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Exploring Children's Representations of Work: A Review Investigating Content and Influences

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Abstract

Middle childhood has been identified as a critical period regarding the exploration and construction of the self, with strong implications for future vocational choices and occupational trajectories. Due to a shortage of both theoretical models and empirical data, a knowledge gap remains as regards children's perceptions and understandings of the concept of work between the ages of 5 to 8, and the differential variables influencing these representations. This review aims to fill this gap by providing relevant information with respect to the investigation of the content of children's representations of work, as well as the factors influencing them. Considering the lack of papers covering this topic, this article approaches the subject through adjacent angles such as adult and adolescent representations of work, children's representations of occupations, and children's vocational preferences or career development. A theoretical model of children's mental representations of work is presented, and general methodological avenues are proposed to pursue further investigation on this research topic.

Keywords: work representations, children, review, career development

Exploring children's representations of work: a review investigating content and influences

As highlighted by Canzittu, (2019), De Vos et al. (2020) or Maree (2018), the world of work is going through major changes characterized by new kinds of jobs, (un)employment, new career development and expectations. Such important changes in working conditions are most likely inducing a shift of our own perceptions and expectations regarding work. In this context, career thinking (i.e., the assumptions, attitudes, behavior, beliefs, emotions, planning, or strategies related to career decision making, Mahmud et al., 2019) is more than ever a life-long process, as is career counselling. Even though many theories have been developed since the emergence of vocational and work psychology, a lot of them have failed to give enough attention to the first chapters of life when it comes to career development. As we will see, a dive into the history of vocational psychology can thus be relevant to explore the importance of this period of life regarding the construction of work representations. First, Ginzberg et al. (1951) highlighted the importance of imagination in the emergence of vocational aspirations in young boys. Before the age of 11, vocational preferences are based on projections in certain occupations, projections fuelled by the observation of adult activities. However, this theory considers vocational development as linear and fails to explain how these projections and representations differ depending on factors such as socio-economic status (SES) or gender. Later, Super et al. (1996), proposed a theory of vocational development that includes childhood and takes into account individual factors. The growth phase (4-13 years old) is considered an integral part of career development, where individuals develop representations of work and its role in life, as well as representations of themselves through the formation of a self-concept. However, the formation, evolution and content of these representations have not been detailed in this model, even though they are thought to influence career trajectories throughout life.

More recently, Savickas (2005) also stressed in his career construction theory the importance of representations and their role in the meaning given to vocational behavior and work experiences, but failed to consider how childhood experiences and representations influence these career decisions, even though vocational development theorists (Gottfredson, 2002; Hartung et al., 2008;

Howard & Walsh, 2011; McMahon & Patton, 1997; Super, 1990) have argued that one's representations of work and of oneself (including vocational self-concept) start to develop very early, including through play, leisure and socializing in highly-gendered spaces (Hartung, 2002; Hong et al., 1993; Lee et al., 2018; Vondracek & Skorikov, 1997).

The importance of work representations and their connection with children's career development and choices has already been stressed (Ferrari et al., 2008). As emphasized by Cinamon & Yeshayahu (2021, p. 17), children's primary perceptions about the world of work are the "bedrock, like the letter of the alphabet, from which more complex and sophisticated knowledge of the world of work and career will emerge". Even if a growing number of countries are trying to include precise vocational knowledge and career education in their curriculum, these programs are centered around occupations without considering how children perceive the *concept* of work (i.e., meaning, purpose), even though the importance of these elements has already been highlighted (Hartung et al., 2005; Schultheiss et al., 2005). Consequently, the goal of this paper is to provide avenues leading to the study of children's mental representations (defined as temporary constructions created in a particular context for a specific purpose such as reading texts, listening to instructions, problem solving; Bonnet, 1990) of work by approaching the subject through adjacent angles.

Many thinkers attempted to describe the complex relationship human beings have with work. Lent and Brown (2021) defined work as specific activities people perform to provide services or create goods, typically, but not always, through employment. An occupation or profession refers to a specific line of work one engages in (e.g., being a nurse), while a job is a specific employed position held in an organization for a certain period of time (e.g., Registered Nurse Anaesthetist at hospital X). A career, however, refers to the work-related path an individual walks through their life, and encompasses the collection of jobs and occupations one has held, even though other scholars (Savickas et al., 2009) have proposed a broader definition of careers as life trajectories, transcending the domain of work or employment. Work can also be understood in a broader sense: in the field of

philosophy, Weil proposed a larger delineation of the concept as an essential human experience, enhancing wisdom, self-fulfilment, feelings of control and especially, freedom (Weil et al., 1934/2022). This conception appears appropriate to express everything “work” encompasses and the considerable space it takes in people’s lives and minds. For this reason, exploring the formation of work representations early in life is crucial, especially through the concept of decent work, which is defined as providing security, autonomy, as well as personal and social development (Cohen-Scali et al., 2020).

The first section of this paper will present the limited number of studies that have examined the content of work representations. In the absence of studies including children, these findings only cover the area of adult and adolescent work representations. Then, we will attempt to identify factors that can influence the way young children perceive work. A model of children's mental representations of the concept of work and their influencing variables will be presented, as well as hypotheses and perspectives for future research.

Method

This article synthesizes findings identified after conducting a staged review of the literature with no temporal restrictions. Three main databases were used (PsychInfo/PsychArticle, Semantic Scholar and Google Scholar) with no specific inclusion or exclusion criteria, except for the language in which the article was written (only English and French articles have been reviewed). The aim of this review is to highlight work representations with a focus on middle childhood, which refers to the period between preschool (around 5) and 8–10 years of age (APA, 2022). However, certain studies including teenagers (individuals aged 14 to 18), young adults (individuals aged 19 to 25), and adults (individuals aged 26 and over) have been included, since they were the only ones providing data on work representations. Keywords used included multiple associations of the terms “children”, “work”, “mental representations” “perceptions” and “career development”. Since primary literature investigations have revealed the lack of research specifically exploring children’s representations of

work, studies not directly related to children's work representations (i.e., occupational representations, vocational preferences, career development studies) have been selected in accordance with their potential relevance to form a hypothesis of work representations.

1. Work representations

1.1 A few leads in late childhood

Studies have shown that children perceive work as a way to obtain certain advantages (e.g., money, satisfaction, social connections, skills and knowledge, helping others; Ferrari et al., 2008; Schultheiss et al., 2005; Zammitti et al., 2020). In particular, children are aware that work is tied to family goals (e.g., economically providing for one's family/children; Schultheiss et al., 2005). Children also perceive negative outcomes such as stress and fatigue, and worry about their effects on their parents (Galinsky, 2005). Finally, studies with children aged between 5 and 11 suggest that they perceive certain positions or activities related to work (e.g., helping, leader) as masculine or feminine (Liben et al., 2001, 2002; Santhanagopalan et al., 2022).

1.2 Adult and adolescent representations of work

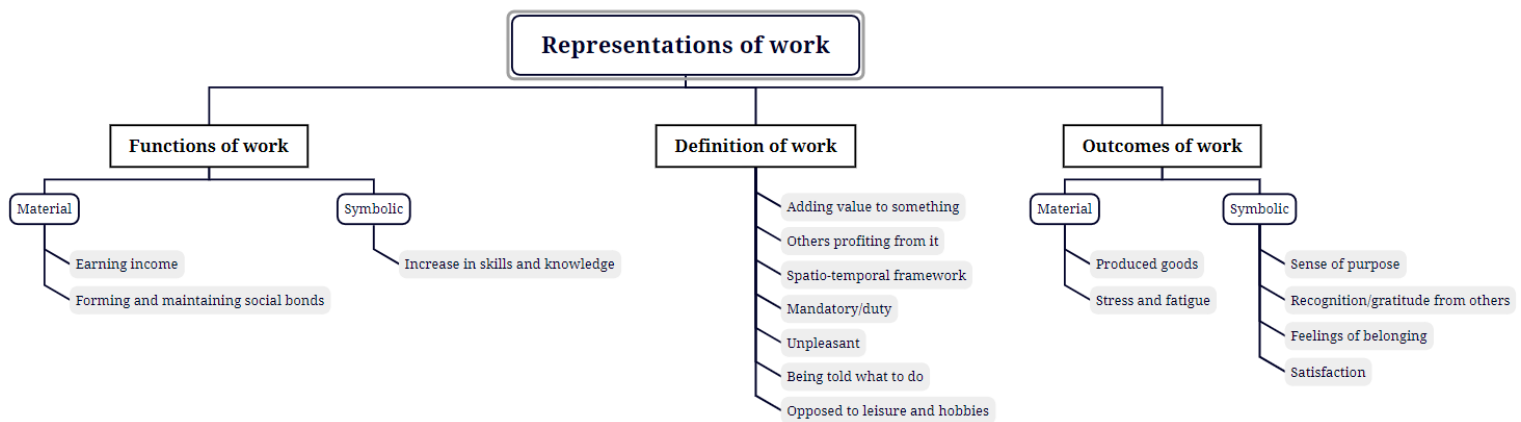
Due to the limited number of studies investigating the content of children's work representations, the examination of studies investigating older individual's work representations is necessary. Previous empirical studies with adults showed that elements such as economic gains, adding value to something, contributing to society, a sense of belonging, taking place in a specific location (e.g., a workplace) and at a certain time, physical and mental strain, benefiting others, the obligatory nature of the task, and the presence of unpleasant aspects can be used to define work (Drenth, 1991). Recent findings confirmed that work is perceived by adults and 10-12-year-olds as providing economic and psychological benefits, fulfilling social needs, enhancing skills and knowledge, as well as fulfilling a moral duty. However, people may not want to work if their economic security is assured and would instead be able to dedicate themselves to something they enjoy, such as hobbies or passions, which can be personally fulfilling but do not ensure economic

sustainability (Ferrari et al., 2008). The representations of work of young adults have also been investigated and characteristics such as satisfying one's needs through fair compensation, contributing to society, experiencing pleasure, satisfaction, personal growth, development, and a sense of purpose are associated with the concept of working (Cohen-Scali et al., 2020).

As Smith (1975) explained, a shift in the way people consider work happened throughout the decades. Work is no longer considered as a means to fulfil basic needs such as survival, safety, and security, as these needs are, in theory, assured by the state or society. Consequently, individuals currently expect work to satisfy needs at a different level. According to the Psychology of Working Theory (Duffy et al., 2016), work fulfils three types of needs: material needs, social and relational needs (such as inclusion or respect), and the psychological need for self-determination.

In the light of all these findings and theories, we propose that individuals usually form representations of work through three dimensions, which are summarized in Figure 1. These dimensions represent different angles through which individuals perceive the concept of "work" and vary in their levels of abstraction. The first dimension, termed *function*, encompasses the goals and objectives associated with work. The second dimension, *definition*, gathers the elements that people spontaneously associate with working. The last dimension, *outcomes*, pertains to the more concrete or unintended consequences of working.

While this model is mostly based on studies conducted with adults and/or adolescents, these three dimensions of work representations may also be relevant to understanding how children perceive work, especially because these dimensions differ in terms of abstraction level. Because like Howard and Walsh (2011), we argue that a larger framework such as developmental contextualism (Bronfenbrenner, 1980; McMahon & Patton, 2018; Watson & McMahon, 2005) is required to take into account the multiple variables that influence children's development and more precisely the way they perceive work, we will now attempt to shed some light upon the differential variables that can influence these representations.

Figure 1*Content of work representations*

2. Two levels of variables influencing work representations

2.1 Intrapersonal level variables

In the first section, we presented the possible content of work representations based on studies conducted with children, adolescent and adult participants. After introducing succinctly elements of children's psychosocial and cognitive development, this second section will be dedicated to presenting the few intrapersonal variables (i.e., age, gender) that can influence work representations, while part 2.2. will present possible external (social-environmental) influences, both based on findings related to children's vocational development or occupational preferences.

2.1.1. A few developmental cues

During middle childhood, individuals go through several developmental stages. The preoperational stage (2-6 years old) is characterized by symbolic and egocentric thought, and limitations in simultaneously attending to multiple elements (Feldman, 2004). They start to use intuitive theories around 4-5 years of age (Feldman, 2004), and around 5 years old, they place great importance on labels, perceiving them as indicators of stability and persistence (Cimpian et al., 2007; Gelman & Heyman, 1999). Then, logical thought appears around 5-6 years old (Feldman, 2004). Between the ages of 6 and 8, they transition to the concrete operational stage (6-12 years old),

marked by logical thought, hierarchical, categorial arrangements, and seriation (Feldman, 2004). Besides, children form concepts based on perceptions or emotional states (Woltering & Lewis, 2010). Significant changes occur during middle childhood regarding the understanding of social emotions and nuances in emotions, whether in self or in others, particularly around 7 years old (Denham et al., 2014; Lagattuta et al., 2015). Starting school is associated with horizontal, between-children socialization, the development of cooperation skills and adaptation to school habits (Ladd et al., 2010), and children who are rejected by peers suffer adverse consequences, such as lower academic self-concepts (Flook et al., 2005). However, significant vertical (i.e., adult-child) socialization processes endure, especially teacher-child relationships, which are influential for interpersonal growth but also for later educational outcomes, such as classroom engagement and participation, or work habits (Ladd et al., 2010).

These developmental elements can be connected to the formation of the work concept. First, before 6 years old, children may form a representation of the concept that is limited to the most frequently observable elements in their environment and only perceive a single *function* of the concept (material, or the increase of skills and knowledge, depending on what they can observe). Children's interpersonal relationships are also important to consider since they might affect the way they perceive or feel about (school) work: since children socialize mostly with their parent(s) or other caretakers before school age, the concept of work of a young child might be shaped mostly based on the job of their caretaker(s), as they often hear adults label their job as "work". After entering the school system, information from broader sources can be progressively included, connected to the core of the concept, labeled and hierarchized. For example, children may start to realize that the concept of work can exist in different forms: they can include their own lived experiences (attending school and homework, which can also be labeled as work by adults), or what they perceive through the observation of their teacher. Consequently, multiple *functions* can be integrated into the concept. It is also possible that emotional development affects the *outcome* dimension of work representations, especially the awareness of the symbolic elements. Indeed, children may be less

equipped to perceive them before the age of 7 because understanding recognition, gratitude, feelings of belonging, satisfaction and sense of purpose implies the possibility of attributing complex mental states and feelings to others that are different from one's own. Besides, if schoolwork is considered work, then it is important to take children's experiences at school into account just like we consider adults' experiences in the workplace. Negative experiences of education or socialization at school can impact dimensions of their representations of work such as the *functions*, especially the material function of forming bonds, or the *definition* and *outcomes*, which could be characterized by the prevalence of negative items (e.g., unpleasantness, obligations, stress).

2.1.2 Age

Age differences in the way children perceive work and employment have been theorized by career development researchers. For example, in Howard & Walsh's model (2010, 2011), the association level (typically around age 5) is characterised by a focus on observable items for understanding jobs (e.g., a police officer is someone who owns a police car and a gun). Similarly, in the first stage of Gottfredson's theory (1981, 2002), children perceive that people can be differentiated based on power, which can be connected to the association level and its emphasis on observable items (e.g., a police officer's gun makes them powerful). Around 8 years old, children enter Howard and Walsh's sequence stage and tend to think in a concrete, linear, serial manner (e.g., completing high school, attending to college, then obtaining a job), which can be completed with the description of Gottfredson's "sex roles" stage, also happening around 8, where children develop a rigid, "black and white" thinking pattern, especially when it comes to gender: you are either a girl or a boy, and your behavior and preferences have to be consistent with this fact.

In their occupational reasoning, 4-year-olds tend to exhibit dichotomous thinking and orientation to resource control. At 5, children identify with parental roles, naïve obedience, and hedonism (Nelson, 1978) and also have higher expectations in the social, enterprising and conventional categories than 12-year-olds (Hung-Chang & Mei-Ju, 2014). These findings suggest that

young children expect their future job to provide power, pleasure, meaning, challenges, but also structure and order. Social and psychological *functions* take more importance for children aged 8: compared to 4-5-year-olds, they score high on conformity, gender role rigidity and are oriented to popularity, personal needs and interests (Nelson, 1978). While children strongly endorse multiple *work values* (altruism, family, money, and power; Weisgram et al., 2010), a preference for altruism among work values declines however with age: 9-year-olds score significantly higher than 10- and 11-year-olds (Cooker, 1973). At 10-12 years old, when asked why they would want to work, children often cite psychological advantages, affirming the importance of the psychological *functions* of work (Ferrari et al., 2008). Age also appears to affect how strongly children perceive work through a gendered lens: occupations are perceived as gender identity markers, but the pattern is unclear. A study found that stereotypes are more prevalent with age (preschool vs. elementary school children; Tremaine et al., 1982, cited by Watson & McMahon, 2005) while others found the opposite (6 years old and younger children versus 9-12 year-olds, O'Keefe & Hyde, 1983; 4 year-olds vs. 10 year-olds, Franken, 1983). However, these studies used cross-sectional designs. Findings using longitudinal methods find that with age (7, 9, then 11 years old) children are less traditional in their answers (Helwig, 1998).

It seems that younger children (3-5 years old) often refer to concrete, observable elements (e.g., uniforms and accessories) when interrogated about their *vocational aspirations* (Nelson, 1978), meaning that they most likely perceive occupations as a role or a costume anyone can just put on, as has been suggested in career development models (Howard & Walsh, 2011). At 8-9 year-olds, this perception shifts and children describe occupations in terms of activities and behaviors, and older children additionally use elements such as interests, abilities and skills more often (Howard & Walsh, 2011; Walls, 2000), meaning they understand work more as an activity that requires specific characteristics. Reviews came to similar conclusions and also noted that children later include more complex elements such as salaries, education requirements, or comparisons with their own abilities (Hartung et al., 2005; Watson & McMahon, 2005).

2.1.3 Gender

Gottfredson (1981, 2002) proposed that gender is a factor influencing occupational preferences in middle childhood: children perceive the level of femininity and masculinity assigned to occupations by society and reject occupations that do not match their own gender. Regarding *work values*, girls aged between 9 and 11 score higher than boys on altruism, considered a feminine value, while boys score higher on values regarded as masculine, such as control and money (Cooker, 1973), although Weisgram et al. (2010) found no gender differences in 5 to 10 years old children. Gender also has an impact on *vocational interests*: boys tend to turn to realistic, investigative, and enterprising occupations while girls tend to focus on social and artistic ones, with specific *occupational aspirations or expectations* for girls including nurse, teacher, doctor or professional artist; boys' equivalents include police officer, firefighter, driver or doctor (Adams & Hicken, 1984; Hung-Chang & Mei-Ju, 2014; Huston, 1985; Lawson et al., 2018; H.-C. Lee, 2012; O'Keefe & Hyde, 1983; Tracey & Ward, 1998; Trice & King, 1991). These differences in interests may be explained by variables such as the orientation towards people vs. things: regarding STEM fields, women and middle school girls are more interested in people-oriented (i.e., biology and medicine) than things-oriented (i.e., engineering) disciplines compared to men and boys (Su & Rounds, 2015).

Furthermore, gender predicts *occupational knowledge*: girls aged 7 to 10 are less likely than boys to know about jobs such as engineer, game tester, mechanic, politician, surveyor or technician (Emembolu et al., 2020). The elements presented above point to gender differences regarding *functions* associated with work: if children prefer and know more about occupations associated with their own gender, the *definitions* and *functions* they associate with work might also be gender specific. For example, girls might define work as helping or taking care of people, because they are familiar with and prefer occupations considered feminine, which often belong to the care sector.

Some studies indicate that girls are less rigid in their *vocational preferences* and their gender-stereotyped *representations of occupations* than boys (Franken, 1983; Hartung et al., 2005; Lawson

et al., 2018; Watson & McMahon, 2005) while others found no differences (O'Keefe & Hyde, 1983). However, since most of these findings are decades old, this field requires new studies in order to be updated. However, we propose that girls may more frequently define work as a social activity, something you do to help others, while boys may preferentially associate the concept with being active and material clues (tools, outfits or accessories), which would also explain why boys are more preoccupied by health and safety than girls in their career thinking (Schultheiss et al., 2005).

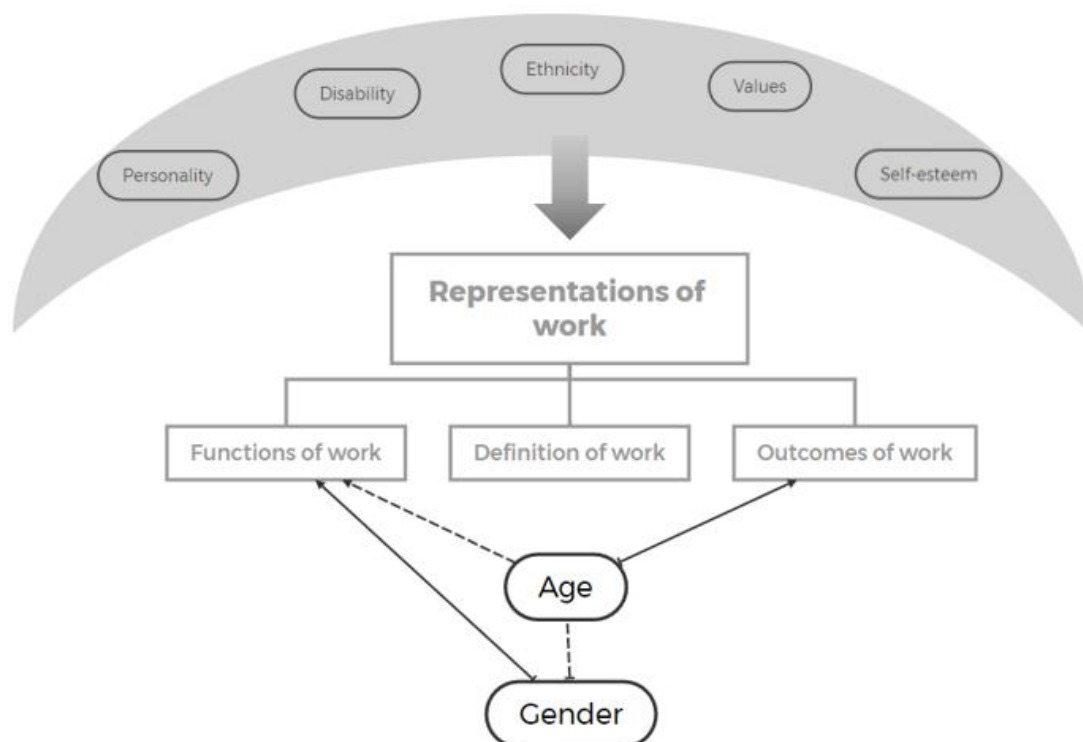
Moreover, children aged 5 to 12 years old are asked why they would not want to do certain jobs, gender inappropriateness is given as a justification more often by younger children (Trice et al., 1995). In a longitudinal study by Helwig (1998), the proportion of boys aspiring to masculine occupations was of 83% at 7 years old and rose to 93% at 11 years old. The opposite trend was observed with girls: 56% cited a gender-congruent (feminine) occupation at 7 but only 30% at 11 years old (for masculine occupations, the proportion went from 19% to 48%). It is therefore likely that *age* operates as a moderator between *gender* and the *traditionality of occupational aspirations*, but the pattern is not linear. Implications for work representations might be that gender differences in how children perceive certain aspects of work vary with age.

Findings presented above suggest that two intrapersonal factors may influence children's representations of work: *age* and *gender*. *Age* has been found to moderate the influence of gender on certain perceptions and preferences, which is summarized in Figure 2. However, other factors might potentially influence work representations as well, as suggested by theory (e.g., ethnicity, disability; McMahon & Patton, 1995). More specific concepts such as personality, temperament, values, or interests might also be relevant. For example, Oakland et al. (2001) found that 8–10-year-old children's *temperament* (which is often understood as a component of personality; Maltzman, 2016) predicted *occupational preferences*. Another example is *self-esteem*: Hughes et al. (1985) found that self-esteem influenced traditional attitudes and stereotypes related to women and their roles in the context of work among children aged 8 to 11. Although these findings provide interesting

leads to pursue our understanding of children's work representations, human beings remain social creatures, it is therefore necessary to also explore the influence of social and larger environmental factors on work representations in childhood.

Figure 2

Influences of intrapersonal variables on children's work representations



Note. Arrows indicate direct influence; dotted arrows indicate moderating influence. Elements in grey already appeared in Figure 1. Variables in the grey crescent lack empirical support but are suspected to have an influence on children's representations of work.

2.2 Social-environmental level variables

2.2.1 Family settings

Birth order has been theorized as having an influence on vocational development (Holland, 1978; cited by Lynch & Lynch, 1980). It seems that 12-to-14-year-old firstborns are more likely to be interested in conventional, realistic and enterprising jobs while later-born children lean towards investigative, artistic and social occupations (Lynch & Lynch, 1980), meaning that first- and later-born children may not expect the same *outcomes* and perceive the same *functions* of work.

One of the main sources of socialisation is the family, and especially the parents. Individual *work values*, including intrinsic and extrinsic factors, work centrality, gender roles, ethics, beliefs, and attitudes, are often determined by those of their parents (Cemalcilar et al., 2018, 2019). Parents also influence *occupational aspirations*: both girls and boys have aspirations more similar to the one of their mothers than of their fathers (Trice & Knapp, 1992). Identification with parents also influences career preferences in the form of entrepreneurship aspirations, (Chlosta et al., 2012), responses to the failure of a parent's enterprise (Mungai & Velamuri, 2011) and the passion exhibited by a parent. Even if parents most likely transfer values (e.g., entrepreneurial capital, Hundley, 2006) to their children, Mungai and Velamuri (2011) found that being exposed to a self-employed parent in childhood (ages 8-11) did not have any impact on the offspring's propensity to become self-employed. Because independent work and self-employment differ substantially from traditional employment, it is plausible that exposition to or preferences for self-employment can influence one's conceptualization of work, especially regarding the *definition* of work (e.g., work occurs at a certain location outside of the home). The employment status of mothers strongly influences the vocational development of kindergartners and first graders: children (both boys and girls) whose mothers hold a job cite more *occupational aspirations* than children with mothers who are not employed outside the home (Selkow, 1984). Also, when mothers work, the more "masculine" the mother's job, the less traditional the interests of her child(ren). However, these findings have not always been replicated (Barak et al., 1991). In contrast, sex typing of fathers' jobs does not seem to be correlated to their child(ren)'s interests (Barak et al., 1991; Selkow, 1984), but it affects *occupational expectations* around 10 years old (more feminine expectations for children whose fathers work in feminine occupations; Oliveira et al., 2020). It is likely that since domestic work is almost never paid, differences in *definition* would be observed between children of homemaker mothers and children of employed mothers, particularly regarding the economic aspect (work is what you do to make money/when you do something to get money). Finally, because children of stay-at-home mothers are exposed to a gendered work distribution (women work in the home to take care of the family

and men work in companies to make money), they might perceive work as a social and especially gender identity marker (which would explain the traditionality of interests reported by Selkow, 1984) than children of employed mothers, who may consider work more as a way to express one's interests or to be aligned with one's talents and aspirations.

2.2.2 Socioeconomic status (SES).

Studies with participants of different SES showed that lower-SES participants and socially vulnerable adults and adolescents (i.e., a population exposed to precarious social and economic conditions due to educational level, family structures, housing conditions or position in the labor market; Magnano et al., 2021) perceive work primarily through the economic *function*, something needed to survive, and as an obligation, something they have no control of, depending on external decisions made by higher institutions. By contrast, although middle-SES participants also mention economic survival, they offer different perspectives in their answers, such as personal satisfaction, enjoyment, or performing to the best of one's ability, which corresponds to the psychological *function* of work (Blustein et al., 2002; Chaves et al., 2004; Magnano et al., 2021). These SES differences have also been observed in studies examining *work values*. Lower-SES adolescents are more likely to be motivated by extrinsic work values, while their higher-SES counterparts tend to be more driven by intrinsic work values (Mortimer et al., 1996; Ovadia, 2001). In summary, the social and psychological *functions* of work are more salient in middle-SES individuals' discourse compared to lower-SES individuals, who mainly consider work as a way to ensure their survival (economic function), and we can hypothesize that these findings apply to children as well.

The higher the SES of the people holding an occupation, the more prestigious the occupation; and children tend to perceive occupations through the lens of prestige (Gottfredson, 1981, 2002). It has been argued that children of lower SES are disadvantaged compared to their middle-class peers in terms of information available to them concerning representations of the world of work (Gomez & Beachum, 2019). Longitudinal and follow-up studies from birth to 17 years old suggest that because

higher-SES individuals have access to more resources than lower-SES individuals, middle-class children know more about the world of work than working-class children (Jordan, 1976; Jordan & Pope, 2001). It is therefore not surprising that at 10 years old, higher-SES children have more detailed *career aspirations* than their lower-SES counterparts (Hutchings, 1996). Gomez and Beachum (2019) found that children living in poverty think that their occupation will make them happy, which corroborates findings from Nelson (1963) who added that in her sample, low-SES children reported more positive attitudes toward jobs even though they had less *occupational knowledge* than high-SES children. To conclude, lower-SES children are disadvantaged compared to their middle-class peers in terms of information available to from representations of the world of work. Therefore, it is possible that children raised in higher-SES families have more complex *definitions* of work and are aware of more *outcomes* and *functions* than their peers raised in working-class families.

SES also appears to influence occupational representations in the form of *gender stereotyping*. In their sample of children aged 5 to 11, Serbin et al. (1993) found that a high SES (measured by the mother's occupational status) was associated with less rigid occupational gender stereotypes, however Sellers et al. (1999) found no differences with children aged 8 to 11 (but noted that measures showed the majority of their sample perceived themselves as having both masculine and feminine elements comprising their personality). A literature review concluded that the lower the SES, the more conservative the attitudes regarding gender stereotypes and work (Hartung et al., 2005). It is no surprise that lower-SES children's occupational representations are more strongly influenced by gender stereotypes than higher-SES children considering that most middle-class women hold jobs whereas low-SES women are more often affected by unemployment (Lahtinen et al., 2020) and as a result, stay at home as unpaid domestic workers. It is therefore easier for higher-SES children to be aware that women can do any type of work when they have examples right in front of them on a daily basis. This implies that for example, girls of lower SES might perceive more the *social functions* of work than their higher-SES peers.

2.2.3 Video content and television

What children see and hear on screens unsurprisingly ends up affecting the way they perceive the world, and this impact can happen as early as the age of 6 (Lamer et al., 2022). Even though they are dated and more recent studies are required to assess the influence of video content on children's representations, empirical data confirm that children aged around 8 and 11 years old can acquire new information about occupations by watching fictions or documentaries (Huston et al., 1997). However, the question of the impact of this information on children's occupational representations remains. For example, it has been found that the total amount of television viewed is not significantly correlated with 6-to-10-year old children's evaluations of scientific occupations, but cartoon viewing is (Potts & Martinez, 1994). The authors explained this result by the fact that children's TV programs frequently depict scientists as the "mad scientist" stereotype, so children who are often exposed to this trope integrate it into their representations of scientific occupations. Watching fiction can also change older children and adolescents' (10-to-16-year-olds) perceptions of occupations: after watching police drama episodes featuring "in charge" women police officers, more participants declared that the police should encourage women to join, and fewer participants declared that a policeman has more chance at being promoted than a policewoman, that policemen are better at commanding or catching criminals than policewomen. Compared to the control group, children in the viewing group were also more to qualify policewomen as clever, strong and capable of defending themselves (Gunter et al., 1991). We can therefore hypothesize that children who consume a great amount of television (and especially cartoons) perceive work according to how programs depict it: adventurous and exciting, where most people work in healthcare or law enforcement, in high-salary, and prestigious jobs (Signorielli, 1993). This might affect the *functions* dimension (social functions as the privileged representation) as well as the *outcome* dimension of children's work representations.

2.2.5 Culture/nationality

Countries often vary considerably in terms of cultures and enhanced values, which shapes the way individuals interact with and perceive the world, including the world of work itself (Manrai & Manrai, 1995; Yi et al., 2015). In most studies, culture is not directly measured but is confounded with nationality. It has been found that adults define work in different ways (e.g. using social items, gratification, personal development, or self-fulfilment) depending on their nationality and these differences in work definitions depend on the nationality of the participant, but not on the level of economic development of the country (Cohen-Scali et al., 2020; Drenth, 1991). The impact of nationality can also be visible in career preferences in childhood. In Taiwan, the *vocational aspiration* expressed most often by kindergartners (5-6 years old) is teacher, which can be explained by the fact that not only is teacher considered a high-status and prestigious occupation in Taiwanese culture, but also because Chinese culture has a long history of honoring both teachers and learning in general. Moreover, children's most favored occupations afford positive social reputation, stability and security in life, which is in line with Chinese social expectations of honoring your family (Lee, 2012).

Differences observed between nationalities regarding work representations and vocational preferences can be explained by cultural indicators such as *collectivism* and *individualism*. Akosah-Twumasi et al.'s (2018) review showed that, particularly in collectivist cultures, prestige and relatedness are especially important for youth in their decisions regarding occupational choices. Collectivistic cultures (such as Chinese culture) are more focused on the common good, cooperation, and loyalty to the community, and consider the benefit of the community (especially the family) when choosing an occupation, while individualistic cultures (such as Western cultures) consider occupational choices as a way to express oneself. However, we argue that it is important to consider culture in a dimensional rather than categorical way because differences exist in the degree to which individuals relate to their culture, especially in the case of immigration. For example, 10–11-year-old, highly culturally-assimilated Chinese-American children value self-realization as a work value more than their less culturally assimilated peers (Leong & Tata, 1990), which has also been observed in

highly acculturated Chinese-Canadian adults (Tao et al., 2018). It is possible that these cultural differences are expressed at the individual level through *independent versus interdependent self-constructs* (Markus & Kitayama, 1991).

Furthermore, studies with adult samples showed that the transmission of collectivist values and more precisely work values in the family can depend on certain family dynamics such as parental warmth, autonomy granting, and level of perceived psychological control (Sümer et al., 2019). Variables such as self-efficacy, intrinsic/extrinsic life goals, family allocentrism (Tao et al., 2018) and the desire for control (Eisen et al., 2016) have also been identified as explanations regarding cultural differences in career decisions.

It is possible that certain cultural dimensions also have an influence on children's representations of work. The concept of work might be more strongly associated with altruistic and social *functions* for children raised in collectivistic cultures. For these children, work could be a way of expressing affiliations with certain groups, such as those defined by gender, SES, or family lineage. Conversely, children raised in individualistic cultures might conceptualize work more in terms of self-expression, focusing on personal interests and abilities, which are emphasized in the psychological *function* of work.

2.2.4 Geographical location of residence

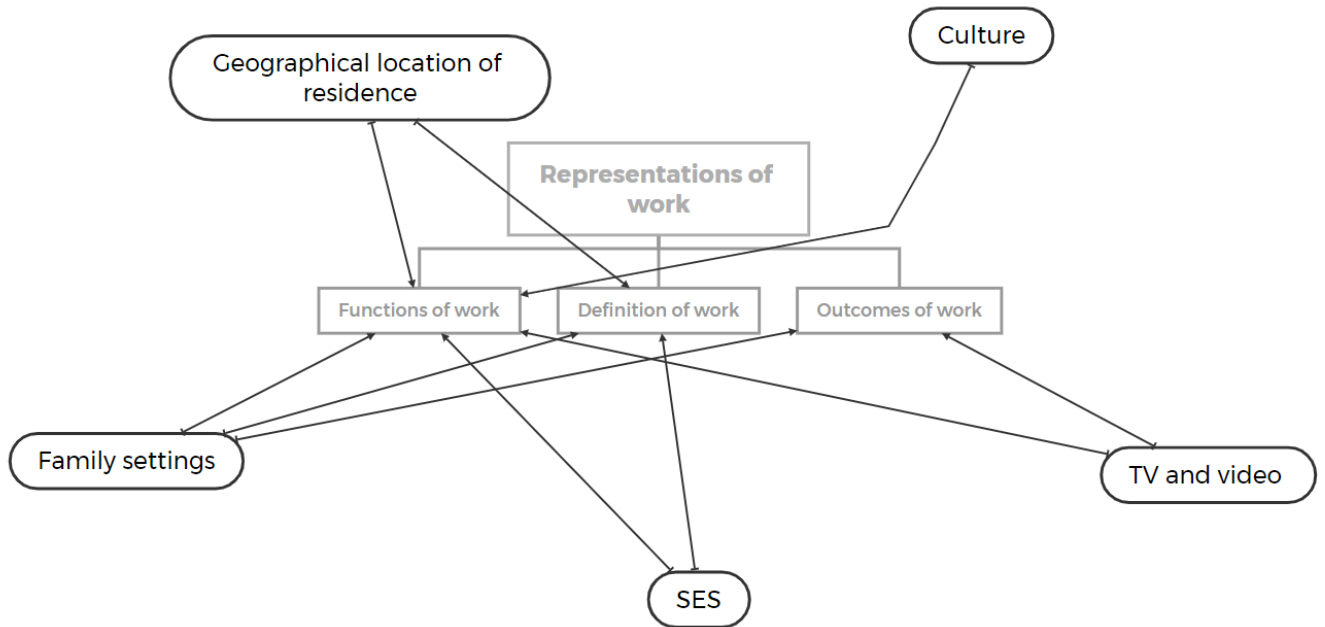
Studies with children suggest that living in a *rural or urban setting* influences vocational development: inner-city kindergartners' *vocational aspirations* are lower and less stable than rural children's, and they have higher rates of fantasy responses (e.g. princess, superhero, bunny; Trice, 1991; Trice & King, 1991). However, the *neighbourhoods'* SES has not been found to influence 5-7-year-olds' *vocational aspirations* (Flouri et al., 2015). Older (8-to-11 years old) rural children also have more stable *vocational aspirations* than suburban children and identify more with the job of their parents (Trice, 1991). Howard et al. (2009) also noted that children from industrialized settings

tend to have more autonomy and *career decidedness*, while those from agricultural backgrounds are expected to take on their parents' occupations. Consequently, we propose that urban children's representations will be less stable and include more diverse *definitions* and *functions* than children living in rural areas. However, living conditions in rural areas are different to what they were 30 years ago, so it would be pertinent to update knowledge concerning the way rural children perceive work.

To conclude, five factors at the social and environmental level might influence children's representations of work: family setting, SES, television/video consumption, and geographical location of residence and nationality/culture, which is summarized in Figure 3. However, as McMahon and Patton (2018) suggested, time also impacts career development, both at the individual and the social level: individuals evolve throughout their life, and societies' norms or enhanced values and living conditions shift from decade to decade. Considering that a number of the reviewed articles recorded how things were several decades ago, new research is required to update knowledge related to this current decade and the ones to come. More precisely, the influence of other types of media and technology should be integrated in future studies, taking into consideration their growing importance in people's (and children)'s lives, and because they have been found to be an important source of information regarding career exploration for elementary school children (Gomez & Beachum, 2019). Similarly, new family settings (employed mothers, co-parenting, homoparental and stepfamilies) should be included in future investigations, as findings reviewed may not be applicable to the current historical time.

Figure 3

Influence of social-environmental variables on children's work representations



Conclusion

The present work aimed at providing a basis for the investigation of children's work representations. Since the literature covering this area is scarce, we approached the topic from other angles to gather relevant information. We began by identifying the content of work representations, which appear to consist of three dimensions (definition, outcomes, and functions). Then, in accordance with contextual-developmental theories (McMahon & Patton, 2018; Watson & McMahon, 2005), we proposed to examine factors (intrapersonal and social-environmental) influencing work representations. Each level revealed a number of factors (e.g., age, SES, location of residence...) that are summarized in Figure 4.

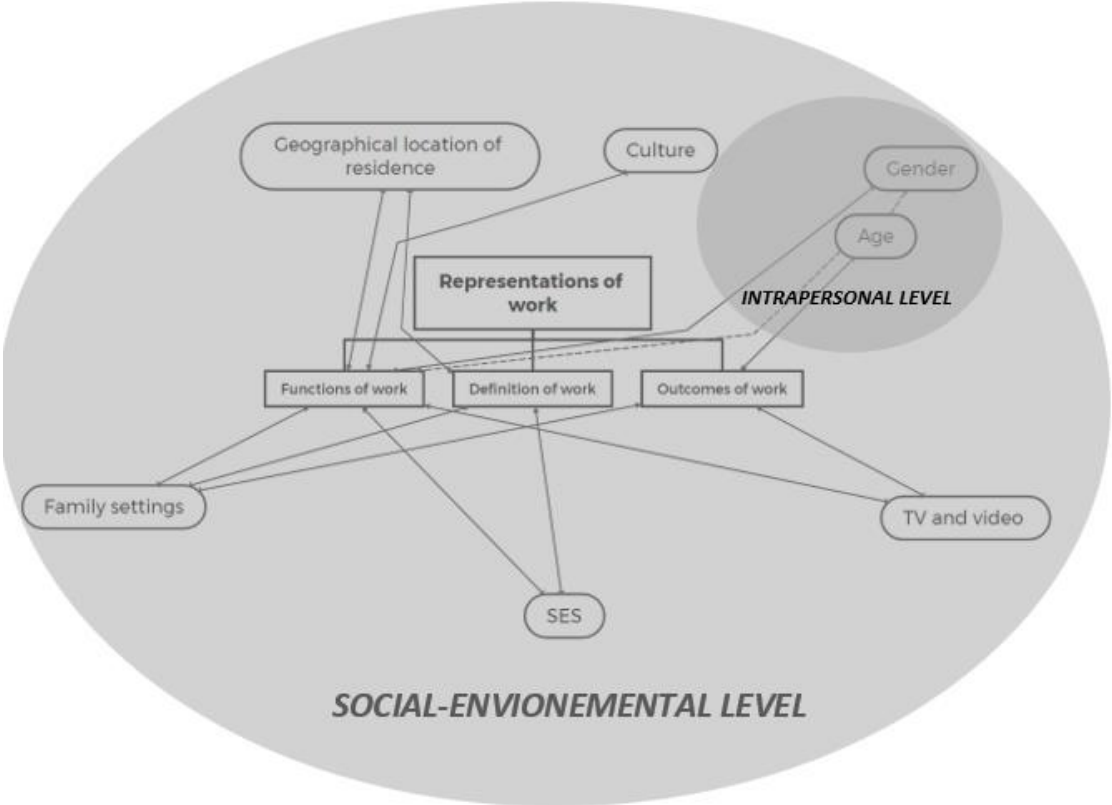
If models of children's career or vocational development exist, they focus on very concrete elements but fail to provide information regarding what work, as a concept, is to younger individuals. Career development theories laid the foundations for a lifelong approach to vocational and career

development. These theories highlighted the importance of how individuals perceive work. However, there has been a notable gap in connecting these two aspects. Children's representations of work are relevant to later career development for two primary reasons: 1) children actively process information to form representations of concepts (Gelman, 2009), including work and its meaning, and 2) children's representations of occupations determine their future career decisions. While the development of children's self-concept and representations of occupations have been extensively studied in relation to career development, there is a notable lack of information regarding how children perceive the broader concept of work, which encompasses occupations and employment. Consequently, longitudinal research is needed to understand how representations of work, occupations and self-concept are connected and how they affect later vocational outcomes, including the meaning of work and its influence on people's lives. Future investigations are needed to clarify this issue. **Table 2 summarizes the variables of interests identified in the *Two levels of variables influencing work representations* section, and the concepts which they influence.** Regarding methodology, research investigating representations of work are mostly of a qualitative nature (see Table 1 for a detailed summary). If these research designs provide detailed and rich findings, complementary quantitative data could help to answer remaining questions and allow for stronger conclusions. Therefore, future investigations should include both qualitative and quantitative methods. Paradigms such as prompted narratives (also known as story completion tasks), picture selection/sorting tasks or implicit measures could be efficient solutions to explore young children's cognitive maps and the different connections it is comprised of, especially with younger individuals who may not be able to fully verbalize their thoughts. These methods have successfully been used to measure representations and other cognitions (i.e., mental illness, occupational stereotypes, food healthfulness) in middle childhood (DeJesus et al., 2020; Fox, 2005; Liben et al., 2002).

Figure 4

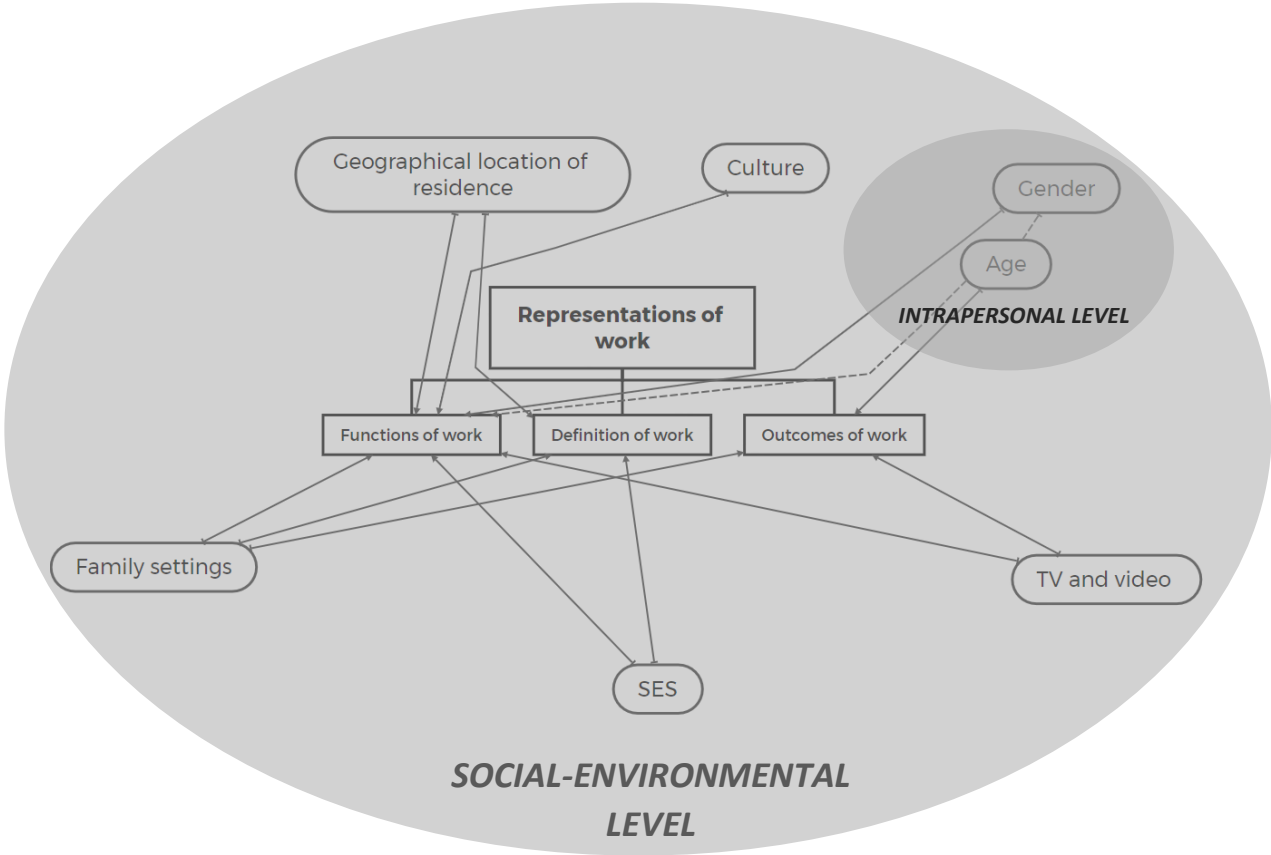
Content and influences of children’s representations of work

Note. Arrows indicate direct influence; dotted arrows indicate moderating influence.



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Tables

Table 1

Main Findings and Associated Methods

	Study	Method	Population	Findings	Dimensions	Differential variable
CONTENT OF WORK REPRESENTATIONS	Cohen-Scali et al. (2020)	S-S itw.	Young adults	Work provides decent wage and good conditions, pleasure, satisfaction, a sense of purpose, a social role, and personal development	Functions, outcomes	/
	Drenth (1991)	Ranking task	Adults	Work is defined as economic gains, adding value to something, societal contributions, feeling of belonging, taking place in a certain location (a workplace), taking place at a certain time, physical strain, mental strain, others profiting from it, the mandatory aspect, being told what to do, and unpleasantness	Definition	/
	Ferrari et al. (2008)	S-S itw.	Typical and mentally impaired adults, typical 10-12-year-olds	Work is a moral duty, provides economic and psychological advantages, social needs satisfaction, increase in skills and knowledge	Functions, outcomes	/
	Liben et al. (2001) Liben et al. (2002)	Likert-type questionnaire Structured itw.	6-8-year-olds and 11-12-year-olds 6-11-year-olds	There are masculine and feminine occupations	Definition	/
	Galinsky (2005)	Interviews	Children	Work can cause stress and fatigue in workers	Outcomes	/
	Santhanagopalan et al. (2022)	Election task (president, treasurer, notetaker, welcomer)	5-10-year-olds	Certain activities related to work (helping, leading) are associated with women and some with men	Definition	/
	Schultheiss et al. (2005)	S-S written assignments	9-12-year-olds	Work is a way to earn money and help others, it impacts the amount of free time and the possibility to provide for children	Functions	/
	Zammiti et al. (2020)	S-S itw.	~12-year-olds	Work allows economic gains, psychological well-being, development of social connections, commitment	Functions, outcomes	/
	Adams & Hicken (1984)	Structured itw.	3-12-year-olds	Children cite gender-stereotyped occupations as their aspirations	Functions	Gender
	Cooker (1973)	Work values questionnaire	9-11-year-olds	Preference for altruism as a job value declines with age Girls score higher on altruism and boys score higher on the control and money values	Functions, outcomes	Age, gender
Emembolu et al. (2020)	Sorting task (knowing and liking a job)	7–10-year-olds	Girls are less likely to know jobs such as engineer, game tester, mechanic, politician, surveyor, or technician	Definition, functions	Gender	

INTRAPERSONAL INFLUENCES ON WORK REPRESENTATIONS

Ferrari et al. (2008)	S-S Itw.	Typical and mentally impaired adults, typical 10-12-year-olds	Children often cite psychological advantages, affirming the importance of the psychological functions of work	Functions, outcomes	Age
Franken (1983)	Sorting task (job for men, women or both)	4-10-year-olds	Gender stereotyping of occupations decreases with age Girls are less rigid in their vocational preferences and their gender-stereotyped representations of occupations than boys	Functions, definition	Age, gender
*Helwig (1998)	Structured Itw.	7-11-year-olds	Gender stereotyping of occupations decreases with age Age operates as a moderator between gender and traditionality of occupational aspirations	Functions	Gender, age
Howard & Walsh (2010)	S-S Itw.	5-9-year-olds	Younger children focus on the external, observable objects or activities of occupations while older children rely on activities, behavior, interests, skills and abilities	Definition	Age
Hughes et al. (1985)	Questionnaires	8-11-year-olds	High correlation between self-esteem and non-traditional attitudes related to women and work (positive for girls, negative for boys)	Function	Gender
Hung-Chang & Mei-Ju (2014)	Questionnaire	5-12-year-olds	Young children expect their future job to provide power, pleasure, meaning, challenges, but also structure and order Children cite gender-stereotyped occupations as their aspirations	Functions and outcomes	Age, gender
Nelson (1978)	S-S Itw.	3-8-year-olds	4-year-olds exhibit dichotomous thinking and orientation to resource control; 5-year-olds identify with parental roles, naive obedience, and hedonism, 8-year-olds score high on conformity, gender role rigidity and are oriented to popularity, personal needs and interests 3-5-year-olds often refer to uniforms and accessories when justifying vocational aspirations	Functions, definition	Age
*Lawson et al. (2018)	Questionnaire	10-17-year-olds	Children cite gender-stereotyped occupations as their aspirations Girls are less rigid in their vocational preferences and their gender-stereotyped representations of occupations than boys	Functions, definition	Gender
Lee (2012)	Structured Itw.	5-6-year-olds	Children cite congruent gender-stereotyped occupations as their aspirations	Functions	Gender
Oakland et al. (2001)	Self-report affinity questionnaire	8-10-year-olds	Temperament predicts interests in certain occupations but not others	Functions	Temperament

INTRAPERSONAL INFLUENCES ON WORK REPRESENTATIONS	O'Keefe & Hyde (1983)	Structured itw.	6–12-year-olds	Children cite gender-stereotyped occupations as their aspirations Younger children gender-stereotype occupations more than older children	Functions	Age, gender
	Franken (1983)	S-S written assignments	9-12-year-olds	Boys are more preoccupied by health and safety than girls in their career thinking	Definition	Gender
	Su & Rounds (2015)	Meta-analysis	Middle-school children & adults	Woman and middle-school girls are more interested in people-oriented (i.e., biology, medicine) than things-oriented (i.e., engineering) disciplines compared to men and boys	Function	Gender
	Tracey & Ward (1998)	Questionnaire	Elementary school children	Children cite gender-stereotyped occupations as their aspirations	Functions	Gender
	Trice & King (1991)	Structured itw.	8-11-year-olds	Children cite gender-stereotyped occupations as their aspirations	Functions	Gender
	Trice et al. (1995)	Structured itw.	5-12-year-olds	Younger children use gender inappropriateness more often to justify their dislike for an occupation	Functions	Age
	Walls (2000)	Job rating questionnaire	8–18-year-olds	Younger children focus on the external, observable objects or activities of occupations while older children rely on activities, behavior, interests, skills and abilities Occupational knowledge: 8–9-year-olds are significantly less accurate than older children	Definition	Age
	Weisgram et al. (2010)	Occupation rating task	5-10-year-olds	Children strongly endorse altruism, family, money, and power as work values	Functions	Age
SOCIAL-ENVIRONMENTAL INFLUENCES ON WORK REPRESENTATIONS	Akosah-Twumasi	Systematic review	Highschool and university students	Prestige and relatedness are especially important to youth in collectivist cultures when it comes to occupational choices	Definition, function	Culture
	Blustein et al. (2002)	S-S itw.	Young adults	Individuals of middle-SES perceive work through personal satisfaction, enjoyment, or performing to the best of one's ability	Functions	SES

SOCIAL-ENVIRONMENTAL INFLUENCES
ON WORK REPRESENTATIONS

Cohen-Scali et al. (2020)	S-S itw.	Young adults	Aspects such as gratification, personal development, or self-fulfilment (specific to the concept of dignified work) are unequally represented with respect to nationality of participants	Definition, outcomes	Nationality
Drenth (1991)	Ranking task	Adults	Japanese and German people use social items to describe work less often than individuals of other nationalities	Definition	Nationality
Gomez & Beachum (2019)	Focus group + S-S itw.	9-11-year-olds	Children of lower SES are disadvantaged compared to their middle-class peers in terms of information available to them concerning representations of the world of work Children living in poverty think that their occupation will make them happy	Definition, function, outcomes	SES
Gunter et al. (1991)	Questionnaires	10-16-year-olds	Experimental exposure to progressive fiction reduces gendered occupational stereotyping	Function, outcomes	Video content and television exposure
Howard et al. (2009)	Questionnaires	11-12-year-olds	Children from industrialized settings have more autonomy and career decidedness while those from agricultural backgrounds are expected to take on their parents' job	Function	Geographical location
*Jordan (1976)	Picture recognition test	3-17-year-olds	Middle-class children know more about the world of work than working-class children: the higher the SES of the family, the better the occupational knowledge Low-SES children report more positive attitudes toward jobs	Definition, function, outcomes	SES
*Jordan and Pope (2001)	Career development competence tests				
Hutchings (1996)	S-S itw.	4-11-year-olds	Children from the higher-SES school have more detailed career aspirations	Definition, function, outcomes	SES
Lee (2012)	Structured itw.	5-6-year-olds	Teacher is the vocational aspiration chosen most often by Taiwanese children	Function, outcomes	/
Leong & Tata (1990)	Self-report questionnaires	10-11-year-olds	Highly acculturated non-western children endorse (individualistic) western job values more than less acculturated non-western children	Functions	Culture
Lynch & Lynch (1980)	Self-report questionnaire	12-14-year-olds	First born children are interested in conventional, realistic and enterprising jobs, later-born children prefer investigative, artistic and social occupations	Outcomes, functions	Birth order

SOCIAL-ENVIRONMENTAL INFLUENCES
ON WORK REPRESENTATIONS

Magnano et al. (2021)	Focus groups	Socially vulnerable adults	Low-SES individuals perceive work primarily through the economic function Individuals of middle-SES perceive work through personal satisfaction, enjoyment, or performing to the best of one's ability	Function	SES
*Mortimer (1996)	Questionnaire	14-year-olds	Lower-SES adolescents are more likely to be motivated by extrinsic work values while those from higher SES are more driven by intrinsic work values	Function	SES
Mungai & Velamuri (2011)	Quantitative analysis on institutional survey data	From 8 to 23 years old	Being exposed to a self-employed parent in childhood (8-11 years) does not have any impact on the offspring's propensity to become self-employed	Function, definition	Family setting
Nelson (1978)	S-S itw.	4-8-year-olds	Low-SES children report more positive attitudes toward jobs even though they have less occupational knowledge than privileged children	Definition, function, outcomes	SES
Oliveira et al. (2020)	Open-ended question	10-12-year-olds	More feminine vocational expectations for children whose fathers work in feminine occupations	Functions	Family
Ovadia	2001	18-year-olds	Lower-SES adolescents are more likely to be motivated by extrinsic work values while those from higher SES are more driven by intrinsic work values	Function	SES
Potts & Martinez (1994)	Questionnaire	6-10-year-olds	Cartoon viewing is significantly correlated with children's evaluations of scientific occupations	Functions, definition	Television exposure
Selkow (1984)	Structured itw.	5-7-year-olds	Children of employed mothers cited more occupational choices than children with homemaker mothers Children with employed mothers choose less stereotypically feminine jobs than children of homemaker mothers	Functions, definition	Family
Serbin et al. (1993)	Sorting task (object used by men, women or both)	5-11-year-olds	A high SES predicts less rigid occupational stereotypes	Functions, definition	SES
Tao et al. (2018)	Questionnaire	Adults	Cultural assimilation is a moderator between culture and work values	Function	Culture

Trice (1991)* Trice & King (1991) Trice et al. (1995)	Structured itw.	5-12-year-olds	Inner-city children’s vocational aspirations are lower, less stable than rural children’s, and they have higher rates of fantasy responses Rural children also have more stable vocational aspirations than suburban children and identify more with the job of their parents	Definition, functions	Geographical location of residence
Trice & Knapp (1992)	Self-report questionnaire	10-14-year-olds	Children choose vocational aspirations similar to the jobs of their mothers more than those of their fathers	Functions, definition	/

Note. itw. = interview; S-S itw. = semi-structured interview; SES = Socioeconomic status; * = longitudinal study; / = no differential variable.

Table 2

Variables of Interests for Future Investigations based on findings from the Two levels of variables influencing work representations section

Level	Variable	Dimension of work representations that are/might be influenced	Related impacted concept	Nature of evidence
Intrapersonal variables	Age	Functions	Career reasoning Vocational preferences (aspirations, interests) Work values	Theoretical + Empirical
	Gender	Definition Functions	Occupational knowledge Occupational representations* Vocational preferences (aspirations, interests) Vocational expectations Work values*	Theoretical + Empirical
	Ethnicity	Needing further investigations	Career development	Theoretical
	Disability	Needing further investigations	Career development	Theoretical

	Interests	Needing further investigations	Career development	Theoretical
	Personality	Needing further investigations	Vocational preferences	Empirical
	Values	Needing further investigations	Career development	Theoretical
	Self-esteem	Functions	Occupational and work stereotypes	Empirical
Social-environmental variables	Birth order	Functions Outcomes	Vocational interests	Theoretical + Empirical
	Parental occupations and employment status	Definition Functions	Vocational preferences (aspirations, interests*) Vocational expectations	Empirical
	Socioeconomic status	Definition Functions Outcomes	Work values Occupational knowledge Vocational preferences (aspirations) Occupational gender stereotypes	Theoretical + Empirical
	Amount and type of video consumption	Functions Outcomes	Occupational representations	Empirical
	Nationality	Definition	Vocational preferences (aspirations)	Empirical
	Culture (collectivism/individualism)	Functions	Work values	Empirical
	Location of residence	Definition Functions	Vocational preferences (aspirations) Career decidedness	Empirical

Note. * = conflicting empirical results. Variables in green have the strongest probability of influencing children's representations, variables in orange require more investigations to support the hypothesis of an influence and variables in red have only been theorised as having an influence.