

Chapter 5

The Systems Theory Framework: A Systems Map for Career Theory, Research and Practice



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Abstract The Systems Theory Framework of career development (STF) recognises the contextually embedded nature of career development through its application of systems thinking and systems mapping. First published almost a quarter of a century ago, the STF continues to serve as a systems map that can inform, conceptualise and integrate contemporary career theory. In addition, the systems maps of the therapeutic system, the school system and the research system provide conceptual and practical maps for career practitioners that stimulate reflection on career practices such as career counselling and career education, and for researchers to consider the status quo of career research. Systems mapping is a process that facilitates analytical reflection on particular issues and has been applied to individual career decision making through the qualitative career assessment instrument My System of Career Influences (MSCI). The MSCI (Adult and Adolescent versions) guide individuals through the construction of their own systems maps of career influences. This chapter overviews the Systems Theory Framework. Applications of the STF are considered and the STF's utility as a systems map to conceptualise career theory, research and practice at both macro and micro levels is elaborated.

Keywords Systems theory framework · STF · Systems mapping · Systems thinking · My system of career influences

Almost a quarter of a century after it was first published, the Systems Theory Framework of career development (STF; McMahon and Patton 1995, 2018; Patton and McMahon 1999, 2006, 2014, 2015, 2017) continues to serve as a systems map

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that can inform contemporary career theory, career research and career practice. This chapter begins with an overview of the Systems Theory Framework, which applies systems thinking and systems mapping to career development. Applications of the STF are then considered and the STF's utility as a systems map to conceptualise career theory, research and practice at both macro and micro levels is elaborated.

The Systems Theory Framework of Career Development

The Systems Theory Framework was borne out of a need for news of difference in the field of career development at a time when the relevance of the extant theory and practice to the complex needs of diverse clients in a rapidly changing society was being questioned (e.g., Collin and Young 2000; Savickas and Lent 1994). Career development was challenged to modernise its practices and renovate (Savickas 2000) in order to be fit for purpose in the twenty-first century. The challenges for career development were many including the multitude and divergence of career theories. Concerns were expressed about whether convergence of career theories was needed or whether an overarching framework might be useful (e.g., Savickas 1993; Savickas and Lent 1994). A further related challenge was perceived as a reliance on constructs emanating from the positivist worldview such as objectivity, linearity and cause and effect and little recognition of constructs emanating from the constructivist worldview such as personal agency, meaning, subjectivity and emotion. Limited attention to culture and to the context of career development was and remains a persistent challenge for career development. Indeed, the complex and contextual nature of career development caused Savickas (1995) to observe that positivism, the philosophical foundation of many theories at that time, would limit its comprehensive study.

Responses to these challenges emerged in the form of new theories (e.g., Career Construction theory [Savickas 2013]; Chaos Theory of Careers [Pryor and Bright 2011]) and practices (e.g., narrative career counselling) and are largely underpinned by the tenets of constructivist and social constructionist philosophies, which emphasise personal agency, meaning making, subjectivity, and narrative discourse. Similarly, the Systems Theory Framework (McMahon and Patton 1995, 2018; Patton and McMahon 1999, 2006, 2014, 2017) is underpinned by constructivist philosophies.

The STF emanated from research based on McMahon's (1992) contextual framework for adolescent career decision making and is one of the earliest responses to modernising career development and the first to explicitly employ systems theory as its foundation. Emanating from Latin and later the Greek word *systema*, a system is best described as a whole comprising many parts. Systems theory itself originated in the field of biology in the work of Ludwig von Bertalanffy (1934) who recognised as early as 1928 that a complete picture of any phenomena cannot be provided by single parts and processes and published his seminal work, *General Systems Theory*, in 1968. Essentially, "to understand things systemically literally means to

put them into a context, to establish the nature of their relationships” (Ison 2008, p. 142); systems theory is multidisciplinary in its application. In the discipline of career development, Osipow (1983) first recognised its potential usefulness and Collin (1985, 2006) developed a conceptual model of career based on systems theory. Systems thinking and systems mapping are a means of operationalising systems theory and are central to the STF and its application to career development. Systems thinking facilitates meaningful understanding of a phenomena such as career development by constructing a whole picture (Flood 2010). It offers a means by which the complex and dynamic nature of career development may be understood and systems mapping provides a visual representation of it.

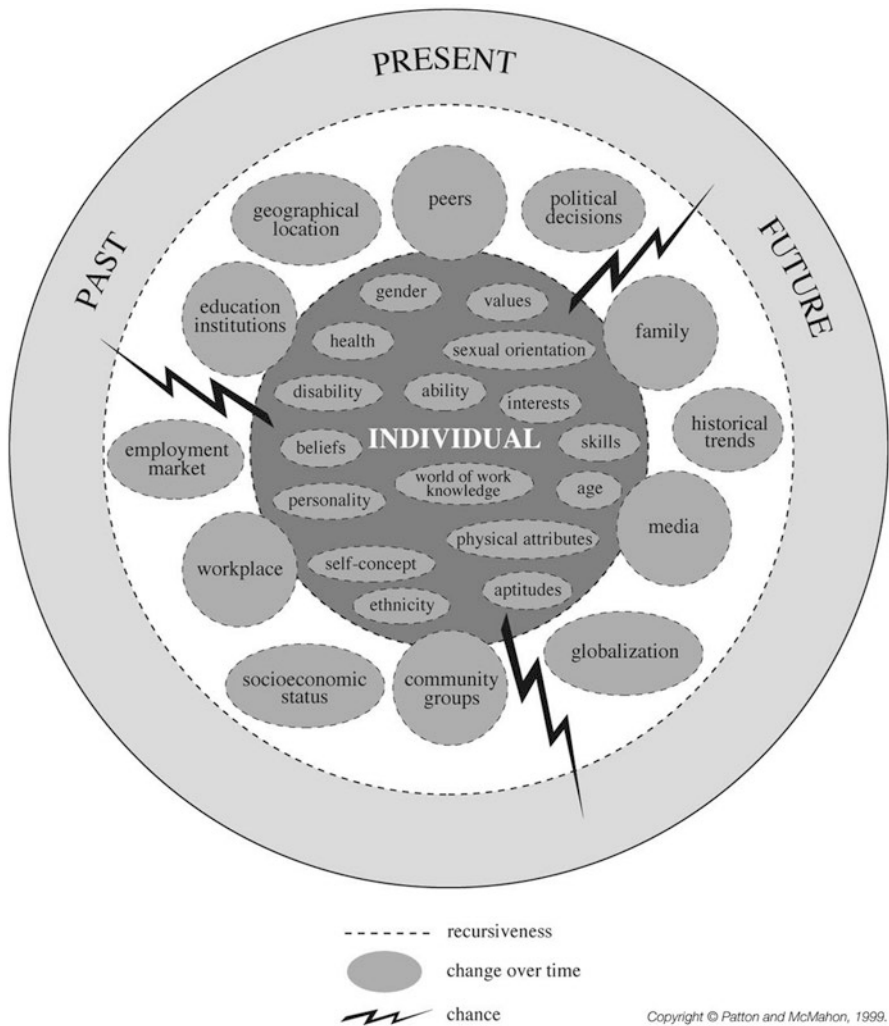


Fig. 5.1 The Systems Theory Framework of career development

Systems maps are holistic diagrams developed on a particular topic (Király et al. 2016); the STF is itself a systems map (see Fig. 5.1) that depicts many contextual influences on career development in a series of interconnected systems. The term influence has neither positive nor negative connotations; it merely signifies an interaction between the influence and the individual or other influences in the system. The individual's location in the STF serves as a reminder that, consistent with systems theory, an "individual in context view" of career development is needed in order to avoid "oversimplification of career decision-making and career development" (McMahon et al. 2014, p. 30). An "individual in context view" has relevance in individualistic cultures such as western cultures and also in collectivist cultures where career decision making may be socially embedded in families and communities.

Career development is depicted in the STF as a series of interconnected systems of influence, specifically: the individual system, the social system, and the environmental-societal system, which are located within the context of past, present and future time. The STF and its systems of influence are open systems, which means that they are subject to influence from elements beyond their permeable boundaries and that they can also exert influence beyond their boundaries. Within each of these interconnected systems are located a number of influences that represent the content of career development. Some of these influences have been the focus of career theories that offer detailed accounts of them (e.g., personality has been accounted for in detail by Holland's (1997) theory of vocational personalities and work environments). By contrast, the STF is not a theory; rather, the STF was conceived as a meta-theoretical framework, which is, in essence, a broad perspective that over-arches a number of theories. As such, the STF recognises the contribution of all theories and their capacity to provide detailed accounts of some of the influences identified in the STF. The STF also makes visible little researched influences and influences that have seldom been accounted for in career theory. Such influences, and others not represented in the STF, will emerge in the stories told by individuals in career counselling and career programs. Thus, the STF is responsive to Super's (1992) observation that it is unlikely that a single theory can be comprehensive enough to adequately account for career development.

The STF is a complex and dynamic framework of career development that depicts both content and process influences. At the centre of the STF is the individual system featuring a range of intrapersonal influences (e.g., beliefs, gender, personality, values) on career development. With career psychology's origins in differential psychology, some of the intrapersonal influences have been intensely researched. For example, extensive bodies of research have been amassed about well-known career influences such as personality, values, and interests. Further, research on influences such as interests has driven the development of myriad career assessment instruments. Other intrapersonal influences such as sexual orientation and disability have received little research attention in career development yet may have profound influence on individuals' careers.

Intersecting the individual system are the influences of the social system, the 'significant others' with whom the individual may interact and who may be

influential in their career development. Social influences include family, peers, workplaces, education institutions, community groups and media. Career development research has paid much less attention to social influences. A feature of the STF, as discussed previously, is the dynamic process of change over time. This manifests in changing constellations of influences over time and change in the nature of influences. For example, when the STF was first published, the influence of media, which has been little researched in career development, primarily concerned newspapers, magazines, radio and television. Since that time, the rapid growth of social media has seen it become increasingly influential in career development as a means of networking, self-promotion and information.

The third of the interconnected systems of influence is the environmental-societal system that incorporates the influences of socioeconomic influence, geographic location, globalisation, political decisions, historical trends and the employment market. Most of these influences have been little researched in the field of career development even though their impact on career development can be profound as demonstrated by research conducted in other fields such as geography, economics, education and sociology (see McMahon and Patton 2018).

The content influences could in themselves appear static. The STF, however, also depicts the dynamism of career development through its process influences of recursiveness, change over time, and chance. Recursiveness is the process of interaction within and between influences and between systems and is depicted as dotted lines in the STF to illustrate the permeability of the systems' boundaries. Change over time recognises that incremental change is ongoing and occurs over time in and between influences. For example, for most individuals, the influence of family is ever present yet the nature of its influence changes through life and may be configured differently at different stages of lifespan career development (e.g., childhood or adulthood). Change, however, may also be sudden or spontaneous (e.g., during a major life crisis) and the system may be required to develop a new form of functioning to accommodate it; such change is termed discontinuous change. Chance recognises the influence on career development by unexpected natural and human events and encounters. Essentially, the STF is a map of influences and interrelationships (McMahon and Patton 2017); systems thinking considers the interrelationships and interaction between influences by "looking inside the 'space between'" them (Sexton 2012, p. 61).

An important feature of the STF is its emphasis on an "individual in context" (McMahon et al. 2014, p. 30) perspective that enables individuals to place their own emphasis on influences dependent on their culture. Indeed, applications of the STF (e.g., the MSCI) enable individuals to construct personalised and culturally sensitive STF's. Consequently, culture is not explicitly represented in the STF because of its multifaceted and personal nature and its many possible locations in the system. Similarly, constructs such as identity and work are not specifically located in the STF because they, along with culture, exist in the recursiveness and spaces of the system.

Systems thinking underpins key constructs of systems theory and, consequently, the STF, including wholes and parts, patterns, acausality, abduction, recursiveness,

discontinuous change and story. For example, the interconnectedness of wholes and parts reflects systems thinking; a comprehensive understanding of a part is best achieved by viewing it in the context of the whole. Within complex, dynamic open systems, recursiveness (interaction) occurs within and between parts, between parts and the whole, and between parts, the whole and influences beyond the permeable boundaries of the system. Change is continuous in systems; discontinuous change results in differences in the system before and after change that may seem unrelated. Patterns may emerge within and between systems (e.g., patterns of behaviour and interaction). The complexity of systems and the recursiveness between parts suggests that cause is difficult to determine and this is referred to as acausality; linear cause and effect relationships are not consistent with systems thinking. Because patterns exist within systems and cause and effect thinking is not appropriate, a form of reasoning known as abduction is a construct of systems theory. Abduction involves thinking across the influences in the system, sometimes by examining patterns and relationships. In practice, career development is best accounted for by the stories told by individuals. These constructs underpin applications of the STF in theory, research and practice.

Applications of the STF

A strength of the STF throughout its history has been its integration between theory, research and practice (see McMahon and Patton 2018 and Patton and McMahon 2017). In particular, the STF has underpinned research, been informed by research, and has stimulated the development of practical applications in career counselling and career assessment. Further, the STF has stimulated theory integration. Theory integration will be considered first followed by a brief overview of the STF's practice applications. Finally, career research will be considered in relation to the STF.

Theory Integration

Theory integration may be facilitated by the STF at three levels. First, it may be used to demonstrate integration between career theories and also with practice. Second, it may be used to demonstrate integration with other disciplines; and, third, it may be used to analyse theoretical constructs. The STF has been applied to analyse integration between career theories at the macro-level (e.g., McIlveen 2007; Patton 2007, 2008, 2015) and individual career development at the micro-level (McMahon et al. 2013). For example, Patton (2015) considered the relationship between the STF and Contextual Action theory and concluded that despite their differences, they share conceptual similarities through their root metaphor in contextualism and also similarities in practice through their development of measures and approaches that may be utilised by practitioners. McIlveen (2007) and McIlveen

and Patton (2007) described the theoretical integration of the STF and dialogical career theory to develop the dialogical career assessment instrument, *My Career Chapter* (McIlveen 2006). At the micro-level of individual career development, McMahon et al. (2013) analysed the career development of older women and considered the potential provision of career services at various points in women's careers from the perspective of the STF. In discussing the integration of relational theory and the STF, Patton (2007) explained the relational dimension of career assessment instruments based on the STF and how theory practice integration may be facilitated at the micro-level of interventions with individuals.

As a meta-theoretical framework of career development, the STF also has a capacity to integrate the potential contributions of other disciplines to career development and illustrate where they may apply (see McMahon and Patton 2018). For example, the work of the English sociologist Roberts (2012) provides insight into the impact of socioeconomic status of career development. Patton and McMahon (1999, 2006, 2014) integrate Experiential Learning Theory (ELT; Kolb 1984) as a learning theory underpinning career practice based on the STF. This is further elaborated later in the chapter. Finally, the STF has also been used as a lens through which to analyse career development constructs such as work (McMahon 2017), learning (Patton and McMahon 1999, 2006, 2014), and identity (McMahon 2014). Such constructs are intentionally not visible in the STF because they are fluid and exist in the recursiveness of the system (i.e., the dotted lines), and in the spaces (see Fig. 5.1).

Career Practice

A strength of the STF since its inception in McMahon's (1992) contextual framework is the importance placed on its application to practice. For example, subsequent to the publication of the first theoretical statement of the STF (McMahon and Patton 1995), a range of Australian authors considered its practice applications with diverse potential clients and in diverse settings in an edited text (Patton and McMahon 1997). Fundamental to practical applications of the STF is the process construct of learning in which Patton and McMahon (1999, 2006, 2014) position individuals as learners, a feature that distinguishes the STF from contemporary career theories such as career construction theory and the chaos theory of careers. Drawing on constructivist learning principles, enacted through Experiential Learning Theory (ELT; Kolb 1984), learning results from the recursive process between experiencing, reflecting, thinking, and acting (Kolb and Kolb 2010). Career development practitioners (e.g., career counsellors and career teachers) are positioned as learners and also as learning facilitators who "generate learning experiences for clients" (Krumboltz 1996, p. 75) and "facilitate the learning of skills, interests, beliefs, values, work habits, and personal qualities that enable each client to create a satisfying life within a constantly changing work environment"

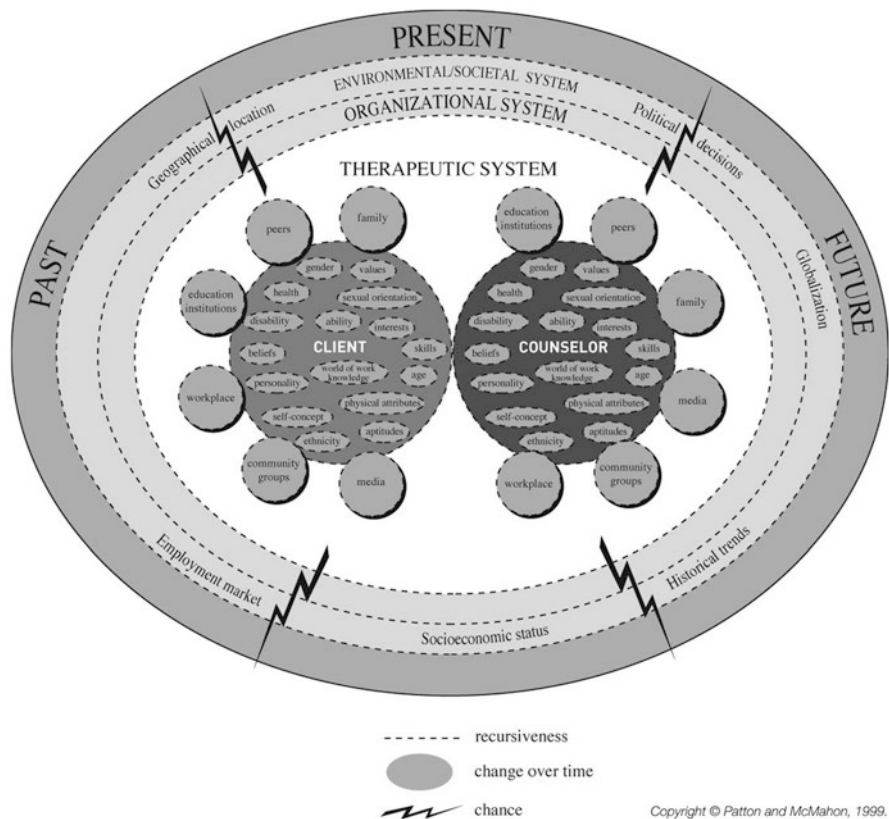


Fig. 5.2 The therapeutic system

(Krumboltz, p. 61). Utilising ELT to provide an explanation of learning is an example of the STF’s meta-theoretical capacity to integrate other theories.

Just as the STF’s contribution to career theory is guided by the systems map of the STF, so too are its practical applications guided by the systems maps of the therapeutic system (see Fig. 5.2) and the school system (see Fig. 5.3). Indeed, McMahon and Patton (2017) describe the STF as a conceptual and practical map. The systems maps of the therapeutic system and the school system provide a lens through which to conceptualise at the macro-level career counselling and career education in schools respectively. The STF’s application to career counselling, career assessment and career education will be briefly considered.

Career Counselling

The systems map of the therapeutic system (see Fig. 5.2) provides a visual depiction through which career counselling may be conceptually understood at the macro-level. It demonstrates the individual system of the client in recursive interaction

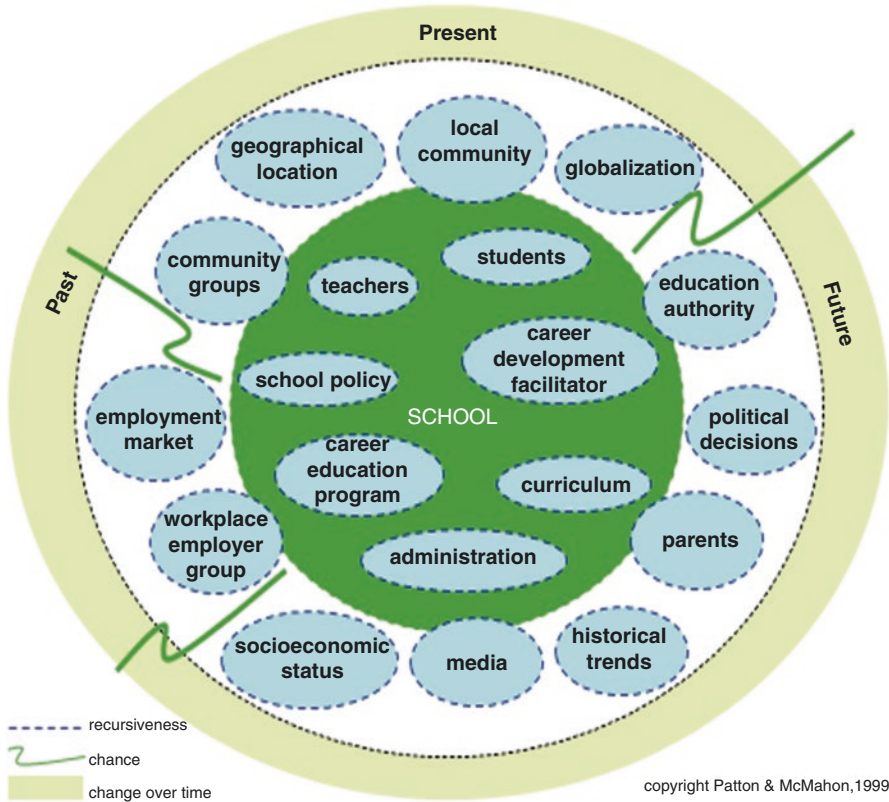


Fig. 5.3 The school system

with the individual system of the career counsellor within the context of a counselling setting such as an organisation (e.g., a clinic or private practice) and the broader environmental-societal system. The therapeutic system is also located within the context of past, present, and future time. Thus, at the macro-level, career counselling is depicted as a complex culturally and contextually based interaction.

Foundational to the STF's application to career counselling is an understanding of its core theoretical constructs of the individual, systemic thinking, recursiveness and story. As depicted in Fig. 5.2, career counsellors must take an individual in context view of their clients while at the same time also remaining aware of their own systems of influence and their potential impact on career counselling. They must also be aware of the influence of the organisational and environmental-societal systems in which their work occurs and in which clients' careers are constructed. By facilitating a narrative process, career counsellors assist clients to tell stories that connect them with their systems of influence and in turn career counsellors also come to learn about the complex and recursive nature of the client's system of influences. Thus, at a practical level, career counsellors facilitate a narrative process

through the use of story that assists clients to think systemically about their careers and to identify themes and patterns located within and between stories.

Systems thinking and the systems map of the therapeutic system offer possibilities of interventions with influences from the broader system to achieve good outcomes for clients (see Arthur and McMahon 2005). For example, career counselling with a couple, advocacy with an organisation or government department, or including the involvement of a family may be enacted with the permission of the client and in their best interests in order to achieve a desirable outcome. In the therapeutic system, career counsellors aim for a client-counsellor relationship that demonstrates the Rogerian principles of empathy, unconditional positive regard and genuineness (Rogers 1951), which, in turn, establishes a mattering climate where clients feel valued and listened to (Schlossberg et al. 1989).

Story is at the heart of the STF's application to career counselling and is central to the story telling approach (McMahon 2005; McMahon and Watson 2010, 2012a, 2013) to narrative career counselling that is a direct application of the STF. The core STF constructs of connectedness, meaning making, agency, reflection and learning (McMahon 2005; McMahon and Patton 2017) are evident in the story telling approach which

encourages individuals to engage in a reflective process (reflection) during which they tell their stories in relation to the systems of influence within which they live (connectedness), begin to understand how identified influences have impacted on their story (meaning making), identify themes and patterns evident within and across stories (learning), and, as a result, play a more active role in constructing their future identities and career stories (agency) (McMahon et al. 2015, p. 151).

Preliminary research has investigated how the core constructs manifest in the story telling approach (McMahon et al. 2012a) and McMahon and Watson (2012a) have provided some guidelines regarding three levels of story crafting questions that may be used by career counsellors, specifically questions on (a) content and experiences, (b) connectedness and subjective experience, and (c) identification of themes and patterns. The story telling approach (McMahon and Watson 2010, 2012a, 2013) and its core constructs are also reflected in the application of the STF to career assessment.

Career Assessment

The STF has provided a stimulus for the development of a number of career assessment instruments that have also served to stimulate research. In the context of this chapter, a detailed description of each instrument is not possible so they will be overviewed. The most widely known and used instrument is the *My System of Career Influences* in its adolescent (McMahon et al. 2017a, b) and adult versions (McMahon et al. 2013a, b). The MSCI most closely reflects the visual and conceptual framework of the STF.

Both versions of the MSCI involved an extensive process of international collaborative research. The adolescent booklet and facilitator's guide was developed

over a four-year and three-stage trialling process across two nations (Australia and South Africa; see McMahon et al. 2017a) and the adult MSCI was developed over a 2 year period across three nations (Australia, England and South Africa; see McMahon et al. 2013b) and sampled adults in a variety of large public sector, private practice and private organisational settings. The MSCI (Adolescent version) has been translated into languages such as Cantonese, French, German, and Dutch, and the adult version has been translated into Italian. The MSCI is a booklet which guides users through a process of reflection on their career influences from each of the STF's subsystems and culminates in the drawing of a personalised systems map of career influences and making an action plan. To accommodate cultural diversity, clients are given an option about where they want to begin their reflection; for example, with individual, social, or environmental-societal influences. Such personalised maps ideally then become a focus for dialogue in small groups or in career counselling. Demonstrating theory, practice, research integration, the MSCI adult version has been used for example, in case study research in higher education in South Africa (McMahon et al. 2012b; Watson and McMahon 2009) and the adolescent version has been used in research with a range of participants internationally (see the section below on research). Further, McMahon et al. (2012b) demonstrated how other forms of career assessment could be integrated within the meta-framework of the MSCI process. This South African research demonstrated how the MSCI could assist clients to consider their intrapersonal strengths in the context macro-systemic barriers.

The STF provides a map for narrative systemic interviewing as reflected by applications of McMahon's (1992) original contextual model that predated the STF and included structured peer interviews and adolescent-parent interviews. The *Career Systems Interview* (CSI; McIlveen 2003; McIlveen et al. 2003) is an example of a semi-structured interview process that is theoretically grounded in the STF and invites users to reflect on all of its influences. Prior to completing the CSI, McIlveen (2015) suggests that clients are familiarised with the STF map. Subsequent to completing the CSI, clients are encouraged to write an autobiography either using My Career Chapter (McIlveen 2006) qualitative assessment process (discussed in the following subsection) or in other forms of career assessment. Initial research (McIlveen et al. 2003) with a small group of undergraduate students using a pre-post experimental-group design suggested the potential usefulness of the CSI in career counselling. McIlveen (2015) suggests that beginning the interview with the environmental-societal influences that are less personal in nature, before moving to social and individual influences may enhance rapport building. A further example of narrative systemic interviewing is that of a sentence completion exercise (McIlveen et al. 2005) based on the STF that stimulated the development of My Career Chapter (McIlveen 2006). More recently, the STF has guided the development of systemic interviews (Integrative Structured Interview; ISI) based on the results of quantitative career assessment instruments (McMahon and Watson 2012b; Watson and McMahon 2015). To date ISIs have been developed for the *Self-Directed Search* (Holland 1985) and Super's *Work Values Inventory – Revised* (Zytowski 2006). These interviews provide an opportunity for clients to make meaning of their results

in the context of work and life experiences. Preliminary research suggests that clients find the ISIs beneficial (e.g., McMahon et al. 2018).

My Career Chapter (MCC; McIlveen 2006) was developed as an STF based resource for narrative career counselling to assist clients to write “an autobiography of their career” (McIlveen and Patton 2007, p. 76). In a series of seven steps, clients reflect on their systems of influence and write their responses as a short story that is subsequently read out loud and then edited by the client from different voices such as themselves 5 years earlier (McIlveen 2015). Clients can also identify themes in their stories and make meaning of them (McIlveen & Patton, p. 76). Similar to the MSCI and its parent framework, the STF, the MCC may also be used with other forms of career assessment that may then be integrated into the MCC story. Preliminary research suggests that the MCC is useful in career counselling (McIlveen 2007; McIlveen et al. 2005) The MCC has also been used as a stimulus for reflective practice and self-supervision for career counsellors (Patton and McMahon 2014; McIlveen and Patton 2010).

Career Education

The systems map of the school system (see Fig. 5.3) depicts the complexity of career development work in schools and its potential challenges for career development practitioners. The school system depicts schools as subsystems of a broader system of influences that may impact curriculum and the place of career education in that curriculum but may also be resources for schools and career development practitioners and beneficiaries of career education. The school system also depicts schools as systems in their own right, comprising many sub-systems of which the career development practitioner is one.

Traditionally, career development in schools has been the responsibility of a lone practitioner who may not have a full-time career development role. Moreover, a persistent and pervasive view of career education as peripheral to the curriculum has tended to marginalise career development services in schools. Viewing career education from a systems perspective, however, suggests that many have a role to play in the effective implementation of career education. In this regard, Patton and McMahon (2014) provide an example of a review process in the form of reflective questions that career practitioners or schools could use to consider the provision of career education. The review is systemic in nature and encourages reflection at the level of the school system, including questions on students’ career development needs, career education itself including who receives it, resource and staffing allocations, the attitude of school administration personnel to career education, and the career development practitioner in terms of their skills and knowledge and their implementation of career education. At a broader systemic level, the review poses questions to guide reflection on parents and the wider school community and their involvement in career education, at the broader level of national and state policies and resource provision, and the context of time such as labour market trends. Application of systems thinking is evident in a recent text on career education that

provides a guide for practitioners in developing and developed countries (McCowan et al. 2017). As evident in the school system and in the McCowan et al. guide, the career practitioner is only one influence in a complex and dynamic system of influences on career education; effective implementation of career education from a systems perspective suggests that many influences have a role to play.

Career Research

The STF contributes to career research conceptually and methodologically. At a conceptual level, the systems map of the research system (McMahon and Watson 2007; see Fig. 5.4) provides an analytical framework that facilitates reflection on the status quo of career research. The map paves a way for critical analysis of career research, its traditions, and its gaps.

Methodologically, the STF draws attention to the potential of soft systems methodologies that are essentially qualitative, interpretative and participative and have been little used in the field of career development (McMahon and Patton in press). Soft systems methodologies employ a structured approach to research that takes a holistic view of systems and appreciates differing perspectives on a topic (Mingers

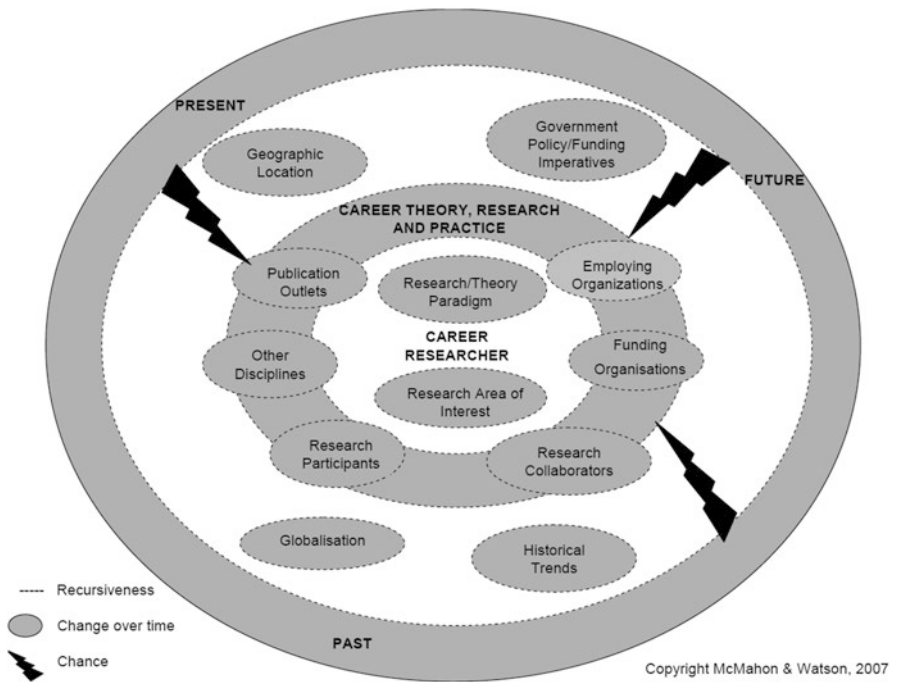


Fig. 5.4 The Research System

and Taylor 1992) and the construction of meaning (Flood 2010) and may give a voice to people who have been marginalised or not heard (Rajagopalan and Midgley 2015).

Examples of soft systems methodologies include action research and participatory systems mapping. The STF through its qualitative career assessment instrument, the MSCI, provides a means by which each research participant constructs a map of their system of career influences. Subsequently systems maps stimulate dialogue (Sedlacko et al. 2014) with peers and/or career counselling. This process stimulates learning and encourages participants to identify outcomes and actions they will take (Sedlacko et al. 2014). Both versions of the MSCI have been facilitative of international research with diverse participants including adolescents from low socioeconomic backgrounds (McMahon et al. 2008), black students from a South African township (Albien and Naidoo 2017), female black South African university students (McMahon et al. 2012b), Hong Kong Chinese college students (Yim et al. 2017), Swiss German upper secondary school Baccalaureate students (Schindler and Schreiber 2015), and adults with substance abuse disorders (Sgaramella et al. 2015). These research examples are reflective of the STF's application across countries and cultures.

The applications of the STF attest to Samuel Osipow's (1983) prediction that by applying systems theory to career development

elements of the social, personal, and economic situation within which individuals operate may be more explicitly analysed, and the relationships of the larger systems to one another may be more clearly understood than in traditional approaches to behavior, which may tend to emphasize only one major segment of the individual or the environment (p. 178).

Conclusion

The meta-theoretical Systems Theory Framework of career development demonstrates that it is able to meet Krumboltz's (1996) criteria for a "useful theory" (p. 27) through its application of systems mapping and systems thinking. Its comprehensiveness enables all potential influences on career development to be identified and explained accurately. The STF has demonstrated repeatedly its capacity to integrate with other theories, its adaptability to change, and, its many practical applications in career counselling, career assessment, career education and career research.

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