

Study of career development in children from a developmental-contextual perspective

Alexandra M. Araújo and Maria do Céu Taveira
University of Minho (Portugal)

Career development is a longitudinal process, from childhood to adulthood, which is influenced by personal and contextual factors. Vocational literature has described childhood as a formative period, as the bases of exploration and vocational interests, values, attitudes and skills are established in the first years of life. This study starts with an overview of the major theoretical approaches and research trends in the study of children's careers. A particular focus on the developmental-contextual approach is adopted, as an integrative framework to capture the complexity of processes and results that occur in the first years of life in that domain. The application of such a perspective to the study of the evolution of children's vocational behaviour leads to a discussion of the nature of change in the first years of life, of the child as a shaper of development and context, and of the impact of contexts on children's. Finally, we present implications of the adoption of the referred contextual approach for future research.

Keywords: Career development, vocational guidance, childhood, contextual theories.

Estudio del desarrollo de la orientación vocacional en la infancia desde la perspectiva evolutivo-contextual. El desarrollo de la orientación vocacional debemos entenderlo como un proceso longitudinal, que se extiende desde la infancia hasta la edad adulta y que está influido por factores personales y contextuales. La literatura existente, ha descrito la infancia como un período clave para este proceso, pues las bases de la exploración profesional, los intereses, los valores, las actitudes y las habilidades vocacionales, se forman en los primeros años de vida. Este estudio, describe los principales enfoques teóricos y las tendencias de la investigación en la actualidad sobre este tema y su relación con la infancia, poniendo especial énfasis en el enfoque contextual, como marco integrador explicativo de la complejidad de los procesos que se ven implicados en el desarrollo vocacional y la importancia que tienen los primeros años de vida. El uso de esa perspectiva, en el estudio de la orientación profesional en la infancia, surge a raíz de las controversias existente en referencia a la naturaleza del cambio en los primeros años de vida, de la idea del niño como regulador del desarrollo y del contexto, así como también, del impacto contextual en los procesos evolutivos. Finalmente, el trabajo presenta las implicaciones -para futuras investigaciones- de la relevancia de la teoría contextual.

Palabras clave: Desarrollo, orientación vocacional, infancia, teoría contextual.

Although childhood and children's development has long been studied, career development of children has received scant attention, comparing to other developmental periods, such as adolescence or young adulthood (e.g., Araújo, 2002; Hartung, Porfeli, & Vondracek, 2005; Watson & McMahon, 2005, 2007). The interest in studying career development in childhood is assured by the evidence that the bases of career exploration and vocational interests, values, attitudes and skills are established in the first years of life (Hartung *et al.*, 2005; Porfeli & Vondracek, 2007; Roe, 1957; Roe & Lunneborg, 1984; Skorikov & Vondracek, 2007; Super, 1957, 1980, 1990; Taveira, 1999; Watson & McMahon, 2005). In fact, recent reviews on children's career development literature (Araújo 2002; Hartung *et al.*, 2005) revealed that empirical studies in this field have focused on career exploration, career awareness, vocational expectations and aspirations, vocational interests, and career adaptability. These reviews showed that: (i) children experience a qualitative progression in their exploratory behaviour; (ii) young children present a rather stereotyped, but reasonably realistic awareness of the occupational world; (iii) they present gender-based differences in vocational aspirations and expectations, which also are influenced by race and socioeconomic status (SES); (iv) interest patterns vary from childhood to adolescence, and seem to be influenced by occupational sex-typing; (v) there appears to be age-graded differences in career adaptability, as older children become more oriented to the future and possess clearer views about themselves and the occupational world. These results demonstrate that childhood is a period with concrete accomplishments in the vocational domain, which potentially will influence later career results. Nevertheless, there still is a need to link this knowledge to what is known about other developmental periods, in order to "construct a more complete portrayal of life-span vocational ontogeny" (Hartung *et al.*, 2005, p. 411).

Moreover, the literature review conducted by Araújo (2002), evidenced that, although developmental theories (Ginzberg, Ginsburg, Axelrad, & Herma, 1951; Gottfredson, 1981, 1996; Super, 1957, 1980, 1990) were mostly responsible for the identification of childhood as an important period for career development, other approaches have also presented explicit or implicit contributions for this recognition. Psychoanalytic theories, for example, were among the pioneers in calling attention for childhood in the study of vocational behaviour. Authors such as Roe (e.g., 1957; Roe & Lunneberg, 1984) or Bordin (e.g., 1984; Bordin, Nachmann & Segal, 1963) referred explicitly to the importance of the first years of life in the development of personality structures and dynamics which, in turn, would have a great impact in future vocational choice, and to the importance of the family context in this process. Additionally, matching approaches, mostly through Holland's (1985, 1992) formulations, suggested that early socialization experiences, and namely parental conditioning, are influential in the development of a personality type and of occupational choice. Developmental

theorists, in turn, present a concern with longevity and continuity in career progression, describing the first years of life as a career stage, with specific developmental tasks to be mastered in this domain (e.g., Ginzberg *et al.*, 1951; Havighurst, 1972; Super, 1957). Childhood was therefore addressed as a stage of Fantasy (Ginzberg *et al.*, 1951) or Growth (Super, 1957) in the vocational sphere, where it is expected that youngsters form a picture of the kind of person they are, develop an orientation to the world of work, and acquire an understanding of the meaning of work (Havighurst, 1972). In childhood, play and fantasy exert a fundamental role in reasoning about one's future in the occupational world (Ginzberg *et al.*, 1951). Through these processes, along with participation in school, leisure and other activities, the child develops awareness of his or her abilities and weaknesses, as well as of likes and dislikes, and integrates this knowledge in the self-concept. During the first twelve years of life, children should grow in their capacity to work by learning productive work habits and attitudes, and also increase confidence in their ability to achieve and make their own decisions (Super, 1957, 1981). Gottfredson (1981, 1996) also presented a stage theory, which suggested that children's knowledge of the world of work and their occupational aspirations are progressively circumscribed by the consideration of elements of size and power, orientation to sex roles, and orientation to social valuation. Through this process, "children tend to recreate the social order of their elders, including gender and social class differences in employment, even before they themselves enter the labour market" (1996, p. 182).

Following a life-span perspective, career learning and career exploration have been depicted *per se* as longitudinal processes which have their origin in childhood (e.g., Patton & Porfeli, 2007; Taveira & Moreno, 2003; Watson & McMahon, 2005, 2007). Additionally, vocational psychology has stated the dynamic and interactive nature of these developmental processes, and presented parents, families and schools as important systems of influence in children's career development, and therefore, as major contexts for intervention to promote intentional career exploration and learning (e.g., Krumboltz, 1979; Law & McGowan, 1999; Lent, 2005; Lent, Brown, & Hackett, 1994; Lent & Hackett, 1994; Mitchell & Krumboltz, 1990; Super, 1980, 1990). Watson and McMahon (2005, 2007) proposed also the consideration of learning as a unifying theme to study career development in childhood. These authors stated that a Systems Theory Framework (STF; Patton & McMahon, 1999, 2006) would facilitate "locating learning within the individual child, within the child's individual system and in the child's interaction with the social and the environmental-societal systems in which the child develops" (Watson & McMahon, 2007).

Furthermore, a developmental contextual perspective (Vondracek, Lerner, & Schulenberg, 1986) has also been suggested to account for the complexity of unfolding careers (e.g., Skorikov & Vondracek, 2007; Skorikov & Patton, 2007; Vondracek &

Porfeli, 2008), which would allow the integration of knowledge of children's career development with knowledge about children's development in general. The referred framework is sensible to the historically and ontogenetically changing contexts of life, as well as to the multidimensional nature of the individual's career development. According to this life-span, developmental-contextual perspective, career development is a result of the combined and dynamic effect of multiple factors, related to the individual, the context(s), and time. Although developmental contextualism does not propose a focus on specific age-related periods, taking this approach to the study of career development leads to a necessary focus on childhood as a foundation-period for career trajectories and on children's developmental environments, such as the family and school, as relevant career development contexts. In the next section of this paper, we will discuss the implications of such an approach on the study of children's career development.

The Developmental-Contextual Approach to Career Development: A Focus on Childhood

Developmental contextualism (e.g., Lerner, 1986, 1991, 1998) is a contemporary theory of human development, inextricably related to developmental systems theory (Ford & Lerner, 1992; Sameroff, 1983; Thelen & Smith, 1998), which has co-evolved with the life-span (Baltes, 1987; Baltes, Lindenberger, & Staudinger, 1998), the life-course (Elder, 1974; Elder & Caspi, 1988), and the ecological (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 1998) views of human development. In a seminal work published in 1986, Vondracek, Lerner and Schulenberg (1986) have put forward the relevance of the above theoretical approaches for career development study and intervention. They reinforce the need to adopt a developmental approach in the study of career development, and to conceptualize it in terms of reciprocal organism-context relations. Furthermore, they have stated the complexity and variety of contextual influences on career development, relying on Bronfenbrenner's Ecology of Human Development (1979). These contributions were articulated with the implications of the life-span developmental view of human development, in order to reach to a goodness-of-fit model of career development (Vondracek, 1990; Vondracek *et al.*, 1986), which views the individual and the multiple levels of context as interdependent and changing over time.

The developmental-contextual approach to career development (Vondracek, 1990; Vondracek *et al.*, 1986) views this process as unfolding probabilistically rather than deterministically, as consequence of the dynamic interaction of individual and context. In this perspective, the changing context does not just produce alterations in the individual's development, but is itself influenced and constrained by the characteristics of the individual. Additionally, individual changes in career, which is

conceptualized as a life-span process, are both a result and shapers of the multiple levels of context within the person is embedded. An analysis of these prepositions, articulated with recent reviews on children's career development (e.g., Araújo, 2002; Hartung *et al.*, 2005; Watson & McMahon, 2005, 2007), affords the possibility to focus research on three main aspects: change in children's career development, the child as shaper of development and context, and the impact of context on children's career development.

Change in Children's Career Development

A developmental-contextual approach to human development focuses on systematic change, due to the belief that the potential for change exists across the life-span and across the multiple levels of organization comprising the ecology of human development (Bronfenbrenner, 1979; Vondracek *et al.*, 1986). The adoption of such a framework to the study of career development implies that the focus must be placed on change, and that changes at one level are reciprocally dependent on changes at other levels. Thus, it must be understood that there exists relative plasticity across life and across the system of influences on the individual's development (Vondracek *et al.*, 1986). In this perspective, interindividual differences in plasticity arise in relation to differences among the individual's organismic characteristics, as these characteristics influence the type of experiences lived in the multiple contexts. Therefore, the level of plasticity attained by the individual is an outcome of the temporally changing and dynamic relation of the organism and the context (Lerner, 1998).

Envisioning plasticity in career development (Vondracek *et al.*, 1986) suggests that, due to the interactions among levels of analysis, there is a potential to change the functioning of any level, and therefore, the entire system of relations. Taking children's career development in perspective, a change in the parent's work setting, leading to unemployment, can motivate parental frustration, anxiety or depression. Growing up with a parent in such conditions might lower the child's expectations and aspirations, by not providing the necessary incentives and reinforcement to invest in his or her own education. In this case, change in the child's context led to a discontinuity in career results. The demonstration of plasticity, although existing across the entire life-span, tends to be higher in childhood (Baltes *et al.*, 1998). Childhood is a time of significant change in such multiple domains as the cognitive, psychosocial or physical spheres. These changes present possibilities for growth in new directions, making childhood a period rich in the potential for novel behaviour, and thus reinforcing the need to study and intervene in youngster's development.

The potential for plasticity is not, however, unlimited. The prior developmental organization of a system constrains the potential of an influence to

motivate a change in the system (Vondracek *et al.*, 1986). This perspective leads to the consideration of continuity of development, as it indicates that there may be links among periods of life, and that previous developmental accomplishments may influence development in later periods. Thus, in a life-span perspective, it is important to account for the potential for plasticity and for developmental (dis)continuities in one's life, and therefore to understand the processes that lead to constancy (Lerner, 1998; Vondracek *et al.*, 1986). In fact, in spite of its probabilistic nature, development is not dispersive, because the individual has organization and internal coherence (Vondracek, 1990). This continuity and coherence in development may be explained by personal factors such as the child's beliefs and expectations, and by contextual influences, such as the parent's attitudes and behaviours. Some studies have shed light over continuity in individual's career trajectories, and more specifically to the relation between academic and career development. Pinquart, Juang, and Silbereisen's (2003) longitudinal study revealed a relation between high self-efficacy beliefs and better grades in childhood and adolescence with a decreased probability for unemployment in adulthood and increased satisfaction with jobs. Pulkkinen and Rönkä (1994) found that good school success seems to predict a stable career line and positive life-orientation, particularly in women. Wiesner, Vondracek, Capaldi and Porfeli's (2003) longitudinal study also showed a relation between poor levels of educational attainment in childhood and adolescence, along with adverse personal characteristics and family background, and long-term unemployment in adulthood. These authors envisioned continuity in career development, since individual attainment and contextual factors in childhood are described as interfering with the development of social, academic, and other skills during adolescence. The latter are also critical dimensions for success attainment in career trajectories.

Moreover, a longitudinal study conducted by Denissen, Zarrett, and Eccles (2007) with students between grades 1 and 12 revealed that children generally felt competent and interested in domains where they achieved well and perceived their personal strengths. The study showed that this coupling of school-related achievement perceptions, performance and interests, increased across time, fostering continuity in future attainments and interests. Other longitudinal studies have also provided insights on developmental (dis)continuity in children's career development, revealing, for example, variations in interests across children's development (Tracey & Ward, 1998), or in children's occupational aspirations (Helwig, 2001). Finally, Jordan and Pope's (2001) longitudinal study showed that adolescent's occupational information is formed in a developmental process whose antecedents are based in the childhood years, as being related, for example, to cognitive-conceptual attainment in pre-school.

Change in career development has also been discussed by Super (1957, 1980), who presented curiosity as the fundamental antecedent mechanism of children's

career exploration, and context reinforcement as the crucial element of its developmental continuity. This author proposed that childhood curiosity and interests promote adaptive exploratory behaviour in adolescence, reflecting the continuous nature of career exploration. This coherency in children's career development seems to be related to the various influences which act as mutually reinforcing, and thus provide a basis for continuity.

Children as Shapers of Development and Context

Developmental contextualism incorporates the notion that the context influences individual development and it is influenced and constrained by the individual's characteristics, due to the dynamic interactions between them (Vondracek *et al.*, 1986). According to Bronfenbrenner and Morris (1998), individual characteristics act as shapers of development, as they influence the emergence and operation of developmental processes, which are understood as deriving from particular forms of interaction between organism and environment. Furthermore, the same authors point out the importance of the "developmentally generative" characteristics of the individual, as active behavioural dispositions that can set enduring forms of interaction in the immediate environment. These characteristics involve active orientations such as curiosity, tendency to initiate and engage in activity, responsiveness to initiatives by others, and readiness to defer immediate gratification to pursue long-term goals. Curiosity has already been conceptualized as an important active force in career exploration in childhood (Patton & Porfeli, 2007), and seen as a precursor of children's career exploration (Super, 1990). Children's interests, personal beliefs about competence, aspirations and expectancies (Arbona, 2000; Fouad & Smith, 1996; Tracey & Ward, 1998; Trice, 1991) can also be seen as active dispositions that shape individual trajectories and developmental contexts. Research has provided evidence that elements such as gender and sex-role influences, age, SES, family experiences, parental attitudes, self-esteem, intellectual level, and race and ethnicity, account for differential results in these dispositions, the ways individuals engage their environment, and consequently the kind of experiences their career trajectories are made of (e.g., Araújo, 2002; Hartung *et al.*, 2005; Watson & McMahon, 2005, 2007).

Taken as an example of the above discussion, the prospective study conducted by Bandura, Barbaranelli, Caprara, and Pastorelli (2001) shows how children's perceived self-efficacy is a mechanism of human agency in career choice and development. The study tested a conceptual model where familial SES influences parental perceived efficacy and academic aspirations, which, in turn, affect their children's perceived efficacy, academic aspirations and scholastic achievement. Accordingly, the children's perceived efficacy and academic orientations shape their perceived efficacy for different types of career pursuits, which, in turn, plays a major

role in the careers they choose and engage in. Results indicated that familial SES is indeed linked to children's career trajectories, but only indirectly through its effects on parents' educational aspirations and perceived efficacy to promote their children's academic development. The impact of parental aspirations on children's judgments of their occupational efficacy and career choice is, therefore, mediated through the effect on children's self-conceptions of efficacy, academic aspirations, and achievement. Thus, aspiring parents shape their children's academic, social, and self-regulatory efficacy, raise their aspirations, and promote their scholastic achievements. Additionally, children's perceived academic, social, and self-regulatory efficacy influence the types of occupational activities for which they judge themselves to be efficacious, through their impact on academic aspirations, and thus the type of experiences in which they engage.

In the course of development, the active individual makes numerous conscious and unconscious "choices", which have an impact on context and on future development and defines the individual's developmental path or trajectory (Crockett & Crouter, 1995). Gottfredson (1981, 1996) refers to career development as a sequence of cumulative decisions, which progressively constrains the array of options and likely developmental outcomes. This process has been named as "circumscription", which accounts for individual and group differences in career development. Children actively construct a social map of the world of occupations, and identify the occupations they most prefer by assessing the compatibility of these with their images of themselves. In this assessment, public presentations of masculinity/femininity will be examined, which progressively follow to the consideration of social standing, and ultimately to interests and personality. Nonetheless, this process should not be seen as a narrowed, one-way ended route: because some of life events are unpredictable and result of chance opportunities, prediction of outcomes is not possible, although the accumulation of decisions should make certain outcomes in terms of occupational aspirations and career decision-making increasingly (un)likely.

Following this conception of the child as an active agent in his or her own development, research should treat the vocational characteristics of the child as precursors and producers of later development, and not just as mere developmental outcomes. The study conducted by Ferreira, Santos, Fonseca and Haase (2007) focused on early predictors of career development among a Portuguese sample of school children. The study presented findings from a 10-year longitudinal study of the educational and occupational socialization of 7 year-old students when first tested, who were about 17 years old at the fourth time of measurement. The authors collected psychological measurements from the participants, and behavioural reports from parents and teachers, thus adopting a comprehensive view of developmental assessment. Results showed that the presence of antisocial behaviours, reported by

teachers as early as the second grade of schooling, was highly predictive of school drop-out seven more years later. The authors also found the relationship between early antisocial behaviours and school drop-out to be much stronger for boys than for girls, probably due to different socialization patterns and different expectations held for the boys and girls. Additionally, they recognized the role of socio-cultural factors, as well as the impact of family SES and parental influences, in the pattern of school leaving. Following a developmental-contextual approach in the analysis of these results will lead to a conception of school drop-out and premature transition into work as a complex process that occurs over time, and due to the dynamic interaction between personal characteristics and the psychosocial context within which development takes place. Moreover, results evidence that the relationship of early experiences to later outcomes is complex, partly due to the fact that children are active producers of their own development.

The study conducted by Wiesner, Vondracek, Capaldi and Porfeli (2003) is another example of the analysis of child characteristics as precursors of career development trajectories. The purpose of the study was to identify and examine the factors during childhood and adolescence that predict young adult career pathways, using data from an at-risk sample of young men (23-24 years of age), who were assessed annually from the time they were 9-10 years of age. Four career pathway groups were distinguished in the sample of 202 at-risk men, namely: young men with long-term unemployment, short-term unemployment, full employment, or a college education. Measures of educational attainment, family and peer characteristics, and personal adjustment during childhood and adolescence were used to determine if they would predict early adult career pathways. Results seemed to demonstrate that the long-term unemployed young men showed the poorest levels of educational attainment, family and peer characteristics, and personal adjustment during childhood and adolescence. Wiesner *et al.* (2003) found that the most important predictors of different results in career trajectories were educational attainment, arrests, and mental health problems. These results evidenced that the link between early and later career outcomes is a result of a complex relation between personal and context characteristics, and that the individual, with his or her behavioural dispositions, has an active role in shaping development and the contexts in which he or she engages.

Impact of Context(s) on Children's Career Development

Children's career development is influenced by the nature of the environments in which they are developing. Proximal contexts, such as the family, school, peer group and local neighbourhood, help shape the actual and perceived opportunities available to children. These contexts are, in turn, embedded in the social, cultural, and historical contexts that have a powerful role in shaping the resources and

opportunities available in the more proximal settings. Accordingly, the developmental-contextual approach to human development stresses that the bases for change lie in the relations that exist among the multiple levels of organization of human life (Lerner, 1998). These levels range from the most inner and biological features of the individual to more distal characteristics, such as public policy or the economic systems.

Vondracek *et al.* (1986) viewed Bronfenbrenner (1979) description of the ecology of human development as a framework which allows for a comprehensive examination of the context as it affects career development. The authors presented the family setting as one of the most important microsystems in children's and adolescents' development. Furthermore, they emphasized the importance of elements such as family activities, interpersonal relations, roles, and structural and physical features of the setting in the description of this context. At the mesosystem level, attention is claimed to the interrelations among the child's family, school, peer group, and part-time work setting (e.g., family SES and parental attitudes are important features in supporting children's academic success in school and shaping children's vocational expectations). Furthermore, exosystems such as the community may have an important impact on children's career development. School board's decisions on human resources recruiting structure the type of opportunities the child has in more proximal contexts such as the teacher-student dyad. Along with this example, Vondracek *et al.* (1986) stressed the importance of parent's workplace as an important exosystem, as parental work autonomy and job demands impact parental child-rearing practices and values for the child's attainment. Finally, at the macrosystem level, historical change and cultural and subcultural influences are named as contributors for differences in children's career development in such indicators as career commitment and school attainment.

Among the multiple contexts to which the child is connected, the combined influence of particular settings may provide a synergetic base for development (Crockett & Crouter, 1995). An example of this synergetic influence may be when the child of parents with high expectancies for academic and vocational success, and who is involved with an academically oriented group of friends, attends a competitive school, which also provides sports or science after-school programs. Thus, it is not a single context that has a major influence on children's academic and career development, but the combined pattern of influences the multiple settings place on the child. Nonetheless, it is important to analyse each setting's structure and processes in order to apprehend the potential for these synergies.

The family context has accordingly been presented as a crucial context for the integration of information, skills and attitudes which can reveal to be important in future decision-making (Ginzberg *et al.*, 1951; Holland, 1985, 1992; Roe, 1957; Roe & Lunneberg, 1984; Super, 1980, 1990). Moreover, empirical research has revealed a positive relation between parents' educational level, occupational status and family's

economic attainment, and children's career awareness, occupational aspirations and expectations regarding educational and occupational status, educational requirements of occupations and academic attainment (Schulenberg, Vondracek, & Crouter, 1984). Research also suggested that family functioning (e.g., parental behaviour and attitudes, support and guidance), has a greater influence on career results than family structure variables (e.g., number of siblings, parents' educational and occupational attainment) (Kerka, 2000). Furthermore, there is evidence that processual variables such as parental expectations, parent/child interactions, parental values, parental support and encouragement, role modelling, attachment styles, and intentional influence behaviour, affect children's career development (Pinto & Soares, 2001; Schulenberg *et al.*, 1984; Whiston & Keller, 2004). More recently, Bryant, Zvonkovic, and Reynolds (2006) conducted a review on parenting influence on children's career development and claimed that processes such as occupational knowledge acquisition, exploration, academic and occupational aspirations and self-efficacy, mediate the relation between parenting and vocational behaviour. Additionally, Bryant and colleagues (2006) advocated the need to view the family as a multifaceted context, which is, by turn, influenced by factors such as the availability of financial capital, child agency, work-family interfacing, family roles, family structure, and the historical conditions affecting parenthood.

Although parents seem to have the most salient influence on their children's career development, other family members such as siblings and extended family also exert some of the same important influences. Supportive teachers, counsellors, and significant others also provide the active and supportive relational environment that contributes to career progress (Schultheiss, Palma, Predragovich, & Glasscock, 2002; Schultheiss, 2007).

The school setting also operates in several levels of influence, including the school's resources and structure (e.g., school size), the social climate (e.g., rules, emphasis on particular goals), differentiated curricular tracking, and, the classroom-level practices (e.g., teaching strategies, teacher's expectations). Variations in these elements have a different effect on student's learning opportunities and motivation for learning, which in turn influence academic and vocational achievement (Arbona, 2000; Eccles & Roeser, 2003). In addition, research has revealed a relation between academic attainment and aspirations and career planning, aspirations and occupational (Arbona, 2000).

Contextual change in school settings is experienced by young children, and this potentially influences children's academic and career development. Ecological transitions (Bronfenbrenner, 1979) are particularly relevant for career development (Vondracek *et al.*, 1986). In this domain, research has showed that a successful school-to-work transition is a precursor of promising career development (Pinquart *et al.*,

2003). Additionally, Brynner's (1997) longitudinal study showed that problems in developing basic literary and numerical skills by age 10 were associated with later problems in the school-to-work transition.

Despite general recognition of the longitudinal nature of career development, little is known on how early ecological transitions contribute to career development pathways. In childhood, these transitions may refer to the progression from family-care to pre-school education settings, or moving from these settings to elementary school. The transition to school, for example, occurs as children experience increasing independence and responsibility, the emergence of new reasoning and memory abilities and as the composition of children's social networks starts to change. Furthermore, formal educational settings present new goals and expectations for the child, relating to literacy, numeracy, and socialization, and emphasise formal instruction and the child's academic progress. Due to these differences, children, teachers, and families experience the entrance in school as a qualitative shift in their development (Rimm-Kaufman & Pianta, 2000).

Organized activities, along with the family and school, constitute an important developmental context for children and adolescents. Out-of-school time can be seen as an opportunity for children to learn and develop their competencies. Participation in these activities can have a range of positive influence on children and adolescents, as they help youngsters to negotiate developmental tasks posed at each period. In a review of research on the topic, Mahoney, Larson, Eccles, and Lord (2005) found that young children can benefit from participation in organized activities, which seems to be related to high reading and math achievement, high levels of social competence, positive achievement and emotional adjustment, and perceived competence and values during adolescence.

Involvement in extracurricular activities develops within the contexts of children's lives and, thus, it is important to understand what factors lead children to choose one activity over the other. Children are unlikely to remain involved in activities which they do not value, or for which they feel no competence (Eccles & Harold, 1991; Denissen *et al.*, 2007). Wigfield and Eccles (1992) suggested that, during the elementary school grades, values attributed to specific tasks are related to children's interests. At young ages, interests may shift rapidly, so that children may try many different activities for a short time before deciding which activity they enjoy the most. As children progress through early and middle elementary school grades, children's sense of the usefulness of different activities, especially for future goals, may play a role in staying engaged over time in a particular task (Jacobs, Vernon, & Eccles, 2005).

Finally, contexts are dynamic and the possibilities of change in the environment are constantly high. Non-normative events constitute an important source of contextual change, which impacts children's career development (Vondracek *et al.*,

1986). Unexpected events such as family moves, parental divorce and remarriage, serious illness, and changes in parents' employment situations may alter structural and process operating aspects of the family environment, and thus the opportunities for learning and career exploration. Additionally, research has proved that different cohort membership, as well as historical time, is capable of producing divergences in the course of vocational development (Schoon, Martin & Ross, 2007; Schoon & Parsons, 2002).

CONCLUSIONS

Studying children's career development from a developmental-contextual perspective leads to the recognition of the multiple and dynamic influences on career development results. Following this approach, career pathways are seen as a result of qualitative and quantitative changes which are developed over time, consequence of the dynamic interaction between the individual and the contexts in which he or she is embedded. A major implication of the adoption of such a framework for the study of children's career development is that a focus on the child's development mustn't be separated from the specific aspects of his or her social contexts. Research has showed that a number of contextual variables have a strong impact on children's career development, namely those related to the structure and processes of the family, school and leisure and organized extra-curricular activities. In order to develop a deeper understanding of these factors, and to explore inter-individual differences in career outcomes, we suggest that the assessment of children's career development includes measures of contextual influence, including demographic variables, such as the family SES, but also dynamic features such as parental or teacher's expectations and beliefs. In addition, the influence of the child's personal characteristics, such as curiosity, motivation or self-efficacy beliefs, should be studied as shapers of developmental progression and of the contexts in which the child is embedded. Research should focus also on the study of career development outcomes as well as on the processes underlying change through life. There is still a need to explore the origins and effects on later development of children's vocational indicators, such as vocational aspirations, interests, values, or career exploration (Skorikov & Patton, 2007). Longitudinal research must be stimulated in order to proceed this inquiry line and apprehend intraindividual variations in career results. Furthermore, cohort-sequential designs would be appropriate for the study of children's career development (Vondracek, 1990), because they are more sensitive to the changing socio-historical, economic and cultural context. In addition, children's career assessment should be thought to follow a sequential plan, which follows the child in time and contexts progression, from the early years, to adolescence, and adulthood. Thus, career assessment instruments should focus on developmental constructs or processes, such as career exploration, and be

constructed as integrating a developmental battery, with equivalent forms from childhood to adulthood (Araújo, Silva, Faria & Taveira, 2007).

Due to the strong relation of academic and career development (Arbona, 2000), we also recommend that school achievement is paired with career exploration and career learning throughout childhood, and especially in school transitions, such as home-to-school or school-to-school transitions. Along with academic achievement, other developmental outcomes and processes, as cognitive attainment and socio-emotional adjustment, can be studied in relation to children's career development indicators.

Finally, a comprehensive assessment of children's career development claims for the need to gather information from multiple sources. Parents, teachers, neighbours and the child present different perspectives on children's career development indicators, because they interact with the child in different social contexts, with specific expectations and rules that influence the child's behaviour. These perspectives may be compared in order to apprehend constancies and differences in the characterization of children's career development.

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REFERENCIAS

- Araújo, A., Silva, A.D., Faria, L. & Taveira, M.C. (2007). *Assessment of career exploration in childhood, adolescence and adulthood*. Paper presented at the Xth European Congress of Psychology, Prague, Czech Republic.
- Araújo, S.B. (2002). *Desenvolvimento vocacional na infância: um estudo exploratório com crianças em idade pré-escolar. [Vocational development in childhood: An exploratory study with pre-school children]*. Unpublished master's thesis, Education and Psychology Institute, University of Minho, Braga.
- Arbona, C. (2000). The development of academic achievement in school-aged children: precursors to career development. In S.D. Brown & R.W. Lent (Eds.), *Handbook of counseling psychology* (3rd ed., pp. 270-309). New York: John Wiley and Sons.
- Baltes, P.B. (1987). Theoretical propositions of life-span developmental psychology: On the dynamics between growth and decline. *Developmental Psychology*, 23, 611-626.
- Baltes, P.B., Lindenberger, U. & Staudinger, U.M. (1998). Life-span theory in developmental psychology. In W. Damon & R.M. Lerner (Eds.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (5th ed., pp. 1029-1143). New York: Wiley.
- Bandura, A., Barbaranelli, C., Caprara, G. & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development*, 72(1), 187-206.

- Bordin, E.S. (1984). Psychodynamic model of career choice and satisfaction. In D. Brown & L. Brooks (Eds.), *Career choice and development: Applying contemporary theories to practice* (pp. 94-136). San Francisco, CA: Jossey-Bass.
- Bordin, E.S., Nachmann, B. & Segal, S.J. (1963). An articulated framework for vocational development. *Journal of Counseling Psychology, 10*, 107-116.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. & Morris, P.A. (1998). The ecology of developmental process. In W. Damon & R. M Lerner (Eds.). *Handbook of child psychology: Vol. 1. Theoretical models of human development* (5th ed., pp. 993-1028). New York: Wiley.
- Bryant, B.K., Zvonkovic, A.M. & Reynolds, P. (2006). Parenting in relation to child and adolescent vocational development. *Journal of Vocational Behavior, 69*, 149-175.
- Brynner, J.M. (1997). Basic skills in adolescents' occupational preparation. *Career Development Quarterly, 45*, 305-321.
- Crockett, L.J. & Crouter, A.C. (1995). Pathways through adolescence: An overview. In L.J. Crockett, & A.C. Crouter (Eds.), *Pathways through adolescence: Individual development in relation to social contexts* (pp. 1-12). Mahwah, NJ: Lawrence Erlbaum.
- Denissen, J.A., Zarrett, N.R. & Eccles, J.S. (2007). I like to do it, I'm able, and I know I am: Longitudinal couplings between domain-specific achievement, self-concept, and interest. *Child Development, 78*(2), 430-447.
- Eccles, J.S. & Harold, R.D. (1991). Gender differences in sport involvement: Applying the Eccle's expectancy-value model. *Journal of Applied Sport Psychology, 3*, 7-35.
- Eccles, J.S. & Roeser, R.W. (2003). Schools as developmental contexts. In G. Adams (Ed.), *Handbook of Adolescence* (pp. 129-148). Oxford, UK: Blackwell Press.
- Elder, G.H., Jr. (1974). *Children of the Great Depression: Social change in life experiences*. Chicago: University of Chicago Press.
- Elder, G.H., Jr. & Caspi, A. (1988). Human development and social change: An emerging perspective on the life course. In N. Bolger, A. Caspi, G. Downey & M. Moorehouse (Eds.), *Person in context: Developmental processes. Human development in cultural and historical contexts* (pp. 77-113). New York: Cambridge University Press.
- Ferreira, J.A., Santos, E.J.R., Fonseca, A.C. & Haase, R. (2007). Early predictors of career development: A 10-year follow-up study. *Journal of Vocational Behavior, 70*, 61-77.
- Ford, D.L. & Lerner, R.M. (1992). *Developmental systems theory: An integrative approach*. Newbury Park, CA: Sage.
- Fouad, N. & Smith, P. (1996). A test of a social-cognitive model for middle school students: math and science. *Journal of Counseling Psychology, 43*, 338-346.
- Ginzberg, E., Ginsburg, S., Axelrad, S. & Herma, J. (1951). *Occupational choice: An approach to a general theory*. New York: Columbia University Press.
- Gottfredson, L. (1981). Circumscription and compromise: A developmental theory of occupational aspirations. *Journal of Counseling Psychology, 28*(6), 545-579.
- Gottfredson, L. (1996). Gottfredson's theory of circumscription and compromise. In D. Brown, L. Brooks & Assoc. (Eds.), *Career choice and development* (pp. 179-232). San Fransisco, CA: Jossey-Bass

- Hartung, P.J., Porfeli, E.J. & Vondracek, F.W. (2005). Child vocational development: a review and reconsideration. *Journal of Vocational Behavior*, 66, 385-419.
- Havighurst, R.J. (1972). *Developmental tasks and education*. New York: Longmans/Green.
- Helwig, A.A. (2001). A test of Gottfredson's theory using a ten-year longitudinal study. *Journal of Career Development*, 28(2), 77-95.
- Holland, J.L. (1985). *Making vocational choices: A theory of vocational personalities and work environments* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Holland, J.L. (1992). *Making vocational choices: A theory of vocational personalities and work environments* (2nd ed.). Odessa, FL: Psychological Assessment Resources.
- Jacobs, J.E., Vernon, M.K. & Eccles, J.S. (2005). Activity choices in middle childhood: roles of gender, self-beliefs, and parents' influence. In J.L. Mahoney, R.W. Larson & J.S. Eccles (Eds.), *Organized activities as contexts of development* (pp. 235-254). Mahwah, NJ: Lawrence Erlbaum Associates.
- Jordan, T.E. & Pope, M.L. (2001). Developmental antecedents to adolescents' occupational knowledge: A 17-year prospective study. *Journal of Vocational Behavior*, 58, 279-292.
- Kerka, S. (2000). Parenting and career development. *Career Education*, 214, 1-5.
- Krumboltz, J.D. (1979). A social learning theory of career decision making. In A. M. Mitchell, G.B. Jones & J.D. Krumboltz (Eds.), *Social learning and career decision making* (pp. 19-49). Cranston, RI: Caroll Press.
- Law, B. & McGowan, B. (1999). *Opening doors: A framework for developing career-related learning in primary and middle-schools*. London: CRAC.NICEC.
- Lent, R.W. (2005). A social cognitive view of career development and counselling. In S.D. Brown & R.W. Lent (Eds.), *Career development and counselling: Putting theory and research to work* (pp. 101-127). Hoboken, NJ: Wiley.
- Lent, R.W. & Hackett, G. (1994). Sociocognitive mechanisms of personal agency in career development: Pantheoretical prospects. In M.L. Savickas & R.W. Lent (Eds.), *Convergence in theories of career choice and development*. Palo Alto, CA: Consulting Psychologists Press.
- Lent, R.W., Brown, S.D. & Hackett, G. (1994). Toward a unified social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, 45, 79-122.
- Lerner, R.M. (1978). Nature, nurture, and dynamic interactionism. *Human Development*, 21, 1-20.
- Lerner, R.M. (1986). *Concepts and theories of human development* (2nd ed.). New York: Random House.
- Lerner, R.M. (1991). Changing organism-context relations as the basic process of development: A developmental contextual perspective. *Developmental Psychology*, 27, 27-32.
- Lerner, R.M. (1998). Theories of human development: contemporary perspectives. In W. Damon & R.M. Lerner (Eds.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (5th ed., pp. 1-24). New York: Wiley.
- Mahoney, J.L., Larson, R.W., Eccles, J.S. & Lord, H. (2005). Organized activities as developmental contexts for children and adolescents. In J.L. Mahoney, R.W. Larson, & J.S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular*

- activities, after-school and community programs (pp. 3-22). Mahwah, NJ: Lawrence Erlbaum & Associates.
- Mitchell, L.K. & Krumboltz, J.D. (1990). Social learning approach to career decision making: Krumboltz's theory. In D. Brown, L. Brooks & Assoc. (Eds.), *Career choice and development: Applying contemporary theories to practice* (2nd ed., pp. 145-196). San Francisco, CA: Jossey-Bass.
- Patton, W. & McMahon, M. (1999). *Systems theory and career development: A new relationship*. Pacific Grove, CA: Brooks/Cole.
- Patton, W. & McMahon, M. (2006). *Systems theory and career development: Connecting theory and practice*. Rotterdam, The Netherlands: Sense Publishers.
- Patton, W. & Porfeli, E. (2007). Career exploration for children and adolescents. In V.B. Skorikov & W. Patton (Eds.), *Career development in childhood and adolescence* (pp. 47-69). Rotterdam: Sense Publishers.
- Pinquart, M., Juang, L.P. & Silbereisen, R.K. (2003). Self-efficacy and successful school-to-work transition: A longitudinal study. *Journal of Vocational Behavior*, 63, 329-346.
- Pinto, H.R. & Soares, M.C. (2001). Influência parental na carreira: Evolução de perspectivas na teoria, na investigação e na prática [Parental influence in career: Evolution of perspectives in theory, research and practice]. *Psicologica*, 26, 135-149.
- Porfeli, E.J. & Vondracek, F.W. (2007). Development of work values. In V.B. Skorikov & W. Patton (Eds.), *Career development in childhood and adolescence* (pp. 105-126). Rotterdam: Sense Publishers.
- Pulkkinen, L. & Rönkä, A. (1994). Personal control over development, identity formation, and future orientation as components of life orientation: A developmental approach. *Developmental Psychology*, 30, 260-271.
- Rimm-Kaufman, S. & Pianta, R. (2000). An ecological perspective on the transition to kindergarten: A theoretical framework to guide empirical research. *Journal of Applied Developmental Psychology*, 21(5), 491-511.
- Roe, A. (1957). Early determinants of vocational choice. *Journal of Counseling Psychology*, 4, 212-217.
- Roe, A. & Lunneborg, P. W. (1984). Personality development and career choice. In D. Brown & L. Brooks (Eds.), *Career choice and development: Applying contemporary theories to practice* (Chap. 3). San Francisco: Jossey-Bass.
- Sameroff, A.J. (1983). Developmental systems: Contexts and evolution. In W. Kessen (Ed.), *Handbook of child psychology: Vol. 1. History, theory, and methods* (pp. 237-294). New York: Wiley.
- Schoon, I., Martin, P. & Ross, A. (2007). Career transitions in times of social change: His and her story. *Journal of Vocational Behavior*, 70, 78-96.
- Schoon, I. & Parsons, S. (2002). Teenage aspirations for future careers and occupational outcomes. *Journal of Vocational Behavior*, 60, 262-288.
- Schulenberg, J.E., Vondracek, F.W. & Crouter, A.C. (1984). The influence of the family on vocational development. *Journal of Marriage and the Family*, 46(1), 129-143.

- Schultheiss, D.P. (2007). Career development in the context of children's and adolescents' relationships. In V.B. Skorikov & W. Patton (Eds.), *Career development in childhood and adolescence* (pp. 169-180). Rotterdam: Sense Publishers.
- Schultheiss, D.P., Palma, T., Predragovich, K. & Glasscock, J. (2002). Relational influences on career paths: Siblings in context. *Journal of Counseling Psychology*, 49, 302-310.
- Skorikov, V.B. & Patton, W. (2007). Future directions in research on career development during childhood and adolescence. In V.B. Skorikov & W. Patton (Eds.), *Career development in childhood and adolescence* (pp. 325-336). Rotterdam: Sense Publishers.
- Skorikov, V.B. & Vondracek, F. (2007). Vocational identity. In V.B. Skorikov & W. Patton (Eds.), *Career development in childhood and adolescence* (pp. 143-168). Rotterdam: Sense Publishers.
- Super, D.E. (1957). *The psychology of careers*. New York: Harper and Row.
- Super, D.E. (1980). A life-span, life-space approach to career development. *Journal of Vocational Behavior*, 16, 282-298.
- Super, D.E. (1990). A life-span, life-space approach to career development. In D. Brown & L. Brooks (Eds.), *Career choice and development: applying contemporary theories to practice* (2nd ed., pp.197-261). San Francisco, CA: Jossey Bass.
- Taveira, M. (1999). Intervenção precoce no desenvolvimento vocacional [Early intervention in vocational psychology]. *Psicologia: teoria, investigação e prática*, 1, 173-190.
- Taveira, M.C. & Moreno, M.R. (2003). Guidance theory and practice: The status of career exploration. *British Journal of Guidance and Counselling*, 31(2), 189-207.
- Thelen, E. & Smith, L. B. (1998). Dynamic systems theories. In W. Damon & R.M. Lerner (Eds.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (5th ed., pp. 563-634). New York: Wiley.
- Tracey, T.J. & Ward, C.C. (1998). The structure of children's interests and competence perceptions. *Journal of Counseling Psychology*, 45, 290-303.
- Trice, A.D. (1991). Stability of children's career aspirations. *Journal of Genetic Psychology*, 152(1), 137-139.
- Vondracek, F.W. (1990). A developmental-contextual approach to career development research. In R.A. Young & W.A. Borgen (Eds.), *Methodological approaches to the study of career* (pp. 37-53). New York: Praeger Publishers.
- Vondracek, F.W., Lerner, R.M. & Schulenberg, J.E. (1986). *Career development: A life-span developmental approach*. Hillsdale, NJ: Erlbaum.
- Vondracek, F.W. & Porfeli, E.J. (2008). Social contexts for career guidance throughout the world: Developmental-contextual perspectives on career across the lifespan. In J.A. Athanasou & R.V. Esbroeck (Eds.), *International handbook of career guidance* (pp. 209-225). New York: Springer Publishing.
- Watson, M. & McMahan, M. (2005). Children's career development: A research review from a learning perspective. *Journal of Vocational Behavior*, 67(2), 119-132.
- Watson M. & McMahan, M. (2007). Children's career development earning: A foundation for lifelong career development. In V.B. Skorikov & W. Patton (Eds.), *Career development in childhood and adolescence* (pp. 29-45). Rotterdam: Sense Publishers.

- Wiesner, M., Vondracek, F., Capaldi, D. & Porfeli, E. (2003). Childhood and adolescent predictors of early adult career pathways. *Journal of Vocational Behavior*, 63, 305-328.
- Wigfield, A. & Eccles, J.S. (1992). The development of achievement task values: A theoretical analysis. *Developmental Review*, 12, 1-46.
- Whiston, S.C. & Keller, B.K. (2004). The influence of the family of origin on career development: A review and analysis. *Journal of Vocational Behavior*, 32, 493-568.

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