# Parenting, cognition and motivation in career decision-making processes. A self-determination theory perspective.

# Abstract

In the 12th grade, students are called to make a decision about their intention to proceed for higher education or to entering the job market. The accomplishment of this task mobilizes multiple psychological processes that not always translate into career choices aligned with the individual´s true interests, values and career goals, and quite often are accompanied by feelings of alienation and ill-being. However, research has gathered little consensus about the processes and dynamics that determine the selection of more, or less, self-determined career pathways, as well as the way in which these processes facilitate or hinder the successful resolution of career transition tasks (Waterman, 1990). On the other hand, the explanations provided often reflect the independent exam of the cognitive, motivational and social determinants of the career decision-making processes, rooted in cross-sectional research studies and are essentially focused on constructs which bear a strict vocational nature. Thus, it seems important to develop more integrative conceptual models about the processes involved in career decision-making (Super, Savickas & Super, 1996). In this chapter we present a comprehensive study of the way as parental support and thwart combine with cognitive-motivational processes to predict differentiated trajectories of career decision-making and adjustment in adolescents who are making the transition from high school to higher education/job market. We developed and tested an integrative conceptual model, which includes constructs obtained from motivational, social cognitive and clinical models. The study presented has a longitudinal research design with two measurement waves: the first was carried out in the first term of the 2012-2013 school year and a second in the third term of the 2013-2014 school year. In this study participated 12th grade students enrolled in Portuguese secondary schools. Students were assessed in several constructs, including perceived parenting, psychological needs, career self-efficacy beliefs, dysfunctional schematic functioning, career exploration and commitment-making processes, regulation of career commitments and psychological well/ill-being. Findings suggest that experiences of parental need-support seem to associate to the adolescents´ feelings of higher need satisfaction and to an increased self-confidence in career decision-making, what, in turn, leads to the proactive exploration of career options, to more self-determined career choices and to feelings of higher well-being. Findings also suggest that active parental need-thwarting experiences associate to the adolescents´ to an increase in feelings of psychological need frustration, which, in turn, lead to exploration and career choice processes based on dysfunctional schematic functioning, namely to ruminative exploration an exploration of career options, controlled choices and to the experience of higher ill-being. Overall, these associations seem to indicate the existence of substantively distinct pathways of career identity development and adjustment, one essentially self-determined and adaptive, and a second one more controlled and dysfunctional. This argument, despite somehow speculative, extends the SDT-based distinction between bright” and “dark” pathways of development, to the field of career development. It also suggests the need to differentiate career interventions of a promotional and remediate nature, in function of the degree of self-determination that is associated to the processes of exploration and commitment-making. We hope that with this research we have inspired the development of more integrated career interventions focused on building more self-determined psychological processes.

*Keywords*: Career transitions, perceived parenting, basic psychological needs, self-efficacy, dysfunctional schematic processing, identity development, career decision-making self-efficacy, motives for career decision-making, adjustment, career interventions.

**Introduction**

The aim of this chapter was to reflect on the need to develop more integrated models of the cognitive-motivational and contextual antecedents of adjustment and career identity development during the transition from high school to higher education/job market. It is addressed the role of perceived parenting, psychological needs, self-efficacy beliefs and schematic functioning, on career identity development and adjustment outcomes. A general overview of the self-determination perspective (SDT; Deci & Ryan, 1985; 2000) on parenting, psychological needs, identity development and regulation of career commitment-making is first provided. It is proposed an integrated conceptual model of the contextual, and cognitive-motivational antecedents of career identity and adjustment, rooted on the convergence of Self-Determination Theory, Schema Model (Young & Kolsko, 1994), Social-cognitive career theory (Lent, Brown & Hacket, 1994) and Identity Theory (Luyckx, Vansteenkiste, Goossens & Duriez, 2009). Special attention will be paid to the multivariate relations and intrinsic dynamics of these psychological processes in the prediction of the quality of career decision-making and adjustment processes. Finally the groundings for conceptual convergence will be established, from recent research showing that the influence of parenting on adolescents´ career exploration, commitment-making and well/ill-being, is mediated by a combination of cognitive and motivational subjective experiences, in distinct mediational pathways.

**Perspectives on Parenting**

The dimensional and typological approaches to parenting have generally agreed that that the quality of parenting behavior is adequately captured in a set of three interrelated dimensions, featuring parental support, behaviour control and psychological control (Barber & Xia, 2013). The first dimension, of *parental support* describes the parental attitudes that convey autonomy-support, i.e., that promote self-initiation, freedom of expression and intrinsic motivation (Barber, 1996; Deci & Ryan, 1985), and responsiveness-warmth, referring to the parental attitudes that convey affect and involvement (Barber, Stolz, & Olsen, 1995; Soenens, Duriez, Vansteenkiste, & Goossens, 2007). The second dimension, of *behaviour control* covers the positive and active parental efforts oriented to provide structure for the children’s behaviour (Barber, 1996; Steinberg, 1990, 2005). Finally, the third dimension, of *psychological control* features the parental intrusive and autonomy-inhibiting behaviors of guilt-induction, shaming and love withdrawal that intrude the child’s individuality (Barber, 1996; 2002; Barber & Harmon, 2002).

Contrasting with the broad consensus gained in the identification of the parenting dimensions is the methodological procedures used to examine their construct validity (Cordeiro, Paixão & Lens, 2015). The dimensional approach to parenting (e.g., Gray & Steinberg, 1999), used narrow-scoped models to examine the unique effects of parental dimensions on motivational outcomes, at the risk of exaggerating or misinterpreting the effect of the dimensions covered in spite of others. In the typological approach to parenting (e.g., Baumrind, 1966) the dimensions were combined in parental behavior types, making it difficult to isolate the unique effects of specific dimensions on motivational outcomes (Bean, Barber & Crane, 2006).

This methodological diversity have produced some ambiguous findings that make findings less cumulative (Cordeiro, Paixão & Lens, 2015). For instance, there is some disagreement regarding the linear, piecewise or even non-linear effects of behaviour control on motivational outcomes (Soenens & Byers, 2012; Soenens & Vansteenkiste, 2010). More recently, in an attempt to bring further unity to the findings, more top-down or theory driven studies (Steinberg, 2005) have been conducted, using specific theoretical models as unifying conceptual frameworks (Skinner, Johnson & Snyder, 2005). For the purpose of this chapter, we will pay special attention to the parenting research conducted from the edge of self-determination theory (SDT; Deci & Ryan, 1985; 2000).

**A SDT Perspective on Parenting, Psychological Needs and Adjustment**

Self-Determination Theory (Deci & Ryan, 2000, 2008), is a macro-organismic theory of human motivation and personality that examines the dynamics by which perceived parenting may impact the motivational development of children (Skinner, Johnson & Snyder, 2005). According to SDT, motivation develops in a continual dialectical interplay between organismic tendencies towards psychological development and integrity (Ryan, 1995) and the way primary social contexts either support, deprive or actively thwart those universal tendencies (Deci & Ryan, 1985; Vansteenkiste & Ryan, 2013). This process is assumed to be driven by innate dispositions that guide individuals towards growth and to become more integrated in their functioning, founded on the complementary processes of activating intrinsic motivations, and internalizing non-intrinsic motivations (Deci & Ryan, 2000). Intrinsic motivation refers to a natural desire of individuals to engage in interesting and stimulating activities. Internalization describes natural inclination to integrate extrinsic aspects of the social environment in the self (Deci & Ryan, 1985, 2000).

According to SDT, for intrinsic motivation and internalization to manifest to the fullest extent, significant social contexts (e.g., family or school) must support the child´s autonomy, competence, and relatedness needs. Parents support the child’s needs satisfaction when they allow for volitional functioning (*PVF*; Deci & Ryan, 1985, 2000; Reeve & Jang, 2006; Deci & Ryan, 1985, 1987), provide structure for behaviour **(**Barber, 1996; Barber, Olson, & Shaggle, 1994; Grolnick & Ryan, 1989) and interact with the child in warm, involved and responsive ways (Baumeister & Leary, 1995; Ryan, 1995; Deci & Ryan, 2000). Allow for volitional functioning supports the child´s need for autonomy. Autonomy-supportive parents provide an optimal amount of choice for their actions, or an adequate rationale when choice is constrained, and refrain from using insidious, manipulative and invasive practices (Deci & Ryan, 1985, 2000). In addition, provide structure for behaviour is assumed to support the need for competence. Competence supportive parents make positive efforts to regulate and structure the child’s behavior (e.g., manners, study activities, and involvement with peers) through provision of clear expectations/rules, active monitoring of behavior and positive informative feedback for the child´s accomplishments (e.g., Barber, 2002; Farkas & Grolnick, 2010). Finally, warm-responsive interactions to primarily support the child´s need for relatedness. Parents support relatedness whenever they attune and empathize with their child´s experiences and feelings and relate to them in warm and accepting ways (Soenens, Vansteenkiste, Duriez & Goossens, 2006).

For SDT, when parents support the three needs they make children more prone to develop feelings of autonomy, competence and relatedness need satisfaction (Deci & Ryan, 2000; Ryan & Deci, 2000). Autonomy satisfaction relates to the experience of self-endorsement, volition and choice in the initiation and regulation of behavior (e.g., deCharms, 1968; Deci & Ryan, 1985, 1987). Competence satisfaction corresponds to feelings of effectiveness and self-efficacy related to the achievement of desired outcomes (e.g., Deci & Ryan, 1985; Schunk & Zimmerman, 2007; White, 1959). Finally, relatedness satisfaction is expressed in the feelings of being genuinely connected, appreciated and accepted by others, and to be part of warm, supportive and caring interpersonal relationships (Baumeister & Leary, 1995; Ryan, 1995).

When individuals feel that their three psychological needs are satisfied (BPNT; Deci & Ryan, 2000), the integrative process energizes them towards greater psychological integrity, optimal integrated functioning and well-being in ways consistent with the self (e.g., Deci & Ryan, 2000; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Ryan & Deci, 2000; Sheldon & Niemiec, 2006; Sheldon, Ryan & Reis, 1996; Vansteenkiste & Ryan, 2013).

However, parents vary considerably in the way as they support the child´s needs. Some parents may even behave in such a way that actively thwart the satisfaction of the psychological needs, particularly when they use controlling and pressuring socialization techniques to regulate their child´s behavior. At this purpose, SDT makes a distinction between external and internal forms of parental control. *External control* refers to the parental attitudes that regulate the child’s behavior through reward contingencies, such as punishments (e.g., coercion; Skinner, Johnson & Snyder, 2005) or rewards (e.g., prizes for achievement; Soenens & Vansteenkiste, 2010). On the other hand, *psychological control* characterizes the internally controlling and insidious manipulative techniques aimed at controlling the psychological world and behaviour of the child (Deci & Ryan, 2000; Soenens, Park, Vasteenkiste & Mouratidis, 2012; Soenens, Sierens, Vansteenkiste, Dochy, & Goossens, 2012; Soenens & Vansteenkiste, 2010). These messages may be accompanied by attitudes of derision, criticism or emotional outbursts that give a negative emotional tone to the interactions with the child.

External control, expressed in attitudes of rejection, criticism, neglect (Skinner, Johnson & Snyder, 2005) primarily thwart the child´s need for relatedness. Psychological control, expressed in attitudes of guilt-induction, shaming and love withdrawal used when students fail to comply with parental expectations, primarily thwarts the child´s need for autonomy. SDT posits also that parents who provide negative corrective feedback to performance and compares the child unfavorably to colleagues actively thwart the child´s need for competence (Mouratidis, Lens & Vansteenkiste, 2010).

SDT argues that the chronic exposure to parental need-thwarting practices make the child more vulnerable to develop the subjective experiences of autonomy, competence and relatedness need frustration (Vansteenkiste & Ryan, 2013). *Autonomy frustration* refers to the perceptions of being controlled through externally enforced or self-imposed pressures (e.g., perception of pressure from parents, or from self-imposed high standards for achievement).*Competence frustration* describes feelings of being incompetent or a failure to accomplish achievement-related goals (e.g., perception of not having the necessary skills to succeed in school). Finally, *relatedness frustration* conveys feelings of being apart from others or alone (e.g., perception of being different or excluded from the peer group).

Once formed, these subjective experiences disrupt the integrative process, and contribute to the development of compensatory, or less adaptive motivations that are alien to the self and that have serious maladaptive effects on mental health and well-being (Deci & Ryan, 2000). Consistent with this claim several studies have consistently demonstrated that the subjective appraisals of need frustration associate to diminished well-being and to high levels of ill-being and psychopathology (e.g., Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011; Costa, Ntoumanis & Bartholomew, 2015; Vansteenkiste, Lens; Soenens, & Luyckx, 2006; Verstuyf, Vansteenkiste, Soenens, Boone, & Mouratidis, 2013).

Overall, to the SDT conception of “needs as experiences” (Sheldon, 2011) is implicit the assumption that need-*supportive* parental behaviors relate to well-being and thriving via the child´s subjective feelings of need satisfaction whereas actively need-*thwarting* parenting relates to ill-being and psychopathology via appraisals of need frustration (Deci & Ryan, 2000; Sheldon, 2011; Vansteenkiste & Ryan, 2013). Support for this claim has been obtained in recent SDT-based research (e.g., Bartholomew et al., 2011) in a variety of contexts, including parenting (Cordeiro, Paixão, Lens, Lacante & Sheldon, 2015), sports (Haerens, Aelterman, Vansteenskiste, Soenens & Petegen, 2015; Gunnell, Crocker, Wilson, Mack, & Zumbo, 2013), work (e.g., Gillet, Fouquereau, Forest, Brunault, & Colombat, 2011) and interpersonal relations (Costa, Ntoumanis & Bartholomew, 2015). In this chapter we extend these mediational links for a theory-based model of adjustment and identity development, a domain of psychosocial functioning that has been overlooked in the SDT literature.

**Perspectives on Identity and Career Development**

For Erikson (1968) the formation of an integrated sense of personal identity is a primary developmental task in adolescence, describing the personal feelings, interests and needs that remain relatively constant across time and situations, and give individuals a sense of wholeness, self-sameness and continuity. According to Erikson, identity develops in a continual interaction with the social environment in which individuals explore different options, social roles, and experiment various behavioral and ideological patterns and convictions (Luyckx, 2006). Psychologically, identity develops in a single bipolar continuum of identity confusion, situated on the negative (or ego-dystonic) pole and identity synthesis, lying on the positive (or ego syntonic) pole. *Identity confusion* is described as the inability to develop a manageable set of ideals that form the basis of adult identity. On the contrary, i*dentity synthesis* designates the process of reworking the childhood identifications into a larger and self-determined set of ideals, values or goals. The resolution of the identity crisis through identity synthesis would allow individuals to be more conscious of their personal profile of strengths and weaknesses, whereas a resolution based on identity confusion would leave adolescents to feel more confused about their commitments in identity-relevant issues (Erikson, 1968; Soenens, Berzonsky, Dunkel, Papini, & Vansteenkiste, 2011).

One of the most remarkable neo-Eriksonian theorization on identity development is Marcia´s Identity Status Model (Marcia, 1980). Marcia´s model focused on the intra-individual behavioral components exploration and commitment as the basic processes of identity development (e.g., Luyckx, Goossens, & Soenens, 2006; Luyckx, Goossens, Soenens & Beyers, 2006). *Identity exploration* describes as the degree of exploration of various social alternatives and self-appraisal about personal goals, values, and beliefs prior to making commitments and *identity commitment* relates to the ability to make firm choices on identity-relevant domains. Marcia (1980) crossed the two identity dimensions in order to form four identity statuses: *achievement* (high commitment following high exploration), *foreclosure* (high commitment not followed by prior exploration), *moratorium* (high exploration but very low commitment), and *diffusion* (low commitment and low systematic exploration). From the achievement towards diffusion identity statuses, adolescents move from more autonomous to more controlled behavior in exploration and commitment-making, from feelings of energy and agency to apathy and dependent decision-making, from personal self-integrative continuity to situation/others contingency in decision-making, from flexible to rigid cognitive functioning, and from the experience of well-being to anxiety and low self-esteem (Luyckx, 2006).

Further, in one of the recent extensions of the identity status model, Luyckx and colleagues (Luyckx et al., 2009; Luyckx et al., 2006; Luyckx, Goossens, Soenens & Byers, 2006; Luyckx, Soenens, Goossens, Beckx, & Wouters, 2008) proposed a more dynamic view of identity formation, by unpacking the dimensions of exploration and commitment, and examined whether the model of identity development is rooted in experiences of psychological need satisfaction. A model of identity development is proposed with five central dimensions. The first, *identity exploration* encompasses the dimensions of exploration in breadth, i.e., the degree to which adolescents search for different alternatives with respect to goals, beliefs, and values before making commitments. The second dimension, of *exploration in depth*, features the in-depth evaluation of commitments, choices, and plans already made and their convergence with internal standards. The third dimension, of *ruminative exploration*, characterizes the pattern of indecisiveness, hesitation, worry, and flawed decision-making (Luyckx et al., 2008). The fourth dimension, of *commitment-making*, taps into the degree to which the individuals make firm identity choices. Finally, a fifth dimension, of *identification with commitment* describes the degree to which adolescents feel certain about and can identify with their identity commitments. The five-component model has the advantage of capturing both the adaptive and maladaptive aspects of identity formation (Luyckx, et al., 2009).

More understudied is the developmental roots of identity formation. Yet, the influence of basic need satisfaction and need frustration is at the core of the SDT perspectives on identity development and adjustment. For SDT, *identity integration* and organization is anchored on experiences of parental support and is energized from inner experiences of need satisfaction, both aligned with the individuals’ self-actualizing growth tendency, whereas *identity diffusion* arises from experiences of parental thwart and inner feelings of need frustration that are alien to the self, and that undermine the individuals´ growth tendencies (Soenens & Vansteenkiste, 2010).

SDT-based studies on parenting and psychological needs have recently provided empirical support for these premises. Luyckx and colleagues (2010; Luyckx, Soenens, Goossens, & Vansteenkiste, 2007) found that autonomy-supportive parenting predicts the adolescents´ pursuit of career goals, exploration behaviour, and decision-making in identity-relevant domains, whereas psychologically controlling parenting relates to the development of an indecisive vocational orientation and to low commitment-making. In addition, Luyckx and colleagues (2009) also found that the total need satisfaction experienced in daily life energizes positive identity-related investments that are associated to the proactive exploration of different identity issues (exploration in breadth and exploration in depth), as well as to the commitment to, and endorsement of specific identity options (dimensions of commitment-making; identification with commitment). In opposition, the experience of low need satisfaction was associated to endless worries and self-doubts about the identity options that best-fit the individuals´ interests and experience (dimension of ruminative exploration). However, in no case the unique effects of need frustration on career adjustment were examined. However, beyond these pioneering findings, little agreement has been reached about the role played by psychological needs in the determination of individual differences in identity-related behavior and adjustment (Waterman, 1990).

**A Self-determination Theory on Career Identity Development**

SDT has also inspired studies on the motivational underpinnings of the *quality* of the motivation (motives or reasons) underlying career commitment-making, and aspect of identity development that is particularly relevant for students that face important career transitions. Much like in Waterman´s model (1984), SDT posits the existence of innate propensities – the *self,* motivating identity-related pursuits towards growth and optimal functioning. An important instantiation of this growth tendency is the *level* of internalization, or the degree of relative autonomy with which adolescents make identity-related commitments (Deci & Ryan, 1985, 2000; Ryan & Connell, 1989; Soenens & Vansteenkiste, 2011).

A continuum of autonomous versus controlled motivation is proposed. *Autonomous motivation* (Deci, 1980, Deci & Ryan, 1985; Ryan, Connell, & Deci, 1985) reflects the innate tendency for organisms to function in self-integrated, authentic and unified ways (Deci & Ryan, 2000). It comprises career commitments regulated from self-endorsed interests and goals and that are fully consistent with the self (*intrinsic motivation*) but also commitments regulated by well-internalized forms of extrinsic motivation. Lying within this continuum are the career commitments that have been harmoniously integrated with other self-endorsed values and goals (*integrated regulation*), and the commitments that are perceived as instrumental to accomplish personal and occupational meaningful goals (*identified regulation*). Commitments may be also regulated by *controlled motivation,* particularly when they are pursued for poorly internalized forms of extrinsic motivation (La Guardia, 2009; Ryan & Deci, 2003). In this case individuals may adopt career commitments to avoid internal pressures or controls/increase feelings of self-worth and pride (*internalized regulation;* e.g., shame guilt, disappointment) or to pursue rewards/avoid punishment (*external regulation*), contingencies that are wholly external to the self.

SDT posits that identity career commitments enacted from autonomous motives are more likely related to well-being and adjustment (e.g., Luyckx et al., 2009; Sheldon & Kasser, 1995), because they relate to the satisfaction of the three psychological needs, whereas the career commitments adopted for controlled reasons would more likely relate to ill-being and maladjustment (Deci & Ryan, 2000; Soenens & Vansteenkiste, 2011), because they are rooted in experiences of need frustration.

**Gaps in Career Identity Research and Rationale**

SDT provides a sound approach for the study of the universal contextual and motivational processes implied in normative trajectories of career identity development and adjustment, relegating to the background the role of cognitive processes implied in integrated (e.g., career decision—making self-efficacy; Betz, 2001; Lent & Brown, 2006) versus derailed (e.g., early maladaptive schemas; Young & Kolsko, 1994) pathways of identity development and adjustment. Nonetheless, the role of cognitions and their relations to parenting and psychological needs is not left unnoticed in SDT. For Deci and Ryan (2000) parental need-support and experiences of need satisfaction relate to the formation of *self-determined*, positive and flexible cognitions (*self-schemas*), aligned with trajectories of growth and thriving, that form the basis for self-determined behaviors and relate to well-being. Conversely, parental thwarting and experiences of need frustration prone the child to develop negative and rigid cognitions and emotions, that are alien to the self, and that are associated to *controlled* behaviors and adjustment difficulties (Deci & Ryan, 2000). Despite this rationale, the elaboration of positive and flexible versus maladaptive cognitions was overlooked in SDT and their relation to controlled behavior and adjustment was not examined.

We attempt to shed further light on this subject. Converging the constructs of self-determination theory (Deci & Ryan, 2000), schema theory (e.g., Young, Klosko & Weishaar, 2003) and socio-cognitive career theory (Lent et al., 1994), we specifically examine how perceived parenting and psychological needs relate to career decision-making self-efficacy beliefs (Betz, 2001) and early maladaptive schemas (Young & Kolsko, 1994; Young et al., 2003) in order to predict individual differences in trajectories of career identity development and adjustment. From this broad conceptual model we expect to provide extended evidence for the conceptualization of career decision-making and adjustment in possible “bright” and “dark” pathways (Deci & Ryan, 2000).

**“Bright” Pathways: The Role of Career Decision-making Self-efficacy**

From a SDT perspective, *autonomous* career commitment-making and well-being would be expected from career pathways that are rooted in *self-determined* cognitions because these experiences are energized by feelings of need satisfaction that are aligned with the individual´s innate propensity for growth and thriving. Therefore, autonomous, or “bright” career pathways are associated to positive cognitive functioning. In parallel, Social-Cognitive Career Theory (SCCT; Lent et al., 1994; Lent & Brown, 2006), claims that more than from broad, complex judgements about the subjective experiences of basic need-satisfaction, career identity development and positive adjustment would be determined by task-specific appraisals of *self-efficacy* (Bandura, 1977; Ford & Smith, 2007), and, particularly, by career decision-making self-efficacy beliefs (CDMSE; Betz, 2001; Lent & Brown, 2006; Ezeofor & Lent, 2014; Guay, 2005; Lent, 2004), the latter expressing the confidence that adolescents have about their competence to accomplish career-related goals and choices.

In support of this view SCCT-based research found that career decision-making self-efficacy is an important predictor of high commitment-making (e.g., Ezeofor & Lent, 2014; Ford & Smith, 2007; Lent, 2004; Lent & Brown, 2006), autonomous motivation for exploration behavior (e.g., Guay, 2005; Lent, 2004) and experienced well-being Ezeofor & Lent, 2014; Lent, 2004) during critical career transitions (e.g., Germeijs & Verschueren, 2007; Lent, Paixão, Silva, & Leitão, 2010; Luyckx et al., 2009).

From a Self-determination perspective, we would infer that positive career decision-making self-efficacy beliefs are anchored in experiences of need satisfaction and help the adolescents move towards *autonomous* trajectories of career decision-making and well-being because they are aligned with trajectories of growth and thriving in identity-related pursuits (SDT; Deci & Ryan 2000). In support of this view research has suggested that psychological need satisfaction would energize an autonomous motivation for career decision-making and well-being, in part because feelings of needs satisfaction raise decision-making self-efficacy for career commitment-making (e.g., Guay, 2005).

Overall, the findings suggest that CDMSE partially mediates the effects of need satisfaction over the quality of motivation for career commitment-making, providing initial evidence for the cognitive-motivational determinants of the “bright” pathways of career identity development.

**“Dark” Pathways: The Role of Dysfunctional Schematic Functioning**

SDT also conceptualizes that *rigid and self-invalidating* cognitions, primarily predict “dark” pathways of career development and maladjustment, because they develop from experiences of need frustration that alienate the self from dynamics of growth and self-integrated functioning and energize controlled or pressured modes of functioning (Erikson, 1968; Soenens & Vansteenkiste, 2010). Yet, SDT does not present a taxonomy of self-alienated cognitions. Hence, to investigate this premise we felt it was necessary to integrate self-determination theory into models of cognitive self-schemata (see Bober & Grolnick, 1995 for a similar approach). We selected Schema Model (SM; Young & Kolsko, 1994; Young et al., 2003), because it provides a widely-validated taxonomy of Early Maladaptive Schemas (EMSs) that are associated to maladjustment and psychopathology (e.g., Beck, Freeman & Associates., 1990; Rafaeli, Bernstein & Young, 2011; Safran & Segal, 1990).

In schema model EMSs are defined as “Broad and pervasive themes or pattern regarding oneself and one´s relations with others, developed during childhood or adolescence and elaborated through one´s lifetime” (Young & Kolsko, 1994, p.9). Young (1994; 2003) proposed a structure of eighteen early maladaptive schemas, organized in five higher-order domains of unmet emotional needs. The first domain - disconnection and rejection, covers the EMSs of defectiveness/shame, social isolation/alienation, abandonment/instability, mistrust/abuse and emotional deprivation. The second domain - impaired autonomy/performance comprises the EMSs of vulnerability to harm and illness, dependence/incompetence, enmeshment/undeveloped self and failure. The third domain - impaired limits encompasses the EMSs of entitlement/grandiosity, insufficient self-control/self-discipline. Further, the fourth domain - other-directness includes the EMSs of self-sacrifice, subjugation, and approval-seeking/recognition-seeking, and finally, the fifth domain - overvigilance and inhibition – involves the EMSs of emotional inhibition, unrelenting standards/ hypercriticalness and punitiveness (for a taxonomy of the 18 EMSs see Young 1990; Young et al., 2003; Theiler, 2005). Thirteen of the 18 EMSs are considered unconditional (Young et al., 2003), as they are formed earlier in life, involve core unconditional beliefs about the self and others and are more rigid and resistant to change. The remaining five EMSs represent conditional or “secondary schemas” (Young et al., 2003) that develop later in life to compensate for the unconditional schemas.

In schema model, the EMSs are progressively structured from the chronic exposure of the child to dysfunctional family environments that systematically frustrate the child´s core emotional needs of (a) secure attachment to others; (2) autonomy, competence and sense of identity; (3) freedom to express valid needs and emotions; (4) spontaneity and play, and (5) realistic limits and self-control (Young et al., 2003). Once triggered, EMSs become dysfunctional to a significant degree. They are capable of generating high levels of disruptive affect, selective memory retrieval and intense physiological activation, as well as anxiety, depression and somatization symptoms (e.g., Welburn, Coristine, Dagg, Pontefract, & Jordan, 2002).

For parsimony, the unconditional EMSs are represented by the self-schemas of abandonment/instability, mistrust/abuse, emotional deprivation, defectiveness-shame, social isolation/alienation, vulnerability to harm or illness, enmeshment/undeveloped self, failure to achieve, entitlement/grandiosity, insufficient self-control/self-discipline, punitiveness and negativity/pessimism. The conditional schemas include EMSs of subjugation, self-sacrifice, approval-seeking/recognition-seeking, emotional inhibition and unrelenting standards/hypercriticalness (Young et al., 2003).

Implicit to both SDT and schema model is the view that there is a functional antecedence of parental thwarting and psychological need frustration over schematic functioning (here measured as an averaged score of the 13 unconditional schemas), suggesting that schematic functioning mediates the effects of parental thwarting and needs frustration on “dark” or derailed trajectories of identity career development and adjustment. However, to date, this hypothesis was left untested as both models have remained, for the most part, independent from each other.

**Parenting, motivation, cognitions and identity development**

More recently (Cordeiro, Paixão, Lens, Lacante, Luyckx & Sheldon, 2015) a SDT-based comprehensive conceptual model of the contextual (e.g., parental support, parental thwarting), cognitive (schematic functioning and career decision-making self-efficacy) and motivational (e.g., psychological needs, reasons for career commitment-making) determinants of identity formation and well/ill-being was proposed. A longitudinal research design was carried out with a sample of 755 12th grade students enrolled in Portuguese secondary schools.

Findings suggest that experiences of parental need support associate to the adolescents´ feelings of higher need satisfaction and to an increased self-confidence for career decision-making, which, in turn, associate to the proactive exploration of career options, high commitment to a career path, self-determined career choices and the experience of well-being during the career transition period. On the other hand, active parental need-thwarting experiences associate to the adolescents´ feelings of psychological need frustration and dysfunctional schematic functioning, which, in turn, associate to the ruminative exploration of career options, the choice of career paths for controlled reasons and to experience ill-being across career transitions. Overall, these associations seem to indicate the existence of substantively distinct pathways of career identity development and adjustment: a “bright” pathway, essentially self-determined and adaptive, and a “dark” pathways, more controlled and dysfunctional.

**Implications for educational interventions**

Taken together, the findings suggest that career interventions must examine together the motivational and cognitive determinants of identity development and, more specifically of career decision-making processes. They also highlight the need to bring closer the primary socialization micro-systems, such as parenting, into the equation of students´ motivation for career decision-making. Findings finally suggest the need to align, and, thus, differentiate, the career interventions, depending on whether they are aimed to (a) promote “bright” trajectories of career exploration and commitment-making or (b) prevent, remediate or compensate for “dark” pathways on these outcomes (Cordeiro et al., 2015).

Promotional and preventive strategies should target parents who are predominantly need supportive and who display low levels of need thwarting, and benefit more adolescents that have higher levels of need satisfaction and career decision-making self-efficacy, and low levels of need frustration (Cordeiro et al., 2015). Parent-focused interventions should be designed to support the students´ proactive exploration of career information and autonomous commitment-making (Deci & Ryan, 2000).

Career-related **autonomy** is supported when parents provide their children with opportunities to explore and commit to career pathways, reinforce career pathways volitionally explored and autonomously chosen, stimulate self-expression for career interests and options, allow incursions into the occupational world, and refrain from using manipulative and invasive techniques that control the adolescents´ career choice (Deci & Ryan, 1985, 2000). To support autonomy, parents could (a) mentor apprenticeship activities in their workplace, (b) create opportunities for adolescents to experience careers during holidays or during after-school periods, and (c) talk about their jobs at schools and discuss how they explored and committed to their career choice.

Feelings of **competence** are supported whenever parents provide structure **(**Barber, 1996; Barber et al., 1994; Grolnick & Ryan, 1989) for career-related behaviour. This is accomplished when parents express confidence in the adolescents´ competence and skills to accomplish their career-related goals and choices, discuss previous success in previous vocational goal attainment, ensue that career goals are realistic and are aligned with current skills, convey clear expectations about the conditions and rules that regulate autonomous career pursuits, provide positive informative feedback about progress in career decision-making and allow for self-regulation in career goal pursuits (e.g., Urdan & Schoenfelder, 2006).

Finally, parents support **relatedness**, when they become involved in, accepting of, and responsive to the adolescents´ career-related investments (Baumeister & Leary, 1995; Ryan, 1995; Deci & Ryan, 2000; Soenens et al., 2006). Relatedness-supportive parents attune and empathize with the adolescent´s perspectives and feelings related to exploration and commitment-making activities, are involved in the construction of their career projects, are available to provide help and guidance when asked, convey trust, care and acceptance of their children career projects and are attentive and responsive to emotional symptoms (e.g., anxiety, depressive feelings) that may arise during this challenging period of career transition.

Parents should also learn that the support provided in satisfying the adolescents’ psychological needs is important to build their **confidence in career decision-making**, which, in turn boosts career commitment-making, autonomous career exploration and well-being during critical career transitions (Betz, 2001; Ezeofor & Lent, 2014; Guay, 2005; Lent, 2004; Germeijs & Verschueren, 2007).

Need-supportive parents could also be involved in **training sessions** where they would have the opportunity to acknowledge how their career supportive behaviors are responsible for boosting feelings of psychological need satisfaction, confidence in career decision-making, proactive exploration of career options and to experience well-being during critical career transitions. In sum promotional interventions should not only capitalize what parents already do well, as examples of “good practices” in career support, but also help to create opportunities for parents to learn how to optimize their supportive skills.

Overall, promotional career counselling interventions should be organized to create experiences of need satisfaction and career decision-making self-efficacy beliefs which, in turn, create further experiences of psychological need satisfaction and increment confidence in career decision-making.

However, according to Cordeiro and colleagues (2015) if standard career interventions supporting need satisfaction and career decision-making self-efficacy are helpful in raising the levels of well-being (subjective vitality; satisfaction with life), they do not necessarily play a buffering role against the emergence, or maintenance of ruminative exploration, controlled career decisions and ill-being (anxiety; depression; somatization). Likewise, while remediative or therapeutic interventions decrease the levels of ill-being they do not necessarily raise the levels of proactive exploration, autonomous commitment-making and well-being. This is in part due to the fact that “bright” and “dark” trajectories of identity development and adjustment are rooted in distinct cognitive-motivational mediational processes. More precisely, the positive effects of parental support on well-being, proactive exploration and autonomous decision-making go via need satisfaction and career decision-making self-efficacy, whereas the effects of parental thwarting on ill-being, ruminative exploration and controlled career decision-making go via need frustration and schematic functioning. This is also because the effects of combined parental thwarting, need frustration experiences and schematic functioning create severe resistances to normative career counselling interventions that make them ineffective. They trigger self-fulfilling negative bias in information processing (e.g., ignore positive informative feedback about skills), errors of information processing (selective attention to failure cues) and selective memories (e.g., past failures in decision-making), trigger motivations to avoid painful cognitions (e.g., “I am a failure”), emotions (e.g., anxiety, depression) and behaviors (avoid exploratory identity work and commitment-making) that prevents students to be enrolled in experiences that build-up adaptive career decisions (Young, 1994; Young et al., 2003; Luyckx, 2006).

Consequently, students hardly engage and/or persist in proactive career exploration, endlessly ruminate about their career options, make career commitments essentially for controlled reasons and display high levels of anxiety, depression and somatization during transitions. The presence of these processes must be considered as a sign of possible pathological (identity) trajectories that require more directive and differentiated career interventions, including individual counselling and therapy (Josselson, 1994).

Career counselling interventions should also include parent training programs oriented to identify and refrain from using need-thwarting attitudes that increment, maintain and generalize these problems over time (e.g., Josselson, 1994; Luyckx, 2006).

Within these sessions, parents could learn to identify career-related need-thwarting behaviors, understand their role on the onset and maintenance of subjective feelings of need frustration and rigid self-schemas (Ryan & Deci, 2003) that undermine career identity development and adjustment.

Parents should be helped to abstain from **controlling** behaviors that thwart the need for **autonomy**. Parental career-related autonomy-thwarting include behaviors that **pressure** the adolescent to explore specific career-related information, make career choices in specific directions and use guilt-induction or love withdrawal when students explore and commit to a career path in an autonomous fashion, or when they choose a career path that is not aligned with the parental expectations, preferences or standards (autonomy thwarting; Soenens et al., 2012; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005). Parents could also learn more about the role of failure-oriented feedback in the frustration of the adolescents’ **need for competence** (e.g., Soucy & Larose, 2000). Messages conveying the adolescents´ lack of skills, their inability in stabilizing their interests, or their inability to achieve a career decision frustrate the need for competence, undermine their confidence in career decision-making, and reinforce feelings of being a failure, which, in turn, result in career-related task avoidance and commitment to pathways below their true potential (Young & Kolsko, 1994). Finally, parents should learn about the importance of conveying **rejection and neglect** of the adolescents´ career-related discussions, investments, or difficulties for the frustration of the need for relatedness (e.g., Assor, Roth, & Deci, 2004). Parents communicate these messages when they criticize the adolescents´ career interests, overlook their career options, and are not responsive to their anxieties and need for guidance, making them more susceptible to feel not worthy of love, alone and defective.

**Conclusion**

In this chapter it is proposed an integrated model of the processes and dynamics that determine identity development and adjustment during the critical career transition to higher education/job market. In line with SDT the findings support the existence of substantively distinct “bright” and “dark” trajectories of career identity development, highlighting the role of the contextual, cognitive and motivational determinants of these outcomes.

Conceptually, our findings suggest the importance of examining career identity outcomes using comprehensive explanation frameworks obtained from the conciliation of different psychological models. In terms of intervention, findings suggest the need to design more contextualized psychoeducational interventions that differentiate the students needing more intensive career counselling interventions from those who would benefit from both preventive and promotional career interventions. Promotional interventions should be designed to optimize the exploration and commitment-making processes by getting students to be involved in career-related tasks that encourage self-determination and volitional functioning, allow the essay of choice, increment feelings of self-efficacy, and involve significant others in the decision-making processes (Ryan & Deci, 2007). Interventions of a more preventive or remediative nature should be more focused in the re-alignment of the identity-related investments with personal growth-oriented values and goals, by combining individual counselling, deficit-focused career sessions, and preventive contextual interventions. We hope that future research will explore in depth this research avenue, and expand this model to different populations and developmental periods.

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