

Easy does it: an innovative view on developing career identity and self-direction

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Abstract

Purpose – A generally held belief in the field of career development is that career attitudes and abilities, including identity and self-direction, can and should be developed in school programmes with a cognitive focus. The purpose of this paper is twofold: first, to question this belief, and second, to provide a new perspective on career development that may inspire innovations for career science, and guidance during the lifespan.

Design/methodology/approach – Specific questions are formulated and answered on the basis of sources mainly stemming from neurosciences and different sub-disciplines of psychology. On the basis of a systems theory, a new approach is proposed.

Findings – Current approaches in career guidance are at odds with findings and insights from developmental sciences and brain research. Several risks of current approaches are described. One risk is identity foreclosure. Another risk involves the development of ineffective ways of thinking and decision making. A control theory that stems from cybernetics is proposed to offer an alternative view on career development.

Research limitations/implications – One implication for research is that long-term longitudinal approaches are required to fully clarify the development of self-direction and identity. Furthermore, the building and testing of models of career development based on dynamic systems theories is recommended.

Practical implications – The main implication for career practices and policies is that self-direction and identity are no realistic aims for most students. Instead, it is recommended to relieve the pressure associated with career choices for young people, and to give more time, room, stimulation and guidance for exploration and reconsideration, for adults as well. Guidance should consist of offering sufficiently varied work experiences, and counselling when individuals experience conflicts that impede direction finding. Not too much emphasis should be put on reflection and rational thinking. Acceptance and commitment therapy is recommended as an approach offering many useful insights and instruments that may inspire career professionals.

Originality/value – This paper questions a mainstream approach and offers an original point of view.

Keywords Reflection, Brain development, Identity, Foreclosure, Career education, Self-direction

Paper type Viewpoint

Introduction

In spite of divergent views on the future of the world and work, there exists a remarkable consensus that in order to be successful in one's working life in the twenty-first century, people will have to dispose of an array of attitudes and abilities. Designations that are commonly used in career theory to indicate the necessary attitudes are a "boundaryless" and "protean" career orientation (Briscoe and Hall, 2006). Common designations for necessary characteristics and abilities are a "(career) identity" (Savickas, 2013), "employability" (Vanhercke *et al.*, 2014), "adaptability" (Savickas, 2013) "career management skills" (Sultana, 2012) and "career competencies" (Kuijpers, 2016). A person who disposes of these attitudes and abilities possesses "career capital" and knows why, how and with whom to (find) work (Parker *et al.*, 2009).

Although all these concepts are distinct, they overlap to a great extent. This paper will focus on an important core in the necessary career attitudes and abilities – "self-directedness" (Raemdonck *et al.*, 2012) or "self-direction", "the desire to be agentic, in charge of one's career" (Hall *et al.*, 2018, p. 6.2). Lin (2015, p. 757) defines self-direction as "[...] self-reliance and a proactive approach in the self-management of a career such as developing goals and search opportunities while taking responsibility for developing skills and competence". Closely



related to self-direction is the concept “(career or working) identity”. Kroger (2017) defines identity as a sense of inner sameness and continuity over time that enables one to move with purpose and direction in life. In later sections some specifications will be added to the meanings of self-direction and identity.

Not only does consensus exist about the necessity of career attitudes and abilities, but there is also a policy consensus that fostering the development of these attributes is possible and useful (Sultana, 2012). For programmes aimed at the development of career attitudes and abilities, the designations “careers provision”, “career(s) education” (Hughes *et al.*, 2016), and “career learning” (Van Geffen, 2011) are often used. “[...] it is clear that career education is a vital part of equipping young people for the future and ensuring they have the skills in their adult lives to make informed decisions” (Yates and Bruce, 2017, p. 69). Often, there is a cognitive focus, as is apparent in Sultana’s (2012, p. 229) definition of career management skills, based on surveys among policy-makers in 15 countries of the European Union: “[...] a whole range of competences which provide structured ways for individuals and groups to gather, analyse, synthesise and organise self, educational and occupational information, as well as the skills to make and implement decisions and transitions”.

Schools are considered to play a major role in career education. “Educational establishments across the world are expected to equip students with the knowledge and skills for employability, sustainable employment and career development” (Leach, 2015, p. 50). Van Geffen (2011) considers school to be the best place to learn the ability of self-directing one’s career. He believes that it’s there that young people can discover who they are. “There is growing recognition that identity formation must become an important focus in education” (Kaplan and Flum, 2012, p. 171). “Schools have a moral responsibility to ensure that young people leave school with the skills, knowledge, attitudes and attributes to manage their life, learning and work” (Hooley *et al.*, 2012, p. 7). Schools are increasingly acknowledging this responsibility (Kuijpers, 2016; Leach, 2015). In many countries (e.g. Cambodia, Estonia, England) governments design secondary schools as being responsible for career development among students (Haug and Owens, 2019). For example, in the Netherlands, most students in secondary education, aged 12–16, are subjected to an examination programme that contains career competencies. They are deemed capable of understanding and directing their own learning and working processes by reflecting on their cognitive and emotional functioning (OCW, 2007). By reflecting on their experiences students at school are supposed to draw conclusions about their motives and capabilities, to construct a clear self-image or career identity, and on this foundation, to design their lives and careers (Kuijpers, 2016). In this paper career learning in secondary education is emphasised. Little is known about career learning in primary education (Hughes *et al.*, 2016). About career development in tertiary education much more is known and many ideas exist for practices to develop (Donald *et al.*, 2018; Meijers and Kuijpers, 2014). The validity of the main thesis of this paper, however, is less clear there, as students in higher education have had more time to mature.

In summary, there exists a belief that career attitudes and abilities, including self-direction and identity, can and should be developed. Efforts to realise this are undertaken in school programmes, often with a cognitive focus. This approach, however, is not based on empirical research (Hooley *et al.*, 2012; Sultana, 2012). In this paper, this approach is called the existing view. The main aim of this paper is to question this view and the policies and practices that exist around it. Some specific questions that are examined here are: when in life do people normally develop self-direction and a (career) identity? Is it opportune to accelerate this development? What is known about the development of our brains in relation to self-reflection, self-knowledge, decision making and self-direction? What is the role of conscious information processing in decision making? These questions will be examined on the basis of sources that mainly stem from neuroscience and different sub-disciplines

of psychology. Using this research, it will be argued that school is not the best place to develop self-direction and identity. On the contrary, the existing view implies risks of jeopardising career development in the long-term. Among these risks are “identity foreclosure”, “false goals” and inadequate thinking and decision-making habits.

The second aim of this paper is to provide inspiration for a more promising direction. A different view, based on a cybernetic systems approach, will be offered, as well as some ideas for theory and practice that are in line with the knowledge and insights derived from psychology and neuroscience. One aspect of the view offered here is to put less pressure on the development of self-direction and identity in education, but instead, offer more opportunities and guidance for career development for adults. Another aspect of this view is that career development is to a great extent an automatic, unconscious process, which needs time, experience and maturation. It depends less on conscious effort than is usually assumed. In important ways, this makes career development easier.

When in life do people normally develop self-direction and a (career) identity?

In the career literature, no evidence exists about the prevalence and development of self-direction during the lifespan (Greenhaus *et al.*, 2008; Hall *et al.*, 2018). Extensive research, however, has been conducted on aspects of personal development that allows for an answer to the question above. Luken (2009) reviewed theories and research from Kegan, Kohlberg and Loevinger about levels of meaning-making, moral judgment and ego development, respectively. According to the reported studies, the average adult, and certainly most adolescents, may be described as “conventional” or “conformist”. They are strongly influenced by their social environment and they lack autonomy. In addition, they are not able to overview self and other, feeling and thinking, and past, present and future. In the absence of sufficient autonomy and the ability to overview, they are not able to develop an independent point of view and a stable, personal vision on self and society. Thus, they lack a basis for self-direction. Finally, the reviewed research of Kegan, Kohlberg and Loevinger indicates that a majority of the population remains stuck in a conventional or conformist stage of development. Only a minority of between one-quarter and one-third of adults reaches developmental stages that may be called self-directed, usually only later in life.

Erikson, who introduced the concept identity to psychology and the general public, considered adolescence as a period of “identity crisis” – a phase of role confusion and uncertainty about the self. As a result, a common belief ensued that this crisis should be resolved in adolescence and that normally one enters adulthood with an achieved identity. From this perspective it is logical to think that in school young people should be helped to discover who they are (Kaplan and Flum, 2012; Van Geffen, 2011). The idea that identity is generally formed in adolescence, however, is far from reality. Many (young) adults have not yet developed their own identity. For example, meta-analyses of numerous empirical studies show that of young adults, aged 23–29 years, only 31 per cent may be described as having an “achieved identity”, characterised by clear commitments in life and work, based on sufficient explorations. It is not until the 30–36 year age group that about half (47 per cent) of the participants may be rated as identity achieved (Kroger *et al.*, 2010; Kroger, 2017). This finding corresponds quite well with the outcomes of one of the rare longitudinal research projects where identity is investigated during a long part of the lifespan. Whitbourne (2010) found that 53 per cent of her subjects eventually developed an authentic, healthy identity. The other half adopted an identity prematurely, remained searching, or did not succeed in rebuilding a lost identity.

Could it be possible to accelerate development, so that people develop self-direction and achieve an identity earlier in life? And would it be possible to foster development, so that a larger proportion of the population ultimately becomes self-directed and identity achieved?

These questions will be looked at presently, but first a few, relatively new insights about the brain and its development are presented. These insights help to explain why self-direction and identity are so difficult to achieve for young people.

Insights from brain research

In the last few decades, thanks to very sophisticated new techniques, it has become possible to investigate the development and workings of the living human brain. This has led to important findings and insights, which are very pertinent to career development. Until now, however, these have received little attention from career scholars and practitioners. One notable exception is the overview study of Westwell and Panizzon (2011) on brain development in the context of cognitive and career development. This work offers powerful arguments for the importance of matters of the brain for career development.

The main finding of brain research in relation to personal and career development is that the maturation of the brain takes much longer than previously thought. For a long time, it was assumed that the brain would be fully developed around the age of 12, when the skull does not grow anymore and the person has become able to execute formal, abstract thinking operations. Now we know that our brain matures until somewhere between the ages 20 and 30, and in some respects even beyond (Blakemore and Choudhury, 2006; Craik and Bialystok, 2006; Goldberg, 2009; Mills *et al.*, 2016; Steinberg, 2016). Maturation is necessary for brain components to operate properly. It relates to a biological, largely genetically determined process of decreases in the quantity of grey matter (mainly neurons) and increases in white matter (nerve fibres).

Entering adolescence, most components of the brain are mature, but there is one notable exception. The maturation of the prefrontal cortex (PFC), the voluminous area of the brain behind the forehead, continues until around the age of 25 (Craik and Bialystok, 2006; Goldberg, 2009). For many years, scientists wondered about the function of the PFC. This was not clear and for this reason, the PFC was sometimes called “the silent lobes” (Goldberg, 2009). Strangely enough, people can function rather well with a severely damaged PFC. A famous example is Phineas Gage. In 1848, this railway worker had his PFC accidentally pierced by an iron bar, propelled by an explosion. Surprisingly, he could still function normally in many ways. “The instruments usually considered necessary and sufficient for rational behaviour were intact in him. He had the requisite knowledge, attention, and memory; his language was flawless; he could perform calculations; he could tackle the logic of an abstract problem” (Damasio, 1994, p. xii). Gage managed to perform very different types of labour. He worked as a farmhand, showed himself as a curiosity to the public and drove spans of six horses as coachman on long distances in Chile. But there was something important that he could not do anymore – look into the future and give direction to his life. The neuroscientific literature offers more, intriguing examples (e.g. patient R in Stuss, 1991; Elliot in Seligman *et al.*, 2016) of people who remain capable of very intelligent thinking and operating after severe injuries to their PFC. They are able at self-reflection and self-knowledge, but not at self-direction. What in particular seems to be lacking is “affective forecasting”. This concept relates to the usually subtle feelings and physical reactions that are evoked when we make representations of possible future scenarios. Processing and integrating these signals play an important role in the development of preferences, decisions and a course in life (Gilbert and Wilson, 2009; Seligman *et al.*, 2016).

The absence of a mature PFC may explain why young people have difficulty in integrating thinking and feeling, and taking long-term decisions. It makes understandable why adolescents often stick blindly to choices they made or radically go in the opposite direction after a disappointment (Westwell and Panizzon, 2011). Thus, the insights from neuroscience help to explain why identity and self-direction are so

rare among adolescents and young adults. They do not yet explain, however, why so many people never develop self-direction and an achieved identity. We will return to this matter shortly.

Is it opportune to accelerate the development of self-direction?

To many, it seems an attractive idea to accelerate development. The idea is that a person and society can then exploit the developed capacities earlier and longer. Faster seems better. Also, some are afraid that if people do not learn self-direction in adolescence, they will never [^]^~~ae~~ all. Many developmental scientists, however, are sceptical about the possibilities of accelerating development. Jean Piaget, undoubtedly the most famous scholar in this field, referred to this matter as “the American question” (Hopkins, 2011). He suggested that pushing children beyond their natural levels was like training animals to do circus tricks. It may have an apparent, temporary result, but instead of contributing to their normal growth, it could lead to stunted long-term development. Bjorklund (2007) mentions examples from several contexts of learning and development of animals and humans where an early start of a learning process leads to longer durations and lower final levels compared to a later start. Researchers in the context of ego development have found that a rapid ego development in youth does not imply a high ego level as an adult (Syed and Seiffge-Krenke, 2013; Westenberg and Gjerde, 1999). Finally, neuroscientists also conclude that rapid brain development by no means automatically implies better development. An early maturation of the PFC is associated with the emergence of depressive symptoms in adolescence, possibly caused by an excessive cognitive control over emotional tendencies (Bos *et al.*, 2018). The cortex of very gifted children matures more slowly than is the case with less gifted children (Shaw *et al.*, 2006). Jolles (2016) makes this point metaphorically – a slow-growing tree can eventually become the tallest tree.

In order to know more about the optimal pace of development the concept “sensitive” or “critical period” is of interest. This construct refers to a life phase that is optimal for the development of a certain capacity (Berk, 2008; Blakemore and Choudhury, 2006; Guldberg, 2009; Jolles and Crone, 2012). For example, if a child has not been in intensive contact with music before the age of seven, it becomes almost impossible to develop “absolute hearing” – the ability to produce or name a tone without a reference tone. It is well known that learning experiences should not start too late. Much less attention is given to the fact that learning experiences should not start too soon, when the person is not yet “ready” for it. Early learning is often wasted energy. Or worse, it can be harmful. Starting too early can disrupt development (Fischer and Bidell, 2006), harming plasticity and learning ability in the bud (Jolles and Crone, 2012).

A simple psychological explanation for the disadvantages of starting too early is the experience of discouragement, as a consequence of the inability to meet expectations. A neuroscientific explanation is that the “plastic” brain develops the habit of using brain areas that are not optimally equipped for the task, because the areas that should do the work are not yet mature (Jolles, 2016; Sebastian *et al.*, 2008). What happens may be called “neural Darwinism” – groups of neurons compete with each other by recruiting neurons whose function is not yet specified (Bjorklund, 2007). Once they have been recruited, they do not give up their job easily (Jolles and Crone, 2012). Therefore, “unlearning” is often more difficult than learning (Crossley *et al.*, 2012). It is like a flawed stroke in sports like golf or tennis that is hard to change. In career reflection, the young person learns to make choices with the available reasoning capacity instead of a not-yet-present ability to generate future images and to process associated “gut feelings” (Blakemore and Choudhury, 2006; Steinberg, 2005).

Considering the above, what then is the sensitive period for the development of self-direction? For the development of self-regulation, adolescence is probably the sensitive period (Jolles, 2016). Self-regulation involves executive functions such as impulse control,

cognitive flexibility and planning (Burnett *et al.*, 2010; Jolles, 2016; Steinberg, 2005; Westwell and Panizzon, 2011). However, self-regulation should be distinguished from self-direction. Descriptions of self-regulation imply that goals are already established (Carey *et al.*, 2004; Matsumoto, 2009). Self-regulation implies a feedback process in which one's current state is compared with a target state and in which behaviour is aimed at reducing the differences between the two states (Vohs and Baumeister, 2007). In contrast, self-direction implies an additional feed-forward process by which goals are set so that differences with the current state are created (Harms, 2010). Self-direction is more than self-regulation. It involves more autonomy. It means not only making and executing plans, aimed at existing goals, but implies also looking for, determining and adapting a direction from which goals are derived.

Logically, the sensitive period for self-direction will come after self-regulation, in (young) adulthood. This corroborates empirical findings about the earliest ages being around 25 for reaching levels of development permitting self-direction (Luken, 2009). Combined, these findings suggest that it would be appropriate to help adolescents to develop self-regulation, but that for fostering self-direction it would be wiser to wait until young adulthood. Then, more people might ultimately become self-directed.

In this section some risks of too early a start of developing identity and self-direction are indicated in general terms like “learning a flawed stroke”. In the next sections, some more specific risks for career development are described.

Foreclosure

In the context of identity development, “foreclosure” means that the person seems to have achieved an identity, but this “identity” is uncritically adopted, mostly as a result of identifying with parents, friends and/or public figures. One's commitments are not based on the exploration of possibilities but on others' opinions and social pressures (Kroger, 2017). One of the first authors who drew attention to the possibility that pressures upon identity development may produce foreclosure was Petitpas (1978). Based on a literature review, he stated that foreclosure is associated with (sometimes extreme) obedience, having an external locus of control, and being directed at remaining safe, secure and approved of, rather than in taking risks or seeking autonomy or actualisation. These are characteristics that are not optimal for flourishing in today's, let alone tomorrow's society. Though Petitpas could not yet provide longitudinal research data, he predicted that foreclosure could in the long-term lead to phenomena like “midlife crisis”.

One of the problems with foreclosure is that it is often very persistent, especially in the case of occupational foreclosure (Fadjukoff *et al.*, 2005; Skorikov and Vondracek, 2012; Whitbourne, 2010). Petitpas (1978) and Kroger *et al.* (2010) demonstrate that foreclosure does not draw attention to itself. Foreclosed young individuals rarely cause troubles. At first sight, it is not possible to distinguish them from young people who have reached an achieved identity after sufficient exploration (Shaffer and Zalewski, 2011). Their foreclosed commitments are likely to be socially supported and implemented. School and parents are usually happy with the stable choice the young person seems to have made; hence there is no motivation or encouragement for them to change (Kroger *et al.*, 2010). Furthermore, the foreclosed identity tends to “defend itself”. The idea of having to change one's choice becomes frightening. Therefore, foreclosed individuals are not open to new experiences, avoid risk-taking and cling to their “identity”. As a result, they do not learn much about themselves and the possibilities in the world. Jepsen and Choudhuri (2001) found in a longitudinal study that about one-third of their subjects had stable career patterns over a 25 year period after high school graduation, but that the people in this stable group were relatively dissatisfied with their careers. According to Whitbourne's (2010) longitudinal research, 27 per cent of careers may be described as a “straight and narrow path”. The risks of enduring feelings of dissatisfaction or a severe crisis later in life and career are

relatively high in this group. People who reconsider and explore when necessary learn much more about themselves and the world and they have a much greater chance of creating an “authentic road” in life and career. Figure 1 illustrates the difference between the two career paths.

Following Brophy (2009), it may be concluded that identity is a double-edged sword. It provides clarity and direction but may exclude the person from experiences in other fields. In a stable environment, early specialisation provides an advantage in the competition with others and in building expertise. But it also implies less time for learning about the environment and, therefore, comes with a higher risk of miscalibration (Frankenhuis and Panchanathan, 2011). In our society, where we see rapid change today and likely into the future, flexibility has more advantages. Then the disadvantages of an identity defined too early can weigh heavily.

Ineffective reflection and decision-making habits

Ever since Parsons (1909, p. 5) laid the foundation for the career science and profession, information gathering and “true reasoning” play a central role in career guidance (Patton and McMahon, 2014). Sultana’s (2012, p. 229) definition of career management skills, which was quoted in the introduction of this paper, may serve as an example. A recent form of advocating true reasoning is inspired by Nobel Prize winner Kahneman (2011), who discerns two systems operating in the judging and choosing mind. “System 1” works automatically, based on experience, in a nonverbal, emotional, holistic, quick, associative and effortless way. “System 2” operates on the basis of conscious, verbal reasoning in a rational, analytical, slow, controlled way and requires wilful effort. Career scholars recommend the use of System 2 in career choices. Redekopp (2016, p. 7) argues that System 1 is responsible for all kinds of cognitive illusions and should be corrected and “outsmarted” by System 2. System 2 should “override” the decisions of System 1. In the same vein, Kuijpers and Van Dinteren (2016) advocate using System 2. They believe that this system knows better what is good for the person than System 1. They argue that System 1 is responsible for people deviating from their plans. It lets people make choices based on unchecked images. In order to be able to make more conscious and therefore, according to Kuijpers and Van Dinteren, better choices, individuals should learn to reflect, which they equate with exercising and using System 2. They claim that, if the higher parts of our brain are not involved in decision making, choices are more or less accidental.

Kahneman (2011) himself does not share the preference for System 2, demonstrated by Redekopp and Kuijpers and Van Dinteren. He repeatedly praises the quality of the extremely fast and effortless judgments of System 1. On the other hand, he denounces intrinsic errors of System 2, for example, being overconfident, having the illusion of understanding. Kahneman describes the problems associated with “narrative fallacies”. Flawed stories of the past shape our views of the world and our expectations for the future.

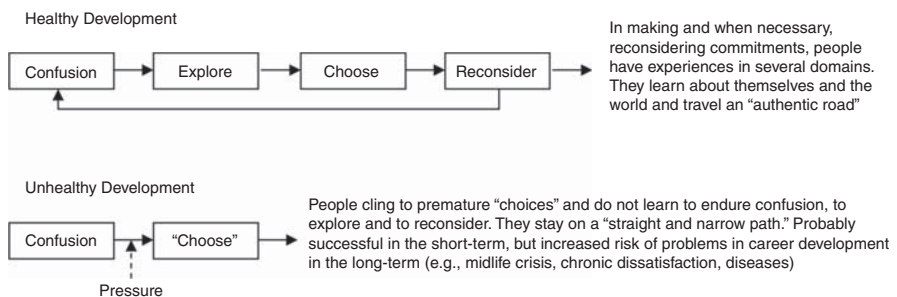


Figure 1.
Healthy and
unhealthy
development

Kahneman further describes the “tyranny of the retrospective self” (p. 104). We mistakenly identify ourselves with our remembering self at the expense of our experiencing self. This leads to “absurd choices” (p. 441), exposing the person to unnecessary pain. According to Kahneman, there is a compelling cognitive illusion to confuse the experience with the memory of the experience. With System 2 we try to increase the quality of our future memories instead of the quality of our experiences.

Many years before, in the 1970s, Epstein (2003) laid the foundation for the dual process theories of Kahneman and many others. He discerned an Experiential and a Rational System, much like Systems 1 and 2. In the context of career development, Epstein’s warning for “the life-long pursuit of ‘false goals’ ” (p. 164) is of interest. When we achieve these kinds of goals we are successful according to the Rational System. At the same time, the Experiential System may make the person feel like a miserable failure. Epstein uses the Russian Writer Tolstoy as an example of a man experiencing deep despair after achieving his life goals – fame and wealth.

Of particular interest in the context of career education is Epstein’s observation that the intelligence of the Experiential System is at its lowest point in adolescence, while the intelligence of the Rational System is at its peak. Developmental psychologists add that adolescents generally overestimate the possibilities of logical thought, a phenomenon called “hyperrationality” (Siegel, 2013). Their freshly acquired potentials of abstract, formal thinking are overused (Kegan, 1994). The goals that they choose in this phase tend to persist during large parts of their lives (Kahneman, 2011). In addition, adolescents generally have a strong tendency to adopt valuations of important others (e.g., parents or friends) (Kegan, 1994; Jolles, 2016). For these reasons, the risk of inauthentic, misleading and lasting goals is substantial.

Conscious thinking about choices may impair the outcomes, while “unconscious thinking” often leads to better decisions. Though seen by many as a contradiction in terms, unconscious thinking is exactly what our “Smart Unconscious”, which is quite similar to System 1 and the Experiential System, does (Dijksterhuis, 2008; Dijksterhuis and Strick, 2016). The choices of the smart unconscious are very fast, but certainly not a matter of chance, as Kuijpers and Van Dinteren (2016) suggest. They are based on the unconscious processing of the person’s lifelong experience.

Conscious thinking generally may lead to positive outcomes in simple and stable situations. In complex, ambiguous, or changing situations, however, the capacity of conscious thinking falls short. It can operate only by “freezing” the situation, and by simplifying it, with all kinds of unhelpful consequences. The fast, automatic, parallel processes of the smart unconscious are indispensable then. They distort the living reality less. Conscious thinking may play an obstructive role by distorting feelings. Verbalizing entails that people lose contact with their original feelings (Creswell *et al.*, 2016). Previously, Wilson and Schooler (1991) concluded from their research that people change their criteria when they think. They will overdraw aspects that may be verbalized and are defensible, at the expense of aspects that one cannot articulate or argue. “People change their mind about how they feel” (p. 191) and accordingly make suboptimal decisions. Sometimes it would be better if System F outsmarted and overruled System G. Sometimes it is wise to give up one’s plans.

Reviewing the literature on dual process theories, a clear conclusion may be drawn that in general, an equilibrated cooperation of Systems 1 and 2 (or experiential and rational system, and unconscious and conscious thinking) leads to the best results (Gilbert and Wilson, 2009; Krieschok *et al.*, 2009; McGilchrist, 2009; Nordgren *et al.*, 2010). Wise choices are made by well-coordinated operations of the whole brain (Meeks and Jeste, 2009). One reason is that they demand an integration of thinking and feeling (Gilbert and Wilson, 2009; Seligman *et al.*, 2016). For this, among other things, a mature PFC is necessary (Pfeifer and Berkman, 2018). This neural hardware is not yet ready in the adolescents’

brains (Steinberg, 2016). When politicians, school managers and parents demand well-established, stable career choices, and when career professionals encourage in a biased way System 2 and rational, conscious thinking for making these choices, then adolescents risk learning to make unwise choices and may be directed by false goals during large parts of their lives.

A promising theory

Vohs and Baumeister (2007) note that many psychologists still tend to connote self-regulation as done by the self instead of it being a process of the self. Also in the career domain, self-direction generally seems to be viewed as a process in which a self governs the person (e.g. Savickas, 2013). For this popular conceptualization and use of this idea of self, the designation “homunculus” may be used. This Latin word means “little man” and indicates that there is a little person inside the individual that functions as its causal agent. But if there were such a homunculus, by what or whom is he directed? By a homunculus in the homunculus? As this idea leads to insurmountable logical problems, it is considered a dreaded myth (Morf and Mischel, 2012). Overcoming this kind of thinking seems an essential challenge for progress in the behavioural sciences (Bateson, 1972; Damasio, 1994). Likewise, in the career domain, we should develop a contextualised understanding of the self to replace or transform the decontextualised self as something, a unique, discrete, relatively stable entity, that the individual possesses (Hartung and Subich, 2010) and should discover (Ibarra, 2003). In this paper, self-direction is viewed as a person, being an integrated assembly of mind and matter, and conscious and unconscious processes, finding his own way in society. But how does this self-direction work?

A theoretical way out of this conundrum is offered by systems theories (Hartung and Subich, 2010; Patton and McMahon, 2014; Vondracek *et al.*, 2014). In particular, cybernetic theories, which intend to explain steering processes, seem pertinent. In my opinion, the perceptual control theory (PCT) (Powers, 2005; Robertson and Powers, 1990) is a particularly interesting and promising example. This theory is applied in several subfields of psychology (Hershberger, 1990; Higginson *et al.*, 2011; Kerpelman *et al.*, 1997; Mansell and Huddy, 2018), but has to my knowledge, until now, received only minimal attention from career scholars (Heravi, 2015).

According to the PCT, self-direction may be adequately described in terms of top-down and bottom-up signalling and feedback loops in a hierarchical, integrated control system operating in an environment, without a specific part governing the system. The revolutionary crux of this theory is that behaviour is viewed as the control of perception. For example, a driver is not controlling the movements of her hands and feet, but she is controlling her position on the road and her distance to other cars. The PCT deviates radically from behaviourism and cognitivism (Robertson and Powers, 1990).

From the PCT two conditions may be deduced that are important for the effectiveness of steering processes: top-down controlling signals are not conflicting; bottom-up perceptual feedback is undistorted. The first condition implies that (career) problems may originate from conflicting signals coming from the higher levels of the control hierarchy. For example, a person wants to be successful and relaxed. Based on the PCT, a method of psychotherapy is developed, for solving these kinds of problems (Mansell *et al.*, 2013). This so-called method of levels might inspire the development of an adaptation for career professionals. In this method, awareness is shifted from the levels where problems are experienced to the levels where conflicts cause these problems. On that level, however, a solution cannot be found by thinking or reflecting, but is created by a “reorganisation process.” This process consists of trying out changes on different levels of the control hierarchy. Feedback – indicating whether changes produce betterment or not – is processed. According to the theory, this reorganisation process largely functions automatically and unconsciously. It can neither be

executed nor controlled by the thinking I, but it can be stimulated by directing awareness. According to the PCT, thinking is only important at one specific level in the hierarchy, the programme level, where actions are programmed to reach goals. Thinking is not suited for choosing goals.

The second condition for the effectiveness of steering processes concerns an undistorted receiving and processing of perceptual feedback. These feedback signals stem from one's environment, but equally important are signals from one's own organism (e.g. feelings, emotions, moods). The undistorted receiving and processing of signals can be fostered by mindfulness (Brown *et al.*, 2007). It is thwarted by thinking too much (Barron *et al.*, 2011; Wilson and Schooler, 1991), and by being led by rigid goals or plans. For example, a manager, focussed on quarterly results, does not notice signs of his staff being dissatisfied, and ignores his headaches.

Implications for practice, policies and research

Also for the development of self-direction, two conditions may be deduced from the PCT: the person needs to have sufficiently varied experiences; and when conflicts in the higher levels of the control hierarchy arise, the person may be helped. For career education the first condition implies that the person receives opportunities and is stimulated to have experiences with different kinds of subjects and forms of work in varied contexts. Then, for example, a girl, wishing to become a nurse, may discover that working in a laboratory might be interesting. The second condition implies that career counselling is provided when necessary. Then, the counsellor's primary aim should not be to produce conclusions about capabilities, motives, plans or identity but to facilitate natural growth processes by stimulating experiences and directing awareness. Learning and the development of preferences and direction are largely automatic and unconscious processes. The core is doing things (internally, in imagination, and externally, in the world) and processing feedback signals that indicate the quality of ensuing experiences. In this way, gradually a reliable sense of direction emerges. If we try to enforce this, the process is thwarted, like pulling grass to make it grow. This view corresponds well with the study of Ibarra (2003, p. 163), who asserts that developing our identities is a lifelong "messy trial-and-error process of learning by doing." "No amount of self-reflection can substitute for the direct experience we need to evaluate alternatives according to criteria that change as we do" (p. 2).

Further inspiration for practical innovations, which are in line with the presented view on self-direction and identity, is offered by the acceptance and commitment approach (Hayes and Smith, 2005; Hoare *et al.*, 2012; Luken and De Folter, 2019). In this approach, instruments and techniques are provided for the clarification of values. In terms of the PCT this contributes to clarity in the top-down signalling in the control hierarchy, while remaining flexible in the setting and realising of goals. For example, a person discovers gradually that he values competing in a playful way, which can be tried in various contexts and manners. This makes it possible to combine being successful and relaxed. Furthermore, the acceptance and commitment approach offers instruments and techniques that facilitate a full, non-judgemental acceptance of experiences. This contributes to the provision of undistorted perceptual input for optimal direction finding, holding and adapting. Finally, in this approach, thinking and self-concepts are put in perspective. Instead of a leading role, the thinking I play an assisting or advising role.

One implication for career policies is to relieve the pressure associated with the career choices of young people. This concerns pressures from politics, teachers, career professionals, and parents, but also pressures from within the person. Dysfunctional beliefs that augment the felt pressure are present in many young people (Mau, 2001). One example is the myth that there is one alternative that fits best. Other dysfunctional beliefs are that the college major choice is the choice for life, and that the quality of your life

depends on making the right choice. Another, related implication for career policies is to give more time, room, stimulation and guidance for exploration and reconsideration, not only for adolescents but also for young adults and later on in life. Then, ultimately more people may develop the self-directing attitudes and abilities that are necessary for their own and society's welfare into the future.

An implication for research is that long-term longitudinal approaches are required to investigate the development of self-direction and identity, as they evolve during the whole lifespan. For example, as demonstrated in a previous section, foreclosure may seem to be without any problems for some time. The advantages of searching and switching may become apparent only later in life.

A strength of the PCT lies in its possibilities to design models of behaviour from which testable hypotheses may be deduced (Pfau, 2017; Powers, 2005). The building and testing of models of career development might possibly boost career science. Kunnen (2011) offers several examples of modelling developmental processes. Although she did not focus directly on career development and did not use the PCT, she explains and illustrates building and testing models based on comparable dynamic systems theories. Van der Gaag (2017) developed a model simulating processes around educational choices. Hopefully these examples may inspire career scientists.

Conclusion

The central thesis of this paper is that the aim of educational institutions to deliver self-directed graduates with clear career identities is too ambitious and in ways even wrongheaded. In adolescence the developmental level, the total of lived experience, and the present neurological infrastructure do not yet permit wise career decision making. Nevertheless, adolescents are put under pressure to learn to make these kinds of decisions. It is argued that this approach is at odds with findings and insights from developmental sciences and brain research. One possible, detrimental consequence is "identity foreclosure" – the clinging to prematurely made "choices" that are strongly influenced by others instead of being based on one's own experiences. Furthermore, a maladaptive way of self-direction may come about, where thinking unduly dominates decision-making. If career learning is aimed at helping young people to discover who they are, then young people are at risk of being guided to misleading conclusions about themselves, which may have severe consequences for their career development in the long-term. And if schools want to deliver career competent young people to society, then they risk terminating learning processes that should continue throughout life.

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