gratification. These foundational ideas continue to shape Future Time Perspective (FTP) theory. Our own discussion of FTP research has focused on the ways that humans plan for the future or privilege future goals over present needs or wants. For example, Husman and Lens (1999) defined FTP as "the degree to which and the way in which the chronological future is integrated into the present life-space of an individual through motivational goal-setting processes" (p. 114). Along these lines, FTP research has focused on particular aspects of human thoughts about the future: future goals, time horizons, and degree of orientation to the future.

The future goals students set for themselves have been one way of operationalizing future possible selves (Oyserman, Bybee, Terry, & Hart-Johnson, 2004). The FTP variable Perceptions of Instrumentality (PI) is defined as the value of present activities in relationship to future goals (Husman & Lens, 1999). Time horizon, a frequently studied aspect of time perspective, is defined as the furthest point in time that an individual can imagine where the activities seem relevant to the present; the distance of the time horizon may be six months or may be several years (Wang, Rieger, & Hens, 2016). Time orientation is the temporal orientation that a person believes to be the most important when considering his or her present tasks; this orientation may be the past, present, or future (Kogut, Eyal, & Sharon, 2017). These variables have been the focus of research within time perspective, including our own research (e.g., Hilpert et al., 2012) and the work by Lens (e.g., Lens, Paixao, Herrera, & Grobler, 2012), Zimbardo (Zimbardo & Boyd, 1999), Paixao (Paixao, Abreu, & Lens, 2012), and others. This body of research has been quite productive, explaining relationships between FTP and positive outcomes such as academic achievement Oyserman, Bybee, & Hart-Johnson, 2006), career planning (Walker & Tracey, 2012), adaptive learning strategies (Hilpert et al., 2012), healthy behaviors (Daugherty & Brase, 2010), and lack of risk-taking (Keough, Zimbardo, & Boyd, 1999).

Zimbardo and his colleagues have championed a view of time perspective as a dynamic process that integrates perceptions of the past, present, future. Despite these theoretical postulations, much of the research on time perspective has failed to meet the richness that is offered by time perspective theory. A focus on static goals, specific life events, and the privileging of future over past and present constructions of self may have hindered the development of a full understanding of the self in time. Methodological limitations almost certainly have contributed to an overly cold and static approach to understanding human time perspective. Zimbardo and his colleagues note in their discussion of the development of the Zimbardo Time Perspective Inventory (ZTPI) that the multitude and multidimensionality of time perspective constructs created difficulty in scoring and held up the development of research (Zimbardo & Boyd, 1999). The introduction of the ZTPI created increased coherency of terms and constructs, and since its publication, research on time perspective has exploded. As evidenced by this text and the over 600 citations of the original Zimbardo and Boyd (1999) article, research on time perspective has been assisted by the development of a single discrete measure of time perspective. Yet, publication of the instrument also contributed to an intense research focus on planning for the future (or the lack thereof), as opposed to imagining its affective qualities. To fully embrace the conceptualization of time perspective as an individual's imagining of themselves as he or she has been in the past, is now, and may be in the future, we need to move beyond measures of time perspective that rely on an examination of goal setting and contingent relationships between future goals and present tasks.

Imagining the Future

Psychological theorists and philosophers have consistently focused their discussions of the way humans understand the self as part of the fluid nature of our personal constructions of the past, present, and future. In other words, who we think we are is more than just planning for the future; it is an evolving, dynamic integration of who we think we were and who we want to be (Lewin, 1942; Lee, Husman, Green, & Brem,

2016). Lewin (1942) introduced the term "time perspective" this way: "The psychological future is part of what L.K. Frank has called 'time perspective.' The life-space of an individual, far from being limited to what he considers the present situation, includes the future, present, and also the past. Actions, emotions, and certainly the morale of an individual at any instant depends upon his total time perspective" (Lewin, 1942, pp. 48–49). Frank and Lewin did not, as James recommended, differentiate the present from the future; they argue instead for considering the self as an integration of the future, past, and present. Continuing this approach, Hazel Markus situated her discussion of time perspective in terms of Future Possible Selves (FPS), an extension of self-concept theory (Markus & Nurius, 1986). Similarly, Oyserman and others have consistently argued that "who we want to become" can serve as a broad roadmap that can guide the choices and decisions we make (Oyserman & James, 2011; Lee et al., 2016). Oyserman and Destin (2010) have reframed their research on adolescent thinking about the future as identity-based motivation. This work emphasizes the emerging identity at the center of our understanding of our personal futures.

Although FTP and FPS theories do refer to the construction of possible futures as a process of identity development that integrates our past, present, and future, most FTP scales (i.e., Strathman, Gleicher, Boninger, & Edwards, 1994; Zimbardo & Boyd, 1999) focus on participant thinking about the future by discussing plans, actions, or goals. The focus on plans and goals is also prevalent in our own FTP scale. The most commonly used subscale, connectedness, is particularly focused on planful behavior (Husman, Hilpert, & Brem, 2016). Oysersman and Markus (1990) have argued that FPS represents a broader understanding of the self in time, but the operationalization focus continues to be on individual goals rather than episodes or their emotional catalysts. An example prompt used in this research is: "Next year I expect to be…" (Oyserman, Gant, & Ager, 1995, p. 58). Although this could elicit description of episodes, typically it does not. Students frequently talk about their goals (e.g., "I want to be a good student"; "I want good relationships with my teacher") (Lee, Husman, Green & Brem, 2016). Although FPS research has provided a number of important and interesting outcomes relating to students' identity, academic success, and pathways to support student

academic development, we see it falling short of keeping the promise of assessing the dynamic nature of constructing the self via imagining future selves.

Within cognitive psychology and cogitative neuroscience, the ways that humans think about themselves in the future has been an expanding area of research. The term Mental-Time-Travel (MTT; Suddendorf & Corballis, 1997) presented a theoretical framework for research into how we may "remember" the future. In essence, human memory from the past is the pulling together of ideas, events, and perceptions to imagine what we have experienced in the past. Tulving (1993) and others argued that humans travel through temporal experience to orient ourselves in time. It is unsettling to find oneself in a meeting or at the grocery store if one doesn't remember how one got there or where one plans to go next. Although prior research on time perspective has provided evidence that imagining the past is counterproductive and may reduce important planning for the future (Zimbardo & Boyd, 1999), MTT research argues that adaptive human functioning is related to an extended and salient view of both the past and the future.

MTT research focuses on one particular type of memory process—autobiographical memory. Autobiographical memory comprises personal episodes, or events, located in both time and space. Autobiographical memories also shape how we think about ourselves in the present. Cognitive neuroscience researchers argue that we can think about our futures using episodes or events. When I am thinking "I should go to the market on my way home from work," I do not just have an abstract goal of going to the market. I can imagine what market I will go to and what the drive to the market will look like. I will imagine what was in my refrigerator the last time I looked and consider what I might need. My imagination does not simply include visions of the market. As I consider what it will be like, I may feel overwhelmed as I imagine that I will feel rundown when I finally come to the end of my work day and still have to stop at the market to buy dinner. I think about being concerned that I may forget something. Memories of the past and imagining the future can flow together, or integrate, to influence our decisions. In an integrated model of thinking about the future, the goal "going to the store" is meaningful to me not because it is an isolated goal but because of the autobiographical structure and affective dimensions of the imagined event.

D'Argembeau and colleagues have investigated the component processes underlining the ability to imagined autobiographical future events. They found that future thinking involves a collection of processes relevant to different facets of the future-event representation. Their work has uncovered differences between the operationalization of FTP and autobiographical future thinking. Time perspective, as measured by the ZPTI, was most closely related to sensory descriptions of participant futures. It was not related to the fluency or the autobiographical specificity of their thinking about the future. The characteristics of student stories about their personal futures are generally not related to participant time perspective as measured by the ZPTI (D'Argembeau, Ortoleva, Jumentier, & Van der Linden, 2010). It seems that the ZPTI is not capturing the totality of what researchers mean when they talk about thinking about the future, particularly with regard to how it is imagined, or an integrated and dynamic process.

Remembering the Future

Lewin's (1942) discussion of FTP includes a discussion of human habitual time space. Habitual time space is the temporal space that encompasses the aspects of one's past, present, and future habitually influencing one's behavior. Although at the heart of time perspective research, autonetic consciousness (awareness of the past, present, and future) has not been represented in our FTP research. In research within cognitive neuroscience, however, researchers have systematically examined the ability of the human mind to simulate possible futures and reflect on past experiences. Utilizing fMRI laboratory research techniques, neurocognitive researchers have endeavored to identify the neurological structure engaged by thinking about the future.

The focus of much recent research into future thinking has focused on episodic future thinking, simulating or constructing specific future events. One of the catalysts of the work on EFT is due to the insight of Schacter and Addis (2007)—namely that the constructive nature of episodic memory is similar to the construction one engages in when thinking about the future. This insight led them to propose that episodic

future thinking is a manifestation of the episodic memory process. Careful research conducted by Addis, Schacter, Szpunar, and others have provided evidence that remembering the past and imagining the future engage a similar neural architecture. This architecture includes the medial prefrontal cortex, posteromedial parietal cortex, and medial temporal lobes (Schacter, Addis, & Buckner, 2007). Constructing past events and imagining future events do not recruit identical structures. However, imagining the future does rely upon neurological structures previously identified as part of the episodic memory process. Differences in the magnitude of engagement of the right and left hippocampus are a focus of research (Addis, Cheng, Roberts, & Schacter, 2011).

In several studies utilizing fMRI methodology, Addis and her colleagues have asked participants to engage in tasks that illicit episodic memory. Specifically, they have asked participants to describe in detail specific past events and general past events and construct alternative past events, general future events, or specific future events. Left hippocampal activity is related to remembering past events, constructing alternative past events, and constructing both general and specific future events; the right hippocampus is uniquely engaged during the construction phase of imagining specific personal future events. One explanation for the findings regarding differentiation between neural architectures is the lack of constraints when thinking about the future versus thinking about the past (Addis, Wong, & Schacter, 2007; Schacter, Addis, & Szpunar, 2017). Although episodic memory from the past is constructed, and it is possible to consider any number of alternative past outcomes, all our past events are constrained. Neurocognitive researchers have argued that it is the near limitless possible futures that we can imagine that distinguish between imagining our past and imagining our future. Whether or not humans *should* imagine all possible futures, the fantastic as well as the realistic, is an underexplored question (Szpunar, 2010) that researchers are beginning to address.

Oettingen and her colleagues have been exploring whether or not humans *should* imagine all possible futures. Research on mental contrasting, the metacognitive strategy of comparing fantasies about the future with possible threats or obstacles, has demonstrated that thoughts about the future need to include both the future goal and the difficulties one

will face along the path to that future (Oettingen & Reininger, 2016). When people fantasize about the future they run the risk of imaging their goal has been met. The feeling of satisfaction produced when one imagines one has obtained one's goal could reduce the need to put energy into achieving that goal. It is not, however, the premature feeling of satisfaction that seems to hinder goal obtainment but, rather, a lack of consideration of the possible obstacles. By mentally imagining the experience of encountering obstacles that can occur along future pathways, people can plan for projects that are achievable, or they can choose not to pursue projects for which they are either unwilling or unable to overcome the obstacles that lay in their path (Oettingen, Stephens, Mayer, & Brinkmann, 2010). Oettingen (2012) and her colleagues have demonstrated that an integrated contrasting of the long- and short-term futures is an important metacognitive strategy; it is important not just to plan for the future but also to imagine the path that will take you there (Kappes & Oettingen, 2011).

Emotional Future Thinking

Viewing future thinking as a process driven by emotions and sensory imagery has several advantages, one being that it adds a dynamic, affective dimension to planning for the future. Cognitive neuroscience is clear that mere registering and processing of sensory signals (i.e., in the occipital lobe and area V5) does not produce conscious thought; rather, orchestration of emotional processes in subcortical structures including the amygdala, the hypothalamus, and the brain stem are responsible for phenomenological consciousness (Luria, 2012). In imagining the future, there are few demands on our visual-spatial constructive abilities, and the medial temporal lobe plays a significant role in human ability to mentally simulate future events (Schacter & Addis, 2009), suggesting that emotions and sensory imagery should act as the catalyst for future thinking and planning. Subjectively felt experiences motivate the forming of anticipatory imagery as we actively engage with our environment (Ellis & Newton, 2000). The emergence of future thinking is dependent upon the integration of anticipatory imagery in the so-called remembered future

and felt experiences from the reconstructed past. The quality of the overall experience is incumbent upon the emotional intensity and valance of the goal-directed state.

Along these lines, future time perspective research has begun to address the role of emotions. For example, Mello and her colleagues (Mello et al., 2016; Worrell et al., 2016) argue for time attitudes, which situate emotional or affect responses to the future as an important catalyst for behavior. In their research, it is common for them to ask participants questions about whether they see the future as hopeful or full of possibility, such as, "My future makes me smile" (Mello et al., 2016, p. 58). Their examination of FTP is more focused on positive or negative valence of the future and less on setting goals, which is consistent with the neurobiological underpinnings of conscious goal-directed behavior. In another example, Carstensen and Lang (2001; Lang & Carstensen, 2002) have examined FTP in older populations, finding that focusing on the future more than the present has negative emotional outcomes. They argue that as people age and they can let go of their focus on plans that need to be accomplished, they think about their social and emotional states. Although this may not be adaptive for emerging adults who need to build careers and families, focusing on the present and imagining emotional goals allows older adults to work more on happiness than on getting things done. This work is consistent with the notion that emotional responses, such as feeling hopeful or full of possibility, are central to the development of anticipatory imagery and goal setting.

The process of imagining the future transforms a student's thought of "If I take this class, then I will be able to graduate and make my parents proud" to a vision of what it would feel like to stand in front of family members in a cap and gown. This image has the power to illicit emotions, and these emotions can help the student through challenging times. Although in this chapter we have argued that the role of conscious-felt experiences and emotions are central to the formation and maintenance of future thought, research also suggests that many emotions may not be consciously experienced, and those too may play an important role in anticipatory thinking. For example, I may have anxiety about performing well on a chemistry test and imagine how it will feel to fail the test, which may negatively influence my performance. However, my worry may be rooted in a deeper fear of a stereotype threat that is related to my role as

a woman in a STEM field, which serves as a catalyst for the felt experience and is central to the emergence and maintenance of my negatively valenced psychological state.

Research on the emotional dimensions of future thinking could be aided by the addition of salivary biomarkers, allowing for the exploration of emotional states not accessible to students, yet related to future thinking. Salivary biomarker methodologies can provide the means to identify students' arousal states and, in combination with established survey methodologies, can allow us to understand students' perceptions of those states. By combining research on the brain, body, and mind, we can more fully understand the mechanisms that allow thoughts about the future and our emotional states to influence one another. Research on future thinking has not used physiological markers of emotional response.

The Investigative Future

Currently, there is little discourse between the "silos" of research on future thinking (neuroscience, psychology, neuroendocrinology, and cognitive science). The lack of connection between these fields exists even within psychology; the bridges between psychology, neuroscience, and endocrinology are rarer still. Each field provides an essential piece of the puzzle. It is important for researchers to continue to explore methods that get at these qualities in one way or another, providing a more complete picture of future time, its nuanced role in important outcomes in peoples' lives, and the potential for targeting interventions that are aligned with the neurological underpinnings of future thinking. The fluid, emergent nature of FTP requires acknowledging the complexity of the phenomena and finding new ways to synthesize data that can account for both imagining and planning for the future.

References

Addis, D. R., Cheng, T., Roberts, R. P., & Schacter, D. L. (2011). Hippocampal contributions to the episodic simulation of specific and general future events. *Hippocampus*, *21*(10), 1045–1052.

Addis, D. R., Wong, A. T., & Schacter, D. L. (2007). Remembering the past and imagining the future: Common and distinct neural substrates during event construction and elaboration. *Neuropsychologia*, *45*, 1363–1377.

D'Argembeau, A., Ortoleva, C., Jumentier, S., & Van der Linden, M. (2010). Component processes underlying future thinking. *Memory & Cognition*, *38*(6), 809–819. https://doi.org/10.3758/mc.38.6.809

Daugherty, J. R., & Brase, G. L. (2010). Taking time to be healthy: Predicting health behaviors with delay discounting and time perspective. *Personality and Individual Differences*, *48*(2), 202–207.

Ellis, R. D., & Newton, N. (Eds.). (2000). *The caldron of consciousness: Motivation, affect and self-organization—An anthology*. Amsterdam: J Benjamins.

Fung, H. H., Carstensen, L. L., & Lang, F. R. (2016). Age-related patterns in social networks among European Americans and African Americans: Implications for socioemotional selectivity across the life span. *The International Journal of Aging and Human Development*, *52*(3), 185–206.

Hilpert, J. C., Husman, J., Stump, G. S., Kim, W., Chung, W.-T., & Duggan, M. A. (2012). Examining students' future time perspective: Pathways to knowledge building. *Japanese Psychological Research*, *54*(3), 229–240. https://doi.org/10.1111/j.1468-5884.2012.00525.x

Husman, J., Hilpert, J., & Brem, S. (2016). Future time perspective connectedness to a career: The contextual effects of classroom knowledge building. *Psychologica Belgica*, *56*(3), 210–225.

Husman, J., & Lens, W. (1999). The role of the future in student motivation. *Educational Psychologist*, *34*(2), 113–125.

James, W. (1890/1918). *The principles of psychology* (Vol. 1). New York: Henry Holt & Co.

Kappes, H. B., & Oettingen, G. (2011). Positive fantasies about idealized futures sap energy. *Journal of Experimental Social Psychology*, *47*, 719–729.

Keough, K. A., Zimbardo, P. G., & Boyd, J. N. (1999). Who's smoking, drinking, and using drugs? Time perspective as a predictor of substance use. *Basic and Applied Social Psychology*, *21*(2), 149–164.

Kogut, T., Eyal, T., & Sharon, I. (2017, April). Seeing into the future: Future time orientation as a moderator of temporal distance effects on educators' decisions. *Journal of Behavioral Decision Making*. https://doi.org/10.1002/bdm.2015

Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals, and social relationships. *Psychology and Aging*, *17*(1), 125.

Lee, J., Husman, J., Green, S. B., & Brem, S. K. (2016). Development and validation of the persistent academic possible selves scale for adolescents (PAPSS). *Learning and Individual Differences*, *52*, 19–28.

Lens, W., Paixao, M. P., Herrera, D., & Grobler, A. (2012). Future time perspective as a motivational variable: Content and extension of future goals affect the quantity and quality of motivation. *Japanese Psychological Research*, *54*(3), 321–333.

Lewin, K. (1942). Time perspective and morale. In G. Watson (Ed.), *Civilian morale* (pp. 48–70). New York: Reynal & Hitchcock.

Luria, A. R. (2012). *Higher cortical functions in man*. New York: Springer Science & Business Media.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, *41*(9), 954–969.

Mello, Z. R., Zhang, J. W., Barber, S. J., Paoloni, V. C., Howell, R. T., & Worrell, F. C. (2016). Psychometric properties of time attitude scores in young, middle, and older adult samples. *Personality and Individual Differences*, *101*, 57–61.

Oettingen, G. (2012). Future thought and behaviour change. *European Review of Social Psychology*, *23*, 1–63.

Oettingen, G., & Reininger, K. M. (2016). The power of prospection: Mental contrasting and behavior change. *Social and Personality Psychology Compass*, *10*(11), 591–604.

Oettingen, G., Stephens, E. J., Mayer, D., & Brinkmann, B. (2010). Mental contrasting and the self-regulation of helping relations. *Social Cognition*, *28*, 490–508.

Oyserman, D., Bybee, D., Terry, K., & Hart-Johnson, T. (2004). Possible selves as roadmaps. *Journal of Research in Personality*, *38*(2), 130–149.

Oyserman, D., Bybee, D., & Terry, K. (2006). Possible selves and academic outcomes: How and when possible selves impel action. *Journal of Personality and Social Psychology*, *91*(1), 188–204.

Oyserman, D., & Destin, M. (2010). Identity-based motivation: Implications for intervention. *The Counseling Psychologist*, *38*(7), 1001–1043.

Oyserman, D., Gant, L., & Ager, J. (1995). A socially contextualized model of African American identity: Possible selves and school persistence. *Journal of Personality and Social Psychology*, *69*(6), 1216–1232.

Oyserman, D., & James, L. (2011). Possible identities. In S. J. Schwartz, K. Luyckx, & L. Vivian (Eds.), *Handbook of identity theory and research* (pp. 117–145). New York: Springer.

Oysersman, D., & Markus, H. (1990). Possible selves in balance: Implications for delinquency. *Journal of Social Issues*, *46*(2), 141–157.

Paixao, M. P., Abreu, M. V., & Lens, W. (2012). Motivation, future time perspective, and vocational planning behavior. In D. A. Leontiev (Ed.), *Motivation, consciousness and self-regulation* (pp. 41–63). Hauppauge, NY: Nova Science Publishers.

Schacter, D. L., & Addis, D. R. (2007). The cognitive neuroscience of constructive memory: Remembering the past and imagining the future. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *362*(1481), 773–786.

Schacter, D. L., & Addis, D. R. (2009). On the nature of medial temporal lobe contributions to the constructive simulation of future events. *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, *364*(1521), 1245–1253.

Schacter, D. L., Addis, D. R., & Buckner, R. L. (2007). Remembering the past to imagine the future: The prospective brain. *Nature Reviews Neuroscience*, *8*(9), 657–661.

Schacter, D. L., Addis, D. R., & Szpunar, K. K. (2017). Escaping the past: Contributions of the hippocampus to future thinking and imagination. In D. E. Hannula & M. C. Duff (Eds.), *The hippocampus from cells to systems* (pp. 439–465). New York: Springer International Publishing.

Strathman, A., Gleicher, F., Boninger, D. S., & Edwards, C. S. (1994). The consideration of future consequences: Weighing immediate and distant outcomes of behavior. *Journal of Personality and Social Psychology*, *66*(4), 742.

Suddendorf, T., & Corballis, M. C. (1997). Mental time travel and the evolution of the human mind. *Genetic, Social, and General Psychology Monographs*, *123*(2), 133–167.

Szpunar, K. K. (2010). Episodic future thought: An emerging concept. *Perspectives on Psychological Science*, *5*(2), 142–162.

Tulving, E. (1993). What is episodic memory? *Current Directions in Psychological Science*, *2*, 67–70.

Walker, T. L., & Tracey, T. J. G. (2012). The role of future time perspective in career decision-making. *Journal of Vocational Behavior*, *81*(2), 150–158.

Wang, M., Rieger, M. O., & Hens, T. (2016). How time preferences differ: Evidence from 53 countries. *Journal of Economic Psychology*, *52*, 115–135.

Worrell, F. C., Temple, E. C., McKay, M. T., Živkovič, U., Perry, J. L., Mello, Z. R., Musil, B., & Cole, J. C. (2016). A theoretical approach to resolving the psychometric problems associated with the Zimbardo time perspective

inventory. *European Journal of Psychological Assessment*. https://doi.org/10.1027/1015-5759/a000313

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, *77*(6), 1271–1288.

Jenefer Husman received a doctoral degree in Educational Psychology from the University of Texas at Austin, in 1998. She is an Associate Editor of the *Journal of Engineering Education*, has served on the editorial board for top educational research journals, and currently sits on the editorial board of *Learning and Instruction*. In 2006, she was awarded the U.S. National Science Foundation CAREER grant award and received the Presidential Early Career Award for Scientists and Engineers from the president of the United States. She publishes regularly in peer-reviewed journals and books, and has held both elected and appointed offices in the American Psychological Association (APA). She was a founding member and the first President of the Southwest Consortium for Innovative Psychology in Education, and served as the Co-Coordinator of the Motivation Special Interest Group of the European Association for Research on Learning and Instruction.

Jonathan C. Hilpert is an Associate Professor of Educational Psychology in the College of Education (COE) at Georgia Southern University. His research interests include student motivation, engagement, and interactive learning; complex, emergent, and dynamic properties of educational systems; and knowledge construction of complex scientific phenomena. His research on student learning in engineering education has been funded by the National Science Foundation, as well as his receiving several internally funded research awards. His research findings have been disseminated in national and international engineering education and psychological journals (including *Journal of Engineering Education*, *Journal of Women and Minorities in Science and Engineering*, *Educational Psychology*, *Psychological Inquiry*, and *Motivation and Emotion*), as well as presented at national and internal conferences, including the American Education Research Association, American Society for Engineering Education, European Association for Research in Learning and Instruction, and various symposiums organized by the National Science Foundation.

13

The Influences of Time Perspectives on Academic Procrastination

Jasmina Nedeljković

Introduction

Procrastination can be defined as postponement of carrying out the tasks in all fields of life. Procrastinating behavior exists in all cultures, including Eastern European and the Balkan culture in Serbia. Although it is present on all social levels, academic procrastination is especially important for examining, since it is connected with young people who will become the pillars of society. Therefore, prevention of procrastinating behavior in the academic population should be one of the main goals and tasks of particular governmental bodies. Young people enroll in faculties because they like the field of study. On the basis of this, there is a direct conclusion to be drawn about the existence of high intrinsic motivation. As their studies advance, the academic population becomes aware of the fact that it should somehow start earning a living using the knowledge

J. Nedeljković (✉)
Business Psychology Department, Faculty for Legal and Business Studies dr Lazar Vrkatić, Novi Sad, University Union, Belgrade, Serbia

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_13

they have gained. Awareness of the approaching end of a student's life also suggests finding a job and worrying about whether the student will succeed in a society characterized by such a dramatic brain drain, as young experts leave the country in search of employment elsewhere. Situations of uncertainty lead to higher levels of anxiety, from which procrastination is the easiest and the least harmful way out.

The truth is that a large percentage of students procrastinate carrying out their duties and tasks. It is also true that not all students procrastinate. The expected question that arises is, What causes such behavior? If loss of motivation is an explanatory factor, we can ask what has led to that loss. It could be bad time management (Ferrari & Pychyl, 2000), bad everyday organization, bad time assessment, lack of self-confidence, or incapability of anticipating all harmful, internal and external consequences of procrastination. Internal consequences refer to despair, self-blame, and, therefore, self-irritation. External consequences directly affect physical health (Tice & Baumeister, 1997), the decrease in academic and work achievements, a weakening of emotional and interpersonal relations in general, and missed opportunities (Haycock et al., 1998). We have gradually learned about academic procrastination through a large number of studies in which the relation between procrastination and different psychological constructs has been examined.

The relation between procrastination and time perspective was studied by Diaz-Morales and Ferrari (2015) who conclude that students with a tendency to cognitive and behavioral procrastination are less oriented toward the Future and more toward Present-fatalistic, Past-positive, and Past-negative time perspectives and both relation modalities toward Past. In her meta-analytical research of procrastination and time perspective, Sirois (2014) obtained results showing there is a significant negative moderate correlation with Future time perspective and a low, statistically significant positive correlation with Present time perspective. Nedeljkovic and Kostic (2013) also obtained a significant negative moderate correlation between procrastination and Future time perspective, a significant low positive correlation with Present time perspectives, and a significant low positive correlation with Past-negative time perspective.

The motivation to work on this topic originated precisely from these results and the desire to better understand the structure of relations between academic procrastination and time perspective.

What Is and What Is Not Procrastination

The question of what procrastination is and is not causes confusion not only among the professionals but also among ordinary people who would like to get the answer to this question.[1] It is difficult to precisely define procrastination. Namely, it is difficult to draw a line between "is" and "is not." The answer can be sought in the description of maladaptive and adaptive side of procrastinating behavior. First, procrastination is not only postponement of something you have to do, since procrastination is constitutive part of every work. Consideration, patience, and defining priorities include elements of procrastination, but they are not procrastination itself.

A lot of research on procrastination emphasizes precisely its maladaptive nature (Ariely & Wertenbroch, 2002; Milgram, 1991) in students with low self-confidence and competence (Steel, Brothen, & Wambach, 2001). The maladaptive aspect of procrastination is especially prominent in students with high levels of fear of failure (Solomon & Rothblum, 1984) and a prominent tendency to perfectionism (Hewitt & Flett, 1991). Since its first appearance in English literature, the word *procrastination* has not been defined only as a postponement; the adjective *irrational* has been added to it as well. Completely aware that we are acting against ourselves and our own interests, we willingly postpone tasks, delaying their execution for a future moment. Every postponed task carries with it certain consequences. The cumulative effect of those consequences leads to having a sense of guilt and guilty conscience, and feeling distressed, which can be intense in certain periods of life. At some moment a complete loss of motivation can be felt, which makes it impossible to systematically plan an activity—its beginning, development, and execution. In the beginning, people think there is enough time for the big project ahead of them—maybe even more than is necessary. Then a rhythm is lost, some obligations are missed, but there is still a sense of

dedication to the given task. If obligations "can" be forgotten, they will be forgotten, however. And then the day comes when a person really wants to finish the task; however, everything will bother the person, will distract his or her attention and prevent any attempts to succeed. The individual would like a day to last more than 24 hours. Anxiety increases so the individual will tend to get instant relief, to fall asleep, to have fun—to do everything that seems to be safe and secure. Instead of dealing with irrational postponement, the person finds excuses that contribute to self-deception and stimulate irresponsible and self-destructive behavior.

Some recent research has shown that procrastinating behavior does not always lead to negative consequences, but it can be sometimes be connected with positive and constructive results (Schraw, Wadkins, & Olafson, 2007; Sokolowska & Zusho, 2006). Based on the findings by Chu and Choi (2005), active procrastinators consciously choose to postpone things because their performance improves when they work under pressure from close deadlines. The closer the deadline, the better active procrastinators organize their time, the more creative and motivated they become when carrying out the tasks. On the basis of existing results, it can be concluded that procrastination is not necessarily maladaptive behavior.

Definitions of Procrastination

This phenomenon is sometimes marked as "functional delay" or "avoidance of hurry" (Bernstein, 1998; Ferrari, 1993). As with other common terms in scientific research, a tendency to define results in having as many definitions as there are scientists who deal with the subject matter (Ferrari, Johnson, & McCown, 1995). Zimmerman (1995) defined the term "academic efficiency" as an assessment of an individual's capability to organize and carry out the activities that enable him or her to reach a certain level of education.

Early attempts to define and study this phenomenon were under the influence of behaviorism, and so it was marked as a postponement of executing the tasks with attention directed at accuracy (Silver, 1974) or

avoidance of tasks (Burka & Yuen, 2008; Lay, 1986; Solomon & Rothblum, 1984). With the increasing popularity of the cognitive and sociocognitive approach, definitions started to include the *cognitive component*—for example, use of irrational approaches and strategies is considered when solving the tasks (Milgram, 1991; Senécal, Julien, & Guay, 2003) or it is a failure of self-regulation (Ellis & Knaus, 1977; Ferrari, 2001; Ferrari & Tice, 2000; Knaus, 2000; Wolters, 2003). Procrastination is usually seen as irrational postponement, and this definition matches the following explanation in the dictionary: "postponement of an action, especially without any justifiable reason" (*Oxford English Reference Dictionary*, 1996). "Irrational" implies the choice of direction in which an activity will happen, despite the expectation that by doing so the overall gain in terms of interests, inclinations, or goals will not increase, neither in a financial sense expressed through money nor in a psychological sense expressed through the feelings of happiness and satisfaction. By combining these elements, "procrastination" is described as voluntary postponment of an activity, despite expecting bad consequences from that postponement.

An increase in the number of definitions of procrastination has led to including *affective components* such as bad feeling, which is connected with the spreading of procrastinating behavior (Burka & Yuen, 2008; Fee & Tangney, 2000; Ferrari, 1991; Rothblum, Solomon, & Murakami, 1986). Although in a smaller range, the definitions also include a *motivational component*, such as expectations and values when searching for a reason for postponement of carrying out of a task (Ackerman & Gross, 2005; Lay, 1986; Senécal, Koestner, & Vallerand, 1995).

The research on procrastination has been mainly directed toward the four most common forms of this behavior: in academic situations, in the work environment, in everyday life, and in the decision-making process. Academic procrastination has been studied in student populations and so it refers to procrastination when it comes to completing academic tasks (Solomon & Rothblum, 1984). Similarly, procrastination in the workplace has only the difference in the consequence of such behavior. Academic tasks are usually taxing for an individual, whereas tasks in the workplace often involve a team of workers; as a result, it affects the overall

efficiency and achievement of an organization and costs much more than academic procrastination (Hammer & Ferrari, 2002; Lonergan & Maher, 2000). Everyday tasks and duties can also become targets of procrastinating behavior (Lay & Brokenshire, 1997; Milgram, Sroloff, & Rosenbaum, 1988; Sigall, Kruglanski, & Fyock, 2000), and they refer to making everyday decisions.

The Basics of Academic Procrastination

How Do Others See an Academic Procrastinator?

The profile of an academic procrastinator has been based on results of studies conducted on this population (Blatt & Quinlan, 1967; Wolters, 2003).[2] A significantly smaller amount of research has been conducted on younger pupils and adolescent pupils (Scher & Osterman, 2002). The question is whether the results obtained from these student populations can be directly applied to pupils in primary and secondary schools. These methodological weaknesses jeopardize the reliability of the conclusions regarding the origin, nature, frequency, and scope of procrastination among the studied populations (Scher & Osterman, 2002). Inefficient students who postpone finishing their studies are usually seen as people who have difficulties with everything, who find it hard to finish what they have started, who are not very successful in their studies, and who are, therefore, not experts (Harriott & Ferrari, 1996; Solomon & Rothblum, 1984; Steel et al., 2001). Inefficient students are also considered to have problems with studying and with motivation (Ferrari, 1998). However, there are findings that claim precisely the opposite—that is, despite postponing, student procrastinators achieve success at a rate that is not worse than that of efficient students (Onwuegbuzie, 1999). Wolters (2003) and Senecal (Senécal et al., 1995) have established that even the students who are highly motivated to become experts in their chosen fields procrastinate the execution of tasks.

The Reasons for Student Inefficiency

The literature mentions three groups of reasons why students postpone the execution of tasks.[3] The first group refers to personality traits such as fear of failure and perfectionism. The second group comprises the characteristics of the task, its level of difficulty, and student aversion to the nature of the task. The third large group of reasons refers to an individual's representation of self-concept, self-respect, and self-efficiency. In order to establish the true reasons for procrastinating behavior, studies must determine a consistent level of procrastination over a set period of time and in different situations. Enough research has been done on this, and the results show that procrastination has temporal and situational stability. For example, Elliot (2002) got the correlation of 0.75 in eight successive studies ($N = 715$) focused on the examination of data reliability using the test-retest method. Elliot (2002) also conducted a longitudinal study with a 10-year time frame and got data reliability of 0.77. Such results indicate that procrastination is stable enough and, therefore, can be considered a personality trait.

Psychological causes of procrastination vary a lot, although anxiety, low self-respect, and self-defense are at the basis of this phenomenon. People prone to procrastination also think they possess a high level of conscientiousness based on their dreams and desires of perfect performance or achievement, contrary to having a realistic assessment of their duties and abilities.

In his "Nature of Procrastination," Steel (2007) gives a comprehensive metaanalytical retrospective on the field results for procrastination so far. By combining 684 correlations, Steel states that procrastination has a very low correspondence with neuroticism, rebellion, and wish for sensations. Strong and consistent predictors of procrastination, he argues, could cause aversion to the given task, postponement of task execution, impulsiveness, self-control as personality trait, conscientiousness, distractibility, organization, and motivation for achievement.

Additionally, what is often pointed out is the connection between perfectionism and procrastination (Burns, Dittmann, Nguyen, & Mitchelson, 2000; Kilbert, Langhinrichsen-Rohling, & Saito, 2005). However, research shows that the connection is not always a direct one. Some

perfectionists procrastinate less often than average and worry more about their obligations. Similarly, different studies connect procrastination with a lack of conscientiousness with regard to self-discipline and dedication to work (Johnson & Bloom, 1995; Schouwenburg & Lay, 1995; Van Eerde, 2004). Other researchers have connected it with the fear of failure (Ellis & Knaus, 1977; Schouwenburg, 1992). Ferrari made a connection between procrastination and self-handicap (Ferrari & Tice, 2000), search for excitement (Ferrari, 1992), and proneness to boredom (Ferrari, 2000).

Since procrastination has been equated to wasting time, it is not surprising that in some research, the perception of time is the focus of consideration. Procrastinators and nonprocrastinators were compared in terms of how much time they needed to fulfil a task (McCown, Johnson, & Rupert, 1987), how long they postpone beginning to solve a task, and how much time they spend doing the task (Lay & Burns, 1991; Pychyl, Lee, Thibodeau, & Blunt, 2000, Pychyl, Morin, & Salmon, 2000), as well as how much time they spend looking for information relevant to carrying out the task (Ferrari & Dovidio, 2000).

Procrastination can also function as motivation. "Motivation" can refer to the task itself or can reflect the specificity of a certain situation. The answer to the question of what motivates students to carry out the tasks, and whether motivation is intrinsic or is based on external factors, is precisely where the causes of procrastination might be found. Factors of extrinsic motivation, such as money reward (Amabile, Hennessey, & Grossman, 1986), loss of the possibiliy to choose (Amabile & Gitomer, 1984), being assessed by others (Waschull & Kernis, 1996), and competition that could, when coupled with expectations, lead to victory (Harackiewicz & Elliot, 1993; Reeve & Deci, 1996) can be harmful for intrinsic motivation merely by directing attention toward external reasons for doing something. A strong connection between patterns of family attachment and academic achievement has also been confirmed in many studies. The results of a study conducted in Israel (Avizer, Sagi, Resnick, & Gini, 2002) show that a *secure pattern* of family attachment has a high positive correlation with motivational factors, efficient use of time, and social competencies, unlike an *insecure pattern* of family attachment.

Socialization and Procrastination

Cultural norms, family values, styles of upbringing, and gender roles, as well as economic situations have always determined the overall capacities of an individual's achievement, granting advantages for some people and limitations for others.[4] Despite strong motivation for achievement, limiting and unfavorable conditions can lead to a conflict to which a person can react using the postponement strategy. Led by a strong desire to succeed in life, assessing the limitations of the surroundings they live in, some people leave such surroundings and go to the countries with a completely different system of values, in which competition, efficiency, and success are reachable goals.Other individuals who have decided to continue their education or find a job in another country face difficulties and problems, which they sometimes can and sometimes cannot solve. They have to learn the language of the country where they arrive, adopt the system of values relevant to that culture, and learn ways of behavior considered desirable in those new surroundings. Besides this, getting used to the new surroundings calls for adapting one's behavior to the moral and customary norms, rituals and ceremonies that are important for that culture. When the adaptation to surroundings is not assessed as successful in any given segment, the "rescue" is found in procrastination. With social pressures to adopt the culture they are now in, to assimilate and "melt" into it, while wanting to stay loyal to their traditional values of the home culture, they are caught between roles and not comfortable, feeling they are not "up to the job," so they are almost forced to postpone making decisions and important choices.

Besides culture in its narrow and wider senses, family can greatly affect the development of procrastination in students. Owing to strong emotional bonds established among family members and shared experiences, family is a primary and very necessary factor of socialization. Indeed, family is usually a mediator in the process of acquiring attitudes, systems of value, and different models of acceptable and desirable behavior. However, family members can also sometimes be the carriers of undesirable, inadequate, inadaptive patterns of behavior and approaches. Still, the answer to the question of what they will become when they grow up is primarily sought by children in the family

environment, where they are presented with contents and possibilities. It is assumed that a child does not want to look up to a parent who has, in his eyes and the eyes of the surroundings, been marked as "unsuccessful." It happens that a child sometimes does not try to look like the "successful" parent who is often physically or emotionally absent from the child's life. Through different forms of learning (by conditioning, realizing, learning by model), a child adopts the values of a certain lifestyle and strives to reach them, forming later his or her own lifestyle. Whether or not these values are achievable and realistic will determine the child's overall functioning. And besides the system of values, family members pass on beliefs, judgments, and expectations regarding the profession children will choose. Moreover, they teach them what is and is not acceptable, what is safe and what is dangerous, how to behave in conflict situations, how to solve problems, and how to make decisions. Consequently, children make an image of themselves in a family, a notion of their own capacities but also of what others expect from them in the future.

Procrastinators describe five family topics (Burka & Yuen, 2008) that represent the basis of all fears connected with procrastination. These are pressure, doubt, control, attachment, and distance; and they are present in all families to some extent. In families with a high level of *pressure*, a dominant value is the high motivation for achievement. This is to be the first and the best, not to accept any kind of limitations, to consider a disgrace any mistakes and failures. The burden of such a family requirement leads to the development of maladaptive perfectionism and procrastination. In families where the dominant topics are *doubt*, parents do not believe that their children will live better than they do. They diminish and relativize every success of the child, and by doing so, they prompt the development of rebellion, low self-respect, postponement, and limited achievement. Rebellious children will desire to show their parents that they can do much more. The goal they set for themselves is to be perfect in certain area. By making such a decision, they step right into the trap of procrastination.

In families with *control* topics, parents determine everything in the lives of children, teaching them how to behave appropriately. They

determine what children will do in life, what and when they should eat or practice, how to behave, or how often they should visit their grandparents. Growing up in such a family, a child comes to the conclusion that rebellion is too big of a risk, that it would disturb a comfortable and secure life, and so the child chooses postponement as a way of opposing the requirements of the family.

Families with highly developed emotional bonds and loyalty, or *attachment*, discourage children from living their own lives. Parents represent an inexhaustible source of support and protection for the child. In that way, a child develops dependence on the parents' affection and support, which lasts throughout their life. Children have learned that it is not good to live the way they want because they cannot survive without the parents' help. Procrastination in this case prolongs a comfortable and secure living, isolated and protected from the dangers of other relationships.

Unlike families with strong attachment, there are families with *distance*, in which emotional bonds have not developed and each family member lives in his or her own world. Such an ignoring, distant, cold family atmosphere leads to the development of feelings of physical and emotional isolation. A child has to solve all the problems alone. In adulthood, such people have feelings of painful loneliness, which can influence their efficiency. Since no one was interested in their thoughts and feelings while they were children, they do not expect different behavior at their job and in their life. They resort to procrastination precisely because they think that no one cares what is happening with them.

Belonging to a specific gender can also contribute to postponement. Women who want to succeed in a "man's world" are afraid they could be marked as an "aggressive-ambitious bitch" and they often choose postponement so as to soften such an image of themselves and make themselves appear less competitive. Men, on the other hand, are aware that they can succeed more easily, and sometimes they escape into postponement so as not to renounce the traits of their "feminine" side—that is, being of two minds, feeling insecurity, searching consolation.

Time Perspective and Culture

> We falsely exist in time, convinced that we are now, not before or after. What we are we do not know to connect with before and after, but our sole criterion of time tells us that we are nowhere beyond now. By stating that we were or that we will be we do not make any precedent. The fact that we were and we will be only means that now existed and that it will exist. We were now in a trolleybus and we will be now in the cinema. That is the only qualitative meaning of the difference between now, before and after.
>
> —*On the Subjective Dimension of Time* (Fajgelj, 1970)

Everything happens under the influence of time.[5] We are born, we grow and develop, we learn and work, we may give birth, then raise children only to have them leave.. In this way, which is always the way of tomorrow, we rejoice, sorrow, fear, get angry. Our attitudes toward our yesterday, today, and tomorrow depend on the emotion that prevails.

Time as a medium in which we live and of which we are aware has always engaged the attention of philosophers, physicists, theologists, psychologists, and laypeople. When we talk about time, we actually talk about events that happened a second, a few minutes, days, years, decades, or centuries ago. And we are aware that the present moment, while we are talking about what has happened or what we hope will happen, is becoming the past. We are also aware that the future does not exist, but that it is a projection of our hopes that something will happen. When we talk about the past, we most frequently do so in categories of pleasant and unpleasant memories. Hoping that our future will happen, and under the influence of past experiences, we enjoy, rejoice, and love what we have or we helplessly wait to see what destiny has in store for us.

The formation of a certain time perspective is largely influenced by a variety of factors, among which one has a special place: the culture in which an individual grows, develops, and lives. In the last ten years, scientists the world over have shown interest in studying the relationship between factors of culture and time perspective. The goal of perennial research conducted by Sircova and her associates as part of an adaptation of the Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999) was to check the factor structures of time perspective in 22 cul-

tures. The results of this research were presented at the International Congress of Cross-Cultural Psychology in Melbourne, Australia, in 2010 (Sircova et al., 2010). Besides checking the existence of the dimensions obtained by using the ZTPI in theses cultures, the researchers compared their results in the given cultures, which enabled a realization of future cross-cultural research. The results show that there is an equality of time perspective structure in all examined cultures, including Serbian. This leads us directly into our study relating procrastination and time perspective.

Our Study on Time Perspective and Procrastination

The main goal of our cross-cultural study on procrastination was to check the structure of the relation between a tendency to general procrastination and time perspective among students in Serbia. The research was to establish whether time perspective has s an influence on procrastination among students, and if so, what its intensity and quality are. Would the results confirm that an orientation toward future strongly determines students' efficiency—that is, low tendency to procrastination? Are happy memories of the past and enjoyment of the present factors influencing low procrastination? Will dealing with negative events from the past, lamenting over one's one destiny and external locus of control turn out to be significant predictors of higher levels of procrastination? Will the results of a sample of students from Serbia differ from the results mentioned by Diaz-Morales and Ferrari (2015) and Sirois (2014)? The study utilized structural modeling (Fajgelj, 2012) with one exogenous variable (time perspective) and one endogenous variable (academic procrastination). It was developed into a draft with five exogenous variables (Past-positive, Past-negative, Present-hedonistic, Present-fatalistic, and Future) and one endogenous variable (academic procrastination). All the assumed connections among the variables are recursive and predictive.

The development of a relationship to time starts at the age of 4 (Zimbardo & Boyd, 2008), a finding supported by the results of the Marchmellow experiment (Mischel, 1972). In Zimbardo's (Zimbardo & Boyd, 2008) theory of time perspective, one of the key postulates is the

change of that relation to time. Why would that be important? Students enroll at a certain school for personal reasons—that is, motivation. The way they will manage and spend their time will largely determine their efficiency and success during their studies. Some students will intensively plan their future, while others indulge in pleasures and enjoy the moment, whereas a third group will be afraid of making fast progress, completing the work, or growing up.

To assess the suitability of the model—that is, to check whether the model fits the empirical data—the following indices were used: normed chi-square, which represents the quotient of chi-square and the degree of freedom (χ^2/df), which should not be over 3 for the optimal fitting of the model and the empirical data; and an incremental index of comparative fitting, CFI, which should be close to 0.95 and the absolute index of suitability, the square root of average quadrated approximation mistake, RMSE, which indicates a good fit when it is not over 0.05 (Barrett, 2007; Hu & Bentler, 1999). The modification of the fitting index was used so as to explore all the additional pathways or covariance mistakes, which can significantly improve the model adjustment.

The final sample in this study was 1299 university students, with 68% females and 32% males, and a mean age of 22.22. The age structure was distributed in such a way that 96.6% of the students were not older than 29 years. The interviewees provided the information whether they had enrolled at some other school before; if they had, they indicated whether they finished or postponed finishing "for some other time." Of 100% of the interviewees, 12.1% had studied at some other school before; 63.9% sought their second chance at the Faculty of Legal and Business Studies (private faculty), while the remaining 35.1% enrolled at state faculties. Of the total percentage of the interviewees who did not finish at the previous school (89.9%), 65.7% had enrolled at private schools and 34.3% had enrolled at state schools. Preliminary results indicated that the information regarding previously enrolled schools was not relevant for the subject of this research, since it showed no difference as far as proneness to procrastination is concerned.

Several instruments were utilized. Diaz-Morales and Ferrari (2015) have discussed different measurements of procrastination. One measurement is Lay's General Procrastination Scale (Lay, 1986), and this psychological test

Table 13.1 Correlations between general procratination and time perspective dimensions

	Past-negative	Present-hedonistic	Future	Past-positive	Present-fatalistic
General procrastination	0.300**	0.141**	−0.511**	−0.106**	0.206**

**significance at level 0.01

was used in operationalization of general procrastination in Serbian students. The questionnaire consisted of 20 items with a five-level answer scale. In the research conducted in 2006 on the Spanish sample (Díaz-Morales, Ferrari, Díaz, & Argumedo, 2006), Cronbach's scale reliability coefficient was $\alpha = 0.84$. The test reliability on our sample was $\alpha = 0.82$. Time perspective dimensions were operationalized by the ZTPI (Zimbardo & Boyd, 1999), consisting of 56 items that measure the interviewee's beliefs, preferences, and values, which refer to temporal experience. The overall questionnaire reliability on our sample was 0.74.

Table 13.1 shows that the obtained correlations between proneness to general procrastination in students and five dimensions of time perspective are statistically significant. All correlations are low all except for Future time perspective and general procrastion, which is moderate.

In summary, our assumed integrative model did not possess good suitability indices. To improve it, we modified it by eliminating and introducing paths of several direct influences in relation to academic procrastination, as well as other variables in the model. The model that fulfilled the statistical criteria for a good model has the following fitting indices: $\chi^2/df = 2889$, CFI = 0.992, RMSEA = 0.038. This model accounts for 36.0% of academic procrastination variance.

The standardized overall direct effects of the predictor variables on academic procrastination were as follows: Past-negative (0.249), Present-hedonistic (0.177), and Future (−0.456). Future orientation has the highest overall effect on academic procrastination, followed by Past-negative and Present-hedonistic. These findings can be due to the specificity of the student sample, since in earlier research by Sircova and Mitina (2007) the dominant time perspective was also Present-hedonistic.

Understanding Time Perspective and Procrastination

Considering the definition of time perspective, Zimbardo and Boyd (1999) state that it often represents an unconscious personal attitude that every one of us has toward time, thanks to which a continual course of existence is placed into time categories (past, present, future) that give our lives order, connection, harmony, and meaning (Kostić, Nedeljković, & Gavrilović, 2011). The research confirmed a significant influence of these three time dimensions on academic procrastination. Although it was negative, the Future dimension had the strongest influence. To explain this finding, we looked at the characteristics of persons oriented toward the future: higher ego control, higher curiosity, stability, higher than average marks, more study hours, higher dependence on rewards, higher self-confidence, lower anxiety. If these characteristics are compared to the ones of persons prone to postponing things—and therefore academically inefficient—it becomes clear that they must have a low score on the Future dimension. The characteristics of a procrastinator, such as higher anxiety, higher depression, low self-confidence, lack of interest in rewards, bad time planning, low self-efficiency, low self-esteem, low motivation, low expectations, and a lack of future goals, thus, directly prevents the Future orientation.

The Past-negative orientation influences academic procrastination as well. Zimbardo and Boyd (1999) distinguish two possible approaches, positive and negative. We know that the experience of time is shaped by the emotional state and a relative significance given, in this case, to what happens. A focus on negative personal past experiences is still able to upset, causing feelings of bitterness and sorrow. Past-negative orientation cannnot arouse positive emotions in a person who remembers traumatic deprivation and dissatisfaction, the parents' cold or rejecting attitude, and their unavailability and inconsistency, or possibly abuse. However, bad and unfavorable circumstances of growing up are not always responsible for a negative attitude toward the past. Sometimes it is a negative reconstruction of past events that provokes a negative attitude toward the past.

Most scientists believe that a dominant time perspective is largely learned in early childhood, almost parallel with the development of dominant affective pattern, which enables the child's interaction in a close

time framework. The characteristics of a person with a negative attitude toward past are similar to the characteristics determined in a procrastinator. In fact, those are the characteristics referencing energy potentials that are not large, emotional stability that is not on a high level, impulse control that could be better, and a low level of self-respect. All these characteristics are common for people who have a negative attitude toward the past and for those who are prone to procrastination.

Some causes of procrastination should be probably located in the past. Could it be that traumatic experiences in the past that are still connected with negative emotions such as fear, sadness, disappointment, or shame hide serious reasons for procrastination in the present? Could it be that earlier failures influenced the development of a defensive way of behavior that is characteristic for procrastinators, and that entails avoiding and postponing the beginning of present activities? Although no one can claim that a person's memories of the past are absolutely reliable, the research (Zimbardo & Boyd, 1999, p. 87) shows that an attitude toward the past has a significant influence on a person's way of thinking and behaving and on present efficiency.

Although the weakest, the influence of the Present-hedonistic time dimension on academic procrastination was also significant. Hedonistically oriented persons usually tend to provide for themselves as much comfort and pleasure as possible, while trying at the same time to avoid situations requiring a lot of effort, continuous work on something, or giving up present excitement. Their higher energy is directed toward activities that satisfy their intrinsic need for the new, exciting, and pleasant, whereas their uncontrolled and weak ego, as well as insufficient persistence, hinders any kind of serious academic activity. Therefore, it is understandable that a higher-level of hedonistic orientation toward the present jeopardizes and significantly decreases the level of efficient and productive activity.

In assessing whether the time perspective dimensions are good predictors of intentional postponing of the beginning of an activity and work on assignment, we tried to explain not everyday procrastination but, rather, "situational-academic procrastination" (Ferrari, 2010). One of the ways to understand why people procrastinate, despite the fact that they face discomfort, anxiety, and sadness, is to consider their attitude toward

time. It turned out that procrastination was negatively correlated with an orientation toward the future, as well as with a negative attitude toward the past.

Conclusion

A structural model of the time perspective and procrastination has confirmed the dominant role of a Future time perspective in low procrastination on the sample of students from Serbia. The obtained results are in accordance with results obtained by Diaz-Morales and Ferrari (2015) and Sirois (2014). The result of this study, that students with higher Past-negative and Present-fatalistic time perspectives procrastinate more is, also, in accordance with the results of the mentioned research by Diaz-Morales and Ferrari (2015) and Sirois (2014). The results on the sample of Serbian students differ only in regard to the Past-positive time perspective, which negatively correlates with procrastination. Beautiful memories and planning for the future result in students being more efficient and in postponing less their school obligations.

Notes

1. The chapter has been taken from the Unpublished Ph.D. thesis, An Integrative Model of Psychological Predictors of Academic Procrastination, author Jasmina Nedeljković (2012).
2. The chapter has been taken from the Unpublished Ph.D. thesis, An Integrative Model of Psychological Predictors of Academic Procrastination, author Jasmina Nedeljković (2012).
3. The chapter has been taken from the Unpublished Ph.D. thesis, An Integrative Model of Psychological Predictors of Academic Procrastination, author Jasmina Nedeljković (2012).
4. The chapter has been taken from the Unpublished Ph.D. thesis, An Integrative Model of Psychological Predictors of Academic Procrastination, author Jasmina Nedeljković (2012).
5. The chapter has been taken from the Unpublished Ph.D. thesis, An Integrative Model of Psychological Predictors of Academic Procrastination, author Jasmina Nedeljković (2012).

References

Ackerman, D. S., & Gross, B. L. (2005). My instructor made me do it: Task characteristics of procrastination. *Journal of Marketing Education*, *27*, 5–13.

Amabile, T. M., & Gitomer, J. (1984). Children's artistic creativity: Effects of choice in task materials. *Personality and Social Psychology Bulletin*, *10*, 209–215.

Amabile, T. M., Hennessey, B. A., & Grossman, B. S. (1986). Social influences on creativity: The effects of contracted-for rewards. *Journal of Personality and Social Psychology*, *50*, 14–23.

Ariely, D., & Wertenbroch, K. (2002). Procrastination, deadlines, and performance: Self-control by precommitment. *Psychological Science*, *13*(3), 219–224.

Avizer, O., Sagi, A., Resnick, G., & Gini, M. (2002). School competence in young adolescence: Links to early attachment relationships beyond concurrent self—Perceived competence and representations of relationships. *International Journal of Behavioral Development*, *26*(5), 397–409.

Barrett, P. (2007). Structural equation modeling: Adjudging model fit. *Personality and Individual Differences*, *42*(5), 815–824.

Bernstein, P. (1998). *Against the gods: The remarkable story of risk*. New York: Wiley.

Blatt, S. J., & Quinlan, P. (1967). Punctual and procrastinating students: A study of temporal parameters. *Journal of Consulting Psychology*, *31*, 169–174.

Burka, J., & Yuen, L. (2008). *Procrastination: Why you do it, what to do about it*. USA: Da Capo Press.

Burns, L. R., Dittmann, K., Nguyen, N., & Mitchelson, J. K. (2000). Academic procrastination, perfectionism, and control: Associations with vigilant and avoidant coping. *Journal of Social Behavior and Personality.*, *15*(5), 35–46.

Chu, A. H., & Choi, J. N. (2005). Rethinking procrastination: Positive effects of "active" procrastination on attitudes and performance. *Journal of Social Psychology*, *145*, 245–264.

Diaz-Morales, J. F., & Ferrari, J. R. (2015). More time to procrastinators: The role of time perspective. In M. Stolarski, N. Fieulaine, & W. van Beck (Eds.), *Time perspective theory: Review, research and application: Essays in honor of Philip G. Zimbardo, part III* (pp. 305–321). Switzerland: Springer International Publishing. https://doi.org/10.1007/978-3-319-07368-2_20

Díaz-Morales, J. F., Ferrari, J. R., Díaz, K., & Argumedo, D. (2006). Factorial structure of three procrastination scales with a Spanish adult population. *European Journal of Psychological Assessment*, *22*(2), 132–137.

Elliot, R. (2002). *A ten-year study of procrastination stability*. Unpublished masters, University of Louisana, Monroe.

Ellis, A., & Knaus, W. J. (1977). *Overcoming procrastination*. New York: Signet Books.

Fajgelj, S. (1970). O subjektivnoj dimenziji vremena. *Naši dani*, Sarajevo. (On the Subjective Dimension of Time).

Fajgelj, S. (2012). *Metode istraživanja ponašanja [Behaviour research methods]*. V dopunjeno izdanje. Beograd: Centar za primenjenu psihologiju.

Fee, R. L., & Tangney, J. P. (2000). Procrastination: A means of avoiding shame and guilt. *Journal of Social Behaviour & Personality*, *15*(5), 167.

Ferrari, J. R. (1991). *Compulsive procrastination: Some self-reported characteristics*. Annual meeting of the Eastern Psychological Association (1990, Philadelphia, Pennsylvania), Psychological Reports, 68, 455–458.

Ferrari, J. R. (1992). Procrastination in the workplace: Attributions for failure among individuals with similar behavioral tendencies. *Personality and Individual Differences*, *13*, 315–319.

Ferrari, J. R. (1993). Procrastination and impulsiveness: Two sides of a coin? In W. G. McCown, J. L. Johnson, & M. B. Shure (Eds.), *Theimpulsive client: Theory, research, and treatment* (pp. 265–276). Washington: American Psychological Association.

Ferrari, J. R. (1998). Procrastination. In H. Friedman (Ed.), *Encyclopedia of mental health* (Vol. 3, pp. 281–287). San Diego, CA: Academic Press.

Ferrari, J. R. (2000). Procrastination and attention: Factor analysis of attention deficit, bordomness, intelligence, self-esteem and task delay frequencies. *Journal of Social Behavior and Personality*, *15*, 185–196.

Ferrari, J. R. (2001). Procrastination as self-regulation failure of performance. Effects of cognitive load, self-awareness, and time limits on 'working best under pressure. *European Journal of Personality*, *15*, 391–406.

Ferrari, J. R. (2010). *Still procrastinating? The no-regrets guide to getting it done*. Hoboken, NJ: John.

Ferrari, J. R., & Dovidio, J. F. (2000). Examining behavioral proceses in indecision: Decisional procrastination and decision-making style. *Journal of Research in Personality*, *34*, 127–137.

Ferrari, J. R., Johnson, J. L., & McCown, W. G. (1995). *Procrastination and task avoidance*. New York, NY: Plenum Press.

Ferrari, J. R., & Pychyl, T. A., eds. (2000). Procrastination: Current issues and new directions. [Special Issue] *Journal of Social Behavior and Personality, 15*(5), 225–238.

Ferrari, J. R., & Tice, D. M. (2000). Procrastination as a self-handicap for men and women: A task-avoidance strategy in a laboratory setting. *Journal of Research in Personality*, *34*(1), 73–83.

Hammer, C. A., & Ferrari, J. R. (2002). Differential incidence of procrastination between blue—And white-collar workers. *Current Psychology*, *21*, 334–338.

Harackiewicz, J. M., & Elliot, A. J. (1993). Achievement goals and intrinsic motivation. *Journal of Personality and Social Psychology*, *65*, 904–915.

Harriott, J., & Ferrari, J. R. (1996). Prevalence of procrastination among samples of adults. *Psychological Reports*, *78*, 611–616.

Haycock, L. A., McCarthy, P., & Skay, C. L. (1998). Procrastination in college students: The role of self-efficacy and anxiety. *Journal of Counseling and Development*, *76*, 317–324.

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology*, *60*(3), 456–470.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55.

Johnson, J. L., & Bloom, A. M. (1995). An analysis of the contribution of five factros of personality to variance in academic procrastination. *Personality and Individual Differences*, *18*, 127–133.

Kilbert, J. J., Langhinrichsen-Rohling, J., & Saito, M. (2005). Adaptive and maladaptive aspects of self-oriented versus socially prescribed perfectionism. *Journal of College Student Development*, *46*, 141–156.

Knaus, W. J. (2000). Procrastination, blame, and change. *Journal of Social Behavior and Personality*, *15*, 153–166.

Kostić, A., Nedeljković, J., & Gavrilović, D. (2011). Доминантна временска перспектива код Срба, 503–515. У: Божић, М., Митровић, Љ., Стојић, Г. (пр.)*Традиција, модернизација, идентитети*. Ниш: Филозофски факултет Универзитета у Нишу, Центар за социолошка истраживања, МБ Графика. ISBN 978–86–7379-214-9 COBISS.SR-ID 183949324 (Kostić, A., Nedeljković, J. & Gavrilović, D.: Domminant Time Perspective at Serbs).

Lay, C. H. (1986). At last, my research article on procrastination. *Journal of Research in Personality*, *20*, 474–495.

Lay, C. H., & Brokenshire, R. (1997). Conscientiousness, procrastination, and person-task characteristics in job searching by unemployed adults. *Current Psychology*, *16*, 83–96.

Lay, C. H., & Burns, P. (1991). Intentions and behavior in studying for an examination: The role of trait procrastination and its interaction with optimism. *Journal of Social Behavior & Personality*, *6*(3), 605–617.

Lonergan, J. M., & Maher, K. J. (2000). The relationship between job characteristics and workplace procrastination as moderated by locus of control. *Journal of Social Behavior and Personality*, *15*, 213–224.

McCown, W., Johnson, J., & Rupert, P. (1987). An experimental study of some hypothesized behaviors and personality variables of college student procrastination. *Personality and Individual Differences*, *8*, 781–786.

Milgram, N. (1991). Procrastination. In R. Dulbecco (Ed.), *Encyclopedia of human biology* (Vol. 6, pp. 149–155). New York: Academic Press.

Milgram, N. A., Sroloff, B., & Rosenbaum, M. (1988). The procrastination of everyday life. *Journal of Research in Personality*, *22*(2), 197–212.

Mischel, W. (1972). Stanford marshmallow experiment.

Nedeljković, J. (2012). *Integrativni model psiholoških prediktora akademske neefikasnosti. Neobjavljena Doktorska disertacija, odbranjena na Filozofskom fakultetu u Nišu. [An Integrative model of psychological predictors of academic procrastination]*. Unpublished Ph.D. thesis.

Nedeljkovic, J., & Kostic, A. (2013). *Procrastination and time perspective in Serbian students*. Paper presented at the 8th Biennial Procrastination Research Conference, Sherbrooke, QC.

Onwuegbuzie, A. J. (1999). Writing apprehension among graduate students: Its relationship to self-perceptions. *Psychological Reports*, *84*, 1034–1039.

Pychyl, T. A., Lee, J., Thibodeau, R., & Blunt, A. (2000). Five days of emotion: An experience-sampling study of undergraduate student procrastination. *Journal of Social Behavior and Personality*, *15*(5), 239–254.

Pychyl, T. A., Morin, R. W., & Salmon, B. R. (2000). Procrastination and the planning fallacy: An examination of the study habits of university students. *Journal of Social Behavior and Personality*, *15*(5), 135–150.

Reeve, J., & Deci, E. L. (1996). Elements within the competitive situation that affect intrinsic motivation. *Personality and Social Psychology Bulletin*, *22*, 24–33.

Rothblum, E. D., Solomon, L. J., & Murakami, J. (1986). Affective, cognitive, and behavioral differences between high and low procrastinators. *Journal of Counseling Psychology*, *33*, 387–394.

Scher, S. J., & Osterman, N. (2002). Procrastination, conscientiousness, anxiety, and goals: Exploring the measurement and correlates of procrastination among school-aged children. *Psychology in the Schools*, *39*, 385–398.

Schouwenburg, H. C. (1992). Procrastinators and fear of failure: An exploration of reasons for procrastination. *European Journal of Personality*, *6*, 225–236.

Schouwenburg, H. C., & Lay, C. H. (1995). Trait procrastination and the big five factors of personality. *Personality and Individual Differences*, *18*, 481–490.

Schraw, G., Wadkins, T., & Olafson, L. (2007). Doing the things we do: A grounded theory of academic procrastination. *Journal of Educational Psychology*, *99*(1), 12–25.

Senécal, C., Julien, E., & Guay, F. (2003). Role conflict and academic procrastination: A self-determination perspective. *European Journal of Social Psychology*, *33*(1), 135–145.

Senécal, C., Koestner, R., & Vallerand, R. J. (1995). Self-regulation and academic procrastination. *The Journal of Social Psychology*, *135*(5), 607–619.

Sigall, H., Kruglanski, A., & Fyock, J. (2000). Wishful thinking and procrastination. *Journal of Social Behavior & Personality*, *15*, 283–296.

Silver, M. (1974). Procrastination. *Centerpoint*, *1*, 49–54.

Sircova A., Van de Vijver, Osin E., Fieulaine N., Kislali-Erginbilgic A., Milfont T. L., & Zimbardo P. G. (2010). *The international time perspective research project: Introduction and preliminary data*. 20th Congress of the International Association for Cross-Cultural Psychology, Melbourne.

Sircova, A., & Mitina, O. B., idr., (2007). Феномен временной перспективы в разных культурах (по материалам исследований с помощью методики ZTPI). *КУЛЬТУРНО-ИСТОРИЧЕСКАЯ ПСИХОЛОГИЯ* 4/2007, 4.–P. 19–31. (Sircova, A. & Mitina, O.B.: Pfenomen of Time Perspective in Different Cultures).

Sirois, F. (2014). Out of sight, out of time? A meta-analytic investigation of procrastination and time perspective. *European Journal of Personality*. Published online in Wiley Online Library (wileyonlinelibrary.com) https://doi.org/10.1002/per.1947.

Sokolowska, J., & Zusho, A. (2006). *"Effective" procrastination strategies? Self-regulation of academic procrastination among high achievers*. Paper presented at the American Psychological Association Annual Convention, New Orleans.

Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology*, *31*(4), 503–509.

Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of self-regulatory failure. *Psychological Bulletin, 133*, 65–94. American Psychological Association, Washington, DC.

Steel, P., Brothen, T., & Wambach, C. (2001). Procrastination and personality, performance, and mood. *Personality and Individual Differences*, *30*, 95–106.

Tice, D. M., & Baumeister, R. F. (1997). Longitudinal study of procrastination, performance, stress, and health: The costs and benefits of dawdling. *Psychological Science*, *8*, 454–458.

Van Eerde, W. (2004). Procrastination in academic settings and the big five model of personality: A meta-analysis. In H. C. Schouwenburg, C. H. Lay, T. A. Pychyl, & J. R. Ferrari (Eds.), *Counseling the procrastinator in academic settings*., Chapter 3 (pp. 29–40). Washington, DC: American Psychological Association.

Waschull, S., & Kernis, M. (1996). Level and stability of self-esteem as predictors of children's intrinsic motivation and reasons for anger. *Personality and Social Psychology Bulletin*, *22*, 4–13.

Wolters, C. A. (2003). Understanding procrastination from a self-regulated learning perspective. *Journal of Educational Psychology*, *95*, 179–187.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-difference metric. *Journal of Personality and Social Psychology*, *77*, 1271–1288.

Zimbardo, P. G., & Boyd, J. N. (2008). *The time paradox, the new psychology of time that will change your life*. New York: Free Press; Simon & Schuster, Inc.

Zimmerman, B. J. (1995). Self-efficacy and educational development. In A. Bandura (Ed.), *Self—efficacy in changing societies* (pp. 202–231). Cambridge, UK: Cambridge University Press.

Jasmina Nedeljković is a psychologist. She is an assistant professor at the University Union, Belgrade, in the Department of Business Psychology, Faculty of Legal and Business Study de Lazar Vrkatić, Novi Sad, Republic of Serbia. She teaches courses in methodology and in advanced research methods of psychology. Her main research interests are causes and ways to overcome procrastination.

14

Putting Time into Time Perspective

Blaze Aylmer

Introduction

The role of time has gained growing scholarly attention across diverse literatures, including work teams (Bartel & Milliken, 2004; Gersick, 1988, 1989; Gibson, Waller, Carpenter, & Conte, 2008; Mohammed & Nadkarni, 2011; Roe, Gockel, & Meyer, 2012; Waller, Zellmer-Bruhn, & Giambatista, 2002), human resource management (Ployhart & Hale, 2014), leadership (Shamir, 2011), mistreatment in the workplace (Cole, Shipp, & Taylor, 2015), organizational commitment (Solinger, van Olffen, Roe, & Hofmans, 2013), personality development (Roberts, Wood, & Caspi, 2008), methodology (McGrath & Tschan, 2004; Ployhart & Vandenberg, 2010; Ployhart & Ward, 2011; Zaheer, Albert, & Zaheer, 1999), and theory development (Ancona, Goodman, Lawrence, & Tushman, 2001; Ancona, Okhuysen, & Perlow, 2001; Mitchell & James, 2001; Navarro, Roe, & Artiles, 2015; Roe, 2008; Roe, 2009;

B. Aylmer (✉)
Galway City Community Training Centre, Galway, Ireland

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_14

Whetten, 1989). Subsequently, scholars have argued that theory development and empirical findings that ignore the importance of time are incomplete, inaccurate (Cole et al., 2015), and timeless (Roe, 2008). Unfortunately, time perspective as a disposition has not attended to time, despite its namesake and therefore is open to the criticism of inadequacy.

The historical context of time perspective highlights conceptual confusion, measurement challenges, and overemphasis on the future. The development and validation of the Zimbardo Time Perspective Index has arguably addressed these issues and conceptualizes time perspective as a stable individual difference. *Time perspective* is defined as "the often nonconscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help to give order, coherence, and meaning to those events" (Zimbardo & Boyd, 1999, p. 1271).

In the study of time perspective as a disposition, albeit reflects time in name, the current body of knowledge remains inadequate and continues to accumulate in a timeless manner. That is, relationships between variables do not contain a reference to time (Roe, 2008). The neglect of time in time perspective shows that accumulated knowledge is grounded in existing conversations characterized by stability and temporal rhetoric. How can processes be studied using cross-sectional designs? Empirical findings grow on the basis of demonstrating time perspective's antecedents, and how it mediates, moderates, or predicts various outcomes across diverse literatures without attending to temporal considerations.

To address this inadequacy, it is time for time perspective researchers to join a new conversation located in the management and organizational psychology literature extoling the importance of time by conducting temporally sensitive research. Time perspectives are arguably adaptive and open to change; however, published studies providing descriptions of that change are very rare and are limited to pre- and post-test designs; they emphasize individual differences rather than within-person variability or change. These descriptions are central to intervention and clinical settings so that knowledge is actionable and clinicians and coaches know when to intervene. For example, what is the length of time needed for time perspectives to change, when do

relapses happen and what do these changes look like? From a theoretical perspective, how do time perspectives develop, are they influenced by maturation processes, do time perspectives become more or less difficult to change with age, do they unfold simultaneously with maturation processes, or do they lead or lag personality development? By remaining in existing conversations, the time perspective literature will remain timeless and inadequate.

The broad aim of this chapter is to shift consensus toward the importance of temporal considerations in time perspective research. The chapter is organized as follows: Firstly, the chapter briefly reviews time perspective literature and introduces a problematization framework to highlight current assumptions underpinning the time perspective literature. Secondly, the time perspective literature is evaluated using an epistemological and conversations lens to demonstrate sources of inadequacy. Thirdly, the chapter proposes some directions for future research and recommendations. Lastly, the chapter concludes.

A Review of the Literature

Zimbardo and Boyd (1999), through a series of iterations, developed what is currently known as the Zimbardo Time Perspective Index, or ZTPI. The dispositional approach they adopted to time perspective is regarded as context free, and researchers in this stream regard time perspective as a stable individual difference or disposition (Gupta, Hershey, & Gaur, 2012; McGrath & Tschan, 2004; Seginer, 2009). The dispositional approach to time perspective involves thinking, appraisal, and action (Seginer, 2009). The *thinking* element is represented by the extent to which individuals weigh the future consequences of present actions (Strathman, Gleicher, Boninger, & Edwards, 1994). *Appraisal* describes the extent to which individuals act to surmount obstacles blocking their pathway (Snyder et al., 1991), while *action* addresses planning, goal setting, and deadlines. The ZTPI was developed to measure time perspective in a valid and reliable way, and the authors identified five time perspectives: Future, Present-hedonism, Present-fatalism, Past-negative,

and Past-positive. The Future-time perspective is the most studied of all of the time perspectives (Boniwell, 2009). Future-oriented individuals, according to Zimbardo and Boyd (2008) tend to: obtain regular health and dental check-ups, be weight conscious, refrain from drinking, smoking, and drug taking, have pensions and medical insurance, are depressed less and are less likely to ruminate over past events, report higher levels of support from extended networks, take fewer risks, achieve higher grades, make more money, achieve higher education levels, make the best of difficult situations, and focus on long-term rather than short-term gains.

Present-hedonists tend to: live in the moment, crave excitement, take risks, and disregard the future consequences of present actions, develop addiction to drugs, and practice unsafe sex. They tend to be more aggressive, depressed, have more energy, and are less likely to wear a wristwatch. Present-fatalists tend to believe they have little control over events and tend to be more: shy, anxious, lie more, and have low self-esteem. Past-positive represents a nostalgic view of the past and is associated with friendliness, well-being, and low levels of depression, anxiousness, and aggression. Past-negative represents an aversive view of the past and is positively associated with gambling, lying, and stealing. Validation studies indicate mixed evidence that the factor structure of the ZTPI replicates across different cultures (Apostolidis & Fieulaine, 2004; Carelli, Wiberg, & Wiberg, 2011; Liniauskaité & Kairys, 2009; Milfont, Andrade, Belo, & Pessoa, 2008; Milfont & Gouveia, 2006; Shipp, Edwards, & Lambert, 2009; Worrell & Mello, 2007; Zimbardo & Boyd, 1999).

The 56-item scale has been translated into different languages and validated in various countries, and it continues to be the most valid and reliable way of assessing individual time perspectives (Wakefield, Homewood, Taylor, Mahmut, & Meiser, 2010). Researchers have attempted to shorten the scale, which resulted in poor psychometric properties (D'Alessio, Guarino, De, & Zimbardo, 2003; Wakefield et al., 2010). It appears that researchers are highly invested in expanding time perspective's nomological network, which is described as an interlocking system of laws that constitute a theory whereby theoretical constructs are related to other theoretical constructs and observed variables (Cronbach & Meehl, 1955). The purpose of expanding the nomological network is to learn more

about the construct (Cronbach & Meehl, 1955). The nomological network for time perspective has grown over time to show the relationships between time perspectives and various antecedents, outcomes, mediators, and moderators.

Antecedents of time perspectives include religion (Zimbardo & Boyd, 2008), education (Worrell & Mello, 2007), age and gender (Mello & Worrell, 2006; Milfont et al., 2008), life history trajectories (Dunkel & Weber, 2010), living in a stable family environment (Zimbardo & Boyd, 2008), social development environments (Kruger, Reischl, & Zimmerman, 2008), socioeconomic deprivation (Fieulaine & Apostolidis, 2007), serious illness (Martz & Livneh, 2007), attachment relations (Belsky, Steinberg, & Draper, 1991; Laghi, D'Alessio, Pallini, & Baiocco, 2008), identity commitment (Luyckx, Lens, Smits, & Goossens, 2010), mental time travel (Suddendorf & Corballis, 1997), and thinking about past, present, and future (Fortunato & Furey, 2010). Studies indicate that the five time perspectives predict a range of diverse outcomes. Future-time perspective is related to: physical and mental health (Daugherty & Brase, 2009), health protective behaviors such as taking exercise (Henson, Carey, Carey, & Maisto, 2006), and is instrumental in decisions to participate in diabetes screening (Crockett, Weinman, Hankins, & Marteau, 2009), taking the flu vaccine (Fieulaine & Martinez, 2009), protection against contracting HIV (Aronowitz, Rennells, & Todd, 2005; Rothspan & Read, 1996), and is predictive of social relations, psychological well-being, and level of independence among HIV patients (Préau, Apostolidis, Francois, Raffi, & Spire, 2007).

The Present and Past time perspectives are also related to health. Research shows a link between Present-hedonism and health-related behavior such as tobacco use, alcohol consumption, and a larger number of unprotected sexual encounters (Daugherty & Brase, 2009; MacKillop, Mattson, MacKillop, Castelda, & Donovick, 2007), as well as the frequency of calling to a health support service (Tucker, Blum, Xie, Roth, & Simpson, 2012). Health research has incorporated Past-negative and Present-fatalism to highlight relationships with seat belt use, condom use, and use of birth control (Henson et al., 2006), as well as number of lifetime sexual partners and the number of sexual partners over a six-month period (Rothspan & Read, 1996). Time perspective is related to

substance misuse (Apostolidis, Fieulaine, Simonin, & Rolland, 2006; Apostolidis, Fieulaine, & Soulé, 2006; Fieulaine & Martinez, 2010; Goldberg & Maslach, 1996; Keough, Zimbardo, & Boyd, 1999; Petry, Bickel, & Arnett, 1998; Pluck et al., 2008; Wills, Sandy, & Yaeger, 2001), gambling (Hodgins & Engel, 2002; MacKillop, Anderson, Castelda, Mattson, & Donovick, 2006a, 2006b), and addiction to online gaming (Lukavska, 2012). Time perspectives also predict a range of mental health outcomes such as: suicidal ideation (Laghi, Baiocco, D'Alessio, & Gurrieri, 2009; van Beek, Kerkof & Beekman, 2009), trait anxiety and depression (Anagnostopoulos & Griva, 2011; Wakefield et al., 2010), psychological distress (Fieulaine & Apostolidis, 2007; Holman & Silver, 2005), and psychopathology (van Beek, Berghuis, Kerkhof, & Beekman, 2011). Recent research investigating relationships between time perspective and the amount of time spent playing online games indicated a negative correlation with Future-time perspective and positive correlation with Present-fatalism (Lukavska, 2012).

Academic settings portray the importance of time perspective to academic outcomes, including academic achievement (Adelabu, 2007; Barber, Munz, Bagsby, & Grawitch, 2009; Mello & Worrell, 2006), academic engagement (Horstmanshof & Zimitat, 2007), achievement goals and study strategies (Phan, 2009), signing up for experiments (Harber, Zimbardo, & Boyd, 2003), procrastination (Díaz-Morales, Ferrari, & Cohen, 2008; Ferrari & Díaz-Morales, 2007), and the seriousness of academic cheating (Worrell & Mello, 2007). In general, Future-time perspective positively predicts academic outcomes, and these outcomes are negatively predicted by Present-time perspectives. The Future-time perspective is generally positively correlated with grade point average as a measure of academic achievement (Barber et al., 2009; Mello & Worrell, 2006; Zimbardo & Boyd, 1999), while Present-fatalism and Present-hedonism are significant and negative correlates of grade point average (Barber et al., 2009; Mello & Worrell, 2006; Worrell & Mello, 2007; Zimbardo & Boyd, 1999). Other diverse arenas of study report that Future-time perspective predicts water conservation (Corral-Verdugo, Fraijo-Sing, & Pinheiro, 2006) and is positively correlated with environmental preservation (Milfont & Gouveia, 2006); Future-time perspective also plays a key role in influencing attitudes and behav-

iors toward the environment (Milfont, Wilson, & Diniz, 2012). Investigators have examined relationships between time perspective and well-being (Zimbardo & Boniwell, 2004; Drake, Duncan, Sutherland, Abernethy, & Henry, 2008; Boniwell, 2009; Boniwell, Osin, Linley, & Ivanchenko, 2010) to show the importance of a Past-positive time perspective.

There is a growing awareness among researchers about the need to hold a balanced time perspective (BTP), which refers to one's ability to switch between different time perspectives depending on the situational demands (Zimbardo & Boniwell, 2004; Zimbardo & Boyd, 1999). The BTP is useful for monitoring time perspectives such as Past-negative and Present-fatalism (Zimbardo & Boyd, 2008). A BTP is characterized by moderately high scores on Present-hedonism and Future-time perspectives, low scores on Present-fatalism and Past-negative, and a high score on Past-positive (Zimbardo & Boyd, 2008). This research stream emphasizes calculation of the BTP (Zhang, Howell, & Stolarski, 2013), the relationship between the BTP and psychological constructs such as well-being (Drake et al., 2008), time perspective coaching interventions to improve productivity and well-being (Boniwell, 2014), and intervention research in clinical settings such as temporal therapy (Sword, Sword, Brunskill, & Zimbardo, 2013; Zimbardo, Sword, & Sword, 2012). A diverse literature using the ZTPI as a disposition has grown gradually since 1999. In Roe (2008), a classification of time in applied psychology suggests that research output in applied psychology is: (a) timeless, (b) methodologically temporal, (c) conceptually temporal, and (d) fully temporal. Timeless research is typified by cross-sectional designs where relationships between variables do not make any reference to time. Methodologically temporal research specifies the measurement occasions; usually a pre- and post-test design; conceptually temporal designs consider various time concepts such as sequence and rhythms; and fully temporal designs examine change over time, have multiple measurement occasions, and emphasize dynamic features such as onset, duration, and offset. Arguably, time perspective research represents a timeless body of literature because references to the temporal features underpinning its nomological network are virtually absent. It is time to put time into time

perspective by challenging current thinking using a problematization framework.

Problematizing the Time Perspective Research

Problematization is an "endeavour to know how, and to what extent it might be possible to think differently about what is already known" (Foucault, 1985, p. 9, cited in Alvesson & Sandberg, 2011, p. 253). To rally support for problematization, Alvesson and Sandberg (2011) present a typology of assumptions underpinning a field, such as in-house assumptions, root metaphors, paradigmatic assumptions, ideological assumptions, and field assumptions.

In-house assumptions apply to a specific school of thought, such as trait theories, which are constructs assumed to be traitlike. *Root metaphors* are used to describe the broader images of a topic and are used to conceptualize reality (Morgan, 1980). Ontological, epistemological, and methodological assumptions underpin specific literatures and these *paradigmatic assumptions* define the nature of reality and the methods of inquiry to study that reality—that is, these assumptions are paradigmatic in that they define a world view (Morgan, 1980). *Ideological assumptions* refer to political, moral, and gender-related assumptions relating to the subject matter. *Field assumptions* reflect wider beliefs about the subject matter that are held by different schools of thought within and occasionally across paradigms. By challenging the select assumptions underpinning a view, there may be a larger payoff relative to questioning a wide array of assumptions (Sandberg & Alvesson, 2011), and the assumptions selected for discussion here are in-house and paradigmatic assumptions.

In-House Assumptions

In-house assumptions hold that the dispositional view of time perspective is stable (Gibson et al., 2008; Waller, Conte, Gibson, & Carpenter, 2001), is described as a personality trait (Boniwell, 2009; Levy &

Earleywine, 2004; Milfont et al., 2008), is considered a dispositional style or individual difference variable, but is also considered a process (Zimbardo & Boyd, 1999). Evaluation of in-house assumptions shows that time perspective research emphasizes differential stability and views stability and change as mutually exclusive rather than coexisting, and this view has arisen for a number of reasons.

Stability has different meanings within the psychology literature (Taris, Bok, & Meijer, 1998); it refers to an enduring pattern of behavior that is inflexible and stable over time, (Lozenweger, Johnson, & Willet, 2004). The term *stability* is argued to be misleading and ambiguous because it denotes something that does not change (Roberts et al., 2008).

Roberts et al. (2008) classified stability and change into (1) differential continuity, (2) mean level change, (3) individual differences in change, (4) ipsative continuity, and (5) structural continuity. Differential continuity "refers to the consistency of individual differences within a sample over time, to the retention of an individual's relative place within a group" (Caspi & Roberts, 1999, p. 304). Differential continuity appears to receive most attention among time perspective researchers vis-à-vis test-retest reliability, which is a measure of sample stability over time (Nunnally & Bernstein, 1994; Terracciano, McCrae, & Costa, 2010), and is assessed by administering the same test to the same subjects at two points in time (Cronbach & Furby, 1970). Large retest coefficients are believed to indicate greater stability, or lack of change across time, or that all individuals changed in the same way because they all experienced a normative event; but the size of the coefficient is not informative about the underlying processes of stability and change.

Mean level change describes the extent to which the "average amount of the construct changes over time within a sample" (Fryer & Elliot, 2007, p. 702). Mean level change is analyzed by comparing means across measurement occasions, and is distinct from rank-order continuity (Trzesniewski, Robins, Roberts, & Caspi, 2004). Studies by Roberts and Del Vecchio (2000) and; Roberts et al. (2006) demonstrate both rank-order consistency and mean level change in personality to show that stability and change can coexist.

Ipsative continuity represents "the level of stability and change in an individual's configuration of constructs over time" (Fryer & Elliot, 2007,

p. 702). Ipsative continuity can be described in terms of the level, pattern, and scatter of scores. Changes in profile shape are measured using person-level Q correlations. A high Q correlation indicates stability across time in the individual's configuration of constructs. Scatter is measured using the within-person standard deviation, and a positive scatter coefficient indicates dispersal over time while a negative coefficient indicates that the profile dispersion declines over time.

Structural continuity describes the researcher's interest in the factor structure and pattern of correlations that persist among a set of variables. Sircova et al. (2014) found support for structural continuity of time perspective using cross-cultural research. Some studies appear to indicate four- to six-factor solutions (Anagnostopoulos & Griva, 2011; Carelli et al., 2011; Worrell & Mello, 2007), and attempts to shorten the ZTPI scale have resulted in a three-factor solution (D'Alessio et al., 2003). In-house assumptions view time perspectives as inherently stable, where the role of time is underplayed and stability and change are mutually exclusive.

Paradigmatic Assumptions

In Alvesson and Sandberg (2011), paradigmatic assumptions address ontological, epistemological, and methodological assumptions underpinning an existing literature.

Investigators undertake social science research within a set of paradigms. A *paradigm* "is a set of propositions that explain how the world is perceived; it contains a world view, a way of breaking down the complexity of the real world, telling researchers and social scientists in general what is important, what is legitimate, and what is reasonable" (Patton, 1990, p. 37). Ontological assumptions guide our beliefs of what constitutes reality, that there is an external reality independent of ourselves, or that reality is created by one's mind. Epistemology guides what researchers regard as acceptable knowledge and how it is acquired and transmitted. Ontology and epistemology encompass philosophical debate and are central paradigmatic assumptions. The paradigmatic

assumption of interest is the debate about stability and change or Being and Becoming.

The stability and change debate is important in time perspective and has its origins in early philosophical discussion between those who view the physical world as static (Being) and protagonists who describe the world as ever changing (Becoming). Being has its roots in philosophical perspectives of Aristotle and Plato, which suggests that the world consists of hard and unchanging substances that endure (Mesle, 2008). The unchanging Being forms the cornerstone of Western thinking, which seeks certainty in its scientific laws. Eleatics such as Parmenides denied the reality of change, regarded the past and future are illusions, and argued that objects either existed or did not, and that there was no temporal becoming or mediating stages of change. Parmenides attempted to eliminate time (Cornford, 1976) by denying temporal Becoming because temporal Becoming includes all change.

Heraclitus offered an alternative perspective and suggested that the only permanent reality is that of change, while permanence amounted to an illusion of the senses (Roeckelein, 2008). Temporal Becoming can be considered as the movement of the present in the direction of the future, or it refers to a "change in the ontological states of events from unactualized to actualized" (Riggs, 2007, p. 80). Heraclitus's thinking is embodied within process philosophy, which does not deny substance, but reconceptualizes substance as process (Rescher, 1996). Process philosophy stresses the centrality of time as passage and the becoming and perishing of events (Mesle, 2008). Within the social sciences, Being and Becoming are everywhere, and are conceptualized differently, and according to Harrison (2002, p. 12) "to say that nothing changes contradicts our experience." Being and Becoming are conceptualized in the context of the flow of time, with Being synonymous with the present, while Becoming is future oriented (Uprichard, 2008). In contrast to substance philosophy, process philosophy is preoccupied with the unfolding of human experience and can accommodate the future because the process and nature of reality implies that the present constitution of things will always project itself into an unrealized and open future (Rescher, 1996).

Paradigmatic assumptions also address epistemologies such as process and variance (Van de Ven, 2007). Variance-based approaches typically use variables, correlations, regressions, factor analysis, and SEM to investigate the antecedents and outcomes of time perspectives. Process-based perspectives "address questions about how and why things emerge, develop, grow or terminate over time." (Langley, Smallman, Tsoukas, & Van de Ven, 2013, p. 1), or onset, duration, and offset (Roe, 2008). In essence, process approaches are temporally sensitive, unlike variance approaches which treat time as static and compress processes into stable individual differences or process variables (Roe et al., 2012). Variance approaches constitutes normal science (Welch & Paavilainen-Mäntymäki, 2014) and underpin current time perspective research.

Paradigmatic assumptions indicate how researchers view the world, and under variance-based approaches, researchers study fixed entities with varying attributes. The varying attributes are captured through variables that are thought to reflect change in the entity, as variables are nested within the entity such as a person (Van de Ven, 2007). Researchers adopting a variance epistemology are interested in the relationship between variables, and the language of variance epistemology is grounded in nouns that reflect what *is* rather than what is *happening* (Roe, 2008). Different stages of the research process are underpinned by philosophical and epistemological assumptions such as theory construction, research design, measurement and empirical findings.

Theory construction under variance epistemology often proceeds on the basis of drawing boxes to represent constructs that are operationalized as variables and linked together by straight lines, after which directional hypothesis are suggested between dependent and independent variables. These hypothesis between variables do not reflect a process (Welch & Paavilainen-Mäntymäki, 2014), are not expressed in temporal terms (Roe et al., 2012), and the temporal sequence in which the independent variables interact with dependent variables is irrelevant (Van de Ven, 2007).

Research designs investigating time perspective's role are largely based on cross-sectional designs that produce a snapshot of the relationships between time perspective's antecedents and outcomes across a broad array

of domains. This type of research design does not provide any insights into time perspective as a nonconscious process. Instead, cross-sectional designs perpetuate timeless research that tells us nothing about how changes in time perspective unfold over a time interval.

Variance epistemologies emphasize variables that do not clearly delineate between within-person change over time and individual differences—that is, between-person differences whereby *what happens* is confused with *what is happening* (Roe, 2008). Roe (2008) argues that when measuring constructs, researchers assume that the behavior or attribute they wish to capture is present and that a value can be assigned to that attribute or behavior that captures them to a lesser or greater extent. The variable presents a static view that masks emergence, unfolding, relapsing, improving, declining and bifurcating, onset, duration, and offset (Roe, 2008).

Adopting a process epistemology invites a host of new research directions for time perspective in areas of coaching, clinical settings, and temporal research. A process is a "changing state of a subject defined with reference to a certain period of time" (Roe et al., 2012, p. 632), and process questions ask how time perspectives develop and unfold over time. How long does the effect of a time perspective intervention last? What is the duration of stability for each time perspective, and which time perspectives are least and most open to reversible or irreversible change? These questions are inherently temporal and challenge us in a variety of ways to produce actionable knowledge about time perspectives and their relationships to other constructs.

Theory construction under process epistemology directs us away from representing time perspectives as boxes related to other variables and toward trajectory-based descriptions of time perspectives showing the beginning of change, how change unfolds, and how it terminates over a time interval. We know that Past-positive time perspective is related to well-being and that Past-negative is related to depression, but how do these relationships unfold over time?

Time perspective is embedded within differential psychology, which is the study of interindividual variation or individual differences (Nesselroade, 2002). Under differential psychology, researchers develop

valid and reliable multi-item surveys that demonstrate appropriate psychometric properties. The very nature of reliability is to distinguish between people on a construct of interest rather than detecting change over time. A process perspective requires development of a temporally sensitive measure of change in time perspectives and individual time series data.

Empirical findings from process studies are actionable because they produce knowledge (Langley et al., 2013, p. 4). For example, from cross-sectional research we know that Past-negative and suicidal ideation are related, but do we know when to intervene to reduce Past-negative and suicidal ideation and how long it takes for Past-negative to decline following intervention? Research findings from static studies when examined in a dynamic manner can contradict the original findings or demonstrate insignificance (see, e.g.,Vancouver, Tamanini, & Yoder, 2010; Vancouver, Thompson, & Williams, 2001).

The basic assumption underpinning existing time perspective research is that there is factor structure equivalence at the within-and between-person level. Significant investment has been made in validating the five time perspectives presented in Zimbardo and Boyd (1999) using Confirmatory Factor Analysis (CFA), but are these five time perspectives present at the level of the individual? Alternatively, Dynamic Factor Analysis (DFA) can examine the within-person factor structure of the five time perspectives. Researchers can also use DFA to study autoregressive effects to examine the stability of time perspectives, carryover effects, and leads and lags.

To summarize, the vast majority of time perspective research is timeless, and demonstrates a commitment to a variance epistemology to extend time perspective's nomological network at the expense of a process approach. Researchers are invested in time perspective as stable, and there is little effort expended on longitudinal designs to explore questions of development and change. Further insights into these points can be gained from the interaction of two lenses: conversations and epistemologies to critique the current time perspective literature.

Conversations and Epistemology Lenses

Research using the ZTPI has grown considerably, and this literature can be classified using conversations and epistemologies to create a positioning matrix, shown in Fig.14.1. The conversations lens (Huff,1999, cited in Corley & Gioia, 2011), illustrates the current state of a literature and where it should go. The epistemological lens highlights the reliance on variance epistemology and the opportunity to consider process. The positioning matrix shows four quadrants: individual differences, rhetoric, long-term stability and change, and temporal research. The positioning matrix is built on the assumption that variance approaches can be used to inform process thinking (Van de Ven, 2007).

Variance and Existing–Individual Differences Quadrant

The vast majority of research using the dispositional view of time perspective falls into the category of individual differences—that is, time perspectives act as stable individual differences. In this category, researchers attempt to find another outcome, antecedent, mediator, and moderator or attempt to improve existing measures of time perspective. The category advocates an incremental approach to the growth of time

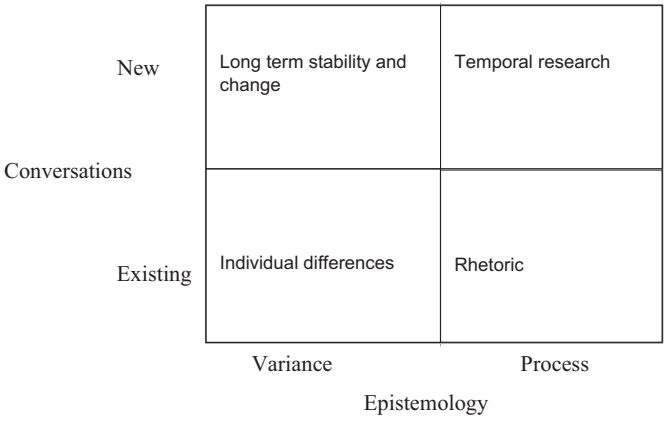

Fig. 14.1 Positioning matrix

perspective literature through gap spotting, which fails to challenge prevailing assumptions (Alvesson & Sandberg, 2011).

New lines of research in the existing and variance category arise through neglect spotting and application spotting. Neglect spotting can occur by identifying under-researched areas, application spotting, and identification of literature that lacks empirical support (Sandberg & Alvesson, 2011). A popular approach to extending time perspective research is application spotting whereby researchers spot an important role for time perspective that has been previously ignored (see Unger, Yan, & Busch, 2016). Existing conversations have focused on evaluation of the psychometric properties of the ZTPI (McKay et al., 2015; Worrell & Mello, 2007), scale development for use in different languages (Liniauskaité & Kairys, 2009), and shortening the scale (Wakefield et al., 2010).

Existing and Process—Rhetoric Quadrant

Existing conversations about change and development of time perspective are mainly rhetoric. The rhetoric quadrant shows the importance of studying time perspective, but excludes the role of time. Research in this quadrant argues for adaptability of time perspective and the importance of reducing Past-negative and Present-fatalism, which is an important feature of intervention research (Zimbardo & Boyd, 2008). Examples of rhetoric include discussions of process and change using cross-sectional designs. Currently, temporal therapy falls into this category, where changes in time perspective are discussed in terms of variables that do not describe the unfolding of within person change in time perspectives across therapy sessions. The balanced time perspective is also a case in point that is essential to optimal functioning (Zimbardo & Boniwell, 2004).

We know that time perspectives become unbalanced. What process descriptions do we have of unbalancing and rebalancing time perspectives? In this quadrant, reference is made to within-person processes that are studied using between-person measures and cross-sectional research designs, and such data are a poor substitute for evaluating within-person processes (Curran & Bauer, 2011). In effect, rhetoric indicates current

thinking rather than reflecting current practice, an observation that Roe et al. (2012) made in relation to the study of team processes using between-team measures.

The dispositional view of time perspective is conceptualized as a process that partitions our experience into categories of past, present, and future; and continued emphasis on variance approaches has resulted in a significant body of timeless research that tells us little of how time perspectives unfold in the context of our life experience. The individual differences and rhetoric categories are situated within research paradigms that show technological certainty—that is, there is agreement that certain methods and research questions will advance the field (Pfeffer, 1993)—and research in this category will not challenge that status quo which continues to produce more know-what knowledge.

Variance and New—Longer-Term Stability and Change Quadrant

New conversations push the research agenda toward process and variance thinking. Researchers are unclear about stability and change in time perspective across the life span. Personality development research shows that personality increases in rank-order consistency with age (Roberts & Del Vecchio, 2000), and shows normative change in early adulthood (Roberts, Caspi, & Moffitt, 2001), adulthood (Helson, Kwan, John, & Jones, 2002), and even into old age (Mroczek & Spiro, 2003). Currently, there is little research about stability and change in time perspective across longer time intervals or if change is possible in shorter time intervals. These observations are central to developing temporal knowledge about time perspective, such as when they change and what predicts those changes.

Under variance models, the principles of personality development may open new conversations about stability and change in time perspective. For example, the maturity principle states that people become more socially dominant, agreeable, and conscientious and emotionally stable between the ages of 18 and 26 (Roberts et al., 2001). Current methodological developments in latent difference score models may be used to

investigate leads and lags between time perspective changes and personality changes using the maturity hypothesis.

Variance approaches might be used to develop process thinking with time perspective interventions. For example, variance based models have shown that Past-negative and Present-fatalism time perspectives are positively related to suicidal ideation (Laghi et al., 2009). Unfortunately, time perspective research cannot explain how the emergence or growth in Present-fatalism and Past-negative are related to the emergence and growth of suicidal thoughts, which has implications for intervention.

New and Process—Temporal Research Quadrant

Process research requires an engagement with time in its various guises, designing temporally sensitive measures of time perspective, and adopting temporally sensitive designs to collect data at the desired intervals. In Solinger et al. (2013), the authors address these key issues in a study examining newcomer organizational commitment. The researchers developed a theory of change in commitment, adopted an intensive measurement design, and created a fast capture measure of organizational commitment with self-anchoring scales ranging from 0 to 100. The approach allowed respondents to create their own unfolding graphical descriptions of their organizational commitment over time. Individual trajectories were grouped using the Group Based Trajectory Model (Nagin, 2005) into hypothesized groups that describe various commitment trajectories. In a study of socialization among software developers, Wang and Bodner (2007) used Growth Mixture Models to depict different socialization trajectories that were then classified into four latent socialization classes.

In Zimbardo and Boyd (1999), the authors suggest that time perspective is influenced by social contexts such as school, family, and religion. We are socialized and learn about time in various contexts, and socialization is inherently processual (Ashforth, Harrison, & Sluss, 2014). Unfolding over time reflects process and Becoming, which is a dynamic interplay between a context and an individual whose potential is developing. Perhaps new lines of time perspective research might explore the

relationship between the socialization process in family or school contexts and the development of different time perspectives among adolescence, using ecological momentary assessment (Fisher & To, 2012) or Turning Point Analysis (TPA; Jansen & Hofman, cited in Ashforth et al., 2014, p. 31). TPA uses semi-structured interviews whereby study participants construct their own trajectories and provide reasons for the changes in the trajectory. Organizational research has paid little attention to time perspective and may provide fruitful direction for examining the relationship between the development of a predominant future time perspective and the unfolding of workaholism.

Psychotherapy settings can provide new insights for temporal research in time perspectives. Ramseyer, Kupper, Caspar, Znoj, and Tschacher (2014) introduce Time-Series Panel Analysis (TSPA) to capture unfolding processes across psychotherapy sessions to produce ideographic descriptions of change that can be aggregated to the group level of analysis. Time perspective research can join an array of conversations, but there is an urgent need to shift consensus toward process studies that can validate or critique variance based knowledge.

Further Guidance and Recommendations

Table 14.1 provides guidance on future research directions to address the inadequacy in current time perspective research. These suggested approaches require a mind shift toward the incorporation of temporal features, the questioning of paradigmatic and in-house assumptions, the opening of a new measurement debate toward ideographic measurement, and the use of more advanced statistical modeling.

There is a wider appreciation of the importance of time, and it is both appropriate and timely for time perspective to join the debate. This chapter has argued that the current static view of time perspective is inadequate and that there is merit in adopting a more temporally sensitive approach to time perspective. A temporally sensitive approach may begin with a theoretical justification for stability and change in time perspectives that clearly articulates the time scales underpinning these theories. More longitudinal research is needed to investigate short-term and long-

Table 14.1 How to apply a temporal lens to time perspective research: Guidance on further directions

Checklist item	Reasons for importance	Key implementation considerations	Guiding theoretical framework	Guiding temporal frameworks
Q1. I want to conduct a longitudinal study of time perspective using objective (clock time) time to examine stability and change. What now?				
What is the purpose of the study?	Study of long-term and short-term change and stability in time perspective Understand how time perspectives develop with age Identify within- and between- person variations in time perspectives.	Appropriate temporal design. Use of measurement bursts (Sliwinski, 2008).	Personality development principles, plasticity principle (Roberts & Wood, 2006). Life span development (Baltes, Reese, & Lipsitt, 1980).	Radical Temporalist Perspective-Onset-duration-offset (Roe, 2008). Timescales (Zaheer et al., 1999). Temporal design (Collins, 2006; Collins & Graham, 2002).
Q2. I want to conduct a study to explore when and how time perspectives change using objective time. What now?				
Conceptualize change (graphically)	Construct hypotheses about the form of change that make predictions falsifiable. Develop a theory of change for time perspectives that will inform future research.	Measurement of Change: reliable measures may not capture change. Shift toward developing dynamic measures of time perspective. Number of measurement occasions commensurate with form of change.	Personality development principles: Maturity principle and social investment principle (Roberts & Wood, 2006).	Radical Temporalist Perspective-Onset-duration-offset (Roe, 2008). Measuring change (Collins & Sayer, 2000).

(*continued*)

Table 14.1 (continued)

Checklist item	Reasons for importance	Key implementation considerations	Guiding theoretical framework	Guiding temporal frameworks
Q3. I want to conduct a study to examine time perspective trajectories for clinical settings. What now?				
To investigate the possibility of subgroups in clinical settings that demonstrate different trajectory types following intervention.	Gain an understanding of how individual time perspectives change in clinical settings and classify the change trajectories into different groups.	Intensive time series. Suitable measures of time perspective that detect change. Stationary Time Series needed.	Temporal therapy (Zimbardo et al., 2012). Balanced Time Perspective (Drake et al., 2008). Dynamic Systems Theory.	Role of time in theory (George & Jones, 2000; Mitchell & James, 2001). Radical Temporalist Perspective-Onset-duration-offset (Roe, 2008).
Q4. I want to conduct a study showing dynamic relationships between changes in time perspective and other constructs. What now?				
Investigate leads and lags between changes in time perspective and changes in hopelessness.	Develop a theory about leads and lags between changes in time perspectives and changes in other constructs such as suicidal ideation.	Establish a family of lags. Use dynamic factor models. Intra-individual measures of time perspective. Time-Series Panel Analysis. Turning Point Analysis.	Theory of hopelessness (Abramson et al., 2000). Socialization theory.	Gollob & Reichardt, 1987). Sonnentag, Pundt, & Albrecht, 2014).

Source: Adapted from (Cole et al., 2015)

term dynamics in time perspective using individual time series data. Although there is an ongoing measurement debate about time perspective, the debate needs to focus on developing temporally sensitive measures of change in time perspective. Time perspective researchers may problematize rather than find the next antecedent, outcome, mediator, or moderator of time perspective and begin to build a within-person nomological network. These recommendations require a shift in focus toward a process epistemology that is inherently temporal.

Conclusion

Shipp and Fried (2014) advocated a role for temporal ambassadors who bring ideas about time to specific research domains. In the spirit of this call, this chapter advocates for the inclusion of time in time perspective and to join new conversations about long-term stability and change and temporal research. The current focus on individual differences and cross-sectional designs produces a timeless body of research. Instead, researchers might consider the value of studying time perspective in a dynamic manner using different temporal frameworks to provide insights into the onset, duration, and offset of changes in various time perspectives, identifying which time perspectives are most and least adaptable or guiding the development of a theory of change in time perspectives across the life span and opening new measurement debates.

References

Abramson, L. Y., Alloy, L. B., Hogan, M. E., Whitehouse, W. G., Gibb, B. E., Hankin, B. L., … Cornette, M. M. (2000). The hopelessness theory of suicidality. In T. E. Joiner & M. D. Rudd (Eds.), *Suicide science: Expanding boundaries* (pp. 17–32). Boston: Kluwer Academic Publishing.

Adelabu, D. H. (2007). Time perspective and school membership as correlates to academic achievement among African American adolescents. *Adolescence*, *42*(167), 525–538.

Alvesson, M., & Sandberg, J. (2011). Generating research questions through problematization. *Academy of Management Review*, *36*(2), 247–271.

Anagnostopoulos, F., & Griva, F. (2011). Exploring time perspective in Greek young adults: Validation of the Zimbardo time perspective inventory and relationships with mental health indicators. *Social Indicators Research*, *106*, 1–19. https://doi.org/10.1007/s11205-011-9792-y

Ancona, D. G., Goodman, P. S., Lawrence, B. S., & Tushman, M. L. (2001). Time: A new research lens. *Academy of Management Review*, *26*(4), 645–563.

Ancona, D. G., Okhuysen, G. A., & Perlow, L. A. (2001). Taking time to integrate temporal research. *Academy of Management Review*, *26*(4), 512–529.

Apostolidis, T., & Fieulaine, N. (2004). Validation française de l'échelle de temporalité The Zimbardo Time Perspective Inventory (ZTPI). *Revue européenne de psychologie appliquée*, *54*, 207–217.

Apostolidis, T., Fieulaine, N., Simonin, L., & Rolland, G. (2006). Cannabis use, time perspective and risk perception: Evidence of a moderating effect. *Psychology & Health*, *21*(5), 571–592.

Apostolidis, T., Fieulaine, N., & Soulé, F. (2006). Future time perspective as predictor of cannabis use: Exploring the role of substance perception among French adolescents. *Addictive Behaviors*, *31*(12), 2339–2343.

Aronowitz, T., Rennells, R. E., & Todd, E. (2005). Heterosocial behaviors in early adolescent African American girls: The role of mother-daughter relationships. *Journal of Family Nursing*, *11*(2), 122–139. https://doi.org/10.1177/1074840705275466

Ashforth, B. E., Harrison, S. H., & Sluss, D. M. (2014). Becoming: The interaction of socialization and identity in organizations over time. In J. S. Abbie & F. Yitzhak (Eds.), *Time and work* (Vol. 2, pp. 11–39). New York: Psychology Press.

Baltes, P. B., Reese, H. W., & Lipsitt, L. P. (1980). Life span development psychology. *Annual Review of Psychology*, *31*, 65–110.

Barber, L. K., Munz, D. C. Bagsby, P. G., & Grawitch, M. J. (2009). When does time perspective matter? Self-control as a moderator between time perspective and academic achievement. *Personality and Individual Differences*, *46*(2), 250–253.

Bartel, C. A., & Milliken, F. J. (2004). Perceptions of time in work groups: Do members develop shared cognitions about their temporal demands? In S. Blount (Ed.), *Research on managing groups and teams* (Vol. 6, pp. 87–109). London: Elsevier.

Belsky, J., Steinberg L., & Draper, P. (1991). Childhood experience, interpersonal development, and reproductive strategy: An evolutionary theory of socialization. *Child Development*, *62*(4), 647–670.

Boniwell, I. (2009). Perspectives on time. In S. Lopez (Ed.), *Handbook of positive psychology* (pp. 295–302). New York: Oxford University Press.

Boniwell, I. (2014). Introducing time perspective coaching: A new approach to improve time management and enhance well-being. *International Journal of Evidence Based Coaching and Mentoring*, *2*(2), 24–40.

Boniwell, I., Osin, E., Linley, A. P., & Ivanchenko, G. V. (2010). A question of balance: Time perspective and well-being in British and Russian samples. *The Journal of Positive Psychology*, *5*(1), 24–40.

Carelli, M. G., Wiberg, B., & Wiberg, M. (2011). Development and construct validation of the Swedish Zimbardo time perspective inventory. European Journal of Psychological Assessment.

Caspi, A., & Roberts, B. W. (1999). Personality continuity and change across the life course. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 300–326). New York: Guilford Press.

Cole, M. S., Shipp, A. J., & Taylor, S. G. (2015). Viewing the interpersonal mistreatment literature through a temporal lens. *Organizational Psychology Review*. https://doi.org/10.1177/2041386615607095.

Collins, L. M. (2006). Analysis of longitudinal data: The integration of theoretical model, temporal design and statistical model. *Annual Review of Psychology*, *57*, 505–528.

Collins, L. M., & Graham, J. W. (2002). The effects of the timing and spacing of observations in longitudinal studies of tobaccao and other drug use: Temporal design considerations. *Drug and Alcohol Dependence*, *68*, S85–S96.

Collins, L. M., & Sayer, A. G. (2000). Modeling growth and change processes: Design, measurement and analysis for research in social psychology. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 478–495). New York: Cambridge University Press.

Corley, K., & Gioia, D. A. (2011). Building theory about theory building: What constitutes a theoretical contribution? *Academy of Management Review*, *36*(1), 12–32.

Cornford, F. M. (1976). The elimination of time by Parmenides. In C. Capek (Ed.), *The concepts of space and time* (pp. 137–145). Dordrecht: Reidel Publishing Company.

Corral-Verdugo, V., Fraijo-Sing, B., & Pinheiro, J.Q. (2006). Sustainable behavior and time perspective: Present, past, and future orientations and their relationship with water conservation behavior. *Interamerican Journal of Psychology*, *40*(2), 139–147.

Crockett, R. A., Weinman, J., Hankins, M., & Marteau, T. (2009). Time orientation and health-related behaviour: Measurement in general population samples. *Psychology & Health*, *24*(3), 333–350.

Cronbach, L. J., & Furby, L. (1970). How we should measure 'change': Or should we? *Psychological Bulletin*, *74*(1), 68–80.

Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, *52*(4), 281–302.

Curran, P. J., & Bauer, D. J. (2011). The disaggregation of within-person and between-person effects in longitudinal models of change. *Annual Review of Psychology*,*62*,583–619. https://doi.org/10.1146/annurev.psych.093008.100356

D'Alessio, M., Guarino, A., De Pascalis, V. & Zimbardo, P. G. (2003). Testing Zimbardo's stanford time perspective inventory (STPI) short form. *Time & Society*, *12*(2/3), 334–347.

Daugherty, J. R., & Brase, G. L. (2009). Taking time to be healthy: Predicting health behaviors with delay discounting and time perspective. *Personality and Individual Differences*, *48*(2), 202–207.

Díaz-Morales, J. F., Ferrari, J. R., & Cohen, J. R. (2008). Indecision and avoidant procrastination: The role of Morningness-Eveningness and time perspective in chronic delay lifestyles. *Journal of General Psychology*, *135*(3), 228–240.

Drake, L., Duncan, E., Sutherland, F., Abernethy, C., & Henry, C. (2008). Time perspective and correlates of wellbeing. *Time & Society*, *17*(1), 47–61.

Dunkel, C. S., & Weber, J. L. (2010). Using three levels of personality to predict time perspective. *Current Psychology*, *29*(2), 95–103.

Ferrari, J. R., & Díaz-Morales, J. F. (2007). Procrastination: Different time orientations reflect different motives. *Journal of Research in Personality*, *41*(3), 707–714.

Fieulaine, N., & Apostolidis, T. (2007). *Socioeconomic deprivation and psychological distress: Exploring the role of time perspective*. Working Paper. Université de Provence, France.

Fieulaine, N., & Martinez, F. (2009). *Does time perspective predict influenza vaccination? A longitudinal investigation among French Elderly.* Paper presented at the 11th European Congress of Psychology, Oslo, Norway.

Fieulaine, N., & Martinez, F. (2010). Time under control: Time perspective and desire for control in substance use. *Addictive Behaviors*, *35*(8), 799–802.

Fisher, C. D., & To, M. L. (2012). Using experience sampling methodology in organizational behavior. *Journal of Organizational Behavior*, *33*(7), 865–877. https://doi.org/10.1002/job.1803

Fortunato, V. J., & Furey, J. T. (2010). The theory of MindTime: The relationships between thinking perspective and time perspective. *Personality and Individual Differences*, *48*(4), 436–441.

Foucault, M. (1985). *The use of pleasure: The history of sexuality. Vol. II*. New York: Vintage.

Fryer, J.W., & Elliot, A. J. (2007). Stability and change in achievement goals. *Journal of Educational Psychology*, *99*(4), 700–714.

George, J. M., & Jones, G. R. (2000). The role of time in theory and theory building. *Journal of Management*, *26*(4), 657–684.

Gersick, C., J. G. (1988). Time an transition in work teams: Toward a new model of group development. *Academy of Management Journal*, *31*(1), 9–41.

Gersick, C., J. G. (1989). Marking time: Predictable transitions in task groups. *Academy of Management Journal*, *32*(2), 274–309.

Gibson, C. B., Waller, M. J., Carpenter, M. A., & Conte, J. M. (2008). Antecedents, consequences, and moderators of time perspective heterogeneity for knowledge management in MNO teams. *Journal of Organizational Behavior*, *28*(8), 1005–1034.

Goldberg, J., & Maslach, C. (1996). *Understanding the connections between the past and future.* Paper presented at the Annual Convention of the Western Psychological Association.

Gollob, H. F., & Reichardt, C. S. (1987). Taking account of time lags in causal models. *Child Development*, *58*(1), 80–92. https://doi.org/10.2307/1130293

Gupta, R., Hershey, D., & Gaur, J. (2012). Time perspective and procrastination in the workplace: An empirical investigation. *Current Psychology*, *31*(2), 195–211. https://doi.org/10.1007/s12144-012-9136-3

Harber, K. D., Zimbardo, P. G., & Boyd, J. N. (2003). Participant self-selection biases as a function of individual differences in time perspective. *Basic and Applied Social Psychology*, *25*(3), 255.

Harrison, E. (2002). On the physical nature of time. *KronoScope*, *2*, 9–19.

Helson, R., Kwan, V. S. Y., John, O. P., & Jones, C. (2002). The growing evidence for personality change in adulthood: Findings from research with personality inventories. *Journal of Research in Personality*, *36*(4), 287–306.

Henson, J. M., Carey, M. P., Carey, K. B., & Maisto, S. A. (2006). Associations among health behaviors and time perspective in young adults: Model testing with boot-strapping replication. *Journal of Behavioral Medicine*, *29*(2), 127–137.

Hodgins, D. C., & Engel, A. (2002). Future time perspective in pathological gamblers. *Journal of mental and nervous diseases*, *190*(11), 775–780.

Holman, E. A., & Silver, R. C. (2005). Future-oriented thinking and adjustment in a Nationwide longitudinal study following the September 11th terrorist attacks. *Motivation and Emotion*, *29*(4), 385–410.

Horstmanshof, L., & Zimitat, C. (2007). Future time orientation predicts academic engagement among first-year university students. *British Journal of Educational Psychology*, *77*(3), 703–718.

Huff, A. S. (1999). *Writing for scholarly publication*. Sage.

Keough, K. A., Zimbardo, P. G., & Boyd, J. N. (1999). Who's smoking, drinking, and using drugs? Time perspective as a predictor of substance use. *Basic and Applied Social Psychology*, *21*(2), 149–164.

Kruger, D. J., Reischl, T., & Zimmerman, M. A. (2008). Time perspective as a mechanism for functional developmental adaptation. *Journal of Social, Evolutionary & Cultural Psychology*, *2*(1), 1–22.

Laghi, F., Baiocco, R., D'Alessio, M., & Gurrieri, G. (2009). Suicidal ideation and time perspective in high school students. *European Psychiatry*, *24*(1), 41–46.

Laghi, F., D'Alessio, M., Pallini, S., & Baiocco, R. (2008). Attachment representations and time perspective in adolescence. *Social Indicators Research*, *90*(2), 181–194.

Langley, A. N. N., Smallman, C., Tsoukas, H., & Van de Ven, A. H. (2013). Process studies of change in organization and management: Unveiling temporality, activity, and flow. *Academy of Management Journal*, *56*(1), 1–13.

Levy, B., & Earleywine, M. (2004). Discriminating reinforcement expectancies for studying from future time perspective in the prediction of drinking problems. *Addictive Behaviors*, *29*(1), 181–190.

Liniauskaité, A., & Kairys, A. (2009). The Lithuanian version of the Zimbardo Time Perspective Inventory (ZTPI). *Psichologija*, *40*, 66–87.

Lozenweger, M. F., Johnson, M. D., & Willet, J. B. (2004). Individual growth curve analysis illuminates stability and change in personality disorder features: The longitudinal study of personality disorders. *Archives of General Psychiatry*, *61*, 1015–1024.

Lukavska, K. (2012). Time perspective as a predictor of massive multiplayer online role-playing game playing. *CyberPsychology, Behavior & Social Networking*, *15*(1), 50–54.

Luyckx, K., Lens, W., Smits, I., & Goossens, L. (2010). Time perspective and identity formation: Short-term longitudinal dynamics in college students. *International Journal of Behavioral Development*, *34*(3), 238–247.

MacKillop, J., Anderson, E. J., Castelda, B. A., Mattson, R. E., & Donovick, P. J. (2006a). Convergent validity of measures of cognitive distortions, impulsivity, and time perspective with pathological gambling. *Psychology of Addictive Behaviors*, *20*(1), 75–79.

MacKillop, J., Anderson, E. J., Castelda, B. A., Mattson, R. E., & Donovick, P. J. (2006b). Divergent validity of measures of cognitive distortions, impulsivity, and time perspective in pathological gambling. *Journal of Gambling Studies*, *22*(3), 339–354.

MacKillop, J., Mattson, R. E., MacKillop, E. J. A., Castelda, B. A., & Donovick, P. J. (2007). Multidimensional assessment of impulsivity in undergraduate hazardous drinkers and controls. *Journal of Studies on Alcohol and Drugs*, *68*(6), 785–788.

Martz, E., & Livneh, H. (2007). Do posttraumatic reactions predict future time perspective among people with insulin-dependent diabetes mellitus? *Rehabilitation Counseling Bulletin*, *50*(2), 87–98.

McGrath, J. E., & Tschan, F. (2004). *Temporal matters in social psychology*. American Psychological Association.

McKay, M. T., Worrell, F. C., Temple, E. C., Perry, J. L., Cole, J. C., & Mello, Z. R. (2015). Less is not always more: The case of the 36-item short form of the Zimbardo time perspective inventory. *Personality and Individual Differences*, *72*, 68–71. https://doi.org/10.1016/j.paid.2014.08.018

Mello, Z. R., & Worrell, F. C. (2006). The relationship of time perspective to age, gender, and academic achievement among academically talented adolescents. *Journal for the Education of the Gifted*, *29*(3), 271–289.

Mesle, R. (2008). *Process-relational-philosophy-introduction-Alfred-whitehead*. West Conshohocken, PA: Templeton Press.

Milfont, T. L., Andrade, P. R., Belo, R. P., & Pessoa, V. S. (2008). Testing the Zimbardo Time Perspective Inventory in a Brazilian sample. *Interamerican Journal of Psychology*, *42*, 49–58.

Milfont, T. L., & Gouveia, V. V. (2006). Time perspective and values: An exploratory study of their relations to environmental attitudes. *Journal of Environmental Psychology*, *26*, 72–82.

Milfont, T. L., Wilson, J., & Diniz, P. (2012). Time perspective and environmental engagement: A meta-analysis. *International Journal of Psychology*, *47*(5), 325–334. https://doi.org/10.1080/00207594.2011.647029

Mitchell, T. R., & James, L. R. (2001). Building better theory: Time and the specification of when things happen. *Academy of Management Review*, *26*(4), 530–547.

Mohammed, S., & Nadkarni, S. (2011). Temporal diversity and team performance: The moderating role of team temporal leadership. *Academy of Management Journal*, *54*(3), 489–508.

Morgan, G. (1980). Paradigms, metaphors, and puzzle solving in organization theory. *Administrative Science Quarterly*, *25*(4), 605–622.

Mroczek, D. K., & Spiro, A. (2003). Modeling intraindividual change in personality traits: Findings from the normative aging study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *58*(3), P153–P165. https://doi.org/10.1093/geronb/58.3.P153

Nagin, D. S. (2005). *Group-based modeling of development*. Cambridge, MA: Harvard University Press.

Navarro, J., Roe, R. A., & Artiles, M. I. (2015). Taking time seriously: Changing practices and perspectives in work/organizational psychology. *Revista de Psicología del Trabajo y de las Organizaciones*, *31*(3), 135–145. https://doi.org/10.1016/j.rpto.2015.07.002

Nesselroade, J. R. (2002). Elaborating the differential in differential psychology. *Multivariate Behavioral Research*, *37*(4), 543.

Nunnally, J. C., & Bernstein I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

Patton, M. (1990). *Qualitative evaluation and research methods*. Newbury Park, CA: Sage.

Petry, N. M., Bickel, W. K., & Arnett, M. (1998). Shortened time horizons and insensitivity to future consequences in heroin addicts. *Addiction*, *93*(5), 729–738.

Pfeffer, J. (1993). Barriers to the advance of organizational science: Paradigm development as a dependent variable. *Academy of Management Review*, *18*(4), 599–620.

Phan, H. P. (2009). Amalgamation of future time orientation, epistemological beliefs, achievement goals and study strategies: Empirical evidence established. *British Journal of Educational Psychology*, *79*(1), 155–173.

Ployhart, R., & Hale, D., Jr. (2014). Human resource management is out of time. In J. S. Abbie & F. Yitzhak (Eds.), *Time and work* (Vol. 2, pp. 76–96). New York: Psychology Press.

Ployhart, R. E. & Vandenberg, R. J. (2010). Longitudinal research: The theory, design, and analysis of change. *Journal of Management*, *36*(1), 94–120. https://doi.org/10.1177/0149206309352110

Ployhart, R., & Ward, A-K. (2011). The "quick start guide" for conducting and publishing longitudinal research. *Journal of Business and Psychology*, *26*(4), 413–422. https://doi.org/10.1007/s10869-011-9209-6

Pluck, G., Kwang-Hyuk, L., Lauder, H. E. Fox, J. M., Spence, S. A., & Parks, R. W. (2008). Time perspective, depression, and substance misuse among the homeless. *Journal of Psychology*, *142*(2), 159–168.

Préau, M., Apostolidis,T., Francois, C., Raffi, F., & Spire, B. (2007). Time perspective and quality of life among HIV-infected patients in the context of HAART. *AIDS Care*, *19*(4), 449–458.

Ramseyer, F. Kupper, Caspar, F., Znoj, H., & Tschacher, W. (2014). Time-series panel analysis (TSPA): Multivariate modeling of temporal associations in psychotherapy process. *Journal of Consulting and Clinical Psychology, 82*(5), 828–838. https://doi.org/10.1037/a003716810.1037/a0037168.supp (Supplemental).

Rescher, N. (1996). *Process metaphysics*. Albany: Suny.

Riggs P. J. (2007). Nowness and loss of meaning in tensed propositions. *KronoScope*, *7*(1), 79–83.

Roberts, B. W., Caspi, A., & Moffitt, T. E. (2001). The kids are alright: Growth and stability in personality development from adolescence to adulthood. *Journal of Personality and Social Psychology*, *81*(4), 670–683.

Roberts, B. W., & Del Vecchio, W. F. (2000). The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin*, *126*(1), 3–25.

Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin*, *132*(1), 1.

Roberts, B. W., & Wood, D. (2006). Personality development in the context of the neo-socioanalytic model of personality. In D. K. Mroczek & T. D. Little (Eds.), *Handbook of personality development* (pp. 11–39). Mahwah, NJ: Lawrence Erlbaum Associates.

Roberts, B. W., Wood, D., & Caspi, A. (2008). The development of personality traits in adulthood. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 375–398). New York, NY: Guilford.

Roe, R. A. (2008). Time in applied psychology: The study of 'what happens' rather than 'what is.' *European Psychologist*, *13*(1), 37–52.

Roe, R. A (2009). Perspectives on time and the chonometric study of what happens in organizations. In R. A. Roe, M. J. Waller, & S. R. Clegg (Eds.), *Time in organizational research* (pp. 291–313). New York: Routledge.

Roe, R. A., Gockel, C. & Meyer, B. (2012). Time and change in teams: Where we are and where we are moving. *European Journal of Work and Organizational Psychology*, *21*(5), 629–656. https://doi.org/10.1080/1359432x.2012.729821

Roeckelein, J. E. (2008). History of conceptions and accounts of time and early time perspection research. In S. Grondin (Ed.), *The psychology of time* (pp. 1–50). Bingley, UK: Elsevier.

Rothspan, S., & Read, S. J. (1996). Present versus future time perspective and HIV risk among heterosexual college students. *Health Psychology*, *15*(2), 131–134.

Sandberg, J., & Alvesson, M. (2011). Ways of constructing research questions: Gap-spotting or problematization? *Organization*, *18*(1), 23–44. https://doi.org/10.1177/1350508410372151

Seginer, R. (2009). *Future orientation*. New York: Springer.

Shamir, B. (2011). Leadership takes time: Some implications of (not) taking time seriously in leadership research. *The Leadership Quarterly*, *22*(2), 307–315. https://doi.org/10.1016/j.leaqua.2011.02.006

Shipp, A. J., Edwards, J. R., & Lambert, L. S. (2009). Conceptualization and measurement of temporal focus: The subjective experience of the past, present, and future. *Organizational Behavior and Human Decision Processes*, *110*(1), 1–22.

Shipp, A. J., & Fried, Y. (Eds.). (2014). *Time and work: How time impacts individuals* (Vol. 1). East Sussex, UK: Psychology Press.

Sircova, A., van de Vijver, F. J. R., Osin, E., Milfont, T. L., Fieulaine, N., Kislali-Erginbilgic, A. … Boyd, J. N. (2014). A global look at time. *SAGE Open*, *4*(1), 1–12. https://doi.org/10.1177/2158244013515686

Sliwinski, M. J. (2008). Measurement-burst designs for social health research. *Social and Personality Psychology Compass*, *2*(1), 245–261. https://doi.org/10.1111/j.1751-9004.2007.00043.x

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T … Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, *60*(4), 570–585.

Solinger, O. N., van Olffen, W., Roe, R. A., & Hofmans, J. (2013). On becoming (un) committed: A taxonomy and test of newcomer onboarding scenarios. *Organization Science, Articles in Advance*, 1–22. https://doi.org/10.1287/orsc.1120.0818

Sonnentag, S., Pundt, A., & Albrecht, A.-G. (2014). Temporal perspectives on job stress. In A. J. Shipp & F. Yitzhak (Eds.), *Time and work* (Vol. 2, pp. 111–140). New York: Psychology Press.

Ployhart, R. E., & Hale, D. Jr., (2014). Human resource management is out of time. In A. J. Shipp & Y. Fried (Eds.), Time and Work (Vol. 2, pp. 76-96). New York: Psychology Press.

Strathman, A., Gleicher, F., Boninger, D. S., & Edwards, C. S. (1994). The consideration of future consequences: Weighting immediate and distant outcomes of behaviour. *Journal of Personality and Social Psychology*, *66*(4), 742–752.

Suddendorf, T., & Corballis, M. C. (1997). Mental time travel and the evolution of the human mind. *Genetic, Social, and General Psychology Monographs*, *123*(2), 133.

Sword, R. M., Sword, R. K. M., Brunskill, S. R., & Zimbardo, P. G. (2013). Time perspective therapy: A new time-based metaphor therapy for PTSD. *Journal of Loss and Trauma*. https://doi.org/10.1080/15325024.2013.763632

Taris, T. W., Bok, I. A., & Meijer, Z. Y. (1998). Assessing stability and change of psychometric properties of a multi-items concept across different situations: A general approach. *The Journal of Psychology*, *132*(3), 301–316.

Terracciano, A., McCrae, R. R., & Costa, P. T., Jr. (2010). Intra-individual change in personality stability and age. *Journal of Research in Personality*, *44*(1), 31–37.

Trzesniewski, K. H., Robins, R. W., Roberts, B. W., & Caspi, A. (2004). Personality and self-esteem development across the lifespan. In P. T. Costa Jr. & I. C. Siegler (Eds.), *Recent advances in psychology and aging* (pp. 163–185). Amsterdam, The Netherlands: Elsevier Science.

Tucker, J. A., Blum, E. R., Xie, L., Roth, D. L., & Simpson, C. A. (2012). Interactive voice response self-monitoring to assess risk behaviors in rural substance users living with HIV/AIDS. AIDS and Behavior, *16*(2), 432–440

Unger, A., Yan, J., & Busch, R. (2016). The relationship between the Zimbardo time perspective inventory and violations of business ethics in China: Unbalanced time perspective increases the acceptance of unethical business behavior. *Time & Society*. https://doi.org/10.1177/0961463x16634723

Uprichard, E. (2008). Children as 'being and Becomings': Children, childhood and temporality. *Children & Society*, *22*(4), 303–313. https://doi.org/10.1111/j.1099-0860.2007.00110.x

van Beek, W., Kerkof, A., & Beekman, A. (2009). Future oriented group training for suicidal patients: A randomized clinical trial. *BMC Psychiatry*, *9*(65), 65–71.

van Beek, W., Berghuis, H., Kerkhof, A., & Beekman, A. (2011). Time perspective, personality and psychopathology: Zimbardo's time perspective inventory in psychiatry. Time & society, *20*(3), 364–374. https://doi.org/10.1177/0961463x10373960

Van de Ven, A. H. (2007). Engaged scholarship: A guide for organizational and social research. Oxford University Press on Demand.

Vancouver, J. B., Tamanini, K. B., & Yoder, R. J. (2010). Using dynamic computational models to reconnect theory and research: Socialization by the proactive newcomer as example. Journal of Management, *36*(3), 764–793. https://doi.org/10.1177/0149206308321550.

Vancouver, J. B., Thompson, C. M., & Williams, A. A. (2001). The changing signs in the relationships among self-efficacy, personal goals, and performance. Journal of Applied Psychology, *86*(4), 605.

Wakefield, C. E., Homewood, J., Taylor, A., Mahmut, M., & Meiser, B. (2010). Time perspective in hereditary cancer: Psychometric properties of a short form of the Zimbardo Time Perspective Inventory in a community and clinical sample. Genetic testing and molecular biomarkers, *14*(5), 617–627.

Waller, M. J., Conte, J. M., Gibson, C. B., & Carpenter, M. A. (2001). The effect of individual perceptions of deadlines on team performance. Academy of Management Review, *26*(4), 586–600.

Waller, M. J., Zellmer-Bruhn, M. E., & Giambatista, R. C. (2002). Watching the clock: Group pacing behavior under dynamic deadlines. Academy of Management Journal, *45*(5), 1046–1055.

Wang, M., & Bodner, T. E. (2007). Growth mixture modeling: Identifying and predicting unobserved subpopulations with longitudinal data. Organizational Research Methods, *10*(4), 635–656.

Welch, C., & Paavilainen-Mäntymäki, E. (2014). Putting process (back) in: research on the internationalization process of the firm. International Journal of Management Reviews, *16*(1), 2–23.

Whetten, D. A. (1989). What constitutes a theoretical contribution? Academy of Management Review, *14*(4), 490–495.

Wills, T. A., Sandy, J. M., & Yaeger, A. M. (2001).Time perspective and early-onset substance use: A model based on stress-coping theory. *Psychology of Addictive Behaviors*, *15*(2), 118–125.

Worrell, F. C., & Mello, Z. R. (2007). The reliability and validity of Zimbardo time perspective inventory scores in academically talented adolescents. *Educational and Psychological Measurement*, *67*(3), 487–504.

Zaheer, S., Albert, S., & Zaheer, A. (1999). Time scales and organizatonal theory. *Academy of Management Review*, *24*(4), 725–741.

Zhang, J., Howell, R., & Stolarski, M. (2013). Comparing Three Methods to Measure a Balanced Time Perspective: The Relationship Between a Balanced

Time Perspective and Subjective Well-Being. Journal of Happiness Studies, 14(1), 169–184. doi:10.1007/s10902-012-9322-x

Zimbardo, P. G., & Boniwell, I. (2004). Balancing One's Time perspective in pursuit of Optimal Functioning. In P. A. Linley, S (Ed.), Positive Psychology In Practice. New Jersey: Wiley.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting Time in Perspective : A valid, reliable individual differences metric. Journal of Applied Psychology, *77*(6), 1271–1288.

Zimbardo, P. G, & Boyd, J. N. (2008). *The time paradox*. New York: Free Press.

Zimbardo, P. G,. Sword R. M., & Sword, R. (2012). *The time cure*. San Francisco: Jossey Bass.

Blaze Aylmer completed his Ph.D. in Organizational Psychology at Dublin City University. He has held teaching posts at the University of Limerick, University College Dublin, and National University of Ireland Galway.

15

Future Orientation and Psychological Well-Being in Adolescence: Two Multiple-Step Models

Rachel Seginer

Introduction

Consider three only partly related topics. One topic relates to terms researchers employ to describe future thinking. An incomplete list consists of: *future orientation, future thinking, future time perspective, future self, futurism, futurity, considering future consequences, episodic foresight, life tasks, personal strivings, personal projects, possible selves, prospective memory, psychological future, vision*.

The second topic concerns the use of the *future* idiom in advertisement. A non-representative selection includes: "Don't wait for the future, go find it" (*The European*, 1994), "The future isn't something you travel

An earlier version of this paper was presented in the Biannual Conference of the German-Japanese Society for the Social Sciences. Bad Homburg, Germany, May 21–23, 2013, and was supported by the Werner ReimersStiftung.

R. Seginer (✉)
Department of Counselling and Human Development, University of Haifa, Haifa, Israel

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_15

to, it is something you build up" (*Wires*, *the Magazine of the Digital Society*, 1997), "Treat the earth well, it was not given to you by your parents, it was loaned to you by your children" (a Kenyan proverb, Independent Bureau of Humanitarian Issues in Support of the World Disarmament Campaign, 1997), "You never actually own a Patek Phillipe [watch], you merely look after it for the next generation" (Patek Phillipe company, 1999), "For a voyage to the future, we are looking for knowledgeable, visionary, ground breakers, dreamers, entrepreneurs and industrialists" (an Israeli agency, undisclosed name), and "Invest in children, invest in the future" (International MA Program in Child Development, University of Haifa, Israel, 2015).

The third topic pertains to the ancient roots of human awareness of the behavior-regulating function of future thinking. The oldest evidence comes from the clay tablets story of Gilgamesh dated to about 2750 B.C. (Mitchell, 2004), retold centuries later in the Old Testament. The scenarios differ and so do the protagonists, but the lesson is one: Mind the future, act accordingly, and you will save yourself, your family, and all living on earth. In the story of Gilgamesh, the survivor and savior is Utnapishtim, king of Shuruppak, who heard the whisper "King of Shuruppak, quickly, quickly, tear down your house and build a great ship, leave your possessions. Save your life" (Mitchell, 2004, p. 181). In the Old Testament version, he is Noah: "the Lord said unto Noah, Come though and all thy house.… For yet seven days and I will cause it to rain upon the earth" (Genesis 7:1–4).

Although future orientation is rooted in age-old wisdom, has persuasive power, and is applicable to different areas of psychology, research on future thinking is relatively recent. As commented by Allport, "People, it seems, are busy leading their lives into the future, whereas psychology, for the most part, is busy tracing them into the past." (1955, p. 51). Moreover, while future orientation is a regulator of behavior (Bandura, 2001), early stages of research examined its social and cultural covariations (Nurmi, 1987; Seginer, 1988; Trommsdorff, 1983) rather than its outcomes. Much of the research on the relationship between future thinking constructs and present behavior lagged behind and was published only later (De Volder & Lens, 1982, on future time perspective; Ruvolo & Markus, 1992 on possible selves; Seginer & Mahajna, 2012; Zimbardo & Boyd, 1999 on future orientation). The intrapersonal antecedents of future ori-

entation (Seginer, 2009) received even less attention. Thus, the aim of this chapter is to examine both its antecedents and its outcomes by particularly focusing on those indicating psychological well-being.

Given the multiple approaches to future orientation, the chapter begins with the conceptualization of future orientation used here. It continues with a short explication of psychological well-being, followed by the two hypotheses derived from the future orientation–psychological well-being relations and analyses supporting each, and it ends with a summary specifying directions for continued studies and research-based practices.

The Future Orientation

"Future orientation" is an umbrella concept. Researchers have examined the content ("content is an essential element of time perspective"; Nuttin & Lens, 1985, p. 23) and structure (how far into the future individuals project the self; Nuttin & Lens, 1985) of future orientation, or have conceptualized it as generalized attitudes (Worrell, Mello, & Buhl, 2011; Zimbardo & Boyd, 1999). Consequently, the term "future orientation" bears multiple meanings and varied conceptualizations assessed by different research tools. Nonetheless, common to all is the premise that future orientation is not about predicting the future but, rather, about the subjective images individuals hold about the future. In the conceptualization presented here, these images are expressed in terms of the *hopes* individuals have about the future and the *fears* they would rather avoid (Trommsdorff, 1983), subsumed under life domains relevant to age, gender, and cultural milieu, and analyzed in terms of unidimensional or three-component multiple-step constructs.

The Unidimensional Construct: Cognitive Representation of the Future

In the work presented here, future orientation is conceptualized as the subjective image individuals hold about the future. Underlying it is Lewin's premise that "regardless of whether the individual's picture of the

future is correct or incorrect at a given time, this picture deeply affects the mood and the action of the individual at that time" (1942/1948, pp. 103–104). Researchers in the 1950s and 1960s responded to their era's Zeitgeist of science responsibility to world interests. Thus, they drew only on the first part of Lewin's premise and devoted their research to describing how individuals from different sociocultural background represent the future.

Prompted by the belief that a common image of the future will draw people from different countries closer and thus maintain world peace, Gillespie and Allport (1955) conducted a cross-national study about young people's image of the future. The motivation of Cantril (1965), a sociologist, was similar. Believing in social scientists' obligation to inform the government about "what people want," he studied individuals' *concerns* about themselves and their nation. In Cantril's work, concerns were assessed by both hopes and fears. Although interested in description and not in its underlying theory, his distinction between hopes and fears corresponds to the psychological concepts of *approach* and *avoidance*, and thus expanded future orientation from a single to a two-indicator concept (Nurmi, 1991; Seginer, 2009; Trommsdorff, 1983).

Finally, drawing on James's (1910/1950) theory of self, and specifically on his idea of "potential selves," the unidimentional conceptualization developed by Markus termed *possible selves* "pertains to how individuals think about their potential and about their future." (Markus & Nurius, 1986, p. 954). Like Cantril's conceptualization and the subsequent work of future orientation researchers, possible selves have both a positive and a negative aspect. The positive is indicated by the ideal self (what a person would like to become) and by the real self (what she or he could become), and the negative by the feared self (what one is afraid of becoming).

Altogether, the unidimensional construct of future orientation focuses on the cognitive representation of the future as subjectively constructed by individuals. Although Lewin (1942/1948) described it as consisting of both the subjective representation and its motivational assets, researchers drawing on his work, as well as researchers drawing on James's self theory (Markus & Nurius, 1986), initially focused only on the cognitive representation.

Given their interest in the subjective representation of the future, empirical studies of the unidimensional construct have been assessing future orientation with an open-ended questionnaire asking respondents to write down their hopes for the future and their fears of the future. As detailed below, these narratives have been coded into a common set of future life domains (e.g., higher education, work and career, self concerns). The ratio between the number of domain narratives and total number of hopes and fears narratives, respectively, is the *density* score of each future life domain (Seginer, 2009).

Research carried out in Israel (Seginer, 1988; Seginer, 2009; Seginer & Halabi-Kheir, 1998) has shown that when asked to list their hopes and fears about the future, adolescents reared in diverse sociocultural milieus describe the future by relating to a common core of six life domains. Jewish secular and ultra-orthodox, urban and kibbutz, Muslim and Druze adolescents described the future in terms of education, work and career, marriage and family, self-concerns, others, and the collective. While the domains are similar, content and endorsement are culture-specific. Of particular relevance has been the tendency of Muslim adolescent girls to construct a future orientation that has a high density (i.e., relative representation) of higher education, and they express their desire for it vis-à-vis their concerns about overcoming the hurdles set by a yet-traditional society (Seginer, 1988). For example:

> I am worried about what happens after I graduate from high school. My father objects to the idea that I will continue with higher education. Therefore, I am afraid I will continue a useless life, unable to help my people. (Muslim girl)
>
> I have no specific hopes, and if I am allowed to choose I would choose many things, but at least hope to study medicine. (Muslim girl)

This finding—indicating the conflict between traditional values held by their families and community and Muslim girls' striving for education-based independence—has been stable across the years. Thus, Muslim girls list more hopes and fears about higher education and express them in more complex and rich way than do Muslim boys and Jewish secular girls and boys, for whom future options are open and attainable. In

comparison, Jewish girls write: "In the near future to graduate from high school with a good [grade] diploma." "At age 24 to be a university student."

The unidimensional approach and its assessment have had several advantages. The open-ended tool can easily be applied to respondents from different age groups, gender, cultures, and languages. The data yielded by the open-ended protocols consist of spontaneous responses that, despite their personal voice and culture-specific tone, are coded into common life domains. Consequently, this analysis maps the future life-space of individuals and groups, and reflects the meaning the future has for them, while also lending itself to group comparisons.

However, this approach also has conceptual and methodological limitations. Conceptually, the unidimensionality of the approach indicates narrowness. As hopes and fears of the future take up some of individuals' daily thoughts and guide human behavior and progress, a more complex, multidimensional construct is advised. Thus, a multidimensional construct, described below, has been developed (Seginer, 2009; Seginer, Nurmi, & Poole, 1991).

The Three-Component Model

The three-dimensional model evolved from the unidimensional model in two ways. One, given the importance of content for constructing future images, the three-dimensional model has preserved the thematic approach to future orientation, and took the cognitive representation approach as its starting point. Second, drawing on a basic premise that cognitive representation is induced by motivational forces and results in behavior, the expanded model, like that of Nurmi (1991), consists of three components. These components are: motivational, cognitive representation, and behavioral (Seginer, 2009; Seginer, Vermulst, & Shoyer, 2004). Together they form a multiple-step model in which the motivational component precedes the cognitive and the behavioral components, and the cognitive component precedes the behavioral component. As Fig. 15.1 shows, the three-component model consists of both theoretical (the three components) and empirical variables. The empirical variables indicating each of the three theoretical components are described below.

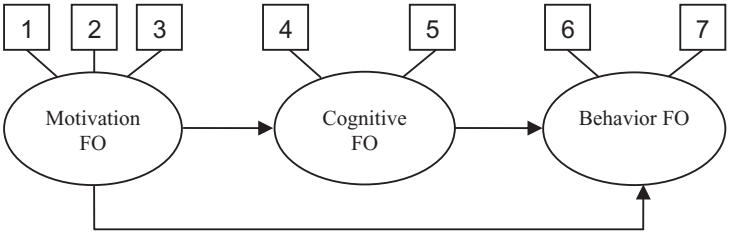

Fig. 15.1 The future orientation model. *1 = Value, 2 = Expectance, 3 = Internal Control, 4 = Hopes, 5 = Fears, 6 = Exploration, 7 = Commitment*

The motivational component. Drawing on motivation theory (Atkinson, 1964) and future orientation conceptualization (Nuttin & Lens, 1985; Trommsdorff, 1983), three empirical variables serve as indicators for this component: the *value* of the prospective life domain ("How do you evaluate your future education/career/ marriage?: important/useful…"); *expectance*, defined as the subjective probability that hopes and plans about a life domain will be materialized ("How likely is it that your education/career/marriage plans will be materialized?"); and the affective tone associated with each domain (feelings aroused: hope vs. despair, good vs. bad mood) (Carver & Scheier, 2002). The third is a sense of *internal control* pertaining to the person's responsibility for the materialization of future hopes and plans (Rotter, 1990) ("What effect will each of the factors listed below have on the realization of your plans about education/career/marriage?: Personal ability/personal effort/self esteem…").

The cognitive representation component. The cognitive representation component is described in detail in the unidimensional construct section. To briefly reiterate, this component relates the extent to which individuals think about the future. Thus, cognitive representation pertains to each future life domain in terms of both hopes and fears ("Thinking about the future, how often do you think hopefully/worry about each of the following issues?: My education/career/marriage").

The behavioral component. The conceptualization of this component draws on the work of Lewin and Erikson. *Exploration* relates to seeking information and advice regarding future options and testing how well they fit personal abilities and values, social expectations, and environ-

mental circumstances (Lewin, 1939) ("Which of the following things have you been doing now to get you closer to realizing your education/career/marriage plan?: Talking to people/checking whether this education/career/marriage fits me…"). *Commitment* consists of the decision to pursue one option and results in "a sense of knowing where one is going" (Erikson, 1968, p. 165) ("I have clear plans concerning my education/career/marriage"). Both add to the instrumentality of future orientation and guide the pursuit of future hopes, goals, and plans.

The importance of content: domain specificity. Drawing on the proposition that "time perspective … cannot be conceived independently of its content" (Nuttin & Lens, 1985, p. 23), the three-component model can be applied to each of several future life domains included in individuals' future life-space. Thus, as indicated above, the thematic quality of future orientation has been maintained in the three-component conceptualization.

Psychological Well-Being and Future Orientation

"Psychological well-being," like "future orientation," is an umbrella concept, subsuming a wide range of terms, indicators, and measures. While most often conceptualized as a subjective *positive* sense of self and, hence, indicated by self-report, it also has behavioral indicators and can be assessed by "objective" measures. Self-esteem, self-efficacy, self-empowerment and self-agency, and a sense of fulfilled universal psychological needs such as autonomy, competence, and relatedness (Deci & Ryan, 2000) are examples of self-reported indicators of well-being, subsumed under such overarching categories as *positive feelings* (Huppert & So, 2013) and *positive psychological functioning* (Ryff, 1989). Sense of accomplishment and sense of resilience, which are included in the *positive functioning* category, also have behavioral indications. School-reported academic achievement (Scales, Benson, Leffert, & Blyth, 2000) is a behavioral indicator of competence, and performing positive adaptation

in the face of adverse conditions and life hurdles consist of behavioral indicators of resilience (Masten, 2015).

Following this conceptual division, research conducted in Israel tested two directional relations: between the subjective sense of *positive self-feelings* and future orientation, and between future orientation and behavioral indicators of *positive functioning*, thus creating two multiple-step models, presented below. While sharing the understanding that development is the reflection of both present context and past history (Masten, 2015), in conceptualizing and assessing these two-direction relations the research focuses on the *present* and asks how intrapersonal characteristics relate to future orientation, and future orientation relates to behavioral indicators of positive functioning.

From Psychological Well-Being to Future Orientation

Examination of the effect of psychological well-being on future orientation takes two main directions. According to one, future orientation—particularly as it relates to optimism and euphoria—is an aspect of psychological well-being (Carver, Scheier, & Segerstrom, 2010; Melges, 1982). The second approach treats psychological well-being and future orientation as two separate constructs, contending that it is psychological health that allows individuals to concurrently think about the present and the future (Melges, 1982). To test it, we examined self-evaluation as one aspect of psychological well-being (Huppert & So, 2013).

The Self-Evaluation–Future Orientation Relation

The importance of the self draws on its three fundamental functions: to process significant interpersonal relationships, integrate it into existing self-concept, and guide behavior and psychological functioning (Harter, 2012; Seginer, 2009). A fourth function is specifically relevant to future orientation. As noted by Allport (1955), the self "helps us bring our view of the present into line with our view of the future" (p. 47).

In the work presented here, I relate to global self-evaluation, indicated by self-esteem, self-agency, and self-empowerment. Each of the three emphasizes a different aspect of self-evaluation. *Self-esteem* is "self-centered" consisting of self-respect and self-worth, and an overall sense of self-satisfaction (Rosenberg, 1979). *Self-agency* emphasizes a sense of self-dependence, control, and responsibility over the person's behavior. Thus, it consists of a sense of overall authorship over one's acts, thoughts, and emotions (Stern, 1985), and thus is particularly relevant for adolescents' sense of self-governance and responsibility, and their ensuing sense of self-value (Blos, 1966).

Self-empowerment, as the term indicates, emphasizes the person's striving to gain the strength needed to achieve a positive change (Zimmerman, 2000). Thus, it is particularly relevant to individuals who—for personal circumstances or cultural values—lack such power (Cattaneo & Chapman, 2010), and is especially applicable to youths growing up in traditional societies, such as Muslim adolescents in Israel.

The relation between self-esteem and future orientation was tested with two correlational designs. One (Seginer, 2009) analyzed the bivariate relations between self-esteem and hopes for the future among Israeli Jewish 2nd, 4th, and 6th graders. Its findings indicate that for children and pre-adolescents, the relation between self-esteem and cognitive representation of hopes for the future is relatively low. However, the relations between self-esteem and future orientation hopes grow with age from nonsignificant correlation for 2nd graders to significant and moderately higher correlations for 4th and 6th graders (r =.24 and .33, p <.05 and .01. respectively) (Seginer, 2005).

The second correlational design consisted of a multiple-step model, and thus multivariate. Employing this design, each of the self-evaluation indicators—self-esteem (Rosenberg, 1979), self-agency (Seginer et al., 2004), and self-empowerment (Seginer & Mahajna, 2012)—was linked to future orientation for one or more groups of respondents. The self-esteem–future orientation link was tested on Israeli Jewish 9th (Danziger, 2013) and 11th graders (Shoyer, 2006), and Israeli Druze 11th graders (Azzam, 2014). The self-agency–future orientation link was tested on ultra-orthodox Jewish adolescent girls (Seginer, 2009), and the

self-empowerment–future orientation link on Muslim adolescent girls in Israel (Seginer & Mahajna, 2012).

These multiple-step models were estimated by structural equation modeling. In each of the studies, self-evaluation indicators (i.e., self-esteem, self-agency, self-empowerment) preceded future orientation for each of three domains: higher education, work and career, and marriage and family. Results showed significant links between each self-evaluation indicator and the motivational component and indirect links (via the motivational component) between self-evaluation and the cognitive and behavioral components Thus, valuing themselves, adolescents also value the tasks they perform (value), and sense of self-esteem, self-agency, and self-empowerment prompt success expectations (expectance) and internal control attributions.

Critics may argue against the interpretation of correlational data as supporting the directional hypothesis that self-evaluation promotes future orientation, rather than a rival hypothesis predicting that future orientation promotes self-evaluation. Support for the validity of these results rests on three considerations. The first draws on the self theory premise about the importance of the self for guiding behavior and psychological functioning (James, 1890/1959; Harter, 2012) supported by empirical findings (Guo, Parker, Marsh, & Morin, 2015; Harter, 2012). The second is statistical analyses testing equivalent models (MacKinnon, 2008) showing that across several groups of Israeli adolescents (Druze, Muslim, secular Jewish girls and boys, and ultra-orthodox Jewish girls), the AIC and BIC fit indices are lowest for the hypothesized model—that is, the model in which self-evaluation precedes future orientation.[1]

The third consideration supporting the directional relation between self-esteem and future orientation draws on participants' responses to the open-ended hopes and fears questionnaires in which they express inner strength and self-reliance as a source of their plans for the future. Not surprisingly, reliance on inner strength is expressed mostly by Muslim, Druze, and Jewish lower-class girls who cannot rely on the support of their family and community to fulfill their hopes for the future. To illustrate:

> Sometimes I sit by myself imagining I am a married teacher with wonderful husband and children. I don't want much. I want only to have a respect-

able job so that I can be economically independent so that my husband will not control my economic life because as a result he will also control my opinions, behavior, and ideas. (11th grade Muslim girl) (Seginer & Mahajna, 2004)

[My hopes are] to materialize my dreams. These dreams are that I will become what I wish for myself, and that is working as an accountant in a bank. (11th grade Druze girl) (Azzam, 2014)

My hopes and dreams for the future are to be successful, to be dependent on no one and enter military service to a unit of my choice and that my service be the best I can do. (11th grade Jewish girl) (Dror-Levy, 2014)

In sum, this section presented the theoretical rationale and supporting empirical evidence about the directional relation between self-evaluation, indicated by self-esteem, self-agency, and self-empowerment, and domain-specific future orientation for children and adolescents from diverse sociocultural background. Moreover, the directional relation between self-esteem and future orientation is indicated by statistical analyses and future orientation narratives, particularly those reported by girls.

From Future Orientation to Psychological Well-Being

The proposition that as a positive functioning behavior, psychological well-being follows from future orientation is examined on two positive-functioning behaviors: academic achievement and resilience. The rationale underlying the directional relation between future orientation and these two behaviors draws on the relation between future orientation and behavior in general as it applies to each of these two behaviors.

The Future Orientation–Behavior Relation

Can the future influence present behavior? As evidenced by the story of Gilgamesh (Mitchell, 2004) and the Old Testament, understanding the motivational effect of future *thinking* on present behavior is as old as human written history. Its psychological underpinnings have been devel-

oped by Lewin's proposition that the subjective image of the future affects the current "mood and action of the individual" (1942/1948, p104).

Our research on the relation between future orientation and behavior draws on three basic premises. One is that not all future thinking prompts present behavior. Instead, behavior is prompted by future thinking that is specifically related to the materialization of hopes, plans, and goals and the avoidance of related fears. Nuttin and Lens (1985) refer to such thinking as *active* or *motivational* future time perspective (rather than cognitive or imaginative time perspective). Oyserman, Gant, and Ager (1995) distinguish between *self-regulating* and *self-enhancing* possible selves, and the future orientation conceptualization used by Seginer and colleagues distinguishes between *prospective life course domains* (e.g., education, work and career, marriage and family) that prompt goal-directed behavior, and existential domains (e.g., self-concerns such as "to be happy"), which do not lead to such behavior (Seginer, 2009).

The second premise relates to future thinking–behavior content similarity. Conceptualized as *endogenous* vs. *exogenous instrumentality* (i.e., high vs. low similarity), endogenous future thinking is more instrumental for prompting behavior than is exogenous future thinking (Lens & Seginer, 2015). Thus, similar content of future thinking and behavior indicates the relevance of future thinking for behavior. To illustrate, future orientation pertaining to higher education is more relevant and thus has a stronger effect on academic achievement than future orientation pertaining to romantic love.

The third premise relates to *temporal* proximity: the shorter the distance to the task prompted by future orientation, the stronger is the future orientation-present behavior relation (Nuttin & Lens, 1985).

The Future Orientation–Academic Achievement Relation

For children, adolescents, and emerging adulthood students, academic achievement is an indicator of competence, adjustment, and goal-directed behavior. However, academic achievement is also an essential condition

for optimal fulfillment of future adult roles. Drawing on the first premise regarding the future orientation–behavior relation, our analyses relate only to the prospective life domains. Drawing on the second and third premises, the prediction is that the competence domains (i.e., higher education, work and career) explain more of the variance of academic achievement than does the relational domain (marriage and family), and that the future orientation–academic achievement relation is age related.

Empirical evidence. Data collected in the last decade have confirmed the hypothesis regarding endogenous instrumentality. While the model is satisfactorily estimated for the three life domains across gender and cultural groups, the future orientation competence domains (i.e., higher education, work and career) explain a higher percentage of the variance of academic achievement (reported by the participants' schools) than does the relational domain (marriage and family) (Seginer, 2009; Seginer & Mahajna, 2012, 2016).

At first glance, findings from two studies run against the endogenous–exogenous instrumentality hypothesis. In one study (Seginer, 2009), carried out among ultra-orthodox Jewish girls in Israel, the relational domain (marriage and family) is *positively* related to academic achievement and explains as much of the academic achievement variance (R^2 = .14) as the competence domain (work and career). In the second (Dror-Levy, 2014), carried out among Israeli Jewish at-risk adolescent girls and boys growing up in institutional care, of the two competence domains, the effect of higher education on academic achievement is positive and significant whereas the effect of work and career is nonsignificant and explains less of the variance of academic achievement (R^2 = .06 and .02, respectively). The explanation of these results rests on the meaning of each domain for the two groups.

The instrumentality of high school academic achievement for *ultra-orthodox* Jewish girls draws on three meanings the girls attribute to marriage and family life, not shared by girls growing up in modern industrial societies. Being a high-achieving student is a matchmaking asset in a society practicing arranged marriage; it is important for her future responsibilities as a caring mother, as well as for the paid job she is expected to hold while her husband is fully devoted to religious studies. The division between work and career future orientation and academic achievement

for the Jewish *at-risk adolescents* (11th graders) growing up in institutional care is based on how they envision their future job. While their Israeli Jewish middle-class counterparts consider professional or semi-professional future careers (Seginer et al., 2004), the at-risk adolescents consider a broader range of job options, from higher education dependent professional careers to blue-collar jobs that do not require further education. For example:

> Before I had childish dreams like becoming a soccer player, then I thought I will have a menial job. Now I understand I must have a university degree so I can pursue a profession. Otherwise, I will stay poor. (11th grade lower class Jewish boy) (Dror-Levy, 2014)
>
> After finishing my military service, I will look for a job with cars, (11th grade lower class Jewish boy) (Dror-Levy, 2014)

Thus, in testing the effect of endogenous instrumentality, the subjective meaning individuals attribute to prospective life domains must be considered (Seginer & Lens, 2015).

The third premise contends that endogenous instrumentality is also age and gender dependent. The closer in age adolescents are to the future life domain, the stronger is the future orientation–behavior relation. Empirical support comes from several data sets; however, some of them are confounded and therefore should be considered with caution. One age comparison pertains to two at-risk adolescent groups who at time of data collection were 9th (Schnarch, 2015) and 11th graders (Dror-Levy, 2014). As noted earlier, future orientation competence domain (higher education) explained 4% and 6% of the variance of academic achievement of the 9th and 11th graders, respectively. While the difference is small, and so is the explained variance, the data suggest the greater relevance of higher education for the older adolescents.

The second age-relevant comparison shows the different reality experienced by Jewish ultra-orthodox and secular girls in Israel (Seginer, 2009). While the secular girls go through two years of military service and a period of emerging adulthood, the ultra-orthodox girls are exempted from military service and enter adulthood through marriage, family, and education leading to a paid job at an early age. Accordingly, the relation

between the competence domain of work and career and academic achievement is higher for the Jewish ultra-orthodox than for the secular girls (R^2 = .14 and .03, respectively) (Seginer, 2009).

The gender-relevant comparison is between Muslim girls and boys in Israel. The competence domain pertaining to higher education explains 15% and 7% of academic achievement of girls and boys, respectively (Seginer & Mahajna, 2017). Underlying is the different reality experienced by Muslim girls and boys in Israel. Boys are expected to contribute to the family income, and as they get close to the age of marriage, to build a house for their newly founded family. Consequently, they leave school earlier than girls and fewer boys than girls attend higher education. The rate of high school dropout is higher among boys than girls, with 54% of the girls and 35% of the boys obtaining high school diploma, and 41% and 27% of the girls and boys, respectively, meeting higher-education admission requirements (Israel Central Bureau of Statistics, 2010).

Two conditions lead to girls' continued high school education. School provides girls with a protective environment, and the earning power of girls is considerably lower than that of boys. As they stay in school they develop an appreciation for education as a means for independence in a traditional society. "Education is a weapon in women's hands" (Seginer & Mahajna, 2003, p. 200) has become a mantra repeatedly noted in their hopes and fears about the future, together with their worries that early marriage will jeopardize their desire for higher education. Thus, for many of the girls, life is under the weight of two conflicting forces: the high promise of higher education for women's emancipated life, and the strong pressure toward early marriage exerted on Muslim girls by their families and communities. In a recent study (Seginer & Mahajna, 2017), 11th grade Muslim girls wrote:

> I want to be successful in everything (my education, my social life). And I want to study medicine. I think education is a weapon in women's hands and her diploma is what will shield her against difficulties and obstacles.
>
> I hope to graduate from high school with high grades. I want to continue my education at the university, and only then I plan to get engaged (age 22), get married (24) and have children (age 25/26).

Obviously, the age and gender comparisons are entangled in a cultural reality that influences the differences between the groups in question. Thus, the shorter distance from the competence future life domains for the Jewish ultra-orthodox vs. the secular girls and the different reality experienced by Muslim girls and boys in Israel is context-related.

The Future Orientation–Psychological Resilience Relation

While psychological resilience has been described by "multiple meanings in multiple contexts" (Bonanno, Romero, & Klein, 2015, p. 139), common to many of those meanings is the relation of behavior to the ability of children, adolescents, and adults to overcome adverse conditions and exhibit positive outcomes (Masten, 2001). As such, psychological resilience is of relevance to individuals experiencing various acute or chronic danger or stress emanating from environmental or inner sources, or threatened to be under such conditions. Hence, the nature of psychological resilience varies according to the adverse circumstances from which it emanates and the individual's developmental period, gender, and sociocultural milieu. In this analysis, respondents were at-risk adolescents who for reasons emanating mainly from home environment were placed in educational residential settings. Their resilience is indicated by overcoming deviant behavior and pursuing normative behavior.

The directional relation between future orientation and resilience draws on the effect future thinking has on behavior in general, and on the nature of resilience as consisting of "adaptation in the face of serious adversity" (Hauser & Allen, 2006, p. 550). As one of multiple inter- and intrapersonal factors prompting resilient behaviors, the relevance of future orientation draws on each of its three components. Focusing on a specific future life domain (the cognitive component), evaluating the subjective value of the domain, and considering the attainability of goals associated with the domain and one's control over it (the motivational component). Finally, actively exploring the suitability for oneself of engaging in activities related to a domain (e.g., higher education) and

going through a process of decision making (the behavioral component) all prompt resilient behavior, against all odds.

Empirical evidence. Unlike research on the effect of future orientation on academic achievement, research on the effect of future orientation on resilience is at its beginning. The findings presented here are the result of one study (Dror-Levy, 2014). Given the definition of resilience as adaptation in the face of adversity, Dror-Levy collected data from 302 (126 girls) Jewish adolescents who live and attend school in educational residential settings known in Israel as Youth Villages. They were placed in youth villages as a result of poverty and adverse family circumstances which interfere with optimal parental care.

Resilient behavior was assessed by the response of the Youth Village counselors on four scales pertaining to aggressive and deviant behavior (Achenbach, 2001), acceptance of adult authority, and active participation in the Youth Village social and educational activities (Dror-Levy, 2014). High resilience is indicated by low scores on the first and second scales and high scores on the third and fourth scales. Analyses using structural equation modeling showed satisfactory fit with the theoretical model in which the three-component future orientation has an effect on resilience for each of the three life domains: higher education, work and career, and marriage and family.

However, the extent to which future orientation explains the variance of resilient behavior varies. It is highest (17%) for education and lowest (4%) for work and career. The marriage and family domain explains 7% of the variance of resilience. Moreover, in an extended model of future orientation that also includes resilience, resilience mediates the effect of each of the three future life domains on academic achievement, and increases the explained variance of academic achievement (R^2 = 20% to 25%). As articulated by 11th graders:

> My hope for the future is that I will be successful in coping with life. And my dream is to have a business of my own. (boy)
>
> My hopes and dreams for the future is to have a successful life and not be dependent on any one. I want to graduate from high school with matriculation, and have a meaningful military service and then continue my education studying at a university or college. (girl)

Summary and Future Directions for Research and Practice

Topic Summary

Psychological well-being and future orientation are umbrella concepts, each indicated by several empirical variables. However, whereas future orientation is an intrapersonal construct, psychological well-being is described by intrapersonal, behavioral, and objective assessment indicators. The two-model proposition examined in this report was prompted by two considerations. Seligman's (2011) distinction between positive feelings (intrapersonal) and positive functioning (behavioral indicators) and earlier future orientation research on its relation with both intrapersonal and behavioral indicators of well-being. Conceptualized as an intrapersonal construct, psychological well-being *precedes* future orientation; indicated by behavior, it is the *outcome* of future orientation.

The chapter consisted of three major parts. The first presented the conceptualization of future orientation as a univariate and three-component construct which can be applied to each of several future life domains (e.g., work and career, marriage and family), and psychological well-being. The second presented rationale and findings on the directional relations between well-being and future orientation, as well-being is conceptualized in terms of intra-personal and indicated by several measures of self-evaluation. Analyses thus support the proposition that intrapersonal indicators of psychological well-being precede future orientation, across culture, age and gender.

The third major part presented the theoretical underpinnings of the directional relation between future orientation and psychological well-being and briefly reported on research on two behavioral indicators: academic achievement and psychological resilience. Analyses supporting the relations between future orientation and the two behavioral indicators of well-being. However, whereas the model in which future orientation precedes academic achievement has been tested across gender and culture (Muslims and Druze in Israel and Israeli Jewish adolescents), the

model in which future orientation precedes resilient behavior was tested on only one group: at-risk Israeli Jewish adolescents.

Future Directions for Research and Practice

In all, as these findings point to the strength of the relations between psychological well-being and future orientation, they also suggest weaknesses, consequently charting the path to further research. Some obvious limitations include geographical, conceptual, and methodological narrowness. Research presented here, though carried out with socially and culturally diverse groups, was all undertaken in Israel. Given that much of this work was carried out with adolescents, it has been limited to three future life domains: higher education, work and career, and marriage and family.

Moreover, the research has focused on current context and has used cross-sectional design, thus preventing researchers from learning about the longer-term effect that psychological well-being has on future orientation and future orientation has on behavioral indicators of psychological well-being. Considering these three limitations, future work should be applied to additional cultural groups, extended future life domains and indicators of psychological well-being, and longitudinal design. The three are not independent of each other. Extending the research program to include additional cultural groups will bring to the fore future life domains and psychological well-being aspects relevant to these cultural groups in their context, and will define the span of the longitudinal design as researchers consider the cultural definitions of childhood, adolescence, and emerging adulthood.

Translating research findings of the two future orientation–psychological well-being models to interventions must bear attention to the principles underlying research-based practices, including the developmental and cultural relevance of research findings. The research is relevant especially in the current global context in which millions of people of all ages are uprooted from their homes, have only limited use of their language, are hosted by unfamiliar cultures, and need to reestablish their

lives. Research testing the two models may serve as a platform for developing support and educational practices for them.

A research-based program of this kind can be effective only if it weighs universal psychological needs (Deci & Ryan, 2000) vis-à-vis culture-sensitive considerations. Particularly, this can be done by exploring the meaning of the various indicators of psychological well-being and identifying which life domains are of relevance to different cultural groups, and within each to individuals according to their age and gender.

Notes

1. Unpublished data available from author.

References

Achenbach, T. M. (2001). *Child behavior checklist for ages 6 to 18*. Berlington, VT: University of Vermont Research Center for Children, Youth, and Families.

Allport, G. W. (1955). *Becoming*. New Haven, CT: Yale University Press.

Atkinson, J. W. (1964). *An introduction to motivation*. Princeton, NJ: Van Nostrand.

Azzam, G. (2014). *Ethnic identity, self-esteem, future orientation and academic achievement among Druze youth in Israel*. Unpublished master's thesis, University of Haifa, Israel.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, *52*, 1–26.

Blos, P. (1966). *On adolescence*. New York: Free Press.

Bonanno, G. A., Romero, S. A., & Klein, S. (2015). The temporal elements of psychological resilience: An integrative framework for the study of individuals, families, and communities. *Psychological Inquiry*, *26*, 139–169.

Cantril, H. (1965). *The pattern of human concerns*. New Brunswick, NJ: Rutgers University Press.

Carver, C. S., & Scheier, M. F. (2002). Optimism. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 231–243). New York: Oxford University Press.

Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review*, *30*, 879–889.

Cattaneo, L. B., & Chapman, A. R. (2010). The process of empowerment: A model for use in research and practice. *American Psychologist*, *65*, 646–659.

Danziger, I. (2013). *Future orientation and academic achievement among Junior high school adolescents in Israel*. Unpublished master's thesis, University of Haifa, Israel.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*, 227–268.

De Volder, M., & Lens, W. (1982). Academic achievement and future time perspective as a cognitive-motivational concept. *Journal of Personality and Social Psychology*, *42*, 566–571.

Dror-Levy O. (2014). *The future orientation of youth village adolescents: interpersonal antecedents and resilience and academic achievement outcomes*. Doctoral dissertation, University of Haifa, Israel.

Erikson, E. H. (1968). *Identity, youth and crisis*. New York: Norton.

Gillespie, J. M., & Allport, G. W. (1955). *Youth's outlook on the future; A cross-national study*. Garden City, New York: Doubleday.

Guo, J., Parker, P. O., Marsh, H. W., & Morin, A. J. S. (2015). Achievement, motivation, and educational choice: A longitudinal study of expectancy and value using multiplactive perspective. *Developmental Psychology*, *51*, 1163–1176.

Harter, S. (2012). *The construction of the self* (2nd ed.). New York: Guilford.

Hauser, S. T., & Allen, J. P. (2006). Overcoming adversity in adolescence: Narratives of resilience. *Psychoanalytic Inquiry*, *26*, 549–576.

Huppert, F. A., & So, T. T. C. (2013). Flourishing across Europe: Application of a new conceptual framework for defining well-being. *Social Indicators Research*, *110*, 837–861.

Israel Central Bureau of Statistics. (2010). *Women and men 1990–2009*. Jerusalem: Central Bureau of Statistics (Hebrew).

James, W. (1890/1950). *The principles of psychology*. New York: Dover Publications.

Lens, W., & Seginer, R. (2015). Future time perspective and motivation. In J. D. Wright (Editor-in-chief), *International encyclopedia of the social & behavioral sciences* (2nd ed., Vol. 9, pp. 561–566). Oxford, GB: Elsevier.

Lewin, K. (1939). Field theory and experiment in social psychology. *American Journal of Sociology*, *44*, 868–896.

Lewin, K. (1942/1948). Time perspective and morale. In K. Lewin (Ed.), *Resolving social conflict* (pp. 103–124). New York: Harper & Brothers Publishers.

MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. New York: Erlbaum.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, *41*(9), 954–969.

Masten, A. (2015). Pathways to integrated resilience science. *Psychological Inquiry*, *26*, 187–196.

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, *56*, 227–238.

Melges, F. T. (1982). *Time and the inner future: A temporal approach to psychiatric disorders*. New York: Wiley.

Mitchell, S. (2004). *Gilgamesh: A new English version*. New York: Free Press.

Nurmi, J. E. (1987). Age, sex, social class, and quality of family interaction as determinants of adolescents' future orientation: A developmental task interpretation. *Adolescence*, *22*, 977–991.

Nurmi, J. E. (1991). How do adolescents see their future? A review of the development of future orientation and planning. *Developmental Review*, *11*, 1–59.

Nuttin, J., & Lens, W. (1985). *Future time perspective and motivation: Theory and research method*. Location: Erlbaum.

Oyserman, D., Gant, L., & Ager, J. (1995). A socially contextualized model of African American identity: School persistence and possible selves. *Journal of Personality and Social Psychology*, *69*, 1216–1232.

Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Books.

Rotter, J. B. (1990). Internal versus external control of reinforcement: A case history of variable. *American Psychologist*, *45*, 489–493.

Ruvolo, A. P., & Markus, H. R. (1992). Possible selves and performance: The power of self-relevant imagery. *Social Cognition*, *10*, 95–124.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*, 1069–1081.

Scales, P. C., Benson, P. L., Leffert, N., & Blyth, D. A. (2000). Contribution of the developmental assets to the prediction of thriving among adolescents. *Journal of Developmental Science*, *4*, 27–46.

Schnarch, R. (2015). *Classroom interpersonal relationships and school functioning: The case of adolescents at-risk of school failure and dropout*. Doctoral dissertation, University of Haifa, Israel.

Seginer, R. (1988). Adolescents facing the future: Cultural and socio-political perspectives. *Youth Society*, *19*, 314–333.

Seginer, R. (2005). Adolescent future orientation: Intergenerational transmission and intertwining tactics in culture and family settings. In W. Friedelmeier, P. Chakkarath, & B. Schwarz (Eds.), *Culture and human development: The importance of cross-cultural research to the social sciences* (pp. 231–251). Hove, UK: Psychology Press.

Seginer, R. (2009). *Future orientation: Developmental and ecological perspectives*. New York: Springer.

Seginer, R., & Halabi-Kheir, H. (1998). Adolescent passage to adulthood: Future orientation in the context of culture, age, and gender. *International Journal of Intercultural Relations*, *22*, 309–328.

Seginer, R., & Lens, W. (2015). The motivational properties of future time perspective/future orientation: Different approaches, different cultures. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research, and application: Essays in honor of Philip G. Zimbardo* (pp. 287–304). New York: Springer.

Seginer, R., & Mahajna, S. (2003). 'Education is a weapon in women's hands': How Arab girls construct their future. *Journal of Sociology of Education and Socialization. Zeitschrift fur Soziologie der Erziehung und Socialisation*, *23*, 200–214.

Seginer, R., & Mahajna, S. (2004). How the future orientation of traditional Israeli Palestinian girls link beliefs about women's roles and academic achievement. *Psychology of Women Quarterly*, *28*, 122–135.

Seginer, R., & Mahajna, S. (2012). With God's help: The future orientation of Palestinian girls in Israel growing up Muslim. In G. Trommsdorff & X. Chen (Eds.), *Values, religion, and culture in adolescent development* (pp. 253–270). New York: Cambridge.

Seginer, R., & Mahajna, S. (2016). On the meaning of higher education for transition to modernity youth: Lessons from future orientation research on Israeli Arab girls. In H. Flum & A. Kaplan (Eds.) Higher education among Israeli Arabs (special issue). *International Journal of Educational Research*, *76*, 112–119.

Seginer, R., & Mahajna, S. (2017). *Gender differences in socio-cultural context: How future orientation links parenting and academic achievement among Palestinian-Israeli adolescents. Unpublished report. University of Haifa.*

Seginer, R., Nurmi, J.-E., & Poole, M. (1991). *Adolescent future orientation in cross-cultural perspectives*. Paper presented in the 11th Meeting of International Society for the Study of Behavioral Development, Minneapolis, MN.

Seginer, R., Vermulst, A., & Shoyer, S. (2004). The indirect link between perceived parenting and adolescent future orientation: A multiple-step analysis. *International Journal of Behavioral Development*, *28*, 365–378.

Seligman, M. (2011). *Flourish: A visionary new understanding of happiness and well-being*. New York: Simon & Schuster.

Shoyer, S. (2006). *The construction of future orientation in the context of adolescent-parent relationships as viewed by adolescents and parents*. Unpublished Ph.D. dissertation, University of Haifa, Israel.

Stern, D. (1985). *The interpersonal world of the infant*. New York: Basic Books.

Trommsdorff, G. (1983). Future orientation and socialization. *International Journal of Psychology*, *18*, 381–406.

Worrell, F. C., Mello, Z., & Buhl, M. (2011). Introducing English and German versions of the adolescent time attitude scale. *Assessment*, *20*, 496–510.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual differences metric. *Journal of Personality and Social Psychology*, *77*, 1271–1288.

Zimmerman, M. A. (2000). Empowerment theory: Psychological, organizational and community levels of analysis. In J. Rappaport & E. Seidman (Eds.), *Handbook of community psychology* (pp. 43–63). New-York: Kluwer Academic/Plenum Publishers.

Rachel Seginer is Professor Emeritus of Human Development and Education in the Faculty of Education, University of Haifa, Israel, and Chairperson of Educational Psychology Graduate Program in the Yezreel Valley College, Israel. Her research and teaching in developmental psychology has focused mainly on adolescent development in cultural settings and examines family and peer relationships, parents' educational involvement, and future orientation and their effect on schooling and academic achievement. Her book *Future Orientation: Developmental and Ecological Perspectives* (Springer, 2009) presents her work on the antecedents and outcomes of future orientation and reviews research carried out since the 1930s on future orientation across the life span and in divergent cultural settings.

16

Who Was the Child Before It Was Born? Prenatal Time Perspective

Wessel van Beek

Introduction

About 15 years ago I attended a presentation by the inspiring American/Indian psychiatrist Salman Akthar. Born into a family of writers and poets, Dr. Akthar became a psychoanalyst and a poet himself. One of the interesting things Akthar talked about was the influence of the expectations of parents on the development of a child. "Who was the child before it was born?" was the phrase that kept circling in my head. The presentation was an incentive to start reading both his professional work and his poems (see, for example, Akthar, 2012). Some years later, when reading about the concept of time perspective, I saw Professor Philip Zimbardo on stage and was eventually able to meet him. Years after that, at the time I worked on the book *Time Perspective Theory* with my colleagues Maciej Stolarski and Nicolas Fieulaine (Stolarski, Fieulaine, & van Beek, 2014), my wife became pregnant with our first child. This changed a lot about

W. van Beek (✉)
GGZ Veenendaal, Veenendaal, The Netherlands

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9_16

my private life, but it also affected my work as a psychotherapist and as a researcher on time perspective. And it reminded me of Akthar's phrase. In this chapter I try to bring theoretical concepts, my research, some clinical cases, and personal experiences together in order to introduce a new time zone in time perspective theory.

Theoretical Time

Time has always been part of my professional career. I read a lot about time without realizing that I did, because I thought I studied psychology, philosophy, or psychotherapy. I read about the influence of the past while reading Freud and Rogers. I became an existential psychotherapist and read about fear of the future in the books by Yalom and modern theorists like Schneider. When I was trained in techniques like cognitive behavioral therapy and schema therapy, I learned about the importance of thought processes in the present. But the subdivision into time zones of past, present, and future was hardly ever on my mind. Time was not much more than a measure of the length of the overall treatment, or the 50 minutes that I had for my therapy sessions.

After becoming aware of these different aspects of time, I started integrating the distinctions between the past, the present, and the future in my daily work. Soon after that, though, when I met an Indonesian patient in therapy, my little model collapsed. From my Western perspective I considered the past, present, and future chronologically consecutive. But this patient taught me that my linear idea of time is not universal at all. Time appeared to be far more complex when my patient started talking about reincarnation, and about his long-deceased grandparents who were talking to him in his dreams. Only then did I realize that different models of time and time zones are used in different cultures and religions. It's like circular or cyclical time in Eastern civilizations (Thapar, 2002), but also exists in modern Western philosophy, as in Nietzsche's "Eternal Recurrence" (for an extensive discussion, see Loeb, 2013). This brought me back to questions like: What is the past? How long does the present last? When the future begin and end? And how do we apply all this in therapy?

Many attempts have been made to break down the temporal continuum, both outside and in time perspective theory, as Zimbardo and Boyd (1999) did in their ZTPI. Additional scales were developed, like Transcendental Future (Boyd & Zimbardo, 1997), Future-Negative (Košťál, Klicperová-Baker, Lukavská, & Lukavský, 2015; Carelli, Wiberg, Åström, 2014), and Present-Eudaimonic (Vowinckel, Westerhof, Bohlmeijer, & Webster, 2015; see Stolarski et al., 2014, p. 8 for an overview). We have created scales for "during life," and "after life"—but what about "before life"? What about the social systems we are born into, like families, subcultures, and cultures? What about the influence of the religion that we are part of even before we are born? It is hard to believe that the unborn is the tabula rasa Aristotle thought it to be.

In my own tentative model of temporal human development I make a distinction between intrapersonal, interpersonal, and nonpersonal influences on past, present, and future. *Intrapersonal* influences are individual idiosyncratic experiences during life. The term *interpersonal* refers to the influences of family, friends, and intimate relationships, while examples of *nonpersonal* influences are religious, historical, and (sub)cultural aspects. These influences play different roles in the respective time zones. And they can be evaluated in a broad range, from positive to negative.

It is obvious that prenatal time is affected by nonpersonal and particularly interpersonal aspects. Impressive examples of this are discussed by Fraiberg and colleagues' (Fraiberg, Adelson, & Shapiro, 1975) "Ghosts in the nursery" and Lieberman, Padrón, Van Horn and Harris's (2005) "Angels in the nursery" when these authors write about both the adverse and the beneficial effects of intergenerational influences on the development of the baby. We are born into an existing context and we become part of something much bigger.

Prenatal Time

How should we call the time before birth? Terms like *antenatal*, *perinatal*, and *prenatal* seem suitable and are used interchangeably, although *perinatal* refers to the specific time around birth. *Prenatal* seems easier to understand, so that's what I used. There are three areas regarding prenatal time

I address here: (1) the parent–unborn attachment, (2) the expectations of parents, the extended family, and culture, and (3) the intrapersonal psychological world of the unborn.

Parent–Unborn Attachment

As a psychotherapist I should mention Otto Rank's *The Trauma of Birth* (1929), a famous but critically discussed book. According to Rank, every birth is so traumatic for the child that it needs a lifetime to recover from it. This severe separation is repeated in emotional relationships—for instance, in therapy. Rank writes "For in the analytic situation the patient repeats, biologically, as it were, the period of pregnancy, and at the conclusion of the *analysis*—i.e., the re-separation from the substitute object—he repeats his own birth for the most part quite faithfully in all its details" (p. 4). This separation at birth becomes what later theorists call a "fundamental attachment representation." And when we look beyond the psychoanalytic nomenclature, Rank might not have been wrong as much as some of his colleagues like Freud found he was. We get separated from our most comfortable place in a most hostile manner—particularly when we realize the baby can feel pain, and does have some form of consciousness before birth, as I will discuss further on. This fundamental and existential bond between mother and child is one of the pillars of later attachment research. In a strict sense, *attachment* refers to the enduring tie that one person has with another who fulfils needs for safety and comfort (Obegi & Berant, 2009).

Historically, attachment theory was developed by John Bowlby and Mary Ainsworth. Attachment is formed by being in proximity with the attachment figures, most of the time the parents. According to these pioneers in attachment theory, this physical proximity provides safety and comfort for the child. During infancy, according to Ainsworth, Blehar, Waters, and Wall (1978), the primary attachment strategy includes nonverbal expressions of neediness, such as crying and pleading, and movements (crawling, walking, extending arms) aimed at reestablishing and maintaining proximity to the caregiver. "In addition, mental representations [mental images, my addition] of attachment

figures and subroutines of the self that develop through the internalization of caring and soothing qualities of attachment figures can successfully provide a symbolic sense of comfort, support, and protection" (Mikulincer, Dolev, & Shaver, 2004). According to Lumley (1982), prenatal attachment is an "established relationship with the foetus in imagination, […] a point at which mothers thought of their babies as a real person." This was observed in 30% of pregnant mothers in the first trimester, 63% in the second trimester, and by 36 weeks' gestation, in 92% (Lumley, 1982).

A more recent definition of parental attachment is proposed by Doan and Zimerman (2003, p. 110): "Prenatal attachment is an abstract concept, representing the affiliative relationship between a parent and foetus, which is potentially present before pregnancy, is related to cognitive and emotional abilities to conceptualize another human being, and develops within an ecological system." Doan and Zimerman's (2003) conceptualization focuses on the bond between parents and the unborn, and therefore leaves out the attachment of others. However, experts disagree on the terms used. According to Van den Bergh and Simons (2009), "the meaning of the term attachment as defined by Bowlby and Ainsworth cannot be transferred to the prenatal life period" due to a lack of reciprocity between the mother and her foetus (p. 115). This is both counterintuitive and not in line with what we know about how external stimuli affect the baby. Reciprocity does exist, both physiologically and behaviorally, and probably emotionally as well.

Most of the older literature discusses maternal attachment exclusively. There appear to be maternal/paternal differences in attachment, but literature is inconsistent about this. Men seem to interact less with the unborn and appear to be less focused on the potential characteristics of the baby (Cranley, 1981a, 1981b), but others (Wilson et al., 2000) have found no significant differences in parental-foetal attachment between men and women. There is an unmistaken difference, though. When the sex is revealed at the scan and fathers-to-be name their son or daughter, it helps men feel emotionally connected and they start to think of the baby as a person (Draper & Ives, 2013; Habib & Lancaster, 2006). Mummy feels the baby physically, and the father becomes a daddy when he sees the baby.

Although attachment is supposed to be of major influence, and there is a lot of research on this, attachment is relatively unstable over time (Levendosky, Bogat, Huth-Bocks, Rosenblum, & Von Eye, 2011). It influences the development of the child, but apparently things can change.

The Expectations of Parents

Probably most people would say that psychologically the child is born in the heads of the parents when they first imagine or talk about having a child, or maybe around the time the child is conceived. On one of the Internet pages I visited,[1] the author cites S. E. Weshard: "the upbringing of a child should start 100 years before it is born: With its grandparents." Brazelton and Kramer (1991) summarize this complexity suitably: "For all parents-to-be, three babies come together at the moment of birth. The imaginary child of their dreams and fantasies and the invisible but real foetus, whose particular rhythms and personality have been making themselves increasingly evident for several months now, merge with the actual new-born baby who can be seen, heard, and finally held close" (p. 3).

We know that in mothers, the parent–foetus relationship is found to be related to the quality of the postnatal mother–infant relationship (Benoit, Parker, & Zeanah, 1997; Dayton, Levendosky, Davidson, & Bogat, 2010), and optimal attachment in early infancy has been identified as an integral component in the future development of a child (Oppenheim, Koren-Karie, & Sagi-Schwartz, 2007). After this, the mental images the parents construct appear to be significant. The richness of antenatal maternal representations has been significantly linked with the security of the infant's attachment to the parents at 1 year of age (Benoit et al., 1997).

The Intrapersonal Psychological World of the Unborn

Does a foetus have a mental world and what do we know about it? From a Western perspective, the unborn child is sometimes simplified to a "not yet full-grown species." But an unborn child means something differently

in different cultures (see Selin, 2014, for an overview of cultural factors). First, we might need to define when the unborn can be regarded as a human being. From his orthodox viewpoint, Ford (2002, p. 63) states: "That the zygote already is, or probably is, a human individual and person. The zygote is a totipotent cell whose newly constituted genome, interacting with the maternal environment." But consciousness arises in a different stage of foetal growth. According to Lagercrantz and Changeux (2009), many of the circuit elements necessary for consciousness are in place by the third trimester. Assuming that consciousness is mainly localized in the cortex, consciousness cannot emerge before 24 gestational weeks, when the thalamocortical connections from the sense organs are established (Lagercrantz, 2014).

But even before 24 weeks, some form of consciousness seems possible. We know that the unborn reacts to external stimuli. "Babies who are communicated with in utero feel themselves to be seen and heard at a deep level, this makes them feel respected as they are and for their unique personality and situation" (Schroth, 2010, p. 2). Or a bit more scientifically, López-Teijón, Garcia-Faura, and Prats-Galino (2015) found in their research that the ability to hear develops as early as week 16, and that foetuses appear to react to these stimuli. This is even before the stage in the development at which the child can survive outside the maternal womb.

A somewhat tentative viewpoint is verbalized by the psychoanalysts Verny and Kelly (1981), who state that the attitude of the mother toward the pregnancy and the child, as well as toward her partner, has a profound effect on the psychological development of the child. This was, to some extent, confirmed in a study by Benoit et al. (1997), who found that the richness of antenatal maternal representations was significantly linked with the security of the infant's attachment to the parents at 1 year of age. The grandfather of prenatal psychology, the late David Chamberlain, suggested (1994) that patterns of intimate relationships and mental expectations about life, including one's sense of self, develop prenatally.

These notions about prenatal interaction are catching and attract a considerable number of adherents, among researchers, midwives, and (upcoming) parents. There is a child, even before birth, that feels and has a rudimentary form of consciousness, which is in some way affected by

what the parents do, feel, and think. We become parents before birth. But once again, this is a Western viewpoint. In Hinduism for example, early on in the foetal development, consciousness is believed to merge with intergenerational memories, as a reservoir of knowledge across generations (Kapur, 2014). In many cultures the individual, particularly the child, is part of an intergenerational history, or even the rebirth of a prior person or animal. Although it is beyond the scope of this chapter, it is obvious that these beliefs and ideas significantly affect the expectations and the attachment style of the parents.

In his unprecedented work *The Motherhood Constellation*, Daniel Stern (1995) describes the importance of the ideas of the mother in the development of her child: "her reveries, preoccupations, fantasies, and projective identifications (as forms of representations) involving the baby became of great interest to the psychic development of the infant. In fact, the mother's fantasies about her infant took on the status of one of the major building blocks for the infant's construction of a sense of identity" (p. 20). These representations may become "pathologically rigid," as Stern points out (Bruschweiler-Stern & Stern, 1989). It seems reasonable to assume that this process does not only takes place after the mother gave birth to her child, as Stern mentions in his work as well.

There is a physio–psychological bond between the mother and the child. The situation of the mother influences the baby. We know that, for instance, that foetal exposure to maternal psychosocial stress is related to adverse perinatal outcomes (Littleton, Bye, Buck, & Amacker, 2010). But apart from the biological bond, the ideas of the parents about their child affect the development. Parental expectations have been examined in children and youngsters. We know that increased levels of maternal anxious thoughts and behaviors during the first month postpartum may disrupt the expression of sensitive behavioral responses to infants at 3 to 4 months. Having positive thoughts about parenting at the first month postpartum is associated with increased neural responses to infant crying (Kim et al., 2015). And we also know that mothers have more early parental preoccupations, worries, and caregiving thoughts, as well as positive thoughts about the parenting role and the baby, than fathers do. And, rather unsurprisingly, first-time parents show more intense parental thoughts than experienced parents do (Kim, Mayes, Feldman, Leckman, & Swain, 2013).

Later on in life, parental expectations of children (in the United States) are the major predictor of eventual academic performance (Jensen & McHale, 2015). Children do better at sports when they think their parents believe in the competence of their child (Eccles & Harold, 1991), and high expectations from both early childhood professionals and parents can enhance children's resilience, achievement, motivation, and self-belief (Gizir & Aydin, 2009). Another field of research focuses on the expectation that parents have of parenthood, along with the pre- and postnatal differences and its effects, including the negative ones (e.g., Lazarus & Rossouw, 2015). This is oftentimes discussed as "transition into parenthood." Low prenatal expectations of the child and parenthood are known to predict nonoptimal parental and marital relationships in the transition to parenthood (Flykt et al., 2009). And research underlines what everyone knows: parental thoughts about the child influence the functioning of child.

That's just the tip of the iceberg of research on the effects of postnatal parental thinking. And it shows that prenatal ideas about parenthood affect the experience of eventual parenting. But what about unborn children? What is the effect of the expectations of the parents on the development of the unborn—and later the child, as my research question was formulated? Scientific research is surprisingly sparse.

Zeanah, Zeanah, and Stewart (1990) report that "a majority reported abstract and at times elaborate attributions about their infants' personalities before and after birth. Nearly 90% of the sample provided descriptions of their infants' personalities a month before the infants were born" (pp. 202–203). After this, Charles Zeanah and his colleagues developed the Working Model of the Child Interview (WMCI; Benoit et al., 1997), assessing what they call the working model of the child. Their research showed a high stability of the maternal representations over time (before birth to at 12 months). They state that "the narrative features of mother's descriptions of their infants before the infant is even born may be used to predict infant security of attachment after birth" (p. 312). Later studies show that the quality of the parent–foetus relationship is related to the quality of postnatal parent–infant relationships (see Maas, Vreeswijk, de Cock, Rijk, & van Bakel, 2012), including the association between the quality of prenatal and postnatal attachment in fathers (Vreeswijk, Maas, Rijk, & van Bakel, 2014).

Do we have enough indications to regard the foetus as a person with its own psychological world? Tyano and Keren summarize the scientific findings when they state: "we need to be cautious to avoid imbuing the foetus's perceptions with affective adult significance on one hand, while also not under- estimating its capacities on the other hand" (in Tyano, Keren, Herrman, & Cox, 2010, p. 28).

Research

Content Analysis of My Own Diary

Background and Method

This section needs a short introduction: after talking about our wish to have a child, it appeared my wife would not get pregnant in the natural way, and we eventually decided that she would undergo in vitro fertilization (or to be precise, intracytoplasmic sperm injection). This finally succeeded after about two years, and we are now the proud parents of a 3-year-old daughter.

From August 1, 2012, to August 2, 2014, I kept a diary in which I wrote to the little someone who eventually might become my child if my wife would get pregnant in the period we tried, to my unborn child when my wife was pregnant, and to my newborn daughter when she was finally here. This diary had no other goal than to structure my thoughts and feelings about the possibility to eventually have a child. Some days I wrote three lines, at other moments I scribbled pages' full. Reading it back, I see that there are also three different periods I wrote about, which I shall refer to as "before pregnancy," "the clinical phase" (hospitals and doctors), and "pregnant."

To analyze the data, I identified different themes I wrote about, most of the time encompassing one paragraph. Then I reread the paragraphs to judge whether I referred to either the past, the present, or the future, and I made a distinction between positive, neutral, and negative referrals. I then counted the scores in the three categories.

Table 16.1 Referrals in my diary

	Before pregnancy (82 referrals)			Clinical phase (67 referrals)			Pregnant (75 referrals)		
	past	pres	Fut	past	pres	fut	past	pres	fut
Negative	**7** (12%)	**40** (49%)	1 (1%)	**4** (6%)	19 (28%)	0 (0%)	1 (1%)	4 (5%)	1 (1%)
Neutral	1 (1%)	13 (16%)	3 (4%)	1 (1%)	**25** (37%)	**6** (9%)	**2** (2%)	18 (24%)	3 (4%)
Positive	1 (1%)	12 (15%)	**4** (5%)	0 (05)	9 (13%)	3 (4%)	0 (0%)	**41** (55%)	**5** (7%)

Note: pres = present, fut = future. The table shows the number of referrals and the percentage of total referrals

Results and Conclusions

So, what did I think and write about in these three distinct periods? Table 16.1 shows the number of referrals per category and the percentage of total referrals in that stage.

In the before pregnancy phase, I mostly wrote about Past-negative and Present-negative topics, with a bit of Future-positive (for example, "When you are old enough we will visit the petri dish you were conceived in"). In the clinical phase, I wrote a few times about the Past-negative, and I was neutral about both the Present and the Future. This was a time of many ambivalences, of both hope and fear. In the stage of pregnancy, I was neutral in the first part of this phase, but mostly positive about the Present, and again sometimes focused on the Future-positive.

Questionnaire for Pregnant Women and Their Partners

Background and Method

In the first phase of my literature study, I examined whether there was an instrument I could use to measure prenatal time, but I could not find anything that would serve my purpose. There are a number of attachment instruments, but none of them fitted my needs (the WMCI came close, but I had no possibilities to interview). To collect data on my topic I decided to develop an exploratory questionnaire.

This questionnaire, which I called the Prenatal Time Perspective Questionnaire (PTPQ), was based on three elements: (1) the role of family and parents; (2) predestination, God, and fate; and (3) thoughts about the unborn. The PTPQ consisted of 11 questions and a supplementary question about religion. Respondents were asked to state their sex, age, and number of weeks they or their partner were pregnant. A total of 72 questionnaires were returned and analyzed.

After finishing the first version of the questionnaire, I had it judged by midwives at a local practice and by a clinical psychologist (my wife). This led to a few modifications and the final questionnaire, which was once again evaluated. We then distributed 150 questionnaires among four midwife practices in our region of The Netherlands, expecting to eventually get about 75 responses. The questionnaire with an accompanying letter was put in the waiting rooms of the practices, with an invitation to participate. The invitations were addressed to both mothers and fathers.

Results and Conclusions

Most of the respondents were female (75%), and 25% were male. The mean age of the respondents was 29.8 years, and the respondent or the partner was an average of 23 weeks pregnant at the time she filled out the questionnaire. A total of 55% respondents considered themselves to be religious.

Respondents were asked the following questions, with responses on a scale ranging from 1 = does not apply to me to 5 = completely applicable to me (see Table 16.2).

A higher percentage of women talk to their unborn (3.37, *sd* = 1.34) than men (3.06, *sd* = 1.39). And in the second half of pregnancy, the number of upcoming parents talking to their children is higher than during the first 20 weeks. Within the subgroup of religious people, the mean score on question 9 was 3.85 (1.18), indicating that religious people more often feel their life is predestined (question 3; 3.38 versus 2.19).

Table 16.2 Frequency of responses to items on prenatal time perspective questionnaire

PTPQ questions	Mean (sd) *n* = 72
1. Parents and grandparents determine how a child will develop	3.36 (0.78)
2. How your life will develop is already determined at birth	2.18 (1.16)
3. I have become who I was destined to become	2.83 (1.28)
4. The traditions in our family will influence how our child will develop	3.15 (0.90)
5. My parents already knew who I would become	2.24 (0.98)
6. I talk (in my mind) to my unborn child	3.36 (1.36)
7. Our society determines strongly who our child will become after birth	2.68 (0.86)
8. I already fantasize about the job or the sport my child will be doing	2.01 (1.20)
9. God has already decided how our child will develop	2.62 (1.64)
10. As a forthcoming parent, I already have many thoughts about what kind of person my child will become	2.62 (1.04)
11. The life of our child will be strongly determined by how we live life as parents	3.87 (0.65)

Clinical Cases

In my work as a clinician I encounter numerous stories about the significance of the prenatal past. I discuss three of these cases here; the names of these patients have been changed and I have adapted some characteristics to secure anonymity.

Case: John

This first case has had an emotional impact on me, both professionally and personally, because the young man eventually committed suicide. I met John in the emergency ward where I was working as a psychotherapist. John had delusions and high anxiety; he was hopeless and suicidal. At times he was so self-destructive that he was put in solitary to keep him from hurting or killing himself. When I talked to John, I found out he was a physician, just like his father who was also called John and who was a family doctor. And even his grandfather was called John, and he had

been a surgeon. John came from an intellectual and wealthy family, a family with high expectations and standards. John had to become a doctor, therefore, like John was a doctor, and John had been a doctor. This prior sentence is not a semantic trick; rather, it is an illustration of the chocking context this young man felt he had to live in. John had to be named John and he had to become a physician, John's parents told me when I talked to them. Particularly his father "knew" that his oldest son John would eventually become a doctor, and he was so proud that he did. Even in the crisis situation his son was in, father John felt the urge to stress how smart his son was and how well he did at medical school. Father John was proud that the prenatal construct—the child before it was born—became what he expected or wanted.

We do not know why this young man committed suicide. It might have been the imperative delusions about how evil he was. Maybe it had nothing to do with his father and his ancestors, but the day before his death, John told me wanted to flee. He said he needed to escape because something terrible was hunting him down and his real self was already dead, and he needed to get rid of these remnants.

I hesitated to include this section here because I do not want to inappropriately impress the reader by writing about this terrible loss. Neither do I want to judge John's father, who appeared to love his son a lot. And I would not want to assert a simplified psychological explication of everything that happened to John. Let us not mix up the complex reality with my theoretical concept. It is, in its psychiatric complexity, a dreadful example of the struggle of a young man with the expectations he could not live up to.

Case: Lana

Lana was 32 years old; she felt depressed and agitated. I saw her in my psychotherapy practice. Lana was five months pregnant, not too happily married to the father of the unborn child, and Lana struggled with her feelings toward her child. Sometimes she did not want the child to be born. She told me that she could feel taken over by the baby in her belly—that she felt she lost her identity when she became

a mother-to-be. Lana noticed a shift in attention; people started asking about her unborn, even when they informed her how she was doing. She felt neglected, left out, and she told me she envied the baby. She would not have minded if she would have lost the child prematurely.

One bad thing about this is that Lana told me this without shame or guilt. She thought she had the right to say so, because that is what therapy is all about, she told me, when I asked her about this apathy. Lana's feelings and ideas are not uncommon, but what worried me at that moment was that there was a fight going on. Lana felt she has the right to feel angry toward her unborn. She was no longer the center of her own narcissistic universe; she had to share her existence with the child in her, and she could hardly cope with that. Lana talked about her ambivalences, about her feelings, and about her struggle to bond with the baby in her. She hardly talked or even fantasized about the baby-person in her; she mostly felt annoyed about how this fetus took over her body and her existence.

This is probably what Margaret Mahler (1952) referred to as the "parasite–host relationship within the mother's organism." The baby in Lana's womb was not what in narcissistic mothers sometimes is called the "golden child": the projection of the mother's need for perfection and compensation for her own low self-esteem. This unborn child in Lana's body was a disturbance in her self-centered life. The young pregnant woman had great difficulty accepting someone in her personal existence, both the father and her upcoming child.

The therapy did not end well. A reason for this must be my own countertransference: I started to dislike Lana, and I had no empathy to further explore her situation. I told her I was not the right therapist to help her, and referred her to another psychologist. This is without doubt related to the fact that my wife was in the process of becoming pregnant. Lana had her personal reasons to struggle with her unborn, but my thoughts and feelings about Lana and her baby, about our wishes and our unconceived child, restricted me in my therapeutic role. This illustrates the magnitude of my emotions related to this topic. I do not know what happened to Lana and her child.

Case: Simon

One of the first things 62-year-old Simon told me when I met him in therapy was that he came from a Jewish family. "Why is it important for you to tell me you are Jewish?" I asked. His reply kept me thinking for a while: "I expected that you wanted to get to know me." For Simon, it was important to explain his personal story as part of his Jewish cultural and religious identity, which of course had been there long before Simon was born. Simon was born into this, and he became part of it before his actual birth.

His parents followed some of the Jewish rituals before his birth (extra charity; his mother kept strict kosher). Both his mother's pregnancy and the parturition were full of rituals, and it was a family matter. Simon was born into a family with a taboo: do not talk about the Second World War. His family had been victimized, and no one mentioned the deceased. "Thousands of years of rituals could not be forgotten, but we were taught not to speak about five years of annihilation." This horrible family story scarred Simon, leaving him angry and disappointed with a significant part of his personal identity.

Simon felt left out and cut off from his family, while he also struggled to give meaning to everything that happened to his ancestors. He told me that he felt lonely and not capable of fully developing an emotional bond with people. During therapy, Simon went to visit the concentration camp Auschwitz, where many of his family were murdered, and he spoke to friends of the family who were willing to talk about the family history. This reconnected Simon with his family. But it was also an important step for him to acknowledge his anger toward his parents, who in my terms obstructed him in integrating his prenatal time in his life.

What I learned from these cases is to keep evaluating the intergenerational stories of my patients. And to keep in mind that sometimes these stories have a great impact on who we eventually become. John taught me about the anguish of one's inescapable fate, related to his predefined role in his family story and his personal life. Lana showed me how my personal feelings kept me from being the therapist she

deserved—a therapist who could also facilitate the maternal bond her child needed to develop in a healthy way. And Simon showed me the significance of the unspoken past.

I have asked many patients questions like "What kind of person did your parents want you to become?" And "Do you think they expected that of you even before you were born?" This type of questioning is quite common in family therapy (see, for example, Bowen's family system therapy and Böszörményi-Nagy's contextual therapy). Time is not often a separate element in psychotherapy, but perhaps more often than in other therapeutic approaches family therapists do try to connect the present with the (intergenerational) past and the hypothetical future (Boscolo & Bertrando, 1992; or "hypothetical future/reflexive questioning," Tomm, 1987).

Maternal Psychiatric Problems

In this chapter I mainly focus on the prenatal time in nonpsychiatric parents. But several studies stress the importance of specific counseling particularly for mothers with psychiatric problems. For instance, Bergner, Monk, and Werner (2008) found that maternal depression is associated with increased basal cortisol levels and increased high-frequency heart rate variability, and that babies born to depressed mothers have lower motor tone, are less active, and are more irritable. They also have fewer facial expressions in response to happy faces, disrupted sleep patterns, increased fussiness, and "non-soothability"; also, there is increased negative reactivity in 2- and 4-month-olds.

We know that traumatized patients with borderline personality disorder (BPD) have a higher chance of developing attachment problems (Nickell, Waudby, & Trull, 2002). Consistent evidence is still lacking, but "the traumatized parent may re-traumatize their infant through insensitive, inconsistent, frightening and confusing interactions" (Beebe & Lachman, 1988); and Hobson et al. (2009) found some evidence for this clinical observation. Newman and Stevenson (2008) summarize prior research, when they state that "mothers with BPD have been observed to be intrusive, insensitive and poorly attuned to their infant's

needs and communication when compared to mothers with no apparent psychopathology" (p. 506). This is problematic, particularly when we realize that mothers with borderline personality disorder are significantly more likely to have negative birth outcomes, partially due to psychosocial problems like drug abuse or financial stress (Blankley, Galbally, Snellen, Power, & Lewis, 2015).

Unborn children of mothers with psychiatric problems are at higher risk. Early analysis of the ability of the parents to emotionally bond with their unborn, therapy focusing on maternal stress during pregnancy (Winsper, Wolke, & Lereya, 2016), and postnatal programs focused on mother–child interaction and attachment (Crandell, Patrick, & Hobson, 2003) might have a profound effect on the development of the child. Several programs have been developed to increase the bond with one's unborn child in the prenatal stage (Raffai, 1997; Schroth, 2010), but these have not yet been systematically evaluated in clinical research.

General Discussion and Summary

As a long-time clinician, part-time researcher, and all-time father, I felt the need to add something to the development of time perspective theory. In this chapter I wrote about the many aspects of the bonding between the unborn and the upcoming parents. My clinical cases illustrated some of the negative effects, my own diary mostly the positive ones, and the questionnaires shed some light on the ideas of upcoming parents about their child.

When I examined the data from my own diary, one conclusion was evident: the time in which my wife tried to get pregnant, including the clinical phase, was dominated by Present-negative referrals. I titled my diary "The Children's Mafia" to begin with, and my first sentence was: "The Children's Mafia has many voices, among which is that of my girlfriend. It's first evil deed was to forbid me to drink any more alcohol, because alcohol would exterminate my semen." This focus on the Present-negative changed when my wife got pregnant and when I dared to imagine the fetus would survive and grow into a child.

What can I say about the role of time before birth and how to integrate this into time perspective theory? In some of my earlier work I wrote about general tendencies in the Past, Present, and Future orientations of time perspective theory (Stolarski et al., 2014), about time perspective in suicidality from a time perspective and a terror management theory viewpoint (Van Beek & Chistopolskaya, 2014,) and the about the transcendental future (Van Beek & Kairys, 2014). In other words, it is about life, about life before inevitable death, about the afterlife; in this chapter I hoped to integrate the "before-life" into the further development of time perspective theory. The concept of prenatal time meanders on the borders between folk psychology, spirituality, and science. It is, and probably will be forever, a hard concept to substantiate with quantitative research methods. We need more longitudinal research to find out what the effects of parents' expectations are on the development of the child, and how we can affect these necessary elements for bonding with the child, in a healthy postnatal attachment.

Prenatal time is a specific case of Past time perspective. The construct is a contribution to the necessary refinement of time perspective theory, in order to connect it to existing literature and findings from developmental and clinical psychology. Prenatal time invites us to regard time perspective also as an interpersonal and intergenerational construct. We are part of an extended time scale: a "before me" and a "broader than me." It is time perspective in a retrospective (prenatal time) and prospective (transcendental future) sense. Prenatal time connects us as individuals to a bigger whole, which can be experienced as both positive and negative.

In my clinical cases, I highlighted the negative aspects, but in my personal story I exemplified the significance of the positive side. I developed a life-long attachment relationship with my daughter. This started way before she was born, when as an adolescent I began thinking about eventually having "a child," when I talked about parenthood with my family later in life, and when my wife and I decided to find out if she could get pregnant. My child existed as a mental image for a great part of my life—long before she was born. The process from "a child" to "her" radically changed the emotional meaning and significance of the ambivalent relationship I had with that "a child." It went from an imaginary object to my

beloved daughter. I have had many thoughts about her, before and after her birth, and I am sure this has affected me, my ideas about her, my attachment style, and my ideas about her upbringing. I became closely attached to her when she was born, and I welcomed her as someone I have been knowing for a long time.

This chapter leads to a few questions: Is this a special case of Past time perspective? If not, how does one distinguish the two? A few lines of research may help clarify this point. Also, there is a need to make the case for a prenatal time perspective and the characteristics associated with this TP. The three cases presented here have negative aspects; can prenatal time also be associated with positive outcomes?

Notes

1. Marianne Fockedey, http://psy.cc/psy4/?4450_Prenatale_Psychologie

References

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.

Akthar, S. (2012). *Between hours: A collection of poems by psychoanalysts*. London: Karnac Books.

Beebe, B., & Lachman, F. (1988). The contribution of mother–infant mutual influence to the origins of self- and object-representations. *Psychoanalytic Psychology*, *5*, 305–337.

Van Beek, W., & Chistopolskaya, K. (2014). Friend or foe? Escape from death, or death as an escape. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 471–481). Cham: Springer International Publisher.

Van Beek, W., & Kairys, A. (2014). Time perspective and transcendental future thinking. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; Review, research and application* (pp. 73–87). Cham: Springer International Publisher.

Benoit, D., Parker, K., & Zeanah, C. (1997). Mother's representations of their infants assessed prenatally: Stability and association with infants' attachment classifications. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *38*, 307–313.

Van den Bergh, B. R. H., & Simons, A. M. T. (2009). A review of scales to measure the mother-foetus relationship. *Journal of Reproductive and Infant Psychology*, *27*(2), 114–126.

Bergner, S., Monk, C., & Werner, E. A. (2008). Dyadic intervention during pregnancy? Treating pregnant women and possibly reaching the future baby. *Infant Mental Health Journal*, *29*, 399–419.

Blankley, G., Galbally, M., Snellen, M., Power, J., & Lewis, A. J. (2015). Borderline personality disorder in the perinatal period: Early infant and maternal outcomes. *Australasian Psychiatry*, *23*(6), 688–692.

Boscolo, L., & Bertrando, P. (1992). The reflexive loop of past, present, and future in systemic therapy and consultation. *Family Process*, *31*, 119–130.

Boyd, J. N., & Zimbardo, P. G. (1997). Constructing time after death: The transcendental-future time perspective. *Time & Society*, *6*(1), 35–54.

Brazelton, T. B., & Kramer, B. G. (1991). *The earliest relationship: Parents, infants, and the drama of early attachment*. London: Karnac Books.

Bruschweiler-Stern, N., & Stern, D. N. (1989). A model for conceptualizing the role of the mother's representational world in various mother-infant therapies. *Infant Mental Health Journal*, *10*(3), 16–25.

Carelli, M. G., Wiberg, B., & Åström, E. (2014). Broadening the TP profile: Future negative time perspective. In M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time perspective theory; review, research and application* (pp. 87–97). Springer International Publishing.

Chamberlain, D. B. (1994). The sentient prenate: What every parent should know. *Journal of Prenatal and Perinatal Psychology and Health*, *26*(1), 37–59.

Crandell, L. E., Patrick, M. P. H., & Hobson, R. P. (2003). 'Still-face' interactions between mothers with borderline personality disorder and their 2-month-old infants. *The British Journal of Psychiatry*, *183*(3), 239–247.

Cranley, M. S. (1981a). Roots of attachment: The relationship of parents with their unborn. *Birth Defects*, *6*, 59–83.

Cranley, M. S. (1981b). Development of a tool for the measurement of maternal attachment during pregnancy. *Nursing Research*, *30*, 281–284.

Dayton, C. J., Levendosky, A. A., Davidson, W. S., & Bogat, G. A. (2010). The child as held in the mind of the mother: The influence of prenatal maternal

representations on parenting behaviors. *Infant Mental Health Journal*, *31*(2), 220–241.

Doan, H., & Zimerman, A. (2003). Conceptualizing prenatal attachment: Toward a multidimensional view. *Journal of Prenatal and Perinatal Psychology and Health*, *18*, 131–148.

Draper, H., & Ives, J. (2013). Men's involvement in antenatal care and labour: Rethinking a medical model. *Midwifery*, *29*(7), 723–729.

Eccles, J. S., & Harold, R. (1991). Gender differences in sport involvement: Applying the Eccles' expectancy-value model. *Journal of Applied Sport Psychology*, *3*, 7–35.

Flykt, M., Lindblom, J., Punamäki, R.-L., Poikkeus, P., Repokari, L., Unkila-Kallio, L., … Tulppala, M. (2009). Prenatal expectations in transition to parenthood: Former infertility and family dynamic considerations. *Journal of Family Psychology*, *23*(6), 779–789.

Ford, N. M. (2002). *The prenatal person: Ethics from conception to birth*. Oxford: Blackwell Publishers Ltd.

Fraiberg, S., Adelson, E., & Shapiro, V. (1975). Ghosts in the nursery: A psychoanalytic approach to the problem of impaired infant–mother relationships. *Journal of the American Academy of Child Psychiatry*, *14*, 387–421.

Gizir, C. A., & Aydin, G. (2009). Protective factors contributing to the academic resilience of students living in poverty in turkey. *Professional School Counseling*, *13*(1), 38–49.

Habib, C., & Lancaster, S. (2006). The transition to fatherhood: Identity and bonding in early pregnancy. *Fathering: A Journal of Theory, Research, and Practice about Men as Fathers*, *4*(3), 235–253.

Hobson, R. P., Patrick, M. P. H., Hobson, J. A., Crandell, L., Bronfman, E., & Lyons-Ruth, K. (2009). How mothers with bordeline personality disorder relate to their year-old infants. *British Journal of Psychiatry*, *195*, 325–333.

Jensen, A. C., & McHale, S. M. (2015). What makes siblings different? The development of sibling differences in academic achievement and interests. *Journal of Family Psychology*, *29*(3), 469–478.

Kapur, M. (2014). Consciousness, memory and dreams in Kashyapa Samhita. In S. Menon, A. Sinha, & B. V. Sreekantan (Eds.), *Interdisciplinary perspectives on consciousness and the self* (pp. 73–79). New Delhi: Springer.

Kim, P., Mayes, L., Feldman, R., Leckman, J. F., & Swain, J. E. (2013). Early postpartum parental preoccupation and positive parenting thoughts: Relationship with parent–infant interaction. *Infant Mental Health Journal*, *34*(2), 104–116.

Kim, P., Rigo, P., Leckman, J. F., Mayes, L. C., Cole, P. M., Feldman, R., & Swain, J. E. (2015). A prospective longitudinal study of perceived infant outcomes at 18–24 months: Neural and psychological correlates of parental thoughts and actions assessed during the first month postpartum. *Frontiers in Psychology*, *6*, 1772. https://doi.org/10.3389/fpsyg.2015.01772

Košťál, J., Klicperová-Baker, M., Lukavská, K., & Lukavský, J. (2015). Short version of the Zimbardo time perspective inventory (ZTPI–short) with and without the future-negative scale, verified on nationally representative samples. *Time & Society*, *25*(2), 169–192.

Lagercrantz, H. (2014). The emergence of consciousness: Science and ethics. *Seminars in Fetal & Neonatal Medicine*, *19*(5), 300–305.

Lagercrantz, H., & Changeux, J. P. (2009). The emergence of human consciousness: From fetal to neonatal life. *Pediatric Research*, *65*(3), 255–260.

Lazarus, K., & Rossouw, P. J. (2015). Mother's expectations of parenthood: The impact of prenatal expectations on self-esteem, depression, anxiety, and stress post birth. *International Journal of Neuropsychotherapy*, *3*(2), 102–123.

Levendosky, A. A., Bogat, G. A., Huth-Bocks, A. C., Rosenblum, K., & Von Eye, A. (2011). The effects of domestic violence on the stability of attachment from infancy to preschool. *Journal of Clinical Child & Adolescent Psychology*, *40*(3), 398–410.

Lieberman, A., Padrón, E., Van Horn, P., & Harris, W. (2005). Angels in the nursery: The intergenerational transmission of benevolent parental influences. *Infant Mental Health Journal*, *26*(6), 504–520.

Littleton, H. L., Bye, K. S., Buck, K., & Amacker, A. (2010). Psychosocial stress during pregnancy and perinatal outcomes: A meta-analytic review. *Journal of Psychosomatic Obstetrics and Gynecology*, *31*, 219–228.

Loeb, P. S. (2013). Eternal recurrence. In K. Gemes & J. Richardson (Eds.), *The Oxford handbook of Nietzsche*. Oxford: Oxford University Press.

López-Teijón, M., Garcia-Faura, A., & Prats-Galino, A. (2015). Fetal facial expression in response to intravaginal music emission. *Ultrasound*, *23*(4), 216–223.

Lumley, J. M. (1982). Attitudes to the fetus among primigravidae. *Australian Pediatric Journal*, *18*, 106–109.

Maas, A. J., Vreeswijk, M. J. M., de Cock, S. A., Rijk, H. A. M., & van Bakel, J. A. (2012). "Expectant parents": Study protocol of a longitudinal study concerning prenatal (risk) factors and postnatal infant development, parenting, and parent-infant relationships. *BMC Pregnancy and Childbirth*, *12*, 46.

Mahler, M. (1952). On child psychosis and schizophrenia: Autistic and symbiotic infantile psychoses. *Psychoanalytic Study of the Child*, *7*, 286–305.

Mikulincer, M., Dolev, T., & Shaver, P. R. (2004). Attachment-related strategies during thought-suppression: Ironic rebounds and vulnerable self-representations. *Journal of Personality and Social Psychology*, *87*, 940–956.

Newman, L., & Stevenson, C. (2008). Issues in infant-parent psychotherapy for mothers with borderline personality disorder. *Clinical Child Psychology and Psychiatry*, *13*(4), 505–514.

Nickell, A. D., Waudby, C. J., & Trull, T. J. (2002). Attachment, parental bonding and borderline personality disorder features in young adults. *Journal of Personality Disorders*, *16*(2), 148–159.

Obegi, J. H., & Berant, E. (2009). *Attachment theory and research in clinical work with adults*. New York: Guilford Press.

Oppenheim, D., Koren-Karie, N., & Sagi-Schwartz, A. (2007). Emotion dialogues between mothers and children at 4.5 and 7.5 years: Relations with children's attachment at 1 year. *Child Development*, *78*, 38–52.

Raffai, J. (1997). Mother-child bonding-analysis in the prenatal realm. *International Journal of Prenatal and Perinatal Psychology and Medicine*, *9*(4), 407–415.

Rank, O. (1929). *The trauma of birth*. New York: Dover Publications.

Schroth, G. (2010). Prenatal bonding (BA): A method of encountering the unborn: Introduction and case study. *Journal of Prenatal and Perinatal Psychology and Health*, *25*(1), 3–16.

Selin, H. (Ed.). (2014). *Parenting across cultures: Childrearing, motherhood and fatherhood in non-western cultures*. Dordrecht/New York: Springer.

Stern, D. N. (1995). *The motherhood constellation. A unified view of parent-infant psychotherapy*. New York: Basic Books.

Stolarski, M., Fieulaine, N., & van Beek, W. (2014). *Time perspective theory; Review, research and application*. Cham: Springer International Publisher.

Thapar, R. (2002). Cyclic and linear time in early India. In K. Ridderbos (Ed.), *Time* (pp. 27–45). Cambridge: Cambridge University Press.

Tomm, K. (1987). Interventive interviewing: Part I. Strategizing as a fourth guideline for the therapist. *Family Process*, *26*(1), 3–13.

Tyano, S., Keren, M., Herrman, H., & Cox, J. (2010). *Parenthood and mental health: A bridge between infant and adult psychiatry*. Chichester: John Wiley & Sons Ltd.

Verny, T., & Kelly, J. (1981). *The secret life of the unborn child*. New York: Summit Books.

Vowinckel, J. C., Westerhof, G. J., Bohlmeijer, E. T., & Webster, J. D. (2015). Flourishing in the now: Initial validation of a present-eudaimonic time perspective scale. *Time & Society*. https://doi.org/10.1177/0961463X15577277.

Vreeswijk, C. M. J. M., Maas, A. J., Rijk, C. H. A. M., & van Bakel, H. J. A. (2014). Stability of fathers' representations of their infants during the transition to parenthood. *Attachment & Human Development*, *16*(3), 292–306.

Wilson, M. E., White, M. A., Cobb, B., Curry, R., Greene, D., & Popovich, D. (2000). Family dynamics, parental-fetal attachment and infant temperament. *Journal of Advanced Nursing*, *31*, 204–210.

Winsper, C., Wolke, D., & Lereya, T. (2016). Prospective associations between prenatal adversities and borderline personality disorder at 11–12 years. *Psychological Medicine*, *45*(5), 1025–1037.

Zeanah, C. H., Zeanah, P. D., & Stewart, L. K. (1990). Parents' constructions of their Infants' personalities before and after birth: A descriptive study. *Child Psychiatry and Human Development*, *20*(3), 191–206.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, *77*(6), 1271–1288.

Wessel van Beek is affiliated with GGZ Veenendaal, Veenendaal The Netherlands. His main research interests are time and behavior, suicidology, and temporal coherence. He was co-editor of *Time Perspective Theory; Review, Research and Application* (2015). He combines research with psychotherapy and management.

Index

A. Kostić, D. Chadee (eds.), *Time Perspective*,
https://doi.org/10.1057/978-1-137-60191-9