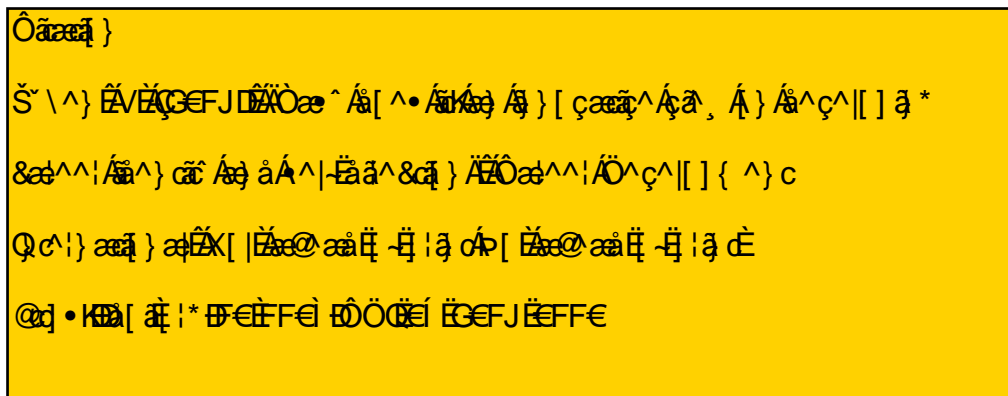




**Easy does it:
An Innovative View on Developing Career Identity and Self-direction**

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Easy does it

An Innovative View on Developing Career Identity and Self-direction

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 programs with a cognitive focus. The first purpose of this article is to question this belief. Secondly, it aims 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 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 article questions a mainstream approach and offers an original point of view.

Keywords Career identity, Self-direction, Career education, Reflection, Decision-making, Foreclosure, Brain development, Cybernetics

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 21st 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 & Hall, 2006). Common designations for necessary characteristics and abilities are a "(career) identity" (Savickas, 2013), "employability" (Vanhercke, Cuyper, & Peeters, 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, Khapova, & Arthur, 2009).

Although all these concepts are distinct, they overlap to a great extent. This article 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, Yip, & Doiron, 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 programs 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 & 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 & 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, Marriott, Watts, & Coiffait, 2012, p. 7). Schools are

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3 increasingly acknowledging this responsibility (Kuijpers, 2016; Leach, 2015). In many
4 countries (e.g., Cambodia, Estonia, England) governments design secondary schools as being
5 responsible for career development among students (Haug & Owens, 2019). For example, in
6 the Netherlands, most students in secondary education, aged 12 to 16, are subjected to an
7 examination program that contains career competencies. They are deemed capable of
8 understanding and directing their own learning and working processes by reflecting on their
9 cognitive and emotional functioning (OCW, 2007). By reflecting on their experiences
10 students at school are supposed to draw conclusions about their motives and capabilities, to
11 construct a clear self-image or career identity, and on this foundation, to design their lives and
12 careers (Kuijpers, 2016). In this article career learning in secondary education is emphasised.
13 Little is known about career learning in primary education (Hughes et al., 2016). About career
14 development in tertiary education much more is known and many ideas exist for practices to
15 develop (Donald, Ashleigh and Baruch, 2018; Meijers & Kuijpers, 2014). The validity of the
16 main thesis of this article, however, is less clear there, as students in higher education have
17 had more time to mature.
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24 In summary, there exists a belief that career attitudes and abilities, including self-
25 direction and identity, can and should be developed. Efforts to realise this are undertaken in
26 school programs, often with a cognitive focus. This approach, however, is not based on
27 empirical research (Hooley et al., 2012; Sultana, 2012). In this article, this approach is called
28 the existing view. The main aim of this article is to question this view and the policies and
29 practices that exist around it. Some specific questions that are examined here are: when in life
30 do people normally develop self-direction and a (career) identity? Is it opportune to accelerate
31 this development? What is known about the development of our brains in relation to self-
32 reflection, self-knowledge, decision-making, and self-direction? What is the role of conscious
33 information processing in decision-making? These questions will be examined on the basis of
34 sources that mainly stem from neuroscience and different sub-disciplines of psychology.
35 Using this research, it will be argued that school is *not* the best place to develop self-direction
36 and identity. On the contrary, the existing view implies risks of jeopardising career
37 development in the long-term. Among these risks are “identity foreclosure,” “false goals,” and
38 inadequate thinking and decision-making habits.
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44 The second aim of this article is to provide inspiration for a more promising direction. A
45 different view, based on a cybernetic systems approach, will be offered, as well as some ideas
46 for theory and practice, that are in line with the knowledge and insights derived from
47 psychology and neuroscience. One aspect of the view offered here is to put less pressure on
48 the development of self-direction and identity in education, but instead, offer more
49 opportunities and guidance for career development for adults. Another aspect of this view is
50 that career development is to a great extent an automatic, unconscious process, which needs
51 time, experience, and maturation. It depends less on conscious effort than is usually assumed.
52 In important ways, this makes career development easier.
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57 ***When in life do people normally develop self-direction and a (career) identity?***
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3 In the career literature, no evidence exists about the prevalence and development of self-
4 direction during the lifespan (Greenhaus, Callanan, & DiRenzo, 2008; Hall et al., 2018).
5 Extensive research, however, has been conducted on aspects of personal development that
6 allows for an answer to the question above. Luken (2009) reviewed theories and research
7 from Kegan, Kohlberg, and Loevinger about levels of meaning-making, moral judgment, and
8 ego development respectively. According to the reported studies, the average adult, and
9 certainly most adolescents, may be described as “conventional” or “conformist.” They are
10 strongly influenced by their social environment and they lack autonomy. In addition, they are
11 not able to overview self and other, feeling and thinking, and past, present, and future. In the
12 absence of sufficient autonomy and the ability to overview, they are not able to develop an
13 independent point of view and a stable, personal vision on self and society. Thus, they lack a
14 basis for self-direction. Finally, the reviewed research of Kegan, Kohlberg, and Loevinger
15 indicates that a majority of the population remains stuck in a conventional or conformist stage
16 of development. Only a minority of between one-quarter and one-third of adults reaches
17 developmental stages that may be called self-directed, usually only later in life.
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23 Erikson, who introduced the concept identity to psychology and the general public,
24 considered adolescence as a period of “identity crisis”—a phase of role confusion and
25 uncertainty about the self. As a result, a common belief ensued that this crisis should be
26 resolved in adolescence and that normally one enters adulthood with an achieved identity.
27 From this perspective it is logical to think that in school young people should be helped to
28 discover who they are (Kaplan & Flum, 2012; Van Geffen, 2011). The idea that identity is
29 generally formed in adolescence, however, is far from reality. Many (young) adults have not
30 yet developed their own identity. For example, meta-analyses of numerous empirical studies
31 show that of young adults, aged 23-29 years, only 31% may be described as having an
32 “achieved identity,” characterized by clear commitments in life and work, based on sufficient
33 explorations. It is not until the 30-36 year age group that about half (47%) of the participants
34 may be rated as identity achieved (Kroger, Martinussen, & Marcia, 2010; Kroger, 2017). This
35 finding corresponds quite well with the outcomes of one of the rare longitudinal research
36 projects where identity is investigated during a long part of the lifespan. Whitbourne (2010)
37 found that 53% of her subjects eventually developed an authentic, healthy identity. The other
38 half adopted an identity prematurely, remained searching, or did not succeed in rebuilding a
39 lost identity.
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46 Could it be possible to accelerate development, so that people develop self-direction and
47 achieve an identity earlier in life? And would it be possible to foster development, so that a
48 larger proportion of the population ultimately becomes self-directed and identity achieved?
49 These questions will be looked at presently, but first a few, relatively new insights about the
50 brain and its development are presented. These insights help to explain why self-direction and
51 identity are so difficult to achieve for young people.
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55 ***Insights from brain research***

56 In the last few decades, thanks to very sophisticated new techniques, it has become possible to
57 investigate the development and workings of the living human brain. This has led to important
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3 findings and insights, which are very pertinent to career development. Until now, however,
4 these have received little attention from career scholars and practitioners. One notable
5 exception is the overview study of Westwell and Panizzon (2011) on brain development in the
6 context of cognitive and career development. This work offers powerful arguments for the
7 importance of matters of the brain for career development.
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10 The main finding of brain research in relation to personal and career development is that
11 the maturation of the brain takes much longer than previously thought. For a long time, it was
12 assumed that the brain would be fully developed around the age of 12, when the skull does
13 not grow anymore and the person has become able to execute formal, abstract thinking
14 operations. Now we know that our brain matures until somewhere between the ages 20 and
15 30, and in some respects even beyond (Blakemore & Choudhury, 2006; Craik & Bialystok,
16 2006; Goldberg, 2009; 2009; Mills et al., 2016; Steinberg, 2016). Maturation is necessary for
17 brain components to operate properly. It relates to a biological, largely genetically determined
18 process of decreases in the quantity of grey matter (mainly neurons) and increases in white
19 matter (nerve fibres).
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24 Entering adolescence, most components of the brain are mature, but there is one notable
25 exception. The maturation of the prefrontal cortex (PFC), the voluminous area of the brain
26 behind the forehead, continues until around the age of 25 (Craik & Bialystok, 2006; Goldberg,
27 2009). For many years, scientists wondered about the function of the PFC. This was not clear
28 and for this reason, the PFC was sometimes called “the silent lobes” (Goldberg, 2009).
29 Strangely enough, people can function rather well with a severely damaged PFC. A famous
30 example is Phineas Gage. In 1848, this railway worker had his PFC accidentally pierced by an
31 iron bar, propelled by an explosion. Surprisingly, he could still function normally in many
32 ways. “The instruments usually considered necessary and sufficient for rational behaviour
33 were intact in him. He had the requisite knowledge, attention, and memory; his language was
34 flawless; he could perform calculations; he could tackle the logic of an abstract problem.”
35 (Damasio, 1994, p.xii). Gage managed to perform very different types of labour. He worked
36 as a farmhand, showed himself as a curiosity to the public, and drove spans of six horses as
37 coachman on long distances in Chile. But there was something important that he could not do
38 anymore—look into the future and give direction to his life. The neuroscientific literature
39 offers more, intriguing examples (e.g., “patient R” in Stuss, 1991; “Elliot” in Seligman et al.,
40 2016) of people who remain capable of very intelligent thinking and operating after severe
41 injuries to their PFC. They are able at self-reflection and self-knowledge, but not at self-
42 direction. What in particular seems to be lacking is “affective forecasting.” This concept
43 relates to the usually subtle feelings and physical reactions that are evoked when we make
44 representations of possible future scenarios. Processing and integrating these signals play an
45 important role in the development of preferences, decisions, and a course in life (Gilbert &
46 Wilson, 2009; Seligman et al., 2016).
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55 The absence of a mature PFC may explain why young people have difficulty in
56 integrating thinking and feeling, and taking long-term decisions. It makes understandable why
57 adolescents often stick blindly to choices they made or radically go in the opposite direction
58 after a disappointment (Westwell & Panizzon, 2011). Thus, the insights from neuroscience
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3 help to explain why identity and self-direction are so rare among adolescents and young
4 adults. They do not yet explain, however, why so many people never develop self-direction
5 and an achieved identity. We will return to this matter shortly.
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8 ***Is it opportune to accelerate the development of self-direction?***

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10 To many, it seems an attractive idea to accelerate development. The idea is that a person and
11 society can then exploit the developed capacities earlier and longer. Faster seems better. Also,
12 some are afraid that if people do not learn self-direction in adolescence, they will never learn
13 it all. Many developmental scientists, however, are sceptical about the possibilities of
14 accelerating development. Jean Piaget, undoubtedly the most famous scholar in this field,
15 referred to this matter as “the American question” (Hopkins, 2011). He suggested that pushing
16 children beyond their natural levels was like training animals to do circus tricks. It may have
17 an apparent, temporary result, but instead of contributing to their normal growth, it could lead
18 to stunted long-term development. Bjorklund (2007) mentions examples from several contexts
19 of learning and development of animals and humans where an early start of a learning process
20 leads to longer durations and lower final levels compared to a later start. Researchers in the
21 context of ego development have found that a rapid ego development in youth does not imply
22 a high ego level as an adult (Syed & Seiffge-Krenke, 2013; Westenberg & Gjerde, 1999).
23 Finally, neuroscientists also conclude that rapid brain development by no means automatically
24 implies better development. An early maturation of the PFC is associated with the emergence
25 of depressive symptoms in adolescence, possibly caused by an excessive cognitive control
26 over emotional tendencies (Bos et al., 2018). The cortex of very gifted children matures more
27 slowly than is the case with less gifted children (Shaw et al., 2006). Jolles (2016) makes this
28 point metaphorically—a slow-growing tree can eventually become the tallest tree.
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36 In order to know more about the optimal pace of development the concept “sensitive” or
37 “critical period” is of interest. This construct refers to a life phase that is optimal for the
38 development of a certain capacity (Berk, 2008, Blakemore & Choudhury, 2006; Guldberg,
39 2009; Jolles & Crone, 2012). For example, if a child has not been in intensive contact with
40 music before the age of seven, it becomes almost impossible to develop “absolute hearing”—
41 the ability to produce or name a tone without a reference tone. It is well known that learning
42 experiences should not start too late. Much less attention is given to the fact that learning
43 experiences should not start too soon, when the person is not yet “ready” for it. Early learning
44 is often wasted energy. Or worse, it can be harmful. Starting too early can disrupt
45 development (Fischer & Bidell, 2006), harming plasticity and learning ability in the bud
46 (Jolles & Crone, 2012).
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51 A simple psychological explanation for the disadvantages of starting too early is the
52 experience of discouragement, as a consequence of the inability to meet expectations. A
53 neuroscientific explanation is that the “plastic” brain develops the habit of using brain areas
54 that are not optimally equipped for the task, because the areas that should do the work are not
55 yet mature (Jolles, 2016; Sebastian, Burnett, & Blakemore, 2008). What happens may be
56 called “neural Darwinism”—groups of neurons compete with each other by recruiting neurons
57 whose function is not yet specified (Bjorklund, 2007). Once they have been recruited, they do
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3 not give up their job easily (Jolles & Crone, 2012). Therefore, “unlearning” is often more
4 difficult than learning (Crossley, Ashby, & Maddox, 2012). It is like a flawed stroke in sports
5 like golf or tennis that is hard to change. In career reflection, the young person learns to make
6 choices with the available reasoning capacity instead of a not-yet-present ability to generate
7 future images and to process associated “gut feelings” (Blakemore & Choudhury, 2006;
8 Steinberg, 2005).
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11 Considering the above, what then is the sensitive period for the development of self-
12 direction? For the development of *self-regulation*, adolescence is probably the sensitive
13 period (Jolles, 2016). Self-regulation involves executive functions such as impulse control,
14 cognitive flexibility, and planning (Burnett et al., 2010; Jolles, 2016; Steinberg, 2005;
15 Westwell & Panizzon, 2011). However, self-regulation should be distinguished from *self-*
16 *direction*. Descriptions of self-regulation imply that goals are already established (Carey,
17 Neal, & Collins, 2004; Matsumoto, 2009). Self-regulation implies a feedback process in
18 which one’s current state is compared with a target state and in which behaviour is aimed at
19 reducing the differences between the two states (Vohs & Baumeister, 2007). In contrast, self-
20 direction implies an additional feed-forward process by which goals are set so that differences
21 with the current state are created (Harms, 2010). Self-direction is more than self-regulation. It
22 involves more autonomy. It means not only making and executing plans, aimed at existing
23 goals, but implies also looking for, determining and adapting a direction from which goals are
24 derived.
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27 Logically, the sensitive period for self-direction will come after self-regulation, in
28 (young) adulthood. This corroborates empirical findings about the earliest ages being around
29 25 for reaching levels of development permitting self-direction (Luken, 2009). Combined,
30 these findings suggest that it would be appropriate to help adolescents to develop self-
31 regulation, but that for fostering self-direction it would be wiser to wait until young
32 adulthood. Then, more people might ultimately become self-directed.
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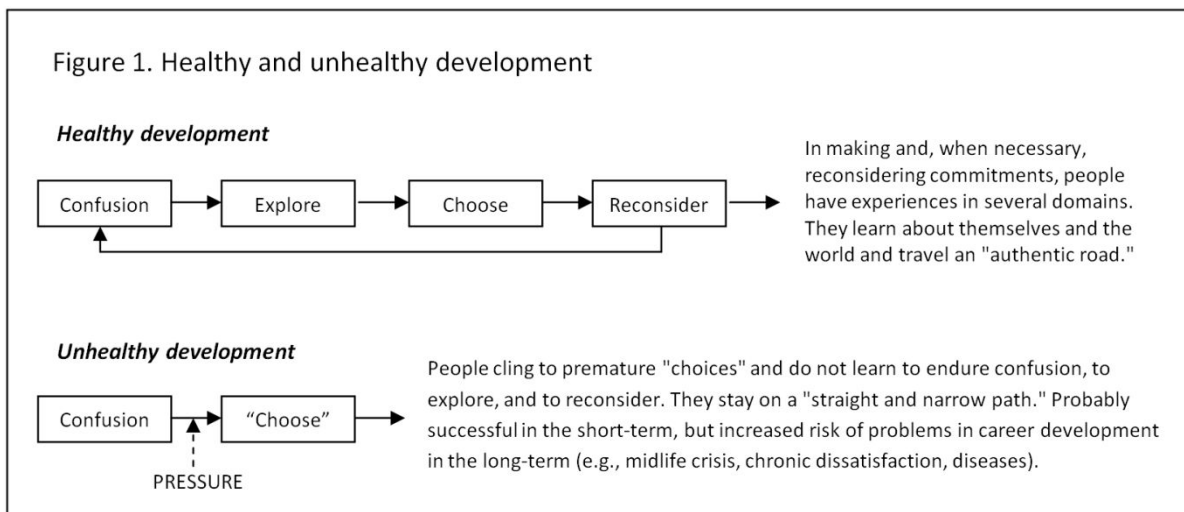
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35 In this section some risks of too early a start of developing identity and self-direction
36 are indicated in general terms like “learning a flawed stroke.” In the next sections, some more
37 specific risks for career development are described.
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39 ***Foreclosure***

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41 In the context of identity development, “foreclosure” means that the person seems to have
42 achieved an identity, but this “identity” is uncritically adopted, mostly as a result of
43 identifying with parents, friends, and/or public figures. One’s commitments are not based on
44 the exploration of possibilities but on others’ opinions and social pressures (Kroger, 2017).
45 One of the first authors who drew attention to the possibility that pressures upon identity
46 development may produce foreclosure was Petitpas (1978). Based on a literature review, he
47 stated that foreclosure is associated with (sometimes extreme) obedience, having an external
48 locus of control, and being directed at remaining safe, secure, and approved of, rather than in
49 taking risks or seeking autonomy or actualization. These are characteristics that are not
50 optimal for flourishing in today’s, let alone tomorrow’s society. Though Petitpas could not yet
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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, Pulkkinen, & Kokko, 2005; Skorikov & 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 & 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% 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 specialization provides an advantage in the competition with others and in building expertise. But it also implies less time for learning about the

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3 environment and, therefore, comes with a higher risk of miscalibration (Frankenhuis &
4 Panchanathan, 2011). In our society, where we see rapid change today and likely into the
5 future, flexibility has more advantages. Then the disadvantages of an identity defined too
6 early can weigh heavily.
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9 ***Ineffective reflection and decision-making habits***

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11 Ever since Parsons (1909, p. 5) laid the foundation for the career science and profession,
12 information gathering and “true reasoning” play a central role in career guidance (Patton &
13 McMahon, 2014). Sultana’s (2012, p. 229) definition of career management skills, which was
14 quoted in the introduction of this article, may serve as an example. A recent form of
15 advocating true reasoning is inspired by Nobel Prize winner Kahneman (2011), who discerns
16 two systems operating in the judging and choosing mind. “System 1” works automatically,
17 based on experience, in a nonverbal, emotional, holistic, quick, associative, and effortless
18 way. “System 2” operates on the basis of conscious, verbal reasoning in a rational, analytical,
19 slow, controlled way, and requires wilful effort. Career scholars recommend the use of
20 System 2 in career choices. Redekopp (2016, p. 7) argues that System 1 is responsible for all
21 kinds of cognitive illusions and should be corrected and “outsmarted” by System 2. System 2
22 should “override” the decisions of System 1. In the same vein, Kuijpers and Van Dinteren
23 (2016) advocate using System 2. They believe that this system knows better what is good for
24 the person than System 1. They argue that System 1 is responsible for people deviating from
25 their plans. It lets people make choices based on unchecked images. In order to be able to
26 make more conscious and therefore, according to Kuijpers and Van Dinteren, better choices,
27 individuals should learn to reflect, which they equate with exercising and using System 2.
28 They claim that, if the higher parts of our brain are not involved in decision-making, choices
29 are more or less accidental.
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38 Kahneman (2011) himself does not share the preference for System 2, demonstrated by
39 Redekopp and Kuijpers & Van Dinteren. He repeatedly praises the quality of the extremely
40 fast and effortless judgments of System 1. On the other hand, he denounces intrinsic errors of
41 System 2, for example being overconfident, having the illusion of understanding. Kahneman
42 describes the problems associated with “narrative fallacies.” Flawed stories of the past shape
43 our views of the world and our expectations for the future. Kahneman further describes the
44 “tyranny of the retrospective self” (p.104). We mistakenly identify ourselves with our
45 remembering self at the expense of our experiencing self. This leads to “absurd choices” (p.
46 441), exposing the person to unnecessary pain. According to Kahneman, there is a compelling
47 cognitive illusion to confuse the experience with the memory of the experience. With System
48 2 we try to increase the quality of our future memories instead of the quality of our
49 experiences.
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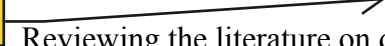
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54 Many years before, in the 1970s, Epstein (2003) laid the foundation for the dual process
55 theories of Kahneman and many others. He discerned an Experiential and a Rational System,
56 much like System 1 and 2. In the context of career development, Epstein’s warning for “the
57 life-long pursuit of ‘false goals’” (p. 164) is of interest. When we achieve these kinds of goals
58 we are successful according to the Rational System. At the same time, the Experiential
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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 & 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 2 ←  outsmarted and overruled System 1. Sometimes it's 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 System 1 and System 2 (or Experiential and Rational System, and unconscious and conscious thinking) leads to the best results (Gilbert & Wilson, 2009; Krieshok, Black, & McKay, 2009; McGilchrist, 2009; Nordgren, Bos, & Dijksterhuis, 2010). Wise choices are made by well-coordinated operations of the whole brain (Meeks & Jeste, 2009). One reason is that they demand an integration of thinking and feeling (Gilbert & Wilson, 2009; Seligman et al., 2016). For this, among other things, a mature PFC is necessary (Pfeifer & 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

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3 biased way System 2 and rational, conscious thinking for making these choices, then
4 adolescents risk learning to make unwise choices and may be directed by false goals during
5 large parts of their lives.
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8 *A promising theory* 9

10 Vohs and Baumeister (2007) note that many psychologists still tend to connote self-regulation
11 as done by the self instead of it being a process of the self. Also in the career domain, self-
12 direction generally seems to be viewed as a process in which a self governs the person (e.g.,
13 Savickas, 2013). For this popular conceptualization and use of this idea of self, the
14 designation “homunculus” may be used. This Latin word means “little man” and indicates
15 that there is a little person inside the individual that functions as its causal agent. But if there
16 were such a homunculus, by what or whom is he directed? By a homunculus in the
17 homunculus? As this idea leads to insurmountable logical problems, it is considered a dreaded
18 myth (Morf & Mischel, 2012). Overcoming this kind of thinking seems an essential challenge
19 for progress in the behavioural sciences (Bateson, 1972; Damasio, 1994). Likewise, in the
20 career domain, we should develop a contextualised understanding of the self to replace or
21 transform the decontextualised self as something, a unique, discrete, relatively stable entity,
22 that the individual possesses (Hartung and Subich, 2010) and should discover (Ibarra, 2003).
23 In this article, self-direction is viewed as a person, being an integrated assembly of mind and
24 matter, and conscious and unconscious processes, finding his own way in society. But how
25 does this self-direction work?
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32 A theoretical way out of this conundrum is offered by systems theories (Hartung and
33 Subich, 2010; Patton & McMahon, 2014; Vondracek, Ford, & Porfeli, 2014). In particular,
34 cybernetic theories, which intend to explain steering processes, seem pertinent. In my opinion,
35 the Perceptual Control Theory (Powers, 2005; Robertson & Powers, 1990) is a particularly
36 interesting and promising example. This theory is applied in several subfields of psychology
37 (Hershberger, 1990; Higginson, Mansell, & Wood, 2011; Kerpelman, Pittman, & Lamke,
38 1997; Mansell & Huddy, 2018), but has to my knowledge, until now, received only minimal
39 attention from career scholars (Heravi, 2015).
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43 According to the Perceptual Control Theory (PCT), self-direction may be adequately
44 described in terms of top-down and bottom-up signalling and feedback loops in a hierarchical,
45 integrated control system operating in an environment, without a specific part governing the
46 system. The revolutionary crux of this theory is that behaviour is viewed as the control of
47 perception. For example, a driver is not controlling the movements of her hands and feet, but
48 she is controlling her position on the road and her distance to other cars. The PCT deviates
49 radically from behaviourism and cognitivism (Robertson & Powers, 1990).
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53 From the PCT two conditions may be deduced that are important for the effectiveness of
54 steering processes: (1) top-down controlling signals are not conflicting; (2) bottom-up
55 perceptual feedback is undistorted. The first condition implies that (career) problems may
56 originate from conflicting signals coming from the higher levels of the control hierarchy. For
57 example, a person wants to be successful *and* relaxed. Based on the PCT, a method of
58 psychotherapy is developed, for solving these kinds of problems (Mansell, Carey, & Tai,
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3 2013). This so-called Method Of Levels might inspire the development of an adaptation for
4 career professionals. In this method, awareness is shifted from the levels where problems are
5 experienced to the levels where conflicts cause these problems. On that level, however, a
6 solution cannot be found by thinking or reflecting, but is created by a “reorganisation
7 process.” This process consists of trying out changes on different levels of the control
8 hierarchy. Feedback—indicating whether changes produce betterment or not—is processed.
9 According to the theory, this reorganisation process largely functions automatically and
10 unconsciously. It can neither be executed nor controlled by the thinking I, but it can be
11 stimulated by directing awareness. According to the PCT, thinking is only important at one
12 specific level in the hierarchy, the Program Level, where actions are programmed to reach
13 goals. Thinking is not suited for choosing goals.
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18 The second condition for the effectiveness of steering processes concerns an undistorted
19 receiving and processing of perceptual feedback. These feedback signals stem from one's
20 environment, but equally important are signals from one's own organism (e.g., feelings,
21 emotions, moods). The undistorted receiving and processing of signals can be fostered by
22 mindfulness (Brown, Ryan, & Creswell, 2007). It is thwarted by thinking too much (Barron et
23 al., 2011; Wilson & Schooler, 1991), and by being led by rigid goals or plans. For example, a
24 manager, focused on quarterly results, does not notice signs of his staff being dissatisfied, and
25 ignores his headaches.
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30 ***Implications for practice, policies, and research***

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32 Also for the *development* of self-direction, two conditions may be deduced from the
33 PCT: (1) the person needs to have sufficiently varied experiences; and (2) when conflicts in
34 the higher levels of the control hierarchy arise, the person may be helped. For career
35 education the first condition implies that the person receives opportunities and is stimulated to
36 have experiences with different kinds of subjects and forms of work in varied contexts. Then,
37 for example, a girl, wishing to become a nurse, may discover that working in a laboratory
38 might be interesting. The second condition implies that career counselling is provided when
39 necessary. Then, the counsellor's primary aim should not be to produce conclusions about
40 capabilities, motives, plans, or identity but to facilitate natural growth processes by
41 stimulating experiences and directing awareness. Learning, and the development of
42 preferences and direction are largely automatic and unconscious processes. The core is doing
43 things (internally, in imagination, and externally, in the world) and processing feedback
44 signals that indicate the quality of ensuing experiences. In this way, gradually a reliable sense
45 of direction emerges. If we try to enforce this, the process is thwarted, like pulling grass to
46 make it grow. This view corresponds well with the study of Ibarra (2003, p. 163), who asserts
47 that developing our identities is a lifelong “messy trial-and-error process of *learning by*
48 *doing*.” “No amount of self-reflection can substitute for the direct experience we need to
49 evaluate alternatives according to criteria that change as we do.” (p. 2).
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56 Further inspiration for practical innovations, which are in line with the presented view
57 on self-direction and identity, is offered by the Acceptance and Commitment approach (Hayes
58 & Smith, 2012; Hoare, McIlveen, & Hamilton, 2012; Luken & De Folter, 2019). In this
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3 approach, instruments and techniques are provided for the clarification of values. In terms of
4 the PCT this contributes to clarity in the top-down signalling in the control hierarchy, while
5 remaining flexible in the setting and realising of goals. For example, a person discovers
6 gradually that he values competing in a playful way, which can be tried in various contexts
7 and manners. This makes it possible to combine being successful *and* relaxed. Furthermore,
8 the Acceptance and Commitment approach offers instruments and techniques that facilitate a
9 full, non-judgemental acceptance of experiences. This contributes to the provision of
10 undistorted perceptual input for optimal direction finding, holding and adapting. Finally, in
11 this approach, thinking and self-concepts are put in perspective. Instead of a leading role, the
12 thinking I plays an assisting or advising role.

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17 One implication for career policies is to relieve the pressure associated with the career
18 choices of young people. This concerns pressures from politics, teachers, career professionals,
19 and parents, but also pressures from within the person. Dysfunctional beliefs that augment the
20 felt pressure are present in many young people (Mau, 2001). One example is the myth that
21 there is one alternative that fits best. Other dysfunctional beliefs are that the college major
22 choice is the choice for life, and that the quality of your life depends on making the right
23 choice. Another, related implication for career policies is to give more time, room,
24 stimulation, and guidance for exploration and reconsideration, not only for adolescents but
25 also for young adults and later on in life. Then, ultimately more people may develop the self-
26 directing attitudes and abilities that are necessary for their own and society's welfare into the
27 future.

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

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

50 51 **Conclusion**

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53 The central thesis of this article is that the aim of educational institutions to deliver self-
54 directed graduates with clear career identities is too ambitious and in ways even
55 wrongheaded. In adolescence the developmental level, the total of lived experience, and the
56 present neurological infrastructure do not yet permit wise career decision-making.
57 Nevertheless, adolescents are put under pressure to learn to make these kinds of decisions. It
58 is argued that this approach is at odds with findings and insights from developmental sciences
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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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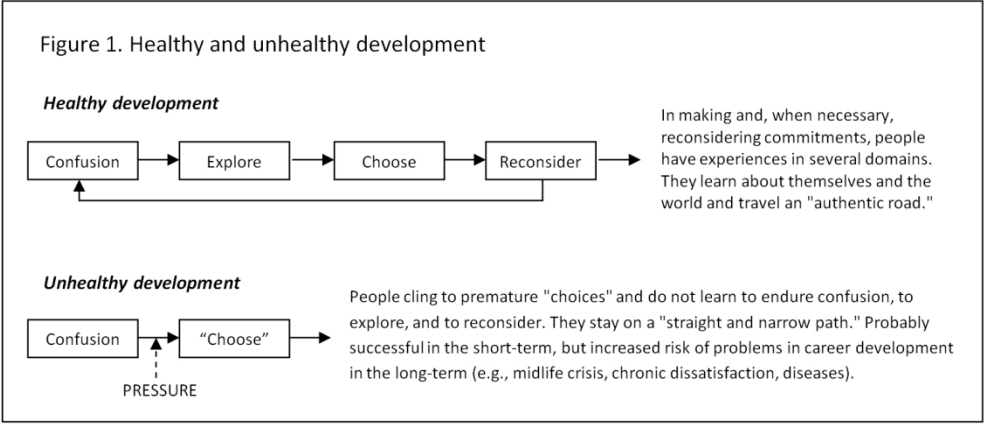


Figure 1. Healthy and unhealthy development