IUL School of Social Sciences
Department of Social and Organizational Psychology

What do children think about older persons? Developmental pattern of explicit and implicit ageism across childhood

Joana Maria Simão Mendonça

Thesis specially presented for the fulfillment of the degree of
Doctor in Psychology

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December, 2019

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Abstract

The general aim of this work was to explore the development of ageism along childhood. The current literature presents mixed findings regarding children's attitudes towards older persons, which have been attributed to the lack of uniformity of the measures used. In this regard, firstly, a literature review was carried out with a focus on the available measures to assess ageism in children (Chapter 2). Results showed that in studies using explicit measures positive attitudes regarding older persons are found, especially in older children. Conversely, in studies using implicit measures, results revealed more ageism. Based on these findings, two studies were conducted in Chapter 3 revealing that implicit and explicit ageism follow different developmental trends along childhood: in Study 1, preschoolers already revealed both implicit and explicit bias against older persons; in Study 2, while first and fourth graders revealed implicit ageism, fourth graders expressed less explicit bias than first graders. Based on these findings and in order to explore the specific content of ageing stereotypes held by children at different developmental stages, two qualitative studies – using interviews and the Human Figure Drawing method - were developed. Results proved to be aligned with the developmental pattern of ageism found in Chapter 3: while fourth graders expressed more positive attitudes regarding older persons and their future ageing self than first graders, a different pattern was found by means of drawings by older children revealing subtle ageism. These results are discussed given their implications to theory and intervention in this domain.

Keywords: ageism in children, ageism development, implicit and explicit measures, attitudes regarding older persons, future ageing self.

PsycINFO Codes:

2800 Developmental Psychology

3000 Social Psychology

3020 Group & Interpersonal Processes

Resumo

Esta tese visou explorar o desenvolvimento do idadismo ao longo da infância. A literatura acerca do idadismo na infância apresenta resultados contraditórios os quais têm sido atribuídos à diversidade de medidas utilizadas. Nesse sentido, desenvolveu-se uma revisão de literatura acerca das medidas disponíveis (Capítulo 2). Os resultados demonstraram que, nos estudos que utilizaram medidas explícitas foram encontradas atitudes mais positivas em relação às pessoas idosas. Por outro lado, os estudos que utilizaram medidas implícitas revelaram mais idadismo. Com base nestes resultados, desenvolveram-se dois estudos no Capítulo 3, os quais revelaram que o idadismo implícito e explícito apresentam diferentes padrões de desenvolvimento ao longo da infância: no estudo 1, crianças em idade pré-escolar demonstraram idadismo implícito e explíctio; no estudo 2, enquanto que as crianças do 1º e 4º ano demonstraram idadismo implícito, as crianças do 4º ano demonstraram menos idadismo explícito do que as do 1º ano. Com base nestes resultados e no sentido de explorar o conteúdo específico dos estereótipos de envelhecimento adquiridos pelas crianças em diferentes fases de desenvolvimento, foram desenvolvidos dois estudos qualitativos com base em entrevistas e Desenho da Figura Humana. Os resultados destes estudos qualitativos vão de encontro ao padrão de desenvolvimento de idadismo identificado no Capítulo 3: enquanto que as crianças do 4º ano expressaram atitudes mais positivas relativamente às pessoas idosas e ao seu processo de envelhecimento, um padrão diferente foi identificado quando a medida do desenho foi aplicada, com as crianças mais velhas a revelarem idadismo subtil. Estes resultados são discutidos à luz das suas implicações teóricas e para a intervenção neste domínio.

Palavras-chave: idadismo nas crianças, desenvolvimento do idadismo, medidas implícitas e explícitas, atitudes em relação às pessoas idosas, processo de envelhecimento.

PsycINFO Codes:

2800 Psicologia do Desenvolvimento

3000 Psicologia Social

3020 Grupo & Processos interpessoais

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Chapter 1

INTRODUCTION

The world´s population is ageing. The number of older persons is expected to more than double by 2050 and, simultaneously, population aged 60 is increasing faster than all younger age groups (UN, 2017). This socio-demographical transformation has several implications and challenges, namely how we perceive older persons and the ageing process.

The concept of ageism was firstly coined by Butler (1969) as "prejudice by one age group toward other age groups" (p.243). This definition was later refined by the same author as "a process of systematic stereotyping and discrimination against people because they are old, just as racism and sexism accomplish this for color and gender" (1975, p.48). Following this initial definition and work by Butler, the subject started gaining new dimensions with several theorists presenting their own definitions of the concept (Iversen, Larsen & Solem, 2009).

In the present thesis we adopt the definition of ageism as negative attitudes regarding people on the basis of their chronological age or the perception of them as being "old". Based on the tri-partite model of attitudes (Eagly & Chaiken, 1993), this concept includes three components: cognitive (stereotypes), affective (prejudice) and behavioral (discrimination). Ageism can be self-oriented (towards oneself) or other-oriented (towards others) and can be driven both by conscious and unconscious mechanisms – explicitly and implicitly, respectively (Iversen et al., 2009).

Several evidences show negative consequences of ageism for older individuals and for society as a whole. For instance, there is evidence that ageism has damaging consequences on several domains of older persons such as their memory (Levy, 1996), performance on a cognitive task (Hehman & Bugental, 2015), health (e.g. Levy, Slade & Kasl, 2002) and even their will-to-live (Marques, Lima, Abrams, Swift, 2014). In a recent study about the health care costs that are generated by ageism, it was found that one in every seven dollars spent by the United States health care for the eight most-expensive condition during one year was due to ageism (Levy, Slade, Chang, Kannoth & Wang, 2018).

Furthermore, ageism and negative attitudes toward age can be a barrier to active ageing which can be defined as "the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age" (WHO, 2002, p. 12). This threat operates through three main mechanisms: stereotype embodiment (internalization of stereotypes), stereotype threat (perceived risk of conforming to stereotypes about one´s group) and experiences of age discrimination (negative treatment based on age) (Swift, Abrams, Drury & Lamont 2016).

The prevalence of ageism is well illustrated in a study developed by the World Health Organization using data from 57 countries in which overall, it was found that 60% of the

respondents reported that older persons are not well respected. Ageism is thus a worldwide phenomenon with a (surprisingly) greater overall expression in Eastern than in Western countries (North & Fiske, 2015). In their meta-analyses, these authors found high heterogeneity in study comparisons suggesting that this effect was moderated by geographic region - East Asians exhibited the greatest negativity within the East and European citizens were the more negative within the West. Also, across regions, the rapid rises in population aging significantly predicted negative attitudes toward older people. Additionally, cultural individualism was identified as a predictor of positive evaluations of older persons.

In the specific case of Europe, the prevalence of ageism is well demonstrated by the European Social Survey (ESS, Round 4, 2008-2009). Across the 28 European countries assessed, a higher percentage of respondents (34%) reported that they had experienced prejudice against themselves due to their age (24%) than on the basis of their gender or race/ethnicity (16%). Moreover, in all the countries included in this pool, participants reported to have experienced ageism in subtler (e.g. being treated in a paternalistic way) than hostile (e.g. being insulted) forms (Abrams, Russell, Vauclair & Swift, 2011).

The high prevalence of ageism worldwide stresses the importance to gain a better understanding on how ageing representations develop from an early age. This knowledge would be important if we want to create well-informed programs to fight these negative attitudes.

In comparison with other forms of prejudice, such as racism and sexism, ageism has been considerably less investigated (Nelson, 2002). In fact, research on ageism in children is relatively scarce and yields contradictory evidence. At the moment we started this PhD thesis it was not possible to understand clearly *how* and *when* ageism manifested in children. One of the main problems we encountered was the lack of uniformity in the measures used to assess ageism, which made it impossible to reach meaningful conclusions. At the same time, very few studies measured ageism in different age groups and in a systematic manner (e.g., using for instance explicit and implicit measures). At that moment, it became clear that this was a topic worthy of further attention from a research perspective.

In the present thesis we aimed to go further and overcome these limitations. Based on the definition of ageism mentioned previously, we assessed children's implicit and explicit attitudes considering what they think, feel and how they (intend to) act regarding older persons and their own future ageing. We strongly believe that this multi-dimensional approach is crucial due to the complexity and fluctuation of children's attitudes as they age. In these studies, we also included three age groups: preschoolers (4/5 years old), first year (6/7

years old) and fourth year students (9/10 years old) (see Chapter 3). Including these age groups allowed us to explore, in a systematic manner, how the pattern of ageism develops across childhood. We believe that this work represents an important contribution to the literature in this domain because it systematizes the main findings in the field and, at the same time, brings important insights to understand how ageism occurs from a very early age.

Therefore, this thesis had three main aims. The **first aim** was to review the existing literature about ageism in children in order to identify and classify the available measures to assess this construct. Specifically, we aimed to classify these measures as more explicit or more implicit and as tapping the cognitive, affective and/or behavioral dimensions of attitudes. Thus, we were able to provide a framework for evidence from relevant studies in the literature. This work has been recently published in the open access book *Contemporary Perspectives on Ageism* (Mendonça, Marques & Abrams, 2018).

The **second aim** was to explore the development of implicit and explicit ageism along childhood considering three age groups: preschoolers, first graders and fourth graders. Using sophisticated methodologies (e.g., Implicit Association Test) we were able to measure different forms of ageism (i.e., explicit and implicit) even from very young ages (4/5 years old).

The **third aim** was to get a deeper understanding about the specific content of ageing representations held by children at different developmental stages. Specifically, we aimed to further explore children's thoughts, feelings and intentional or actual behavior towards older persons and their future ageing self. In order to grasp the content of children's representations we used two qualitative methodologies: interviews and the Human-Figure-Drawing. The results of these methods allowed us to gain a deeper understanding of the complexity of children's views on aging.

The thesis is structured by six chapters. **Chapter 1** corresponds to the present Introduction, where we presented briefly the goal of the work we developed. In **Chapter 2** we focused on clarifying the inconsistent findings in the literature regarding children's attitudes toward older persons and/or the ageing process. In this chapter we developed a literature review about the available measures to assess ageism in children. We classified these measures based on two criteria: the dimensions covered by each measure – cognitive, affective and behavioral (tripartite model of attitudes, Eagly and Chaiken, 1993) - and their level of automaticity as more explicit or implicit based on four features – consciousness, controllability, intentionality and efficacy (Bargh, 1994). Based on this classification and also on participant's age we outlined different patterns of ageism development and were also able

to identify limitations regarding the available measures to assess ageism in children (Mendonça *et al*., 2018).

In **Chapter 3** we proposed a developmental pattern of ageism along childhood by applying both implicit and explicit measures to children from three age groups: preschoolers (Study 1) and first and fourth graders (Study 2). The choice of these age groups was anchored on previous findings on prejudice (e.g. Raabe & Beelman, 2011) and ageism (e.g. Montepare & Zebrowitz, 2002; Mendonça et al., 2018, see Chapter 2) development. As will be detailed later, we expected all age groups to reveal similar levels of implicit ageism, but we expected only preschoolers and first graders to show explicit ageism which would not be observable in fourth graders. In a similar fashion, based on previous studies on racism development, we expected older children to be more strategic by revealing ageism in a subtler way in order to comply with social norms (Abrams, 2011).

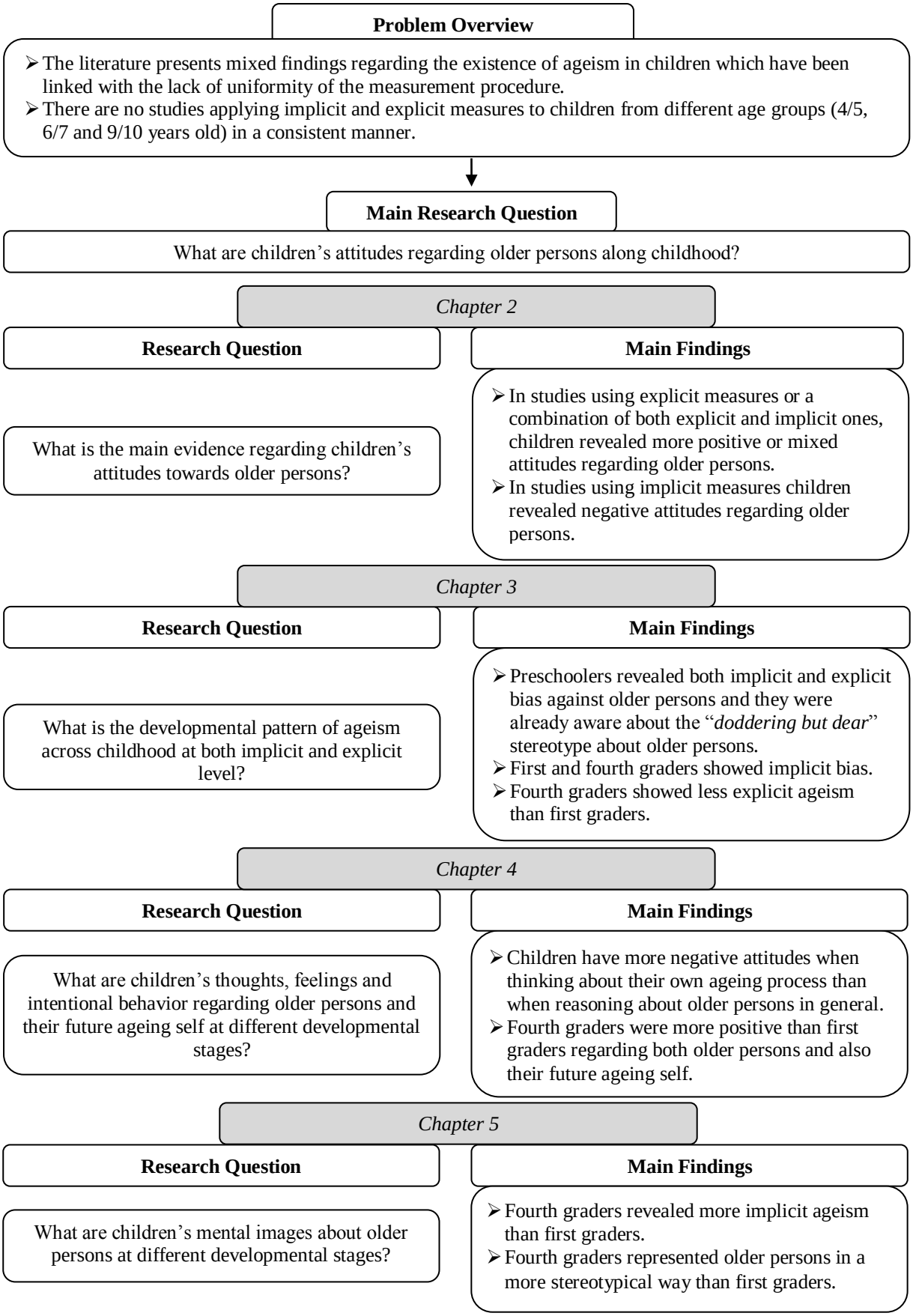
In both Chapters 4 and 5 we applied qualitative measures in order to get a deeper understanding about the ageing stereotypes underlying children's attitudes.

Building upon on the developmental pattern of ageism along childhood (Chapter 3), in **Chapter 4** we applied interviews to elicit children's attitudes toward ageing. Here, we used thematic analyses to explore children's attitudes regarding older persons and their future ageing self and to identify potential differences between children from different age groups. Children's attitudes were categorized according with their target (older persons vs. children's future ageing self), valence (positive vs. negative) and the dimensions covered (cognitive, affective and behavioral). Based on the findings from the previous chapter, we expected fourth graders to express a strategic expression of more positive explicit attitudes regarding older persons and their future ageing self than first graders. In **Chapter 5** we aimed to overcome the limitations commonly ascribed to explicit measures such as the interview used in the previous chapter. In this type of measures, participants are usually aware about what is being assessed and can control their answers in order not to show bias. In the particular case of children, there is evidence showing that they tend to reveal nonprejudiced attitudes in order to comply with social norms (e.g. Aboud & Amato, 2001). Hence, we applied the Human Figure Drawing (HFD) by asking children to draw a younger and an older adult. By using this implicit measure, we aimed to access children's mental images while minimizing social norms related bias. Based on the ageism developmental pattern found in Chapter 3, we expected both first and fourth graders to show implicit ageism by representing older persons more negatively and stereotyped than younger persons.

Finally, in **Chapter 6,** we present a general discussion about the studies' main findings and how they advance the field on the development of ageism along childhood. Moreover, we highlight the relevance of our findings to inform and support intervention programs to fight ageism in children and to promote positive intergenerational relationships. Limitations of the present research and suggestions for future studies are also included.

For a schematic view of the several sections, please see Figure 1 presented below which contains the structure of this thesis and advances the main findings from each chapter. We hope that this outline can be useful for a better understanding of the sequence of the studies carried out.

Figure 1. Framework of the problem, research questions, chapters and main findings



Chapter 2

CHILDREN'S ATTITUDES TOWARD OLDER PEOPLE: CURRENT AND FUTURE DIRECTIONS

This chapter is based on the chapter: Mendonça, J. & Marques, S. & Abrams, D. (2018). Measuring ageism in children: current and future directions. In L.Ayalon & C.Tesch-Roemer (Eds.) European Perspectives on Ageism. USA: Springer Nature

Abstract

The children of today will be the adults of tomorrow and thus their attitudes toward older people lay the ground for their future self-concept and psychological well-being. Understanding how young children perceive older people is thus of crucial importance in an ageing world. The literature suggests mixed findings regarding the existence of ageism among children, which may be an artifact of the diversity measures used. This chapter presents a literature review that assesses most of these measures to assess children´s attitudes regarding older people and the assorted findings. We propose a classification based on two criteria: (i) the dimensions covered – cognitive, affective and behavioral (tripartite model of attitudes) and (ii) the four automaticity features (consciousness, controllability, intentionality and efficacy) which together led us to classify measures into three categories: solely explicit, solely implicit and partially both explicit and implicit measures. Based on this categorization, we delineate distinct patterns of results, associated with the participant's age. In studies using explicit measures or a combination of both explicit and implicit measures, children revealed more positive or mixed attitudes regarding older people. The most positive attitudes were found in studies with older children and adolescents (e.g. using the *Tuckman-Lorge Older People Scale*"). When implicit measures were used, a different pattern of results emerged. Children expressed negative attitudes toward older people across childhood (e.g. behavioral measure). Based on this pattern of evidence, we make recommendations regarding the improvement of measures to assess children´s attitudes toward older people at different points in their social development.

Keywords: prejudice, attitudes, ageism among children, explicit and implicit measures

Introduction

Why and How Study Ageism in Children?

"*Being old is to lose memory, to have wrinkles and also white hair*" ("Maria", 6 years old). "*I think that when we became old we can and we know a lot of things to teach to the future generation of the family*" ("Pedro", 11 years old).

Age is a fundamental dimension along which children organize their perceptions of people in their social world (Lewis & Brooks-Gunnn, 1979). According to Levy (2009), stereotypes about the ageing process and, more specifically, about older people, become internalized across the life span in two fundamental ways: top-down (from society to individuals) and over time (from childhood to old age). As people age, stereotypes internalized during childhood and adulthood tend to eventually become self-stereotypes leading to often negative outcomes for older people (Levy, 1996; 2003). Four main stereotypes against older people seem to be prevalent in society: (1) older people are generally depressed and lonely lacking family and close friends and having mood disorders; (2) older people constitute a homogeneous group and ageing is perceived as a unidimensional and unidirectional process; (3) older people are frail, sick and dependent on others; and (4) older people are seen as having cognitive and psychological limitations (Whitbourne & Sneed, 2002). Several studies have shown that the mere exposure to negative stereotypical traits of old age (e.g., ill, dying, forgetful) has severe negative effects on older persons in multiple domains such as memory performance, stress levels and the will-to-live (e.g., Levy, 1996, 2003; Marques et al., 2014). These negative views are both expressed at the individual and institutional levels because there is also much evidence of negative treatment of older people across many areas such as the media, healthcare and organizational settings (Marques, 2011; Mendonça et al., 2016; Swift et al., 2016). Hence, understanding how representations of older people develop from an early age is of crucial importance in order to better understand and intervene in this domain.

At present, the literature in this field has still not yielded clear findings and it is therefore inconclusive regarding children´s views of different age groups and, in particular, of older people. In fact, the two quotes at the beginning of the present chapter illustrate well the sort of contradictory evidence that currently exists regarding the representations of older people among young children. On the one hand, several studies show that children´s perceptions of older adults tend to be mostly negative. For instance children as young as three years old (e.g. Middlecamp & Gross, 2002), have been found to have negative ideas about older adults, children prefer younger to older adults (Isaacs & Bearison, 1986) and they may refer to older people in a negative manner, associating this age group with traits such as helpless, stubbornness and senility (Pinquart et al., 2000). On the other hand, there are other studies that show no significant differences in attitudes regarding younger and older targets

and some even report positive perceptions of older people. For example, in a study using the drawing test methodology, children expressed a generally positive image of older people, depicting an older family member who was happy, healthy and active (Robinson et al., 2014).

These contradictory sources of evidence suggest the need to explore this issue in more detail. In this chapter, our goal is to explore and systematize the main evidence gathered so far regarding children´s attitudes towards older people, in order to gain a better understanding of how these attitudes develop in childhood. Therefore, the goals of this chapter are: (1) to present a literature review of the main body of studies assessing children´s attitudes toward older people; (2) to classify the available measures according to fundamental criteria of prejudice development in childhood: their level of automaticity (explicit vs. implicit measures) and the dimensions covered (cognitive, affective or behavioral); and (3) to explore the pattern of development of children´s attitudes toward older people in children. We believe that this represents a very important and meaningful contribution to this literature.

In the present analysis, we adopt the definition of attitudes based on the tri-partite model (Eagly & Chaiken, 1993). According to this theory, an attitude is composed of three dimensions: affective (represented by prejudicial feelings), cognitive (represented by beliefs and stereotypes) and behavioral (expressed through behavior or behavioral intentions). These three dimensions of attitudes can express a positive or negative evaluation regarding the object (Eagly & Chaiken, 2007). Hence, we are interested in exploring studies addressing these different dimensions of children´s attitudes towards older people. In accordance with this definition, ageism represents the specific case when there is a negative attitude towards older people (either in affective, cognitive or behavioral terms).

What Do We know about the Development of Prejudice in Childhood? Implications for the Study of Ageism

There are numerous theories regarding the development of prejudice among children. We follow Levy and Hughe´s (2009) suggested framework to organize the main theoretical approaches. For example, the Social Learning Theory (Allport, 1954) is based on the assumption that children learn prejudice through the observation and imitation of relevant role models, namely their parents or peers. According to this theory, as children age and learn the expected behavior, their prejudice would also tend to increase or match the levels of their parents.

A different approach is presented by the Cognitive-Developmental Theory originally developed by Piaget and Weil (1951) and applied to the prejudice field by Aboud (1988), Bigler and Liben (2006) among others. According to this theory, prejudice is derived from children´s limited cognitive abilities which undermines their capacity to see people as individuals, leading to overgeneralizations. With age, children´s cognitive abilities such as multiple classification ability become more flexible, allowing them to recognize similarities across groups and differences within the same group.

Along with this cognitive maturation, children´s expression of prejudice toward out-group members varies across different stages in childhood. In this regard, almost everything infants do is implicit in the sense that they are unlikely to be consciously considering and controlling any of their attitudes (Olson & Dunham, 2010). Children´s attitudes become increasingly explicit as they grow older: as toddlers, as preschoolers and, especially, as elementary school students. In this last developmental stage, children (especially from the age of 8 – e.g., Rutland et al., 2005; Abrams, 2011) are able to manage the expression of their attitudes according to their goals and social constraints. The gradual developmental of the "explicit system" allows children to exert an increasing level of strategic control over previously automatic processes (Olson & Dunham, 2010).

Another set of theories known as Social-Cognitive Developmental Theories, are based on both social and cognitive approaches, considering both personal factors (e.g. age, cognitive skills) and also characteristics of the social environment. For example, the Social Identity Development Theory (SIDT – Nesdale, 1999), postulates that intergroup bias can take different forms among both adults and children, namely the preference for the in-group (in-group bias) and dislike for the outgroup (e.g. race prejudice) (Rodrigues, 2011). This theory is derived from the Social Identity Theory (Tajfel & Turner, 1979) which is based on the assumption that individuals are highly motivated to achieve and maintain a positive self-esteem within an intergroup context. Consequently, in-group favoritism reflects an individual´s motivation to favor and positively distinguish the social groups he or she identify with from other relevant out-groups.

The Social Identity Development Theory has been currently used as a framework to explain the development of prejudice among children, mainly with regard to racism. According to this theory, racism is derived from a process, which involves four sequential phases across childhood: (1) The Undifferentiated Phase: children aged around two-three

years old cannot categorize people based on their racial cues. Consequently, they are not able to express any kind of intergroup bias; (2) The Ethnic Awareness Phase: children of around three-four years old begin to be aware of the existence of social categories that are most salient (e.g. age, gender and race). In this phase, children develop the ability of self-identification and the sense of belonging to social groups; (3) The Ethnic Preference Phase: children aged around five-six years old, focus on positive in-group evaluation rather than on out-group derrogation. In this phase, children begin to show an in-group preference (e.g. a preference for people from their race); (4) The Ethnic Prejudice Phase: by the age of seven-eight years old children intergroup evaluations are focused both on in-group and out-group. Children hold negative out-group stereotypes and discriminate out-group members when socially permissible.

In an elaboration of Cognitive Developmental Theory (CDT), Brown and Bigler (2005) proposed a developmental framework for understanding children´s perceptions of discrimination directed toward themselves and others. This model is based on the assumption that children's perceptions of discrimination are influenced by different factors: cognitive development (e.g. classification and social comparison skills), situational contexts (e.g. salience of one´s group identity), and individual differences. More specifically, this model proposed that by the age of six, children acquire the basic cultural and social-cognitive skills required to perceive discrimination. Along with the cognitive maturation during the elementary school years, children may become more skilled to make attributions to discrimination in different contexts. At the end of elementary school (by age ten), children´s perceptions of discrimination are more complex and similar to that of adults. However, at this age, children may not be able to perceive societal or more complex forms of institutional discrimination (e.g., subtle images portrayed in the media or hidden negative practices in some organizations). Finally, during adolescence, youth is expected to be able to identify discrimination at both societal and institutional levels.

Rutland, et al., (2010), proposed a new socio-cognitive developmental perspective on prejudice that is drawn from two complementary theories: the social domain theory (Turiel, 1998) and the social identity theory (SIT; Tajfel & Turner, 1986). According to this perspective, the development of prejudice involves the interplay between moral reasoning (beliefs about fairness and justice) and group identity (influence of group norms). This means that children consider both moral beliefs and group identity when reasoning and developing

judgments about groups and individuals. Overall, this perspective highlights the need to consider both social-cognitive abilities (emergence of moral beliefs) and intergroup context variables (social context and relationships with others).

Finally, in a further extension of the Social Identity Approach, the Developmental Model of Subjective Group Dynamics (Abrams et al., 2007) holds that between the ages of 5 and 11 children develop a lay theory of group processes, which enables them to calibrate their expression of bias according to which groups are judged by the audience and by their own level of identity.

The evolutionary perspective, considers that prejudice and discrimination are inevitable and, consequently, very difficult to change. For example, Fishbein (1996) argues that humans are predisposed to prefer individuals who are more genetically similar to themselves. The development of prejudice is therefore associated with the development of a group identity at early ages (three/four years old).

Beyond race, research on the development of prejudice has often focused on sexism or gender-related prejudice – "*prejudice attitudes (…) based on gender-related categorization of people*" (Glick & Hilt, 1998, p.7). According to these authors, gender-related prejudice develops and is expressed differently according to a developmental sequence – Between early childhood (two-three years old) and puberty (around the age of 11), children prefer to play with same-sex peers, showing hostile feelings and beliefs toward out-group members. This hostile prejudice is expressed through overall negative emotional evaluations of the other sex and is based on a simple cognitive reasoning. A different pattern is found among adolescents whose greater cognitive abilities, emotions and sexual attraction to other-sex individuals results in a more ambivalent form of gender-related prejudice, which is characterized by paternalistic beliefs: woman are viewed as romantic objects who are also weak and need men's protection. These two different kinds of prejudice – hostile and benevolent - may coexist during adulthood, creating ambivalent attitudes and influencing adult cross-sex interactions. The important point, however, is that prejudice should become more multi-faceted with age.

Regarding the specific case of ageism, studies are scarcer but an important review of this field (Montepare & Zebrowitz, 2002) presented some evidence. Some studies (e.g. McCall and Kennedy, 1980) suggest that children are influenced by salient age cues at a very early age. In fact, children as young as 4 months differentially look at pictorial representations

of faces of people of different age groups. In this chapter, Montepare and Zebrowitz (2002) advanced a hypothesis regarding the expected development of ageist beliefs in children based on a social-developmental perspective. According to this theory, children´s social perceptions require the categorization of people on the basis of their age-related physical characteristics (height, face and voice cues) that are used to distinguish and classify people. Later in development, children´s attitudes are reflected in three types of outcomes: prejudice (children´s feelings toward older adults), stereotypes (children´s beliefs and knowledge about older persons) and discrimination (children´s intended or actual behaviors toward older persons).These different dimensions may involve different developmental paths. In early childhood, attitudes are mostly expressed through (negative) affective reactions toward older people. Meanwhile, children develop systematic behavioral stereotypes that become more complex as a function of their cognitive development. In middle childhood, children´s attitudes toward older people become more positive and differentiated and this continues throughout adolescence and adulthood.

Montepare and Zebrowitz (2002) do not elaborate much on these initial propositions. Hence, much more attention needs to be devoted to evidence and theory. For instance, although some insights may be gained from previous studies on racism and sexism, we would be cautious about generalizing across domains. In fact, evidence so far, seems to suggest that different patterns of development and processes occur in different types of prejudice. For example, there are different theories specifically regarding the development of racism (e.g. Olson & Dunham, 2010) and sexism (e.g. Glick & Hilt, 1998). In the case of racism, research has focused on the role of the anti-racism norm and its influence on implicit and explicit prejudice in different stages of childhood. Studies suggest that the explicit expression of racism decreases as children get older, mainly due to conformity to a strong social anti-racism norm (Olson & Dunham, 2010; Rutland, et al., 2010). On the other hand, theories about the development of sexism are based on the assumption that gender-related prejudice exists throughout life assuming different forms according to the developmental stages (hostile vs. benevolent sexism) (Abrams, 1989; Glick & Hilt, 1998). These observations highlight the need to consider the distinctive features of each type of prejudice. However, we also assume the existence of core developmental processes. In this regard, Olson and Dunham (2010) suggest that the distinction between more implicit or explicit forms of prejudice is fundamental to understanding the patterns of development across childhood. Hence, similarly

to what had been done in the case of racism, it would be important to understand how these two different modes of ageism operate across different age groups and to address the role of social-environmental factors such as the anti-ageism norms. Studies such as these would represent a very important contribute to this field of research.

We therefore aim to progress the field by reviewing the existing literature and providing a framework for systematic evidence from relevant studies in the literature. We present a classification of the main measures of ageism in children based on two main criteria: (i) the dimensions covered – cognitive, affective and behavioral (tripartite model of attitudes) and (ii) the four aspects of automaticity (consciousness, controllability, intentionality and efficacy). Together these allowed classifying measures into three categories: explicit/implicit and blend of explicit and implicit measures. We hope that this classification contributes to our knowledge regarding the development of attitudes towards older people.

Goals and Method of the Present Study

A literature review was undertaken using four databases (PsycARTICLES, PsycINFO, ERIC and Psychology and Behavioral Sciences Collection) and a combination of two groups of keywords - *children* AND *ageism* (n=135); *children* AND *attitudes* AND *ageing* (n=1257). Studies were considered in this review if they comply with the following inclusion criteria: (1) reported the use of measures to assess children´s or adolescents' (under 18 years old) attitudes toward older people and/or the ageing process. (2) measured children´s attitudes without any previous manipulation. Our goal was to explore studies measuring attitudes in their original form. Therefore, we excluded studies that employed interventions or experimental manipulations.

Of the 1392 articles identified, 171 were duplicated and were therefore excluded. This search allowed us to identify 10 articles that focused specifically on the assessment of children´s attitudes regarding older people and that met the inclusion and exclusion criteria. Subsequently, the reference lists from the identified studies were also consulted allowing us to locate 6 additional articles. Therefore, a total of 16 articles were subjected to a deeper analysis. These included both quantitative, qualitative or mixed methods.

What is Being Measured

Cognitive, Affective and Behavioral Measures

We analyzed the available measures to assess children´s attitudes based on the tri-partite model (Eagly & Chaiken, 2007), therefore considering their beliefs, feelings and behavior regarding older people and/or the ageing process. The cognitive dimension was mostly assessed through four scales: "Kogan´s Attitude Toward Old People Scale" (Ivester & King, 1977); "Social Attitude Scale of Ageist Prejudice" (SASAP – Isaacs & Bearison, 1986); "Tuckman-Lorge Old People Scale (OP – Harris & Fiedler, 1988); and the "Child Adolescent Facts in Ageing Quiz" (CAFAQ – Haught et al., 1999). This quantitative approach is based on the assumption that through the use of scales with different methodological characteristics (e.g. Likert-type; dichotomous response) one can assess children´s knowledge, beliefs and stereotypes associated with older people and the ageing process. For example, the "Kogan´s Attitude Toward Old People Scale" (Ivester & King, 1977) is a Likert-type instrument (34 items) for assessing adolescent´s attitudes toward old people with respect to both norms and individual differences (e.g. "*Most old people get set in their ways and are unable to change.*"). Stereotypes and misconceptions about different areas of older people´s lives (e.g. personality characteristics; social adjustment) were also assessed through the use of the Tuckman-Lorge Old People Scale (OP - Harris & Fiedler, 1988), in which participants were asked to circle "yes" or "no" for each of the 137 statements about old people (e.g. "*They are unproductive*."). A very similar method was used in the "Child Adolescent Facts on Ageing Quiz" (CAFAQ - Haught et al., 1999). However, in this case, children´s and adolescent´s attitudes were assessed through 16 items using a true/false format (e.g. "*Most older workers do not work as well as younger workers*"). All these instruments have in common the idea that children´s attitudes are best assessed by asking children about their representations regarding specific stereotypic traits of older people.

A different approach was used in the "Social Attitude Scale of Ageist Prejudice" (SASAP - Isaacs & Bearison, 1986) in which the categories of *young* and *old* were visually represented by photographs of a middle-aged person (35 to 50 years old) and of an aged person (70 to 85 years old). Children were then asked to select the picture of the person that they regard as the recipient of either positive (e.g. "*One of these people is always invited to all parties because everyone likes him. Which person does everyone like?*") or negative social

events ("*These two men are arguing. One of them is nasty and always yells at people. Which one is nasty?*") (46 items). Beliefs and stereotypes regarding older people and the ageing process have also been assessed using a sentence completion task (Lichtenstein et al., 2003), by asking children to write responses to five prompts (e.g. *"Old people…"; "When I am old I…"*).

The affective dimension has been mostly assessed through indirect measures, particularly the drawing test. This technique is based on the assumption that through drawing, children share their internal world of experiences (Lichtenstein et al., 2005). In the studies using this approach, different methodologies have been adopted. In some studies children were asked to draw a typical older person in a setting (e.g. Lichtenstein et al., 2005). Other studies specified that the drawn person should be an old person that children know from real life (Robinson et al., 2014), making the task more self-relevant to the children. Still other studies asked children to simply draw human figures of different ages (young/old from both genders) (e.g. Villar & Fabà, 2012).

In some of this research (e.g. Lichtenstein et al., 2005), interviews were used as a complementary methodology in order to elicit oral or written responses to obtain more detailed information regarding the pictures drawn (e.g. person´s age, activities, feelings, thoughts, possible relation to the child, person´s characteristics that differ from those of the child). All the studies identified using this methodology aimed to cover both the cognitive and affective dimensions of children´s attitudes regarding older people based on the analysis of several dimensions: height of the drawings, physical characteristics (e.g. wrinkles), activity level (e.g. wheelchairs), health status (e.g. hearing aids), personality, roles, settings, facial expression, emotions and also on children´s responses on the interview.

Children´s knowledge and feelings toward older people and the ageing process were also assessed through the use of two qualitative methods: a word association task (brainstorm about words associated with the concept of "*young*" and "*old)* and an attitude toward-aging interview (e.g. "*What do most old people spend their time doing?*") (Laney et al., 1999).

A very different approach has been used to assess the behavioral dimension of children´s attitudes. We found two studies measuring children´s behavior toward older people, both sharing similar methodology. These are based on personal interactions between children and older people. For example, in order to explore whether children as young as four to eight years old already express negative stereotypes about older people, Isaacs and Bearison, (1986)

developed a behavioral measure based on a puzzle activity task (n=144): in the experimental condition, each child worked individually with an older person (approximately 75 years) and in the control group the puzzle activity was performed by dyads of a child and a non-aged person (approximately 35 years). Children´s attitudes regarding older people were assessed based on the scores on behavioral measures: proxemics distance (the distance between the confederate´s chair and the child´s placement of his or her chair); productivity (number of puzzles pieces placed); eye-contact initiation (number of times children directed their gaze toward the confederate); verbal interaction (e.g. number of words spoken by the child). In the other study using a behavioral methodology (Kwong See et al., 2012), the Piagetian number conservation task was modified to assess young children´s age stereotyping. This was done by manipulating the perceived age of the experimenter (younger and older) asking the second question. This task was based on the assumption that children held different beliefs about the motivations of the two experimenters for asking the second question.

Finally, very few studies have assessed all three dimensions of children´s attitudes (cognitive, affective and behavioral). As far as we know, only two instruments attempted to achieve this goal: "The Children´s Attitudes toward the Elderly Scale" (CATE) (Jantz et al., 1977) and the "Children´s View on Aging" (CVOA) (Marks et al., 1985). The CATE (Jantz et al., 1977) is composed by three sub-scales: (1) word association questions regarding the affective (e.g. "*How do you feel about getting old?*"), behavioral (e.g. *"What do you do with that person?"* – referred to the older person the child knew) and knowledge (e.g. *"What can you tell me about older people?"*) dimensions of attitudes; (2) semantic differential composed by ten items on a five-point bipolar scale rating the two concepts "young people" and "old people" (e.g. "*friendly-unfriendly*"); (3) picture series: four drawings representing men at four stages of life were presented to children to elicit responses about their knowledge and feelings regarding older people and the ageing process (e.g. "*Can you put these pictures in order from the youngest to the oldest?*").

The CVOA (Marks et al., 1985) includes four sections with open-ended questions: (1) children are asked to think about becoming an old person and to answer nine open-ended questions covering the three dimensions of their perceptions of the ageing process: cognitive (*"How can you tell when people are growing old?"*); affective (*"How will you feel when you are old?"*) and behavioral (*"What will you do when you are old?"*). These questions were followed by a close-ended question: "*Do you think this is: (a) a good thing to happen?; (b) a*

bad thing to happen?; (c) neither a good or bad?"; (2) children are asked for information regarding the frequency and quality of contact with their grandparents; (3) children are asked about having an older person in the classroom (e.g. "*Would you like having an old person in your classroom as a helper?*"); (4) using a semantic differential scale composed by twelve bipolar word pairs children are asked to indicate what characteristics they attribute to older people (e.g. "pleasant-unpleasant") .

Despite the useful effort to cover the three dimensions of children´s attitudes, both scales (CATE and CVOA) share a common limitation - they represent an overlap of two different attitudinal objects: children´s attitudes about older people and about the ageing process. The attempt to measure two different constructs simultaneously should be taken into consideration when analyzing the results obtained to assess ageism among children. Moreover, both scales are also limited in their measurement of the behavioral dimension of ageism in the sense that they only evaluate the behavioral intentions of children regarding older people and not their actual behaviors as it was done in other measures such as the puzzle (Isaacs & Bearison, 1986) and the Piagetian adapted task (Kwong See et al. 2012). These aspects limit the value of the results obtained by the use of these measures.

Explicit vs. Implicit Measures

In order to organize the literature regarding children´s attitudes towards older people, we propose an alternative way to look at the measures and evidence. As far as we know, this is the first time such a classification has been proposed in order to classify children´s attitudes in the case of age. Based on the definition of measure as an "outcome of a measurement procedure" (De Houwer, 2006), and following previous approaches in other domains (Maass et al., 2000), we present a framework for classifying children´s attitudes measures into three categories: explicit measures, both explicit and implicit measures and implicit measures.

Intergroup attitudes have been mainly measured through self-report questionnaires to assess participant´s attitudes regarding their in-group and out-groups members. However, there are some concerns regarding the validity of these measures because people can easily control their explicit responses and act in order to comply with social norms, making prejudice less likely. Consequently, implicit measures have been increasingly used in order to reduce participant control over responses (Maass et al., 2000). This is based on the

assumption that participants cannot strategically control the outcome of the implicit measurement procedure (De Houwer, 2006).

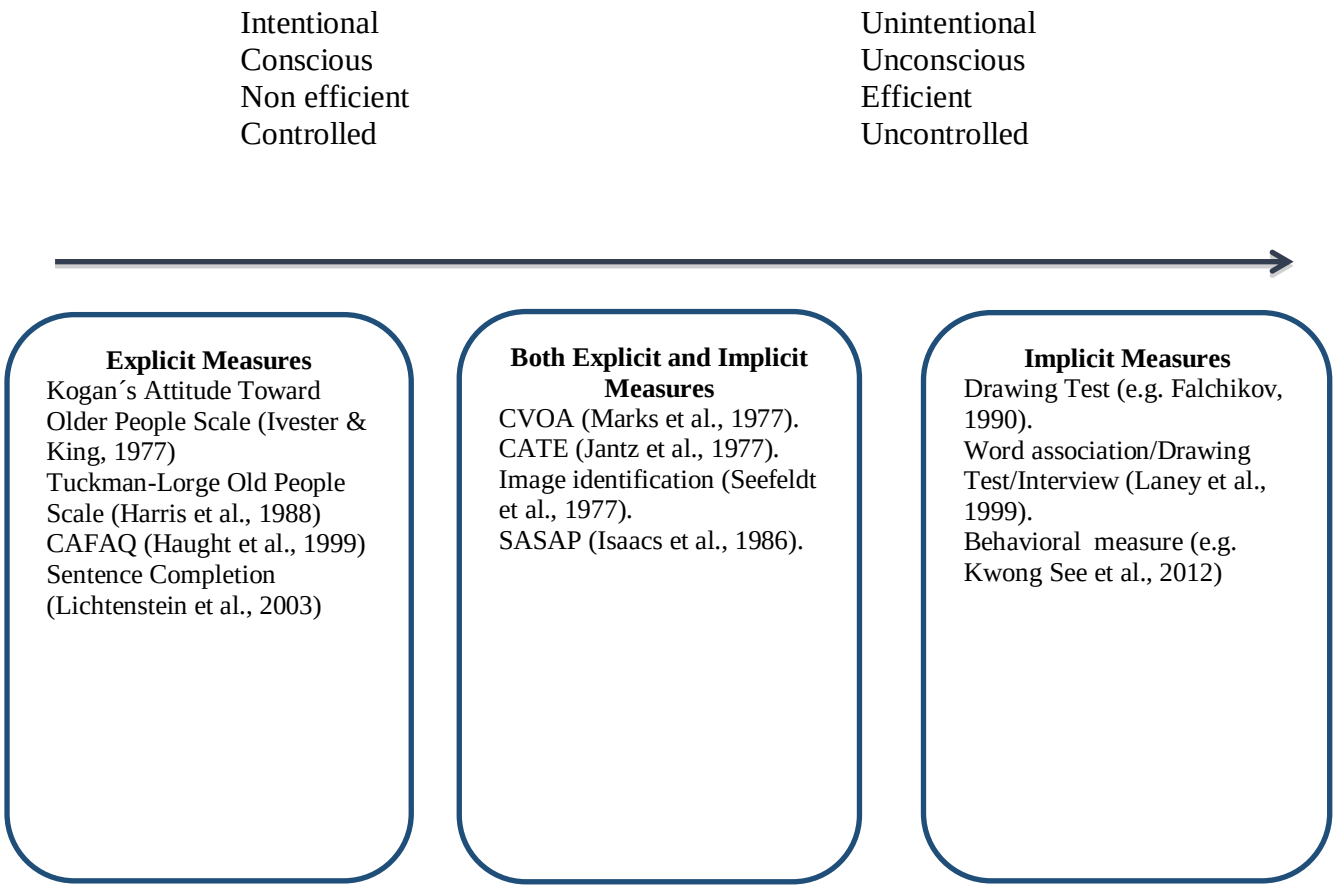
The classification of the measures into the three categories mentioned above (Figure 2) was based on the following four automaticity features: (1) intentionality (whether one is in control over the instigation or "start-up" of processes); (2) awareness (one person can be aware of a stimulus event but also of its potential influence on subsequent experience and judgments); (3) efficiency (effects that are relatively effortless) and (4) controllability (one´s ability to stifle or stop a process once started) (Bargh, 1994). These automatic features do not necessarily occur together in the sense that automatic processing is not unitary. In fact, they are independent qualities that may appear in various combinations.

Explicit measures are more deliberative, mindful, and easily controlled (Maass et al, 2000). An example of an explicit scale is the Tuckman-Lorge Old People Scale (OP) (Harris & Fiedler, 1988), in which participants were asked to circle "yes" or "no" for each item regarding misconceptions and stereotypes about old people (e.g. "*They are unproductive"*.."). In this case, the process is intentional because participants have the goal of engaging in a process, are aware of the stimulus (older persons), the process itself is nonefficient (it requires attentional capacity and time to answer the 137 items) and controllable in the sense that participants can stop the process at any time.

By contrast, implicit measures are automatic because they are more unintentional, efficient, non-conscious and uncontrolled (Bargh, 1994). An example of an implicit measure is the puzzle activity task described above (Isaacs & Bearison, 1986). Behavioral measures aim to create experimental situations that parallel contexts of daily life and to observe participant´s interpersonal behavior (Maass et al., 2000). In the case of the puzzle activity, children in the experimental setting were not aware of what was being measured (their behavior toward older confederates) and, consequently, had little or no control of their own thoughts and behaviors. Moreover, the process is efficient in the sense that it requires minimal attentional capacity and is not time consuming.

The third category includes measures that are a blend of both explicit and implicit questions. An example is the CATE scale (described above) which is constituted by more explicit sub-scales (word association questions and semantic differential) and more implicit ones (picture series based on drawings representing men at four stages of life).

Figure 2. Categorization of measures to assess children´s attitudes regarding older people according to the automaticity features



The classification of the measures into these three categories facilitates the interpretation of the complex pattern of results that emerged from the use of different instruments to measure children´s attitudes regarding older people.

Analyses of Children´s Attitudes Through Different Measures and Across Different Stages of Childhood

Explicit and Mixed Measures

Studies using explicit measures or a combination of both explicit and implicit measures revealed more positive or mixed children´s views of older people in comparison with those adopting an implicit approach. Explicit measures have predominantly assessed the

cognitive dimension of children´s attitudes. Despite some variability, the most positive results were found in studies assessing children´s attitudes in late childhood (eight-ten years old) (e.g. CVOA) and in the adolescence period (13-19 years old) (e.g. Kogan´s Attitude toward Older People Scale; Ivester & King, 1977). For example, in a study using the "Child-Adolescent Facts on Ageing Quiz" (CAFAQ – Haught et al., 1999), children´s knowledge and beliefs regarding older people were assessed through sentences on basic physical, mental and social facts about ageing. Adolescents (grade 12) showed positive attitudes whereas younger children (grade 3) showed a negative bias toward this age group. Younger children´s misconceptions about older people were mainly focused on two dimensions: competence (not working as well as younger people) and social skills (being nice to other people).

The application of two scales that blended both explicit and implicit measures – the "Children´s Attitudes Toward the Elderly Scale" (CATE – Jantz et al., 1977) and the "Children´s View on Aging (CVOA – Marks et al., 1985) revealed a more complex pattern of results. More specifically, the CATE was applied to children aged between three and 11 years old and revealed that children´s attitudes toward older people were mixed. In affective terms, their descriptions of older people tend to be positive (e.g. "*they are nice*"; "*friendly*"; "*wonderful*"). However, the inverse pattern was observed regarding attributes of older people´s physical (e.g. "*ugly*") and behavioral characteristics (e.g. "*they can´t really walk very fast*"). Moreover, children´s attitudes regarding their own ageing process tended to be negative (e.g. "*I don´t want to get old*"), ascribing negative feelings to old age (e.g. "*sad*"; "*depressed*"). Nevertheless, older children (fifth and sixth graders) were the most positive about their future as older persons.

Some of these results are in line with those obtained through the application of the "Children´s Views of Ageing" (CVOA - Marks et al., 1985), namely the negative perception children hold regarding their own ageing process ("*you are sad*"; *nobody cares*"). Responses in the semantic differential scale highlighted the positivity attributed to older people in the affective dimension, while young people were evaluated more positively based on the cognitive domain. In this study, children attributed negative characteristics to older people at both physical and psychological levels (e.g "*lonely*"; "*scary*"; "*people no longer care about you*"). However, children also showed positive behavioral intentions expressing motivation to interact with old people in their classrooms. It is nevertheless important to emphasize that children tested in this study were already 8-10 years old.

Taken together, these results suggest that, although some evidence shows that views of ageing tend to become more positive as children grow older, at least based on more explicit measures (e.g. Haught et al., 1999) a mixed and complex pattern of results still occurs depending on the dimension being assessed. Overall, it seems that children are more positive when we assess explicitly affective and behavioral aspects instead of cognitive representations of older people. Children also seem to be more negative when they are considering their own ageing process as opposed to making judgments about older people. However, the most important finding to emerge is the fact that these sort of explicit measures do not yield a significant and consistent pattern of results. One possibility is that, similar to what happens in other domains such as, for instance, racism, older children are able to control their answers and show ageistic intentions in a more strategic manner depending on task domain, thus limiting our ability to measure their more intrinsic attitudes (Olson & Dunham, 2010). Given this complex pattern of results, attention to the type of procedure used and the dimensions covered in the measurement of children´s attitudes should be given wider attention than has been so far.

Implicit Measures

Ageism among children has been consistently found in studies using implicit measures. For example, in a puzzle activity task (Isaacs & Bearison, 1986), four-, six- and eight-year old participants distinguished aged from nonaged individuals and responded differently to them. More specifically, participants in the experimental condition (those working individually with an older person) initiated less eye contact, spoke less to confederates, initiated less conversations with them and required less appeals for assistance or verification. Interestingly, results showed an increase in ageism between the ages of four to six/eight years, with a decrease in the amount of eye contact in the aged confederate experimental condition, thus contradicting the pattern found with more explicit measures.

In another study, Kwong See et al. (2012) used a modified Piagetian number conservation task in order to assess interpersonal relationships between children and older people. In its original form, a child is asked if two aligned rows of objects have the same number of objects or if one of the rows has more. After the child agrees regarding the equality of the lines, the experimenter makes one of the lines longer and the child is then asked a second time if the two rows have the same number of objects or if one of the rows has more.

According to the Piagetian theory, the second time asked, preoperational aged children (with an age between four to seven years old) usually answer that the rows are different in the sense that they cannot conserve number. However, a different interpretation is provided by the conversational account for conservation errors according to which asking the same question twice is usually interpreted as a request for new or different information. Based on this assumption, Kwong See et al. (2012) hypothesized that when an adult experimenter asks if the two rows are the same a second time, a child infers that the experimenter wants to know if he/she is aware of the perceptual modification that has occurred. In this case, children are expected to consider that the experimenter is more cognitive capable by virtue of being an adult and therefore must know that the transformation did not change the number of objects in the line and is asking about something else. An opposite pattern of response is expected to occur when the experimenter is an older person: in this case, age stereotyping (e.g. poor vision or memory, cognitive impairments) is expected to become associated with the question asked by the experimenter. Thus, children might infer that the older experimenter is asking the second question because he needs to clarify if the number of objects in the rows is truly the same. As predicted by the authors, children held different beliefs about the motivations of the two experimenters and gave different answers according to these beliefs. When the experimenter was a younger adult, the majority of children gave an answer focused on length rather than number. The opposite pattern was found in the older adult experimenter condition, therefore highlighting the similarity of the rows. These results showed that children as young as five years old have already internalized age stereotypes believing that ageing is associated with decline. Unfortunately, this study did not include older children so we can not reach any conclusions regarding this aspect.

In another study using three qualitative and implicit methods – word association task, projective drawings and an attitude toward-aging interview –first and second grade-students showed negative attitudes toward older people and the ageing process (Laney et al., 1999). More specifically, in the word association task, the words associated with "old" were mostly negative at different dimensions: psychologically (e.g. "*weak*"), mentally (e.g. "*bored*"), and low levels of activity (e.g. "*retired*"). The opposite pattern was found regarding young people who were characterized in a positive way (e.g. "*happy*"; "*active*"). Children´s drawings depicted older persons performing sedentary and passive leisure activities (e.g. "*watching out window; "watching TV*"). In addition, drawings revealed the physical characteristics

attributed to older people (e.g. "*gray hair*"; "*wrinkles*"). This negative view of older people was also evident in children´s responses to the interview: they considered that older persons perform passive activities (e.g. *lying in bed*") and need help from young people because they are physically disabled and/or sick. In addition, children expressed negative attitudes regarding the ageing process (e.g. "*the body quits working*") associating ageing with the "*imminence of death*".

Older children´s (ages between 10.5 and 11.5 years) attitudes regarding older people were assessed through a comparative analysis of children´s four drawings: a young man, an old man, a young woman and an old woman (Falchikov, 1990). Results revealed that pictures of old people were more negative in content than those of young people, revealing a clear association between old age and a lack of human contact and loneliness. Drawings of old people frequently included characters such as glasses, wrinkles, canes or wheelchairs, hearing aids and slippers. Moreover, these pictures were significantly smaller than those of young people.

From the analyses of the literature, the only case in which the use of implicit measures yielded more positive views of aging by children was when they were asked to draw older people in greater detail (e.g., within different scenarios). Specifically, in a study where students from two middle schools were asked to draw a typical older person in a setting (Lichtenstein et al., 2005), the drawings demonstrated the great variability of children´s attitudes regarding older people, including both positive and negative traits. The most positive drawings were those depicting someone relevant to the students, namely a grandparent. The relevance of asking children to draw someone they knew was also shown in a study where children between the ages of eight and 12 were asked to produce a drawing of an old person they see in real life (in a setting) (Robinson et al., 2014). Overall, the drawings portrayed an older person (namely, a family member) who was "*happy, healthy, active and with positive physical characteristics*". Hence, these results suggest that children have a more positive view of older people that they know in their daily lives such as their grandparents. The target used to assess ageism against older people should be then carefully chosen.

Given their more consistent pattern of results, implicit measures seem like an interesting avenue to pursue in the study of children´s attitudes regarding older people. In this sense, it would be extremely important to understand how more implicit and explicit attitudes develop throughout childhood and what are the main factors influencing these different aspects of

ageism. A more complete and valid assessment of ageism during childhood would have many important implications to promote more meaningful prevention efforts against the wide negative representations of older people in our societies.

Limitations of Available Measures

We identified a range of measures that have been employed to assess children´s attitudes regarding older people (summarized in Table 1). Although there is a reasonably large volume of work produced in this domain, it is nevertheless difficult to reach a firm conclusion of the developmental trajectory of ageism in children. In fact, a more thorough analysis of the measures used clarifies that they have important limitations that need to be overcome in the future.

The first limitation is the lack of psychometric consistency that is particularly relevant in the case of some studies (e.g., Harris et al., 1988; Haught et al., 1999). The lack of information about psychometric indicators (e.g. validity, reliability) jeopardizes the possibility of reaching conclusions about the meaning of these measures. Secondly, there is frequently an ambiguity or inconsistency in the attitudinal object that is measured. In some measures, there is an overlap of two different attitudinal objects: children´s attitudes about older people (e.g., "what do you think about older people?") and the actual ageing process (e.g., "how do you perceive your own aging will be?") (e.g. Jantz et al., 1977). This makes it difficult to compare the results obtained across the different studies. Third, most of the measures only provide a partial assessment of children´s attitudes. As we have seen, several of the measures identified covered only the cognitive dimension of children´s attitudes (their knowledge and beliefs regarding older people and/or the ageing process) (e.g. Isaacs et al., 1986), disregarding with few exceptions the affective and behavioral dimensions of attitudes. Given the fact that older children are more able to control their answers to these sorts of measures (Olson & Dunham, 2010), it is important to diversify the methodologies used.

Further important limitation of integrating evidence from measures are attributed to the poor and incomplete description of the participants in the studies (i.e., age and grade level), the considerable variability of age range and low sample sizes (e.g. Falchikov, 1990; Lichtenstein et al., 2005). This lack of transparency in the methodological affects the quality of the conclusions that may be drawn from such studies.

Another limitation is that the procedures used in the testing are not well described and appear very time consuming. For instance, the replicability of the studies using the behavioral methodology seems difficult in the sense that it requires the participation of older persons (for example, in a classroom context) in order to engage in interpersonal activities with younger participants (e.g. Isaacs & Bearison, 1986). Another issue that requires further attention is that studies may use measures, such as scales, which may not be sensitive enough to capture the presence of ageism in very young children (e.g. Isaacs & Bearison, 1985). This is particularly relevant in cases where scales were originally applied to adults, and have been used with children or adolescents with little or no adaptation (e.g. the "Tuckman –Lorge Old People Scale" – Harris & Fiedler, 1988; "Kogan´s Attitude toward Older People Scale" - Ivester & King, 1977).

Finally, other aspects that have not been taken into consideration in these sort of studies are the need to control for important factors that may have an association with attitudes to age in children. For instance, in some studies, the prior contact between children and older people, namely their grandparents, was not assessed either in terms of quantity (Robinson et al., 2014) or quality (e.g. Harris & Fiedler, 1988). This constitutes an important limitation in the sense that children´s relationships with relevant older persons could reasonably serve as an important evidence for their cognitive, affective and behavioral overviews towards older people.

The recognition of these limitations is crucial for the refinement of currently available measures and for the development of more complex techniques in the future. New measures should be adapted and created that overcome some of the major limitations identified in this field.

Future Directions & Recommendations

Children´s attitudes regarding older people represent a multidimensional construct (e.g. Lichtenstein et al., 2005) and, consequently, can be fully explored only if the three dimensions of attitudes (cognitive, affective and behavioral) are taken into account. Future studies aiming to explore children´s attitudes regarding older people and/or the ageing process also should be based on a triangulation of both explicit and implicit measures. At the very least, research should be clear about the focus and type of measurement when formulating hypotheses. This will allow for a better evidence base to develop new theories on how

implicit and explicit attitudes towards age and older people emerge and develop in childhood. More specifically, the use of this framework will help to establish a more systematic account on how ageism develops across childhood and how it is expressed by children of different age groups. For instance, if there is a social norm to not discriminate someone based on his or her age, one can hypothesize that older children will show less explicit ageism but, probably, their implicit ageism level will remain the same as happens, for instance, in racism (Rutland et al., 2005). This complex pattern of prejudice development across childhood should also be considered in studies on the development of ageism. Thus, a possible avenue to pursue is to explore the existence of an anti-discrimination norm based on people´s age in children and adults. This will allow to address important topics in the field of ageism such as: the early origins of ageism, the development of self-presentation concerns and executive control and the ability to inhibit prejudicial responses (Olson & Dunham, 2010).

Future measures of ageism in childhood should also have better psychometric qualities (i.e, test-retest reliability, concurrent validity, predictive validity, construct validity and content validity) and better sampling procedures. It is fundamental that specific information regarding participant´s demographic characteristics be provided, e.g., their age. The measurement of other related factors such as prior relationships with grandparents or other significant older people is also of paramount importance in this domain and should be further considered as a necessity (Robinson et al., 2014).

Finally, we believe that it would also be important to conduct subsequent literature reviews, namely meta-analyses in this field. Although we tried to be as inclusive as possible, and we present the main studies in this domain, it would be important to consider other databases (e.g., Scopus, Web of Science) not included in this study. This would allow further exploration of the field, through a systematic procedure.

The improvement of measures of children´s attitudes regarding older people is crucial and urgent. One important route will be to explore the instruments that have been used in other types of prejudicial attitudes (e.g., racism and sexism) and see how they can be applied to the case of ageism. It will allow further understanding of how ageism develops in childhood and the development of effective intervention programs (Marques et al., 2014) to reduce ageism at an early age. In an ageing society, understanding how children think, feel and behave regarding older people is fundamental for preparing a better and more inclusive future for all age groups.

Table 1. Description of measures that assessed ageism among children

Authors	Country	Methodology	Participants	Main Findings	Dimensions of Ageism	Originally developed to be applied with:	Psychometric Qualities
Explicit measures							
Harris et al. (1988)	EUA	The Tuckman-Lorge Old People (OP) Scale (1953) is a questionnaire composed by 137 statements of misconceptions and stereotypes about older people covering a total of 13 categories (e.g., physical, mental deterioration). Participants were asked to circle "yes" or "no" according to their agreement to each sentence (e.g. "*Old people need glasses to read*"). Participants also answered a self-report contact questionnaire (quantity of time spent with an older person in the past year).	Sample size: n = 157 Participant´s age: Mean age of 12.8 years	The quantity of contact preadolescents reported to spend with older persons was not significantly related with their attitudes. Regarding race, white preadolescents expressed the most positive attitudes toward older people in comparison with the black or Mexican-American preadolescents.	Cognitive	Originally developed to be applied with adults (Tuckman & Lorge, 1953). Adapted to be used with preadolescents.	Not specified.
Ivester & King (1977)	EUA	Kogan´s Attitude Toward Older People Scale is a likert-type instrument constituted by 34 items aiming to assess attitudes toward old people regarding both norms and individual differences. The 34 items are 17 matched positive-negative pairs which reflect stereotypes and feelings about old people in society (e.g. "residential aspects of old people´s lives," "the extent to which old people vary among one another").	Sample size: n = 413 Participant´s age: 13 – 19 years old	The results showed that the attitudes of the students toward old people tend to be more positive than negative. Besides, there weren´t significant differences between negative attitudes toward older people from 12th and 9th graders.	Cognitive	Originally developed to be applied with adults (Kogan, 1961). Adapted to be used with adolescents.	Demonstrated reliability and validity (Kogan, 1961): -Odd-even reliabilities ranging from .66 to .83 with the negative scale having higher reliability. - Good content validity: significant correlations between OP scale scores and

							attitudes toward ethnic minorities and physically disabled groups.
Haught et al. (1999)	EUA	"The Child-Adolescent Facts on Ageing Quiz" (CAFAQ) is the adaptation of the "Facts on Aging Quiz" (FAQ – Palmore, 1977) to be applied to children and adolescents. This scale is constituted by statements on basic physical, mental, and social facts about aging and common misconceptions that people have about aging. Students had to mark the 16 items as "true" or "false" (e.g. "*Most older workers do not work as well as younger workers*").	Sample size: n = 954 (three separate experiments) Participant´s age: Grades 3, 6, 9 and 12.	A different pattern of results was found according to participant´s age: adolescents (grade 12) showed positive bias regarding older people; however, school-age children (grade 3) showed negative bias regarding this age group. Female adolescents showed more positive bias in comparison with male adolescents. Hispanic adolescents tended to show more negative bias than White or Black adolescent students.	Cognitive	The "Facts on Aging Quiz" (FAQ) was developed to be used with adults (Palmore, 1977). CAFAQ is the adaptation of this scale to be used with children and adolescents.	Not specified
Lichtenstein et al. (2003)	EUA	Prompts were presented to students and they were asked to write responses (e.g. "Old is…"; "When I am old I…").	Sample size: n = 1874 Participant´s age: Children from 6º, 7º and 8º grades	The most part of student´s descriptions of older persons were based on physical characteristics: wrinkles, gray hair or being bald. Students had a much more positive view of their future compared with their views about other´s ageing process.	Cognitive	Children	Test-retest repeatability in the pilot phase of the project: the responses were not repeatable from Time 1 and to Time 2.
<u>*Both explicit and implicit measures*</u>							
Jantz et al. (1977)	EUA	The CATE – "*The Children´s Attitudes Toward the Elderly Scale*" is composed by four sub-scales: 1.Word association questions regarding the affective,	Sample size: n = 180 Participant´s	Children´s attitudes toward older people are complex and mixed. They expressed positive feelings toward older people (e.g. "*They are nice*") but have negative	Cognitive Affective Behavioral	Children	1.sub-test: word association Coefficients of inter-rater reliability (2 raters) on category scoring for the sub-

		behavioral and knowledge components of attitudes (e.g. "*How do you feel about getting old?*"). 2. Semantic differential composed by 10 items on a 5 point bipolar scale rating the two concepts "young people" and "old people" (e.g. "*friendly-unfriendly*"). 3. Concept of age sub-test: four drawings representing men at four stages of life were presented to children to elicit responses about their knowledge and feelings regarding older people and the ageing process (e.g. "*Can you put these pictures in order from the youngest to the oldest?*"). 4. This sub-test was administrated together with three Piaget-based conservation tasks from the Goldschmid and Bentler Concept Assessment Kit.	age: 3 – 11 years old	attitudes about the physical (e.g. "*ugly*") and behavioral characteristics associated with older persons (e.g. "*They can´t really walk very fast, they are not very strong*"). Children have few contacts with older people outside of their families. Children´s attitudes regarding their own ageing process tended to be negative ("*I don't want to get old*"), ascribing negative feelings to be old (e.g. "*sad*"; "*depressed*"). The older children were the most positive about being old.			test ranged from .7977 to .9838. 2. semantic differential: the evaluative adjectives had obtained high factor loadings through other investigations into how children in grades two through seven rated more than 100 concepts. 3. picture series: validation of the drawings was established by asking graduate students in the fields of gerontology and human development to rate each drawing by giving it an estimated age.
Marks et al. (1985)	EUA	The Children´s Views of Aging (CVOA) is an instrument aimed to assess children´s attitudes toward older people and the ageing process. It´s constituted by 4 sections with a variety of open-ended questions: Section 1: children are asked to think about becoming an old person and to answer nine open-ended questions regarding their perceptions of aging (e.g. "*How they will feel when they are old*"). These questions are followed by	Sample size: n = 256 Participant´s age: 8 – 10 years old	In the open-ended questions, mostly of the children described negatively older people at both physical and psychological level (e.g. *"lonely", "scary", "people no longer care about you"*). Regarding their own aging process, children also revealed a negative perception of their future (e.g. "*you are sad*"; "*nobody cares*"). A different pattern was	Cognitive Affective Behavioral	Children	Concurrent validity coefficient of the semantic differential: 0.64; Test-retest reliability coefficient of the semantic differential = 0.70; The alpha (internal consistency) coefficient of the semantic differential was 0.81.

		a close-ended question: "*Do you think this is: (a) a good thing to happen?; (b) a bad thing to happen?; (c) neither a good or bad?"*. Section 2: asks for information regarding the frequency and nature of children´s contact with their grandparents. Section 3: Asks the child questions related to having an older person in the classroom (e.g. "*Would you like having an old person in your classroom as a helper?*"). Section 4: Semantic differential scale composed by twelve bipolar word pairs that describe characteristics of older adults and asks the child to indicate what characteristics they attributed to older people (e.g. "*pleasant-unpleasant*").		found regarding behavioral intentions, suggesting children´s desire to interact with old people in their classrooms. In the semantic differential scale, old people were evaluated more positively than young people on the affective dimension, while young people were evaluated more positively on cognitive dimension.			
Newman et al. (1997)	EUA	The Children´s Views of Aging (CVOA) is an instrument aimed to assess children´s attitudes toward older people and the ageing process. It´s constituted by 4 sections with a variety of open-ended questions: Section 1: children are asked to think about becoming an old person and to answer nine open-ended questions regarding their perceptions of aging (e.g. "*How they will feel when they are old*"). These questions are followed by a close-ended question: "*Do you think this is: (a) a good thing to*	Sample size: n = 71 Participant´s age: 4th and 5th grades	When describing older people, children often referred physical characteristics (e.g. "*graying hair and wrinkles*") without attributing a value on these characteristics. When asked to describe how it would feel to be old, almost half of them describe negative conditions commonly associated with old age (e.g. *"lonely"; "sad"*).	Cognitive Affective Behavioral	Children	Not specified

		happen?; (b) a bad thing to happen?; (c) neither a good or bad?". Section 2: asks for information regarding the frequency and nature of children´s contact with their grandparents. Section 3: Asks the child questions related to having an older person in the classroom (e.g. "*Would you like having an old person in your classroom as a helper?*"). Section 4: Semantic differential scale composed by twelve bipolar word pairs that describe characteristics of older adults and asks the child to indicate what characteristics they attributed to older people (e.g. "*pleasant-unpleasant*").					
Isaacs et al. (1986)	Not specified	Social Attitude Scale of Ageist Prejudice (SASAP): Children were shown pairs of photographs, one of a middle-aged person (35 to 50 years) and the other of an aged person (70 to 85 years) and were asked to select the picture of the person that they regarded as the recipient of either positive or negative social events (46 items). Example of a positive stated event: *"One of these people is always invited to all the parties because everyone likes him. Which person does everyone like?"*; The stated events included	Sample size: n = 144 Participant´s age: 4, 6 and 8 years old	The mean scores of the youngest group (4-years old) did not indicate prejudice. The frequency of prejudicial responses increased significantly from this age group to six years but remained stable between six and eight years. At these ages, participants showed significant prejudice against older people in their SASAP scores.	Cognitive	Children	Reliability = .87 Validity = item-remainder Alpha scores ranged from .65 to .70.

		statements about a person´s personality traits or abilities.					
Seefeldt et al. (1977)	EUA	Children were presented with four pictures of one man drawn to represent four different stages of life (ages 20-35, 35-50, 50-65, and 65-80). An individual structured interview was conducted in order to assess the three components of children´s attitudes toward older people and the ageing process: cognitive, affective and behavioral.	Sample size: n = 180 Participant´s age: 3 – 11 years old	The majority of the children (69%) were able to place the pictures in correct sequential order. By the first grade they demonstrated an understanding of relative age. Children expressed negative attitudes toward the physical characteristics of the image of the oldest man (e.g. wrinkles) and toward their own ageing process.	Cognitive Affective Behavioral	Children	Interrater reliability = .99
Implicit measures							
Laney et al. (1999)	EUA	Children´s attitudes about older people and the ageing process were assessed using three instruments: 1.word association task: brainstorm of words associated with two concepts: "young" and "old". 2. Children´s human figure drawings: children were asked to draw a picture of an old person and a young person. The students were individually interviewed regarding the content of their drawings. 3. Students were orally interviewed using an attitude-toward-aging questionnaire (e.g. "*How old is an old person?")*	Sample size: n = 20 Participant´s age: 1st and 2nd graders	In the word association task, the words associated with "old" were mostly negative at different dimensions: physiological (e.g. "*weak*"), mental (e.g. "*bored*"), and low levels of activity (e.g. "*retired*"). The opposite pattern was found regarding young people who were characterized in a positive way (e.g. "*happy*"). Children´s drawings depicted older persons performing sedentary and passive leisure activities (e.g. "*watching out window*"). Besides, the drawings revealed the physical characteristics	Cognitive Affective	Children	Not specified

				attributed to older people (e.g. gray hair; wrinkles). In the interview, children expressed a negative attitude regarding the ageing process ("*the body quits working*"). Children considered that older persons perform leisure activities (e.g. "*lying in bed"*) and need help from young people.			
Falchikov (1990)	Scotland	Children´s drawings: (1) Young man; (2) Young woman; (3) Old man; (4) Old woman.	Sample size: n = 28 Participant´s age: 10.5 – 11.5 years old	Pictures of old people were more negative in content than those of young people. Older people portrays frequently included glasses, wrinkles, wheelchairs. There was an association between old age and lack of human contact and loneliness. Pictures of old people were significantly smaller than those of young people.	Cognitive Affective	Children	Reliability (inter-rater average agreement = 87.9%)
Lichtenstein et al. (2005)	EUA	Children´s drawing of a typical older person in a setting. Interview regarding characteristics of the drawn person (e.g. the person's age, feelings, thoughts, possible relation to the student).	Sample size: n = 1944 Participant´s age: Two middle schools	Children´s drawings depicted older persons who were "diverse and multidimensional". The drawings demonstrated the great variability of children´s perceptions of older people (including equally both positive and negative traits).	Cognitive Affective	Children	Interrater agreement (weighted k = 0.73) and Intra-rater agreement (weighted k = 0.74)
Villar & Fabà (2012)	Spain	Children´s drawings with written tags: (1) Young man; (2) Young woman; (3) Old man;	Sample size: n = 60	Older persons were represented in varied and multidimensional ways. Some drawings had negative content (signs of physical	Cognitive Affective	Children	Not specified

		(4) Old woman.	Participant´s age: 9 – 12 years old	disability or degeneration). However, most of them depicted a positive image of older persons. The drawings depicting older persons were more homogeneous and less complex than those representing younger persons.			
Robinson et al. (2014)	EUA	Children´s drawing of an old person that children see in real life (in a setting); Interview.	Sample size: n = 141 Participant´s age: 8 – 12 years old	The drawings produced a generally positive image (94.8%) of older people. Most of the drawings depicted a family member who was happy, healthy, active and with positive physical characteristics.	Cognitive Affective	Children	Not specified
Isaacs et al. (1986)	Not specified	Children were asked to participate in a puzzle task with aged (experimental group) and non-aged (control group) persons. Behavioral measures: proxemics distance; productivity measure; eye-contact initiation measure; verbal interaction measure (e.g. number of times a child initiated conversation).	Sample size: n = 144 Participant´s age: 4, 6 and 8 years old	Regardless of their age, participants showed preference for nonaged confederates compared to the aged confederates. This finding is based on the scores on all the behavioral measures assessed with the exception of the productivity measure. Children as young as 4 years old are already able to make categorizations based on individual´s age and acted differently to them in a behavioral context.	Behavioral	Children	Not specified

Kwong See et al. (2012)	Not specified	The Piagetian number conservation task was modified to assess young children´s age stereotyping. This was done by manipulating the perceived age of the experimenter (puppets in experiment 1 and real persons in experiment 2) asking the second question.	Sample size: Experiment 1 (n = 23); Experiment 2 (n = 28) Participant´s age: 5 years old	In the young adult experimenter condition, the majority of children gave an answer focused on length rather than number. In the old adult experimenter condition, the majority of children gave an answer focused on number rather than length. Children held different beliefs about the motivations of the two experimenters for asking the second question and acted differently accordingly to these beliefs.	Behavioral	Children	Not specified

Chapter 3

ARE CHILDREN AGEIST? DEVELOPMENT OF EXPLICIT AND IMPLICIT ATTITUDES ACROSS CHILDHOOD

This chapter is based on the paper: Mendonça, J., Marques, S., Abrams, D., Swift, H., Rodrigues, R. B., & Gerardo , F. (*in prep*). Are Children Ageist? Development of Explicit and Implicit Attitudes Across Childhood

Abstract

Ageism can be defined as negative attitudes regarding people based on their age. There are mixed findings in the literature regarding the existence of ageism among children. This contradictory evidence has been linked with the lack of uniformity of the measurement procedure, leading to inconclusive findings. In this study, we aimed to explore the development of ageism across childhood by applying both implicit and explicit measures to preschoolers (N = 108, M_{age} = 55.94 months, *SD* = 6.15 months) (Study 1) and to children from the 1st (N = 50, M_{age} = 84.78 months, *SD* = 7.12 months) and 4th (N = 50, M_{age} = 123.52 months, *SD* = 10.34 months) grades (Study 2). In both studies, data was collected in two sessions: in the first session, we applied the Age Preschool Implicit Association Test (PSIAT-Age), the explicit measure of ageism and a behavioral measure of ageism; in the second session, we applied the stereotypical ratings of competence and warmth of older people and behavioral intentions to interact with this age group. Our results showed that children as young as four years old already have negative attitudes regarding older people and that there is a developmental pattern of this kind of prejudice along childhood. More specifically, in Study 1, preschoolers showed both implicit and explicit bias against older people and they were already aware about the "doddering but dear stereotype". In Study 2, both age groups revealed implicit bias when the PSIAT-Age was applied and older children showed a deeper internalization of this paternalistic mixed stereotype, rating older people higher in the warmth than in the competence dimension. Overall, this innovative study allowed us to propose, for the first time, a developmental pattern of ageism along childhood, which can be very useful when planning intervention programs aimed at fight ageism and to promote a more inclusive society – a society for all ages.

"I don't like older adults, just the younger ones." (4 year' old).

"*Older people are ugly and they can't walk so fast…*" (7 year' old)

"*Older people are smarter and wiser because they have more life experience and they know more things than we do."* (9 year' old)

Introduction

Ageism can be defined a negative attitude towards people based on their age (Nelson, 2002). Surprisingly, little research has examined children´s ageism and it yields contradictory, and thus, inconclusive findings. Several studies show that children as young as

three years old have negative ideas about older people (e.g. Middlecamp & Gross, 2002), considering them helpless, weak and boring (Laney , Wimsatt, Moseley, & Laney, 1999) and showing a greater willingness to interact with younger adults rather than with older ones (Isaacs & Bearison, 1986). Other studies show no evidence of ageism among children and some even report positive perceptions of older people (e.g. Robinson, Zurcher & Callahan, 2014).

Levy´s (2009) self-embodiment perspective suggests that stereotypes about the ageing process and about older people are learned and become internalized through their assimilation from the surrounding social context. This occurs across the life span both top-down (from society to individuals) and over time (from childhood to old age). Stereotypes internalized during childhood and adulthood may become self-stereotypes when individuals reach old age, potentially leading to negative outcomes for older individuals at both cognitive and physical levels (Levy, 2003).

Adults' level of prejudice towards social groups may derive from deep-rooted beliefs formed in childhood (Bigler & Patterson, 2017). Thus, knowledge about the developmental pathway in ageism may be very useful when determining the most appropriate age period for implementing intervention programs (Raabe & Beelmann, 2011). Early prevention of bias formation may be more enduring and cost-effective than subsequent interventions that attempt to combat stereotypes and prejudice that are already well established.

In the present research, our goal is to contribute to explore development differences in children's attitudes to older people using different measures of ageism. As far as we know this represents the first time that children's implicit and explicit forms of ageism have been measured across childhood.

How does prejudice develop across childhood? Implications for the development of ageism in children

Much of the growing interest in developmental pathways of prejudice in children (e.g. Aboud & Steele, 2017) has focused on the development of racial attitudes. A good example of such work is Raabe and Beelmann's (2011) meta-analysis, exploring age differences in ethnic, racial and national prejudice along childhood and adolescence. Their analysis shows that majority group members' prejudice (toward lower status racial and ethnic outgroups, such as Blacks) increases between early (2-4 years) and middle (5-7 years) childhood and then decreases slightly between middle (7-8 years) and late childhood (8-10 years) as well as

within late childhood. However, a deeper analysis revealed that this pattern was influenced by the type of measure used to evaluate racism. Decreases in racism were limited to responses on explicit measures that required more mindful, deliberative and easily controlled answers (Maass, Castelli & Arcuri, 2000) such as negative trait attributions or evalutions of differences between out-group and in-group members. This pattern did not hold when more implicit, automatic, measures were used, particularly the Implicit Association Test (the IAT) procedure (Greenwald, McGhee & Schwartz, 1998). The IAT measures the relative strength of associations between a target concept (e.g. race) and an attribute concept (e.g. words that have positive or negative connections). The child-oriented version of the IAT (Baron & Banaji (2006) was used to explore implicit race attitudes in White American children with 6 and 10 years old and revealed that implicit race attitudes were acquired early and remained stable over time, with both age groups showing implicit pro-White attitudes. However, a different pattern of results was found when an explicit measure was applied, with older children showing a decrease in their self-reported ingroup preference.

Raabe and Beelmann (2011) affirm that this decrease only in explicit racial biases stems from the role of an anti-racism norm that inhibitis overt expression of prejudice, an assumption supported by several studies showing that children's explicit racial prejudice is context-dependent and influenced by the salience of norms (see Rodrigues, Rutland & Collins, 2016). For instance, França and Monteiro (2004) found with children aged 6-7 and 9-10, that an anti-discrimination norm made salient by the presence (vs. absence) of the experimenter during a task of resource allocation, inhibited the expression of prejudice more among older children and under conditions of ingroup-accountability.

This and other evidence supports the notion that as children approach middle childhood they become more strategic in their expressions of prejudice in order to comply with social norms (Abrams, 2011; Olson & Dunham, 2010; Rodrigues, 2012). Thus, we anticipate a similar age profile in other socially sensitive attitudes, including ageism.

Ageism in children

Rather little is known regarding the development of ageism in childhood. Montepare and Zebrowitz (2002) proposed a social-developmental account whereby children initially categorize people mainly based on their age-related physical cues (face, height and voice cues). As they grow older, children´s ageism towards older people emerges in three forms: *stereotypes* (children's knowledge and beliefs about older persons), *prejudice* (children's

feelings toward older people), and *discrimination* (children's behavior or behavioral intentions toward older people). According to this theory, the relative salience of each dimension is determined by children's developmental stages. In early childhood, attitudes are mostly expressed through negative affective reactions towards older people. In middle childhood, cognitive development enables children to develop more complex stereotypes. However, existing studies reveal a lack of consistent findings regarding the prevalence of ageism along childhood. This gap in the literature can be attributed both to the use of different measures and with the inclusion of samples from different age groups, thus not allowing a direct comparison of the results.

Mendonça et al. (2018) (current Chapter 2 of this dissertation) reviewed the literature on the development of ageism in childhood and identified the available measures and the assorted findings. Their analysis of 16 articles published between 1977 and 2014, focused on two criteria: measurement of the three dimensions referred above - prejudice, stereotypes and discrimination – (tripartite model of attitudes) (Eagly & Chaiken, 2007), and assessment of the four automaticity features (consciousness, controllability, intentionality and efficacy) (Bargh, 1994), thus elaborating the distinction between explicit and implicit measures.

Similar to the evidence on racism development (Raabe & Beelmann, 2011), explicit and implicit measures revealed different results. Studies using explicit measures (e.g. scales such as the "Children's View on Aging" (CVOA), Marks, Newman & Onawola, 1985) reveal positive or mixed views of older people in studies measuring ageism in older children or adolescents. In addition, children express more positive assessments of older people in studies that explicitly assess the affective and behavioral components rather than the cognitive component. Conversely, in studies using implicit or more indirect measures of ageism, children show higher levels of bias, and do so irrespective of their age group. For example, in a study with a behavioral measure – a puzzle task – children of 4, 6 and 8 years old showed a clear preference to interact with younger adults than with older ones (Isaacs & Bearison, 1986). In studies with older children (aged 10.5 to 11.5) where they are asked to draw typical older persons, the pictures tend to be negative showing an association between old age and loneliness (Falchikov, 1990). In another study, Babcock and colleagues (2016) developed the Child-Age-Implicit Association Test in a paper-format rather than the usual computerized version. Results showed that children from the third and fourth grades have more preference for younger over older adults, revealing implicit ageism. However, these

biases were not found when explicit measures were used, probably due to children's willingness to act in an unprejudiced way.

Mendonça et al. (2018) advanced the hypothesis that the development of ageism across childhood should follow a similar pattern to that of racism. Explicit ageism should tend to decrease as children grow older, whereas implicit ageism is expected to sustain a similar level across childhood.

Following up on these conclusions, recent research has also revealed bias against older people in children using more subtle measures. For instance, Vauclair and colleagues (2017) and Flamion, Missotten, Marquet & Adam (2017) used the Stereotype Content Model (Fiske, Cuddy, Glick & Xu, 2002) and showed that children as young as 6 years old already shared the paternalistic view of older people as "*doddering but dear*" rating them as very warm, but not very competent. This representation also held true amongst 14 year olds, confirming the persistence of ageism in this more subtle form. Benevolent stereotypes of older people are detected in the interaction between the ratings of competence and warmth, a pattern that is unlikely easily to be discerned or deliberately portrayed by children when they answer the questionnaire. Therefore it seems reasonable to regard the stereotype content model measurement – considering both dimensions together – to reflect a less explicit manifestation of age bias that is detected by more direct unidimensional assessments.

The present study

The present study moves beyond previous research, exploring for the first time the development of ageism by comparing different age groups using the same measures. More specifically, we aim to understand the development of implicit and explicit bias in three age groups: preschoolers (Study 1); first graders and fourth graders (Study 2). The choice of these age groups was based on the literature on prejudice development (e.g. Raabe & Beelman, 2011) and on the pattern of ageism development suggested by previous research on this field (e.g. Montepare & Zebrowitz, 2002; Mendonça et al., 2018). We use both explicit and implicit measures of ageism and tap different dimensions. We expect explicit ageism to occur in both preschoolers and first graders and then to decrease in fourth graders. Implicit ageism, on the other hand, should remain the same across age groups.

Study 1

In Study 1 we assess preschoolers' attitudes regarding older people using explicit and implicit measures (the data collection protocol for Studies 1 and 2 can be found in Appendix A). Explicit measures of ageism include both an evaluative and a behavioral forced-choice task where participants have to choose between younger and older people. For implicit measures we used the IAT for preschoolers (Cvencek, Greenwald & Meltzoff, 2011) and the stereotypical ratings of competence and warmth of older people, adapted version for children (Vauclair et al., 2017). As described more fully below, in this latter measure, participants were asked to choose between younger vs. older faces on several items covering the warmth and competence dimensions. We consider this measure to be more implicit in the sense that participants are not aware about the construct that is being assessed (the "*doddering but dear stereotype*").

Based on Mendonça et al. (2018) we expect that:

Hypothesis 1 (H1): Preeschoolers will show explicit ageism against older people, revealing preference for younger people in the forced choice evaluative and behavioral measures.

Hypothesis 2 (H2): Preschoolers will show significant implicit levels of ageism in the IAT, showing a relative preference for younger people.

Hypothesis 3 (H3): Preschoolers will rate older people as more warm than competent (i.e., the "*doddering but dear*" stereotype).

Method

Participants

Participants were 108 children with an age between 46 to 71 months (M_{age} = 55.94 months, *SD* = 6.15 months) from four kindergartners in a charity organization. These kindergarteners were located in a deprived area in Lisbon.

Measures

Age Preschool Implicit Association Test. In the present study we applied the usual computerized version of the Implicit Association Test and not the version suggested by Babcok et al. (2016) Although there is evidence suggesting the validity and discriminant validity of the paper-format version of the IAT (Bardin, Perrissol, Fos & Souchon, 2016), we considered the computer-version more suitable to be used with such young children in the

sense that preschoolers may find easier to just “hit the button” than to perform the paper and pencil task due to their restrictive fine motor skills.

The Implicit Association Test is based on response latency techniques providing a measure of strengths of automatic associations (Greenwald et al.,1998). This measure has been adapted to be used with children as young as 6 years old (e.g. Baron & Banaji, 2006) and also with pre-schoolers (Cvencek et al., 2011) by reducing its cognitive demands. In order to apply the implicit association test to pre-schoolers, we made an adaptation of the Preschool Implicit Association Test (PSIAT – Cvencek et al., 2011) to measure implicit ageism. The development of the PSIAT-Age included adaptations that make the test suitable to be used with very young children. In this task, children were seated at a desk with a laptop (39-cm diagonal screen) and they were told that they would “play a game on a computer”. Before and during the application of the PSIAT, verbal instructions were given in age-appropriate language and children were invited to express any uncertainty. An adapted keyboard was used with two response buttons (3.5 cm) each one with a different colour – one yellow and the other blue. Two stripes (each 10 cm wide) with the same colours as the response buttons appeared at the left and right portions of the computer screen. By using this colour code, it was easier for children to know which button they should push in order to provide a correct answer. In each task a visual (picture) or an audio (word) stimuli were used. Pictures of younger and older adults’ faces were retrieved from the pool of available images in the Age-IAT (7 x 10.5 cm). The display of each picture was accompanied by a short beep sound. All words were digitally recorded by a female speaker as 24-bit.wav files in order to make the task suitable for pre-schoolers. However, unlike Cvencek et al. (2011) words were not presented on the screen. This methodological choice was made to ensure that children’s responses were not confounded with differences in their reading ability where reading speed could affect response speed. The time between the participant’s response and the presentation of the next stimulus (intertrial interval) was 500ms.Visual reminders related with the four concepts remained present in each task: 4 pictures of younger adults, 4 pictures of older adults and “smiley” and “frowny” faces related with the words *good* and *bad* respectively. The standard IAT length of 180 trials (Greenwald, Nosek & Banaji, 2003) was reduced to 144 trials (20%). From these trials, 16 involved the discrimination between two concepts and 24 involved the discrimination among four concepts. Participants were not allowed to continue the task without giving the correct response. In cases where they hit the wrong

button (error response), a red question mark appeared below the stimulus and children were encouraged to give the correct response in order to advance to the next trial.

The application of the PSIAT-Age begun with two single-discrimination tasks during which children practiced sorting, firstly, pictures of younger adults and older adults and, after that, good words (*good, happy, fun and nice*) and bad words (*bad, yucky, mean and mad*). Following this, children completed two combined discrimination tasks in which the four concepts (pictures of younger and older adults; good and bad words) were used. Each combined discrimination task was constituted by two blocks of 24 trials. In the trials involving the discrimination among four concepts (combined task), two instructional conditions were presented: in the "congruent condition", good words and younger adults shared a response key and bad words and older adults shared the other response key. In the "incongruent condition", the association between pictures and words was reversed. Although the left-right orientation of younger and older adult's reminders was counterbalanced, the left-right orientation of the reminders of good and bad categories remained always equal. The two instruction conditions were presented in a counter balanced order within each PSIAT-Age.

The comparison between children' s response speed in one instructional condition relative to the other instructional condition allowed calculating an IAT score (D) (Greenwald et al., 2003). Positive scores indicated higher ageism against older people.

Forced choice evaluative task. Explicit ageism was measured with a task adapted from Cvencek et al. (2011). In this task, half of the computer screen had a yellow background and the other half a blue background. On each side of the screen, a picture of a younger man/woman and a picture of an older man/woman were presented (the same pictures as the ones used in the PSIAT-Age). Children were then asked to "choose the picture they like the most" by pressing the button of the same colour on the adapted keyboard. Children were told to be "as honest as possible" in the sense that "there were no right or wrong answers" and to take the time they needed. Sixteen trials were randomly presented reflecting all possible younger-older same-sex pairings (four pictures of younger adults and four pictures of older persons). The results were analysed by calculating the proportion of responses (out of 16) in which children selected the younger picture. A value of .50 was subtracted from each child's score. The interpretation of the results were made based on the following procedures: positive scores indicated preference for younger adults, negative scores indicated preference for older adults and a score equal to 0 indicated no preference between younger and older adults.

Forced choice behavioral task. This measure was created for the present study and is a forced choice task based on the Disney's Pixar movie "Up". In this task, children were shown three cards of the main character of this movie at three stages of his life - as a child, as a younger adult and as an older adult. The pictures presented the face at different ages of the main character in the three versions. The three cards were put on the table from left to right in chronological order and children were asked two questions: 1) "*These characters are from a movie. Do you know them?*"; 2) "*You can choose 2 of these 3 cards and keep them. Which cards do you prefer?*".

Stereotypical ratings of competence and warmth of older people (SCM).

Stereotypic ratings of older people were assessed by a measure based on Marques, Lima, Abrams & Swift, 2014 (Study 1) and Vauclair et al. (2017) and adjusted to pre-schoolers. In this task, 2 same-sex pairs of younger vs. older adults pictures (the same as the ones used in the PSIAT-Age) were shown to children followed by questions which implied the choice of one picture. Importantly, at the beginning of this task, children were asked "*In these two pictures, who is the youngest? And the oldest?*" in order to validate children's subsequent answers. Firstly, a picture of a young man and a picture of an older man were put on the table and children were asked several questions regarding their warmth (*"Who do you think is nicer?;"Who do you think is friendlier?"*) and their competence ("*Who do you think does things better?"; "Who would you ask for help to fix a toy?*"). After that, the same questions were asked regarding the female pair (younger woman vs. older woman). Children were asked to express their choice orally and/or by pointing to the chosen picture. Two summary scores were created by summing children's answers to the two warmth traits for both men and women (Cronbach's $\alpha = .72$) and the two competence traits for both men and women (Cronbach's $\alpha = .70$). Besides the items to assess warmth and competence, there were others that have been applied but not included in the analyses because they do not assess these dimensions (see further analyses on this measure on Appendix B).

Procedure

This study complies with the standards of integrity in research according to the University's Ethics Committee. Furthermore, the study's proposal was also presented to the charity administration and, more specifically, to each director of the kindergartens where the data were collected. Prior to the study, written parental consent was obtained (see Appendix C).

Children were tested individually in a separate quiet room outside the classroom. The experimenter told them they would be asked to participate in several tasks about their views of younger and older adults and that the study was anonymous. Data were collected in two sessions: session 1 – Age Preschool Implicit Association Test (PSIAT-Age); explicit measure of ageism and behavioural measure of ageism; session 2 – Stereotypical ratings of competence and warmth of older people. The first session lasted approximately 40 minutes and the second one lasted approximately 20 minutes and no child asked to discontinue the session. Children seemed motivated and attentive to the task requirements through the session. The decision to hold two sessions reflected the need to avoid children getting over tired.

Results

Age Preschool Implicit Association Test

The conventional D scores were used to indicate whether children showed implicit bias against older people. The D score is the difference between the averages of response latencies between reversed conditions divided by the standard deviation of response latencies across the conditions (Greenwald et al., 2003). PSIAT-Age data were excluded for participants accordingly with three pre-established criteria (Cvencek et al., 2011): a) ≥10% of responses faster than 300ms; b) error rate of ≥35%, or c) average response latency 3 standard deviations above the mean response latency for the whole sample. Based on these criteria, four participants (3.70%) were excluded and 34 (31.48%) participants were not able to complete the PSIAT-Age (due to cognitive limitations or to lack of motivation) leaving, therefore, a total of 70 participants considered for analysis. Means (with standard deviations in parenthesis) of pre-schoolers' time (milliseconds) and error rate were 4019.44 (2285.72) and 9.78 (7.67), respectively. We performed a one-sample t-test to compare pre-schooler's mean D score against zero (no bias). An effect approaching conventional significance was found, $M = 0.06$, $SD = 0.29$, $t(69) = 1.64$ $p = .053$ (one-tailed), $d = 0.20$, consistent with the presence of implicit ageism.

Evaluative forced choice task

Preschoolers showed an explicit preference for younger faces instead of older ones, $M = 0.12$, $SD = 0.23$, $t(88) = 4.85$, $p < .001$, $d = 0.51$.

Behavioral forced choice task

Although there was a tendency to choose the younger more than the older character (53.26%), this effect did not reach significance (binominal test, $p = .602$).

Stereotypical ratings of competence and warmth of older people (SCM)

Initial tests showed that 10 children were not able to distinguish between the younger and the older faces (seven children in the case of both the male and the female pair, one children just for the male pair and two children regarding the female one) and 22 children did not answer this question. These responses were coded as missing values. An analyses based on the remaining 76 children revealed that preschoolers rated older people higher in the warmth dimension ($M = 1.66$, $SD = 1.46$) than in the competence one ($M = 1.19$, $SD = 1.34$), $t(72) = -2.43$, $p = .017$, $d = -.28$ thus showing that preschoolers already share the "*doddering but dear stereotype*" of older people (Figure 3).

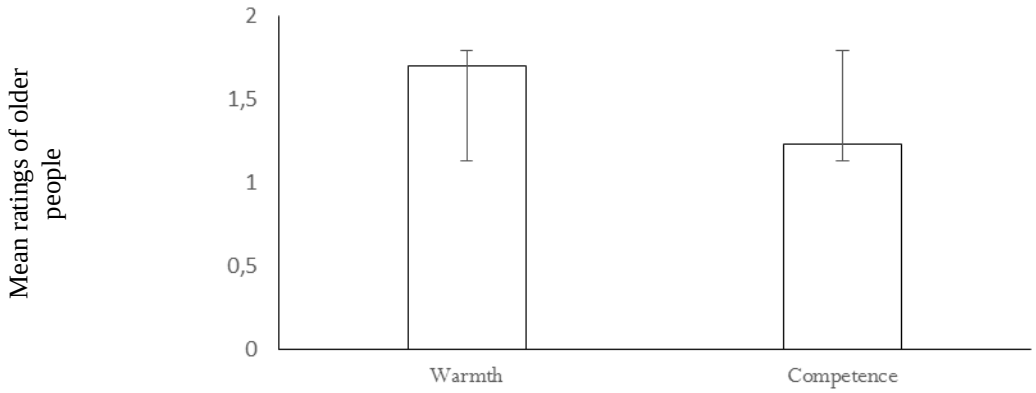


Figure 3. Preschoolers' stereotypical ratings of competence and warmth of older people. Error bars represent standard errors.

Correlations between measures

We also looked at the correlations between the measures (Table 2). The forced choice evaluative task was marginally negatively correlated with the stereotypical rating of warmth ($r = .-.24$, $p = .064$). These results suggests that the more children showed preference for older faces, the more they rated older people higher in the warmth dimension. In addition, the stereotype rating of warmth was positively correlated with the stereotype rating of competence ($r = .32$, $p = .006$).

Table 3. Correlations between the measures used in Study 1

Variables	M	SD	1	2	3	4	5	6	7
1. Forced choice behavioral task	0.53	.50	-						
2. PSIAT score	.06	.29	.07	-					
3. PSIAT reaction time	4019.44	2285.72	-.02	-.21*	-				
4. PSIAT error rate	9.78	7.67	.21*	-.07	.17	-			
5. Forced choice evaluative task	.12	.23	-.07	-.13	.09	-.23*	-		
6. Stereotypical rating of warmth	1.66	1.46	.01	-.02	-.09	-.17	-.24^{+}	-	
7. Stereotype rating of competence	1.19	1.34	.02	.06	-.16	-.21	-.11	.32**	-

*p < .05 **p < .01 $^{+}$p < .07

Discussion

Pre-schoolers showed explicit bias against older people with children as young as 4 years old showing a clear preference for younger adults' faces in comparison with those of older adults (evaluative forced choice task). However, and contrary to H1, they did not show a significant behavioral preference for younger adults.

Consistent with H2 the analyses of the PSIAT-Age revealed that children also showed implicit age bias, although at a marginal level of significance.

Also in line with the predictions (H3), preschoolers rated older adults more favourably in the warmth than in the competence dimensions, thus revealing their agreement with the paternalistic "*doddering, but dear*" sterotype of older people (Fiske et al., 2002).

Unlike studies where the Preschool Implicit Association Test was used to assess children's gender attitudes (e.g. Cvencek et al., 2011), in the present study this implicit measure was not correlated with the forced choice evaluative task (explicit measure). This dissociation between explicit and implicit measures is, however, in line with previous

findings in studies assessing racism with preschoolers (e.g. Quian et al., 2015), with children older than 6 years of age and even with adults (e.g. Dunham, Baron & Banaji, 2006).

Regarding our exploratory analyses of correlations between measures, we found that the more the children rated older people higher at the warmth dimension, the more they showed preference for younger faces in the forced choice evaluative task, and that both the stereotype ratings of competence and warmth are positively correlated.

Overall, these results are in line with our hypotheses that children as young as four years old already know the stereoype associated with older people and share an explicit preference for younger people. Results are stronger in the explicit than in the implicit measures of ageism which may indicate that the negative associations with older people are not yet strongly established, thus limiting their automatic activation (Degner & Wentura, 2010). Regarding this issue, Quin and colleagues (2015) suggested that implicit and explicit bias may be influenced by different kinds of social experience. More specifically, they hypothesized that implicit bias may be mainly influenced by children's direct contact with the attitude object whereas explicit bias may derive from the socialization process.

In the next study, our goal was to explore the pattern of explicit and implicit ageism in children at school ages.

Study 2

Building on Study 1, Study 2 explores the pattern of explicit and implicit ageism in first and fourth graders. For these age groups we expect different patterns for explicit and implicit ageism development. We expect first graders to show both explicit and implicit ageism, but fourth graders to show ageism only at the implicit level. Hypotheses for this study are as follows:

Hypothesis 1 (H1) Children of both age groups will show implicit ageism on the Age Preschool Implicit Association Test.

Hypothesis 2 (H2): Children of both age groups will show the "*doddering but dear stereoytpe*" pattern by rating older people higher on the warmth than on the competence dimension.

Hypothesis 3 (H3): First graders will show higher levels of explicit ageism than fourth graders. Specifically, compared with fourth graders, first graders will be more likely to choose younger characters both in the evaluative and behavioral forced choice tasks.

Method

Participants

Participants were 100 elementary school students in a deprived area in Lisbon. The sample was comprised of two age groups: 50 first graders with an age between 76 and 109 months (M = 84.78, SD = 7.12, 30 boys and 20 girls) and 50 fourth graders with an age between 113 and 165 months (M = 123.52, SD = 10.34, 29 boys and 21 girls). Although the most part of the students in the school were Portuguese, 19.2% of them had at least a parent with a different origin (School's educational project, 2015-2018).

Measures

In Study 2 we used the same measures as those described in Study 1.

Age Preschool Implicit Association Test. The same procedure as in Study 1 was used. As a precautionary pilot stage we conducted sessions with three children from the first grade and three from the fourth grade to check that the PSIAT-Age (originally developed to be used with preschool children) was suitable to be used with elementary school students. Although some of the children were not able to finish this task, overall the PSIAT-Age appeared to be an adequate procedure to be used within this context. Moreover, by applying the same measure as the one used in Study 1, we were able to compare the results of the three age groups: pre-schoolers, first graders and fourth graders. No children found the task tiring or too easy.

Stereotypical ratings of competence and warmth of older people (SCM). The same items were used to measure perceived warmth and competence of older people. Both these scales revealed adequate psychometric qualities for both first graders (Cronbach's α_{warmth} = .75, Cronbach's $\alpha_{competence}$ = .81) and for fourth graders (Cronbach's α_{warmth} = .74, Cronbach's $\alpha_{competence}$ = .68).

Procedure

Study 2 followed the same ethical and methodological procedures as Study 1. Most children did not express tiredness or desire to curtail the session. They appeared engaged and motivated while performing the tasks.

Results

Age Preschool Implicit Association Test (PSIAT-Age)

Three children from the first grade and one child from the fourth grade were not able to finish the PSIAT-Age due to health constraints (n=2) and disciplinary problems (n=2). Therefore, those four children's scores were not considered in the further analyses. Means (with standard deviations in parenthesis) of first graders' time (milliseconds) and error rate

were 2112.46 (663.08) and 4.77 (4.90), respectively. Fourth graders' means (with standard deviations in parenthesis) of time (milliseconds) and error rate were 1361.41 (283.81) and 2.37 (2.13).

One-sample t-tests indicated that, when considered individually, implicit bias against older people was shown by both first, (M = 0.12, SD = 0.27), $t(46) = 3.04$, $p = .004$. $d = 0.44$ and also fourth graders, (M = 0.16, SD = 0.26), $t(48) = 4.33$, $p < .001$, $d = 0.62$. Moreover, in line with our hypotheses, no significant differences were found between the two groups, $t(94) = -0.76$, $p = .447$.

Forced choice evaluative task

Both age groups showed a greater preference for younger faces than for older ones. Moreover, first graders showed a greater bias (M = 0.27, SD = 0.23) than the fourth graders (M = 0.10, SD = 0.33), $t(97) = 3.00$ $p = .003$, $d = .60$.

Forced choice behavioural task

Fourth graders showed a greater preference for the older character (71.7%) than did the first graders (50%), $X^2 (1, N = 96) = 4.73$, $p = .030$.

Stereotypical ratings of competence and warmth of older people (SCM)

Just one child was not able to distinguish between the younger and the older faces regarding the female pair and 11 children did not answer these questions. The analyses were done with the remaining 88 children. We conducted a Mixed ANOVA with 2 (SCM: warmth or competence ratings) as a within-subjects factor x 2 (Age group: first and fourth graders) as between-subjects factor (Figure 3).

There was a significant main effect of participants' age group, $F(1,86) = 5.64$, $p = .020$, $\eta_p^2 = .062$. Means (with standard deviations in parenthesis) of first and fourth graders were 1.92 (1.69) and 2.51 (1.59) respectively.

There was also a significant main effect of the SCM dimension, $F(1, 86) = 55.13$, $p < .001$, $\eta_p^2 = .391$. Means (with standard deviations in parenthesis) of the warmth and the competence dimensions were 2.85 (1.41) and 1.60 (1.48) respectively.

However, these main effects were qualified by a significant interaction effect between participant's age group and the warmth and competence ratings, $F(1,86) = 7.19$, $p = .009$, $\eta_p^2 = .077$. This effect indicated that the ratings in the SCM dimensions differed between the first

and fourth graders. Follow-up tests showed that fourth graders (M = 3.35, SD = 1.12) rated older people higher in the warmth dimension compared to first graders (M = 2.31, SD = 1.51), $F(1, 172) = 11.97$, $p < .001$. However, the differences between the ratings in the competence dimension were not significant between the first (M = 1.52, SD = 1.57) and the fourth (M = 1.67, SD = 1.42) graders, $F(1,172) = .25$, $p = .618$. Furthermore, the largest differences were found within fourth graders' ratings on the warmth and the competence dimensions, $F(1, 172) = 32.60$, $p < .001$, compared with first graders, $F(1.172) = 6.56$, $p = .011$.(Figure 4).

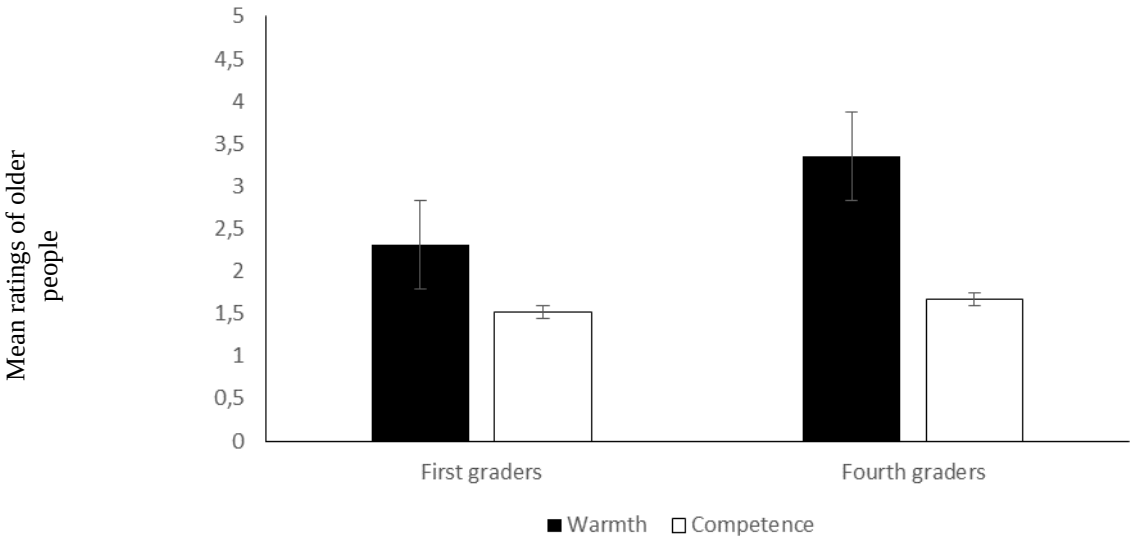


Figure 4. Stereotypical ratings of competence and warmth of older people. Error bars represent standard errors.

Correlations between measures

Exploration of the correlations (Table 3) also revealed significant relationships between the variables.

The measure of forced choice evaluative task was negatively correlated with the forced choice behavioral task (r = -.23, p = .024) and with the stereotypical rating of warmth (r = -.36, p = .001). These findings suggest that the more the children choose the older faces in the forced choice evaluative task, the more they choose the older character in the forced choice behavioral task and rate older people higher in the warmth dimension.

Finally, the stereotypical rating of competence was positively correlated with the stereotypical rating of warmth (r = .38, $p < .001$).

Table 3. Correlations between the measures used in Study 2

Variables	M	SD	1	2	3	4	5	6	7
1. Forced choice behavioral task	.60	.49	-						
2. PSIAT score	.14	.27	.03	-					
3. PSIAT reaction time	1729.11	629.31	-.17	.25*	-				
4. PSIAT error rate	3.54	3.92	-.11	-.18	.29**	-			
5. Forced choice evaluative task	.18	.30	-.23*	.03	.25*	-.03	-		
6. Stereotypical rating of warmth	2.83	.14	.20	-.03	-.47**	-.19	-.36**	-	
7. Stereotypical rating of competence	1.60	.16	.17	.04	-.18	-.05	-.21	.38**	-

*p < .05 **p < .01

Discussion

In line with our predictions, in Study 2 we found a different pattern of results when implicit and explicit measures were used with the two different age groups. More specifically, consistent with hypothesis H1, children from both age groups showed implicit ageism on the PSIAT-Age. Similarly, in line with our stereotype content model assumption (H2), children from both age groups endorsed the "*doddering but dear*" stereotype. In addition, older children revealed a deeper internalization of this stereotype by rating older people significantly higher in the warmth dimension compared with younger children. Conversely, older children expressed less explicit bias than younger children (H2), by revealing a greater preference for the older character on the behavioral measure (H3).

Overall, results from Study 2 are concordant with our assumption that as children age they become more strategic in their expressions of prejudice. Although older children showed

less explicit bias than younger children, they continued to show more implicit and subtle forms of ageism.

General Discussion

In the present research we found that ageism exists even among preschool children and that there is a developmental pattern through childhood. As hypothesized, and shown for the first time in the literature, Study 1 revealed that children as young as 4 years old showed implicit bias against older people and were already aware of the *doddering but dear stereotype* (SCM – Fiske et al. 2002). Additionally, also in line with our predictions, preschoolers showed a clear explicit preference for younger faces compared with older ones. This study represents a meaningful contribution to the literature on ageism by showing, for the first time, that children at such an early age already hold both explicit and implicit biases against old age.

In Study 2 we examined the hypothesis that first graders and fourth graders would show different expressions of ageism depending on the type of measures used. Consistent with the implicit bias hypothesis, both age groups showed ageism on the PSIAT-Age and both also rated older people higher on the warmth than on the competence dimension. However, a different pattern of results was found when explicit measures were used. In line with our hypothesis, older children showed less explicit ageism than younger children. Overall, results from the two studies are consistent with the hypothesized developmental pattern of ageism.

On one hand, when implicit measures were used preschoolers showed less ageism than older children. Preschoolers showed only mild automatic prejudice against older people, whereas older children (first and fourth graders) showed stronger and consistent implicit bias. Study 1 also indicated that although preschoolers already know the stereotype about older people, they have not yet strongly internalized it (PSIAT-Age), making implicit bias less obvious. The awareness of this paternalistic mixed stereotype becomes stronger as children age and seems to be well-established at late childhood (fourth grade). These findings are consistent with the assumption that stereotypes about older persons become internalized over time (Levy, 2009).

On the other hand, when explicit measures were used, it was first graders who showed more ageism, with this explicit bias being lower amongst fourth graders. This is in line with the pattern of ethnic, racial and national prejudice (Raabe & Beelmann, 2011) in which the

decrease of prejudice also occurs between middle and late childhood but only in studies using explicit measures.

Overall, our results suggest that explicit and implicit bias follow different developmental trends. Olson and Dunham (2010), propose that such differences may reflect the rise of metacognitive control strategies and executive skills that allow older children to have a deeper awareness and control over their mental processes (Olson & Dunham, 2010). This includes the activation of self-presentation concerns, which may control their expression of bias. Younger children (first graders) are at an initial stage of the development of the executive control mentioned above, not having yet the self-reflection skills nor the ability to evaluate their own or others' mental states (Olson & Dunham, 2010). Conversely, the older children in Study 2 revealed less explicit bias by revealing a greater preference for the older "Up" character. We can assume that older children, more cognitively sophisticated, may be aware of the existence of an unprejudiced social norm (França & Monteiro, 2004), therefore suppressing their expression of bias. Although this is a still an understudied issue, some studies suggest that there is a social norm not to be prejudiced against older people. For instance, Crandall, Eshleman and O'Brien (2002) showed that the group of older people was one of the less acceptable prejudice targets occupying the 11º position in a list of 105 potential prejudice targets. Moreover, in this study, the normative acceptability for expressing prejudice toward these social groups was highly correlated with the overt prejudice expressed towards them. Moreover, there are significant disjunctions between overtly expressed prejudice and the levels actually experienced by groups that face 'benevolent' forms of prejudice such as ageism (Abrams, Houston, Van de Vyver, & Vasiljevic, 2015; Bratt, Abrams, Swift, Vauclair, & Marques, 2018).

Interestingly, there was a consistent non-correlation between more implicit and explicit forms of ageism across the different age groups. This suggests that these processes operate through different routes across development. This is in line with a study where the Child-Age-Implicit Association Test (paper format version) and explicit measures to assess ageism in children did not correlate (Babcock, MaloneBeach, Hannighofer & Woodworth-Hou, 2016). Similarly, a meta-analysis of age bias amongst adults revealed only a small correlation between the IAT score and self-reported attitudes (Hofmann, Gawronski, Gschwendner, Le & Schmitt, 2005). According to these authors, the correlation between the IAT and explicit measures is moderated by: a) the spontaneity of self-reports; b) the conceptual correspondence between measures and c) method-related characteristics of the

IAT. It is possible that in our study the measures used were conceptually very different, thus turning the correlations between more implicit and explicit forms of ageism impossible to emerge.

Our study has some limitations that should be considered when interpreting the results. Firstly, the participants may not be representative of the Portuguese population in the sense that the participating schools are located in deprived areas in the city of Lisbon. Secondly, the PSIAT-Age should be interpreted carefully, considering its limitations. Specifically, as a category-based measure, the IAT scores may or may not be related to automatic negative reactions toward individual exemplars of that category. In addition, IAT effects could be related to associations between concepts in a non-exclusive way and other factors can influence IAT effects such as stimulus salience, familiarity and perceptual fluency. These limitations make it difficult to distinguish whether an IAT score more strongly reflects personal prejudice or the internalization of societal views (Degner & Wentura, 2010).

Future studies aiming to explore the development of ageism along childhood could benefit from using a larger and more heterogeneous samples and also extending the age range to adolescence. In addition, a longitudinal cohort segment study spanning preschool to adolescence would further clarify the developmental progression at the individual level.

Future research in this domain should also explore the existence of an anti-ageist social norm among children which may help to explain the pattern of results found. Evidence from the European Social Survey (ESS) from Round 4 (European Social Survey Round 4 Data, 2008) revealed that 61% of the respondents in the UK considered age discrimination as a “very” or “quite” serious issue. Moreover, this perception was found to be widely shared by the youngest group of respondents (those with an age below 30 years old) (63%) (Abrams & Swift, 2012). Along with the relevance attributed to ageism, this survey also covered the internal and external motivation of individuals to behave without prejudice based on one´s age. In countries in which the anti-ageist social norm was more salient, older people reported a smaller perception of being a target of this kind of prejudice (Vauclair, Lima, Abrams, Swift & Bratt, 2016). These findings highlight the relevance of promoting age-inclusive social norms in order to fight ageism.

Overall, the present research is the first to have employed a consistent set of measures of both implicit and explicit age bias, as well as a behavioral measure, and across early to middle childhood it has revealed new findings and confirmed hypothesis regarding the existence and development of age prejudice in children. This evidence should be taken into

account when developing programs aiming to influence children's views about older people and the ageing process. This is important for two main reasons: first, it will facilitate the promotion of positive intergenerational relationships; second, it will support the reduction of the internalization of negative age stereotypes during childhood which tend to become self-stereotypes as children age, having a negative impact on both a cognitive and physical level (Levy, 2009).

We hope that the present research therefore contributes to a deeper understanding of the development of children's attitudes regarding older people, and can inform efforts to promote a more inclusive society - a society for all ages, from childhood to old age.

Chapter 4

WHAT DO CHILDREN THINK ABOUT AGEING? – A THEMATIC ANALYSIS

Abstract

This qualitative study aimed to explore the content of representations held by children regarding older persons and their future ageing self and also the development of ageism along childhood. Eighty two elementary school children from the 1st (N = 39, M_{age} = 83.18 months; *SD* = 4.93 months) and 4th (N = 43, M_{age} = 122.56 months; *SD* = 8.89 months) grades were interviewed based on "The Children's Attitudes Toward the Elderly Scale" (CATE). There were identified positive and negative themes about children's attitudes regarding older persons and their future ageing self by considering their thoughts, feelings and (intentional) behaviors regarding these two constructs. Results showed that children from both age groups have more negative attitudes when thinking about their own ageing process than when reasoning about older persons in general. According with the developmental pattern of ageism suggested in Chapter 2, fourth graders were more positive when envisioning their future ageing self and when thinking about older persons than first graders.

Introduction

In the previous chapter we found a developmental pattern of ageism along childhood by using both explicit and implicit measures. Building upon our findings, we aim now to get a deeper understanding about the ageing stereotypes held by children at different developmental stages. In this chapter, we applied a qualitative approach – thematic analysis - to explore children's attitudes regarding older persons and their future ageing self. The choice of this method was based on its many advantages such as: flexibility, possibility of producing unexpected insights, identification of similarities and differences across the data set and potential for outlining key information of a large body of data (Braun & Clarke 2006). These characteristics make thematic analysis suitable to explore children's views and to look for potential differences between children from different age groups. Thematic analysis has been used to assess children's attitudes regarding different social themes such as obesity (Fielden, Sillence & Little, 2011) or health related behaviors (e.g. Healy, Msetfi & Gallagher, 2013).

To the best of our knowledge, this is the first study using thematic analysis to explore children's views on ageing.

What can we expect from children's views on ageing?

Stereotypes about older persons and the ageing process often include references to death, incapacity and loss of social status which have been pointed out as antecedents of

ageism (Marques et al., *in prep*). In this regard, the terror management theory posits that death represents a threat to human beings leading them to continuously strive to manage their fears and anxiety (Greenberg, Schimel & Martens, 2002). Building upon this theory, Martens, Goldenber and Greenberg (2005) propose that ageism derives from the idea that older persons represent our future involving three psychological threats: a) older persons remind us about our own mortality; b) ageing signifies a continuously deterioration of the physical body; c) older persons can compromise one's self-esteem which plays a crucial role in buffering the death-related anxiety. Regarding this latter point, negative stereotypes shared by society usually associate older persons with the loss of socially valued abilities (e.g. competence) which is in line with the "*doddering but dear*" stereotype proposed by the Stereotype Content Model (Fiske et al., 2002). According to this theoretical framework, older persons are usually viewed as friendly (e.g. sincere, friendly, good-natured) but incompetent (dependent, lacking skills, not confident) and, consequently, as a low-status social group.

In the specific case of the content of ageing stereotypes hold by children, qualitative studies have been proven to be particular comprehensive by covering the cognitive, affective and/or behavioral dimensions of children's attitudes (see our literature review in Chapter 2).Overall, studies using a qualitative approach or a blend of both quantitative and qualitative items, revealed children's mixed or negative attitudes regarding older persons and their own ageing process. For instance, in a study where children were shown four pictures of one man drawn to represent four different stages of life (ages 20-35, 35-50, 50-65, and 65-80) combined with a structured interview, children were able to identify the oldest person mostly by distinctive physical features such as wrinkles and described him as passive, helpless and dependent upon others. Most children were negative when envisioning themselves as older persons by anticipating to become sick and close to death. These negative attitudes regarding children's future ageing self were more evident among younger children (from nursery to fourth grade) than older children (fifth and sixth grades) (Seefeldt et al., 1977).

In another study, prompts were presented to children and they were asked to write answers (e.g. "When I am old I…"). Results showed that the majority of youngsters (from 6º, 7º and 8º grades) described older persons based on physical features such as wrinkles, white hair or being bald and as being less active than younger persons. In this case, participants showed a much more positive view of their future ageing self in comparison to their views about others' ageing process, envisioning themselves as being healthy, active, engaged in social activities and becoming grandparents (Lichtenstein et al., 2003).

Children's views on ageing were also assessed through the use of a word association task (brainstorm of words associated with the concepts of *young vs. old*) and an attitude-toward-ageing interview. Here, both first and four graders associated older persons with words with a negative content referring to both physiological (e.g. "weak", "sick") and mental ("bored", "sad", "grumpy", "unhappy") characteristics and also words indicating a low level of activity (e.g. "rest", "retired"). Conversely, children ascribed positive attributes to younger persons describing them as "active", "happy", "healthy" and "playful". When asked about their attitudes regarding older persons by means of an interview, children also described older persons in a negative manner, as being dependent upon others due to their frailty and sickness and therefore performing sedentary or passive activities such as sleeping, lying on the bed and watching TV. Moreover, children also revealed negative attitudes regarding the ageing process, anticipating a loss of capacity ("the body quits working") and expressing anxiety about the inevitability of death (Laney et al., 1999).

The affective dimension of children's attitudes toward older people has been mostly assessed through the human figure drawing. In some cases, interviews were used as a complementary methodology, allowing to assess children's knowledge and feelings about the person drawn (e.g. Lichtenstein et al., 2005).

Nevertheless, less in known about Portuguese children's representations of older persons. In a study where children aged 8 and 9 years old were asked about positive and negative ageing stereotypes my means of a questionnaire, it was found that they represented older persons as sick, slow, mentally ill, poor, isolated, depressed and without a romantic relationship. Conversely, they were also ascribed positive stereotypes such as friendly, trustworthy and "eternal youth", outlining a multidimensional representation of older persons (Dias & Miguel, 2012). In another qualitative study, a sample of Portuguese children aged 6 to 10 years was interviewed about their representations of older persons. Results showed that older person's representations included mainly ageing physical characteristics (wrinkles, white/grey hair), inactivity (older persons do not work) and children expressed willingness to play with older persons, listening stories from them and also help the in daily activities (Sousa et al., 2010).

In the literature review carried out in Chapter 2, we identified "Children's Attitudes Toward the Elderly" (CATE) (Jantz et al., 1977) as a measure covering the three components of children's attitudes and composed by both quantitative and qualitative sub-tests. Children's answers were analyzed mainly quantitatively, considering the influence of children's grade

level, sex, race and the housing type. As far as we know, data from CATE had never been analyzed qualitatively in a systematic way.

Goals of the present study

In this chapter, our goal is to further explore the specific content of the representations held by children at the cognitive, affective and behavioral levels. We adopt a qualitative method, analyzing the views of children regarding older persons and their future ageing self. The use of a qualitative approach will allow us to get a deeper understanding about children's perspective on ageing.

Moreover, we also aim to get more clarity into the development of ageism across childhood by comparing different age groups. More specifically, we aim to explore the development of ageism in two age groups: first graders and fourth graders. The choice of these age groups was based on the work recently developed by our team (see Chapter 3) who proposed a developmental pattern of explicit and implicit bias. In this study, it was found that fourth graders revealed less ageism than first graders but just on an explicit level. In light of these findings, we also expect to find more positive attitudes regarding older people among older children. Furthermore, this study moves beyond previous research by including the future ageing self as a distinctive construct, for which we expect older children to reveal more positive attitudes about their future ageing self than younger children.

Method

Participants

Participants were 82 elementary school children from Lisbon. The sample included students from two different grades: 39 first graders (M_{age} = 83.18 months; *SD* = 4.93 months) and 43 fourth graders (M_{age}= 122.56 months; *SD* = 8.89 months). Although the most part of the students in the school were Portuguese, 19.2% of them had at least a parent with a different origin (School's educational project, 2015-2018).

Interviews

Ethical approval for this study was granted by the first and second authors' university. Moreover, the study's proposal was also presented to the director of the school and also to the professors of the classes where the data was collected. Prior to the study, written parental consent was obtained (Appendix C).

Children were interviewed individually in a separate quiet room outside the classroom. The experimenter told them they would be asked several questions about "persons with different ages". The interviews were carried out by the first author. Four participants were not able to finish the interview due to time constraints (n=3) or to children's physical ailments (n= 1).

The interview guide was based on "The Children's Attitudes Toward the Elderly scale" (CATE) (Jantz et al., 1977). Based on our goals described above, we selected six qualitative questions from two sub-tests to elicit children's answers (see Appendix D). In the first sub-test –"Word Association" – children were asked "What can you tell me about older people?". In the second sub-test – "Pictures Series" - children were shown 4 visual representations of older and younger people to elicit responses to five questions pertaining their concept of older people: "1. Which person do you think is the oldest? Why?; 2. What things would you help this person do?; 3. What things could he help you do?; 4. Which of these people would you prefer to be with?; 5. What kinds of things could you do with that person?". The "Pictures series" sub-test also included one question tapping children's expectations regarding their own ageing process: "How will you feel when you reach this age?". Most children seemed motivated while answering the questions. However, three first graders and one fourth grader were not able to finish the interview due to health (n=1) or time (n=3) constraints. Nonetheless, the available data from these participants were considered for the analysis.

Procedure

We used thematic analysis as a method for identifying, analyzing and reporting patterns (themes) within data (Braun & Clark, 2006, p. 79).

The interviews were digitally recorded, transcribed verbatim and then analyzed using NVivo 12 Pro, following the steps by Braun and Clarke (2006): (1) familiarizing with the data – repeated reading of the data in an active way (initial search for meanings and patterns); (2) generating initial codes – production of initial codes from the data in a systematic fashion; 3) Searching for themes – codes were sorted and collated into potential themes; 4) Reviewing the themes – themes were reviewed and refined considering the coded extracts and the entire data set in order to generate a thematic map; 5) Defining and naming themes - themes were defined and refined by identifying what aspect of the data each theme captures as well as by verifying if it fits into the broader overall analysis. Two examples of transcribed interviews from first and fourth graders can be found in Appendix E.

The themes were identified for two constructs: children's attitudes regarding older persons and their future ageing self.

After conducting an inductive thematic analysis, we employed a deductive approach in light of the tripartite model of attitudes (Eagly & Chaiken, 2007) by coding all the extracts of the data set into three aspects: cognitive, affective and behavioral. Furthermore, all extracts were also coded according to their valence as negative, neutral or positive.

In order to assure the accuracy of the data gathered and, thus, the trustworthiness of the qualitative research, two procedures were adopted: the internal validity and inter-judge reliability (Vala, 2005). Regarding the internal validity, all the unit analysis were classified into a category (exhaustiveness criteria) and were exclusively classified into one single category (exclusivity criteria). With respect to the inter-judge reliability, agreement was reached based on a dictionary of categories and on 20 interviews (10 from first graders and 10 from fourth graders) randomly selected. The interrater agreement was 0.66 (K = 0.66) which is considered as "substantial" (Landis & Koch, 1977).

Results

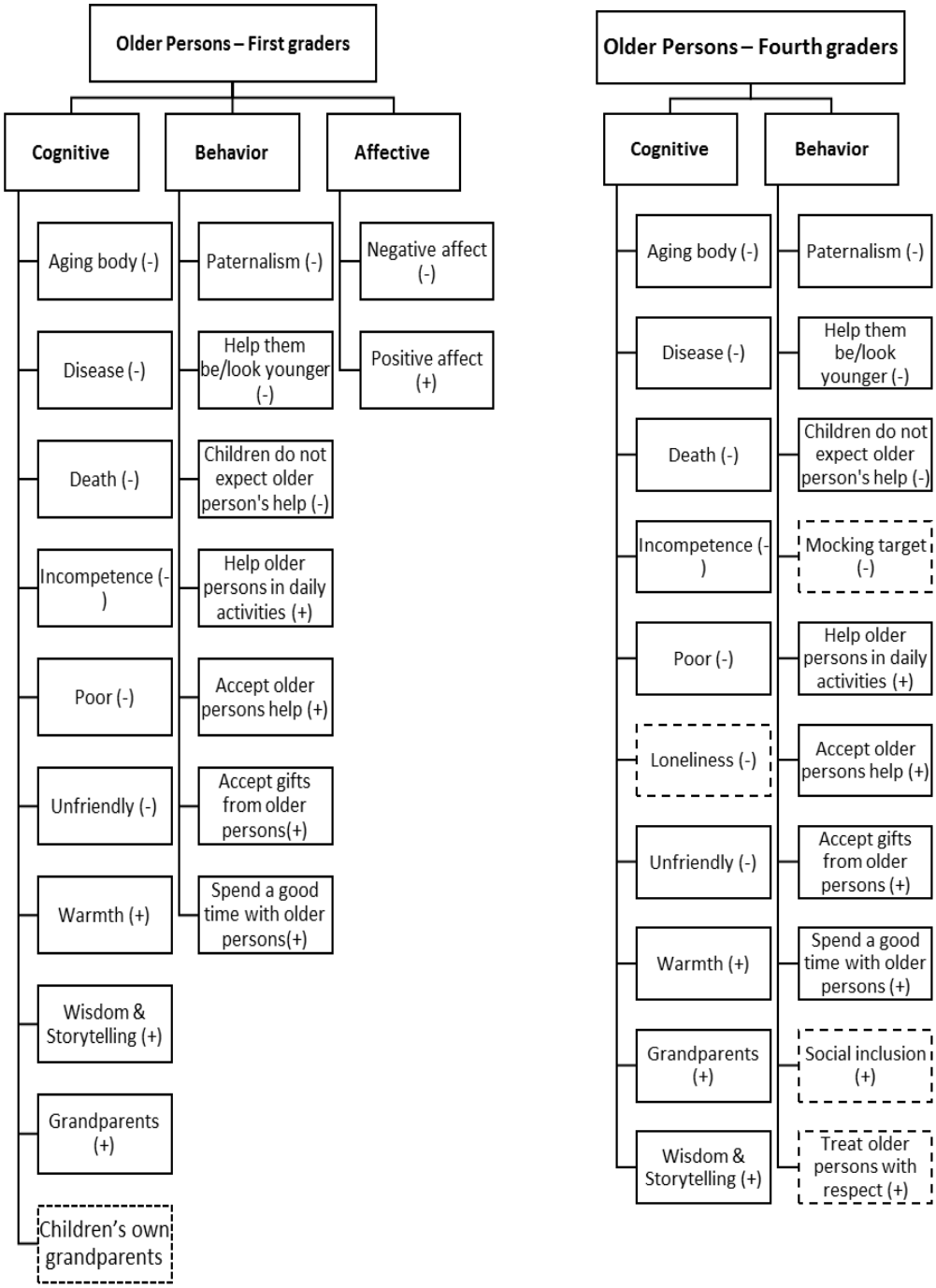
Findings from the present study are organized in two sections: section 1 - children's attitudes regarding older people; and section 2 – children's attitudes regarding their future ageing self. In each of these, we discuss the themes that emerged in light of the tri-partite model of attitudes. Children's attitudes toward ageing included beliefs and stereotypes (cognitive aspect), feeling (affective aspect) and behavior or intentional behavior (behavioral aspect). The description of the themes is organized according to their valence within each aspect.

For space considerations, representative quotes of these aspects of children's attitudes can be found in Tables 4-5.

Children's attitudes regarding older persons

Overall, children from both age groups revealed mixed attitudes regarding older persons (Figure 5). Most negative themes were those which tapped into the cognitive aspect. Conversely, the most positive themes emerged from the behavioral aspect and among fourth graders.

Figure 5. Themes, aspects and valence of children's attitudes regarding older persons. Full line rectangles represent similar themes in both age groups. Dashed rectangles represent themes that only emerged for one age group.



Cognitive aspects. Most of the themes tapping into the cognitive aspect were negative in content. They included stereotypes and misconceptions about older persons, classifying them as ill, close to death, incompetent, poor, lonely and unfriendly. Conversely, only three positive themes related with older persons' interpersonal relationships were identified. In this case, older persons were described as warm, wise, storytellers and grandparents.

Negative cognitive aspects. A central theme in children's definition of older persons is their **aging body**, referring to salient physical features that differentiate older persons such as wrinkles, white/grey hair and beard. Based on these distinctive features, older persons were frequently described negatively as being ugly, sad, mean or revealing physical deterioration related to old age (e.g. lack of hair, teeth and eyebrows). Interestingly, participants from both age groups tended to perceive the oldest person as bigger than the younger ones. For example, a first grader noted, "He has thick lips and big eyes, nose, body, head and eyebrows" (P40). Furthermore, although the four pictures depicted persons with the exactly same clothes, children regarded the older person's clothes as being bigger, darker and old-fashioned. In addition to describing salient physical features, children made an explicit association between older persons and **disease**. While some of them directly expressed that older persons are sick, most participants referred to hospitalization, medical drugs and organ failure. Besides, some of them referred disease as something that differentiates older persons from younger ones: "Older people sometimes require more attention from others, more medical care and need more attention for them; younger persons do not need help, they can do everything they want to, they have their extended future life, they do not need help".(P83, 4th grade). In addition to referring physical deterioration and frailty, children also mentioned **death** as something imminent at old age. When thinking about the inevitability of death, children highlighted older person's need to enjoy their remaining lifetime by doing everything they want to. A fourth theme involved children's perception of older persons as **incompetent** and goes beyond recognizing older people's limitations to encompass their incapacity of performing activities effectively. Children's perception of older persons as incompetent was based mainly on salient visual features such as health aids (e.g. glasses, crutches and wheelchair), evoking their need for help: "Older persons need help to cross the road."(P30, first grade). Furthermore, older persons were frequently described as incapable, inactive, forgetful, sleepy, slow, with less energy and unable to work anymore. Children also described older persons as **poor**, referring that they do not have money to buy things and have less power of purchasing compared to younger adults.

At social level, only fourth graders mentioned that older persons are often **lonely**, highlighting their lack of friends and relatives. These children referred that older persons live alone and were even abandoned because of their age. Some children explicitly referred that older persons are **unfriendly** mainly by describing them as mean and grumpy. In this theme, children described social interaction scenarios to illustrate that older persons are rude, aggressive and even dangerous to children.

Positive cognitive aspects. Conversely, children associated older persons with **warmth** mainly by describing them as good, happy, friendly, funny, kind, altruistic, sincere and affectionate. When elaborating about this theme, children often referred to older persons' social interactions, associating their kindness to their role as grandparents: "A good person and grandmother."(P27, first grade). The **representation of older persons as grandparents** was indeed a theme in children's discourse overall. When elaborating about older person's characteristics, children often mentioned their role as grandparents in a neutral (associating it with aging physical features) or positive (e.g. referring that they are tender with their grandchildren) way. In some cases, children referred to **their own grandparents** as an example of an older person, mentioning both negative and positive aspects regarding them. Negative aspects included references to their grandparent's disease, incapacity and need for help as something typical at old age. Conversely, positive considerations encompassed references to children's daily activities with their grandparents, their interests and their storyteller role. **Wisdom and storytelling** was a crucial theme identified. This theme reflects children's representation of older persons as wise, intelligent and storytellers. Specifically, children referred that older persons "know many things" given their lifelong experience and enjoy sharing their knowledge with younger generations.

Affective aspects. Positive and negative affective themes emerged only among first graders.

Positive affective aspects. Some children explicitly reported a **positive affect** regarding older persons, mainly by highlighting positive intergenerational relationships (e.g. children and older persons usually play together).

Negative affective aspects. Conversely, other children affirmed not liking older persons just because of their age. This **negative affect** was based on children's preference for younger adults as well as on negative attributes regarding older persons (e.g. "they are rotten").

Behavioral aspects. Children reported negative intentional behaviors regarding older persons such as paternalism, helping them look younger and not expecting older person's

help. While this subtle ageism was present in children from both age groups, fourth graders also explicitly referred to older persons as a mocking target.

However, most of children's intentional behaviors regarding older persons were positive in content. These intentional behaviors were based on children's interpersonal relationships with older persons such as helping each other in daily activities and spending a good time together. Moreover, fourth graders also referred their willingness to promote older persons' social inclusion and they also revealed to be aware about the social norm to treat older persons in a respectful way.

Negative behavioral aspects. The most common behavioral theme was **paternalism**. This theme reflects children's intentional helping behaviors towards older persons based on two main reasons: their incapacity and incompetence. Regarding the former, examples of these helping behaviors included: crossing the road, walking, helping them in daily activities (e.g. feeding them, helping them dress), giving them directions to assure that they do not get lost and advice regarding health issues. With respect to the latter, children expressed intention to help older persons not to do foolish things and even to get a job. Children's views of older persons as incapable and incompetent led them to **not expect help from older persons**. In this theme, children referred that they do not expect help from the oldest person presented just because of his age. In some cases, this negative expectation was underpinned on older person's ascribed limitations and frailty leading them to not be able to perform activities. Some children even compared the old target presented with the younger ones, saying that only the latter were able to help children. Children from fourth grade revealed negative views about ageing by expressing intention to **help older persons to be/look younger**. This theme encompassed children's intention to say to older persons that they were still young and also to promote a youthful looking (e.g. through physical exercise).

Only fourth graders explicitly referred to older persons as a **target of mockery** by saying that children use to make fun of them just because of their age. Despite taking responsibility for this behavior, children also recognized that possibly they will be also a target of this kind of discrimination when reaching old age.

Positive behavioral aspects. Children from both age groups revealed positive intention of **helping older persons in daily activities** such as housework (e.g. cooking, housecleaning) and going to the supermarket (e.g. carrying shopping bags). Some children also referred that they could help older persons in work activities such as construction, mechanics and agricultural activities. Alongside this prosocial behavior, children also referred that they could **accept older person's help** in several contexts, namely in housework (e.g. cooking), as

caretakers (e.g. helping in childcare) and in activities requiring older persons' specific skills (e.g. fixing toys and working with computers). Besides, children revealed willingness to **accept gifts from older persons** such as candies, food, toys and clothes. Children revealed willingness to **spend a good time with older persons** by describing several intergenerational activities such as playing, walking, drawing and talking. There were two behavioral themes that emerged only among fourth graders: "social inclusion" and "treating older persons with respect".

The theme of **social inclusion** encompasses older children's prosocial behavior of spending more time with the oldest person presented and provide him with positive social interactions (e.g.: by introducing to him persons to be with). Moreover, some children mentioned their willingness to help the oldest person presented to solve interpersonal conflicts that he could have within his family: "I could help him solve his problems. His daughter could be upset with him or something… I could talk to him and to his daughter as well in order to solve things out" (P71). Older children also revealed having the knowledge about the anti-ageist social norm. The theme of **treating older persons with respect** incorporates children's assumption that older persons should be treated in a respectful way given their age (e.g. not to treat badly older persons nor beat them).

Children's attitudes regarding their future ageing self

Children's attitudes regarding their future ageing self were mostly negative in their content (Figure 6). Most negative themes were those tapping into the cognitive aspect for both age groups. Nonetheless, fourth graders revealed a more differentiated perspective about their future ageing self, by anticipating positive interpersonal relationships with their relatives.

Cognitive aspects. Most of the themes tapping into the cognitive aspect were negative in content. In this regard, children from both age groups predicted to have an ageing body, to become ill, close to death and alone. The only positive cognitive theme emerged among fourth graders who anticipated becoming grandparents.

Negative cognitive aspects. A central cognitive theme was children's future **ageing body**. This theme encompassed physical characteristics usually associated with old age such as wrinkles or white hair. Most of the children described these physical features contemptuously by referring physical losses associated with the ageing process (e.g. lack of hair or teeth), stooped posture and even anticipated that they will become ugly. Besides physical deterioration, children also referred negative perspectives regarding their future

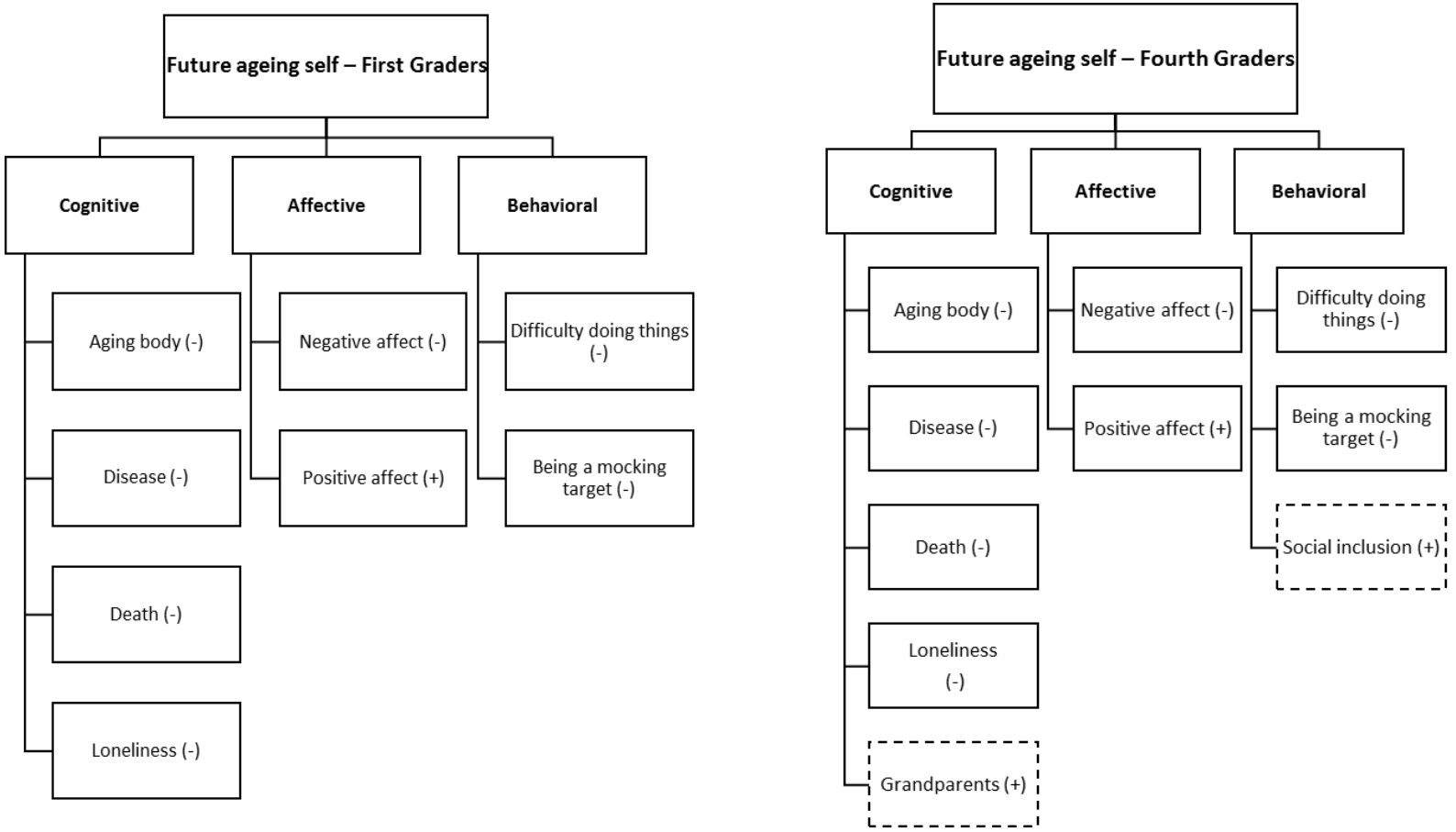


Figure 6. Themes, aspects and valence of children's attitudes regarding their future ageing self. Full line rectangles represent similar themes in both age groups. Dashed rectangles represent themes that only emerged for one age group.

health. The theme of **disease** encompassed children's anticipation of a reduced health status, hospitalization, pain and dependence on medical drugs. Alongside disease, children also revealed an association between old age and the closeness of **death**. In this theme, children mentioned death as something eminent and inevitable exclusively at old age. Some of them even referred that being old is already being "dying" based on physical deterioration. A fourth cognitive theme was **loneliness** involving children's negative prediction that they will feel lonely at old age. In this theme, children mentioned that they will lack relatives and friends mainly because they could have already died.

Positive cognitive aspects. Finally, only fourth graders highlighted their possible role as **grandparents** as a positive characteristic of their future self as older persons.

Affective aspects. Negative and positive affective themes about children's future ageing self emerged among both first and fourth graders.

Negative affective aspects. Most participants referred that they will feel bad and sad when reaching old age even to the point of wishing that not to happen at all. In this theme of **negative affect**, children explicitly denoted that they will not like to become old, predicting to feel upset, tired and bored at old age.

Positive affective aspects. Conversely, some participants anticipated that they will feel good in the future, regardless of their age. The theme of **positive affect** comprised children's prediction that they will feel happy when reaching old age mainly based on the success of their longevity. Some of them also highlighted the possibility of meeting other persons and even living with someone at this stage of life.

Behavioral aspects. Negative behavioral themes emerged among both age groups by children anticipating to have difficulties doing things and becoming a mocking target. The only positive behavioral aspect was referred by fourth graders who predicted they will spend a good time with their grandchildren.

Negative behavioral aspects. A central behavioral aspect was children's negative expectation that they will have **difficulty doing things** when reaching old age. When thinking about their future self, participants anticipated they will have physical and mental limitations and incapacity, becoming dependent on health aids (e.g. crutches, walking stick) and revealing less energy and a decreased ability to perform regular activities. Along with incapacity, participants also referred that they will not have an active life, predicting not be able to work anymore. A second behavioral theme found involved children's negative expectation that they will **be a target of mockery** at old age. This expectation was based on

children's experience seeing youngsters making fun of older persons, namely in a school context.

Positive behavioral aspects. Conversely, fourth graders anticipated having relevant social relationships with their relatives. The theme of **social inclusion** included children envisioning that, in the future, they will have positive social ties with their grandchildren, performing several activities together (e.g. taking a walk, playing, talking and sharing stories).

Discussion

The present research allowed us to get a deeper understanding about children's perspective on ageing.

Both age groups revealed negative stereotypes regarding older persons mainly by associating old age with decline. These cognitive themes included children's negative perceptions of older persons as ill, close to death, incompetent, poor, unfriendly and having an ageing body. Along with these themes, fourth graders also described older persons as lonely, pointing to their age as a reason for social exclusion and even "abandonment" by relatives. Conversely, positive themes also emerged among both age groups encompassing positive stereotypes about older persons such as warmth, wise, storytellers and grandparents. All these themes were based on older person's ascribed positive social skills.

Affective themes only emerged among first graders, encompassing both negative and positive affect towards older persons. Regarding the former, children referred not liking older persons due to their age. This negative affect was based on children's preference for younger adults as well as on negative attributions regarding older persons. With respect to the latter, some children expressed liking older persons, engaging in positive intergenerational activities with them. The emergence of affective themes only among first graders is in line with the developmental path of ageism proposed by Montepare and Zebrowitz (2012). According to this theory, in early childhood, children's attitudes regarding older persons are mostly expressed through affective reactions toward them.

Children's views of older persons as ill, incapable and incompetent led them to reveal paternalism, willingness to help them looking younger and also not expecting their help. These results are aligned with the Stereotype Content Model which advocates that older persons are widely perceived as a friendly but incompetent group, leading to feelings of pity such as the paternalism revealed by children in the present study (Fiske et al., 2002).

Whereas this subtle ageism emerged among both age groups, fourth graders explicitly referred that older persons are usually a target of mockery. This blatant discrimination is performed by children based solely on older persons' age. Conversely, most of the emergent themes tapping into the behavioral aspect were positive. These behavioral intentions were based on children's relationships with older persons such as accepting gifts from them, helping each other in daily activities and spend a good time together. In addition, fourth graders also referred an intentional behavior to promote older person's social inclusion and they also revealed being aware about the anti-ageist social norm according to which older persons should be treated in a respectful way due to their age.

Overall, we found that children have mixed attitudes regarding older persons. On one hand, the most negatives themes were the ones tapping into the cognitive aspect. On the other hand, the most positive ones pertain to children's behavioral intentions toward older persons. Both positive and negative affective themes only emerged among first graders. In line with our hypothesis, older children revealed more positive attitudes regarding older persons but only on themes covering behavioral intentions.

Children's attitudes regarding their future ageing self were mostly negative. Most negative themes were the ones tapping into the cognitive aspect of children's attitudes, encompassing their prediction to have an ageing body, to become ill, close to death and alone. The only positive cognitive theme emerged among fourth graders who anticipated becoming a grandparent. These results are concordant with previous findings that older children were more positive when envisioning their future ageing self than younger children (Seefeldt et al., 1977).

When thinking about their future ageing self, children from both age groups referred positive and negative affective themes. The negative affect theme included children's prediction that they will feel bad, sad, upset and bored when reaching old age. In fact, some of them even referred that they wish not to become old at all. Conversely, some children referred that they expect to feel good and happy in the future mainly due to the success of their longevity.

Regarding the behavioral aspect, children from both age groups anticipated to have difficulties doing things and also to become a target of mockery when reaching old age. The only positive theme was referred by fourth graders who predicted having positive ties with their future grandchildren, engaging with them in a lot of activities.

Overall, some similar negative themes emerged when analyzing children's attitudes regarding older persons and their future ageing self. Specifically, children perceived older

persons as frail, ill, dependent and close to death and those ageing stereotypes lead them to envision negatively their own future ageing self. This is in line with the Terror Management Theory, which posits that older persons are a threatening reminder about our own inevitable mortality (Martens et al, 2005).

In sum, our findings revealed that children have more negative attitudes when thinking about their own ageing process than when reasoning about older persons in general. Besides, according to our prediction, fourth graders were more positive than first graders when thinking about their future ageing self as well as when reasoning about older persons in general.

A possible explanation for these results is that older children revealed to be aware of the existence of an unprejudiced social norm (França & Monteiro, 2004), thus suppressing their bias.

These results are in accordance with our previous study (Chapter 3) using quantitative methods. In this study (Chapter 3) we showed that explicit ageism is higher in first graders and tends to decrease, as children get older. However, more implicit forms of ageism tend to be consistent or even increase in their expression (benevolent forms of ageism) in older children. Qualitative interviews (tapping into more explicit forms of ageism) seem to show this strategic expression of ageism amongst fourth graders, that become more aware of social norms not to be prejudiced and also reveal higher behavioral intentions to interact with older people than younger people.

As far as we know, the present research is the first to have used thematic analysis to assess children's attitudes regarding ageing. The use of this qualitative approach allowed us to get a deeper understanding about children's views on ageing by summarizing the key features of our data and allowing us to identify similarities and differences across both age groups (Braun & Clarke, 2006).

Moreover, in our analysis, we assessed children's attitudes regarding older persons and towards their own ageing process considering the three aspects of the tripartite model of attitudes. The analyses of each of these constructs individually allowed us to overcome a limitation previously identified in the existing literature about the overlap of these two different attitudinal constructs (see Chapter 2).

This study presents a limitation due to the qualitative methodology adopted. In fact, the use of the interview to assess children's attitudes may be dependent on children's comprehension and oral expression abilities. In our study, we tried to overcome this constraint

by using an adapted vocabulary to children's level of communication and by encouraging them to freely express their views.

Future studies should explore the existence of an anti-ageist social norm at a greater extent which may help to understand the different pattern of results along childhood.

We hope that the present research therefore contributes to a deeper understanding of the development of children's attitudes regarding older people and their future ageing process.

Table 4. Children's attitudes regarding older persons

Theme	Evidence – first graders	Evidence – fourth graders
Cognitive aspects		
Aging body	"He has a crumpled face… He has no teeth…. He almost has no hair or eyebrows."(P5)	"He has wrinkles, white and thinning hair, and a more used mouth. Oh, and he has tired eyes… Probably they have been used a lot during his life."(P55)
Disease	"I could take him to the hospital and he could use crutches."(P26)	"They already have a lot of diseases… They start to have hearing problems."(P56)
Death	"He has a sad face which means that he is almost dying…Someday he will die and that is not good because he can pass out and that is not good."(P14)	"He knows that he can die someday, so he prefers to do the things he need and want before dying, because then… he dies and did not do what he wanted."(P63)
Incompetence	"They do not work anymore… There are some of them who sleep more than the others, they like to lay in bed; I think that they prefer to be at home, they are more relaxed this way."(P20)	"Older people are lazy… They do not want to get up anymore… They cannot do it because their body is already old… They do not have as much strength as we do."(P65)
Poor	"They are poor…"(P36)	"You cannot eat that because I do not have money…"(P69)
Loneliness	-	"They can be abandoned… Maybe they do not have any relative and then they become sad."(P59)
Unfriendly	"They are mean and they say bad things."(P13)	"They are not nice because they are old, they have more years."(P76)
Warmth	"They are good persons, nice, and they give us everything."(P5)	"Older persons are good, kind and they take care of us with love. They are our friends and they treat us well by making us feel like part of the family."(P41)
Older Persons as grandparents	"They are good persons and grandparents."(P27)	"They are tender with their grandsons."(P81)
Reference to children's own grandparents	"I think that he likes watches because my grandfather… My grandfather is technology and on his birthday I will buy him a	"My grandmother rolled of a ladder and she had the leg… She had a little bite of metal on her leg. She went to the hospital and remained there for a

	watch."(P18)	week. If this happened with my grandmother, it can happen with everyone, even with this man" [pointing to the picture of the oldest man](P50)
Wisdom & Storytelling	"They tell us nice stories… He knows a lot of things."(P17)	"They have many stories to tell about when they were children because, as I have already said, older people usually tell stories. I would like to learn about his past."(P67)
Affective aspects		
Positive affect	"I like older persons, because they use to play with me."(P3)	-
Negative affect	"Older persons are… I do not like older persons, I feel old. That is when they become rottener (P31).	-
Behavior aspects		
Paternalism	"I could help him to cross the road… He could be lost because he could been robbed. Then, I could find him, he could tell me where his house is and I could tell him the direction. That is because older persons need to be helped. They may have forgotten where they live."(P32)	"I could give him advice… Because sometimes, older persons do not like to go to the hospital… They say that medical doctors are worthless and I could help him by saying that he needs to go."(P71)
Help them be/look younger	-	I would say to him to make more physical exercise… Not cosmetic surgery, no because that would be worst… But I would try to make that person to become more active, walking more, in order to become more resistant (P74).
Children do not expect older person's help	"This very old man? No! These two could help me [pointing to the 2 of the younger persons presented]. Nobody else!"(P12)	"He cannot help me because he is very old and he cannot do a lot of things."(P59)
Mocking target	-	"Children make fun of them most of the time by saying that they are old. Nowadays we make fun of older people but perhaps it will happen us the

		same thing.”(P71)
Help them in daily activities	“I could sweep the floor and also to cook with his help.”(P24)	“I could go to the supermarket with him.”(P66)
Accepting their help	“If I fell he would lift me. If I hurt myself he could put me a bandage.”(P27)	“If I broke a toy he could help me fix it… He could have good ideas.”(P48)
Accepting gifts from older persons	“He could buy me a chocolate… A chocolate cake!”(P5)	“If he had money, he could buy me food or toys.”(P65)
Having a good time with them	“I could play with him, have a walk, make drawings…”(P16)	We could have a walk in the park and playing cards.”(P60)
Social inclusion	-	“When he felt sad I could keeping him company”(P48)
Treat older persons with respect	-	“For me we have to respect older persons. And no… We cannot beat them neither nothing like that”(P50)

Table 5. Children's attitudes regarding their future ageing self

Theme	Evidence – first graders	Evidence – fourth graders
Cognitive aspects		
Aging body	"I will have wrinkles… And I will not have teeth, they are under the lips."(P5)	"I will become ugly! All my hair will turn white… All, all, all of it! Like snow. I will just have 10 hair strands."(P45)
Disease	"I could become sick and then the medical doctors will treat me very well by prescribing me medication…"(P20)	"I will have a lot of pain because older people have increasingly back, arm and leg pain."(P171)
Death	"Becoming an older person is part of being already dying… This just happens with older persons… Do you see those wrinkles? It is the body falling… Because the skin goes away and the skeleton will remain."(P33)	"We could be always thinking: "When will I die? What will I left if my grandchildren need me?"(P41)
Loneliness	"I will not have friends… Because they will be already old and they will not be able to get out anymore."(P1)	"I think that people will not like me."(P47)
Grandparents	-	"I will have grandchildren."(P44)
Affective aspects		
Positive affect	"I will be happy despite this age… Because I can be happy."(P37).	"I will feel good for having lived so much and having been able to reach that age."(P58).
Negative affect	"I will feel sad because I do not like it… I do not know what to do neither where to go" (P10).	"I really hope to not become old. I really do not want things to be like that because every time I will speak, people will see my denture… I do not want that too… And then I will have to make like this [mimicry] to pretend that I am smiling." (P69)
Behavioral aspects		
Difficulty doing things	"I will feel bad because I will have to retire. And then people will not allow me to work, older people cannot work, even if they want to.	"I will have less strength, less resistance and I will be clumsier as well. I will slip and forget about things."(P67)

	And then, older people are very sleepy, I will be very sleepy."(P32)	
Mocking target	"Then, there are children who will make fun of me."(P28)	"Nowadays we make fun of older persons but perhaps it will happen the same thing to us… Because we are already old and they make fun of us."(P71)
Social inclusion	-	"I could play with my family and talk with them… Let off with my family."(P125)

Chapter 5

DO YOUNG AND OLD ADULTS LOOK THE SAME? IMAGES OF OLDER PERSONS FROM SCHOOLCHILDREN'S PERSPECTIVES

Abstract

Implicit measures have been increasingly used to assess prejudice in order to minimize the social norms related biases usually ascribed to explicit ones. In this study, we applied the Human Figure Drawing to 156 elementary school students from two different age groups: first graders (N = 61, M_{age} = 81.34 months, SD = 4.65 months) and fourth graders (N = 95, M_{age} = 118.80 months, *SD* = 8.08). Participants were asked to draw a "younger person" and an "older person" and they were afterwards interviewed about the content of each drawing. Results showed that both age groups revealed a heterogeneous and multidimensional representation of older persons. However, according with the developmental pattern of ageism suggested in Chapter 3, fourth graders revealed a more stereotypical view about older persons than first graders.

Introduction

In the last chapter, we conducted an interview to elicit children's attitudes towards ageing. The application of this explicit measure implied asking children openly about their thoughts, feelings and intentional behaviour regarding older persons and their future ageing self. This measure has some limitations in the sense that it is reliant on children's comprehension and oral expression abilities and prone to variations due to social desirability. To this point, Aboud and Amato (2001) argued that children tend to reflect nonprejudiced attitudes in order to comply with authority and adult's expectations.

In order to minimize these social norms related biases, implicit measures (see Chapter 2) have been increasingly used to assess prejudice in both adults (e.g. Greenwald et al., 1998) and children (e.g. Cvencek et al., 2011). An example of an implicit measure is the Human Figure Drawing (HFD) which implies asking children to draw a human figure, previously identified by a group label which activates the image the child has of the specified group (Bar-Tal & Teichman, 2005). This measure may constitute an important indicator of children's mental images, providing multidimensional information (e.g. Villar & Fabà, 2012).

Children's ability to draw human figures generally develops between the age of two and four years. These tadpole figures constitute children's first attempt to represent people and usually they do not include the torso. Later on, both the torso and other elements are progressively included in children's drawings (transitional figures).

Finally, adolescents already present a more complex and differentiated human figure. (Bar-Tal & Teichman, 2005).

The use of this measure has some advantages, namely its applicability to children in different stages of development and from different sociocultural backgrounds. Unlike explicit measures such as self-reports or interviews, the HFD is a language-free instrument and children are familiarized with the drawing task, making it particularly suitable to assess their attitudes (Bar-Tal & Teichman, 2005).

The "Draw-a-Man Test" was introduced by Goodenough (1926) as a tool for the assessment of children's intelligence and neurological deficiencies based on their drawings of the human figure. This psychologist asked children to draw a person the best they could and then counted the number of details included and also children's graphic style (e.g. spatial relations) allowing to produce a single-score of mental ability. This test was later revised by Harris (1963) and used in both clinical and educational contexts. Later on, the HFD was considered to reflect children's inner world, namely their feelings and conflicts (e.g. Koppitz, 1968). Finally, it was considered useful for the assessment of social representations and attitudes (e.g. Dennis, 1966) such as friendship (e.g. Bombi & Pinto, 1994), gender (e.g. Houston & Terwilliger, 1995), ethnicity (e.g. Teichman, 2001; Teichman & Zafrir, 2003) and age (e.g. Falchikov, 1990).

Despite the existing research using the HFD to assess children's attitudes, some limitations have been ascribed to this instrument, namely its lack of empirically based definitions. In fact, in the studies using this instrument, the ratings of drawings relied on the researcher's predetermined variables jeopardizing the use of the HFD as a reliable scientific tool (Bar-Tal & Teichman, 2005).

In order to overcome these limitations, Teichman (2001) proposed a new method. Asking Jewish children with an age between four and 15 years old to draw images of two different ethnic groups – Jews and Arabs - She only then employed judges to identify themes reflected in the drawings. Besides this bottom-up approach, the authors also included structural representations (image complexity and image quality) and thematic aspects (status, affect, behaviour, and appearance attributed to them). Results showed that independently of children's age, the quality of the image of the Jew was significantly higher than that of the image of the Arab and that the image of the Jew was significantly more complex than that of the Arab. This is in line with previous findings in the adult literature about stereotypes, who argue that outgroups are generally perceived as less differentiated than in-groups (e.g. Linville, 1982). Regarding

the size of the figure, the representation of the Jew was significantly larger than that of the Arab which is in accordance with evidence that children perceive large figures as representing important persons (higher status) and small figures as inferior ones (low status) (e.g. Thomas, Chaigne & Fox, 1989). For affect, Teichman (2001) found a clear association between colourful drawings and positive feelings such as "nice" or "happy" and an association between colourless drawings and "hostile" or "sad".

The use of the HFD to assess children's attitudes regarding ageing has shown mixed findings depending on the method used (please, see Chapter 2). In a study with first and second graders, children's drawings showed negative attitudes regarding older people and the ageing process. In this case, older persons were represented performing passive and sedentary leisure activities (e.g. "watching TV") (Laney et al., 1999). In a study using a comparative approach, older children (with an age between 10.5 and 11.5 years old) were asked to draw four drawings representing a male and female younger and older persons. Results revealed that pictures of older people were negative in content, associating old age with loneliness. In this study, older persons were represented through stereotypical physical characteristics (e.g. wrinkles), medical aids (e.g. glasses, canes or wheelchair) and inactivity related items (e.g. slippers). Furthermore, the drawings of older persons were drawn smaller than those of younger ones. Inversely, in another study where middle school students were asked to draw an older person in greater detail (e.g. in a setting), results revealed mixed attitudes regarding older people with both positive and negative traits emerging (e.g. Lichtenstein et al., 2005). Importantly, the most positive results were found in drawings depicting someone relevant to children, namely their grandparents (e.g. Robinson et al., 2014). In some cases, interviews were used as a complementary methodology, allowing to assess children's knowledge and feelings about the person drawn (e.g. Lichtenstein et al., 2005; Robinson et al., 2014).

Notwithstanding, when focusing on the Portuguese context, there are few studies using the HFD to assess children's views on ageing. One of these studies aimed to assess representations of an older and younger persons by means of drawing among children aged 8 and 9 years. Results showed that children's representations of an older person included mainly ageing physical characteristics (e.g. wrinkles, white and grey hair, short hair), more traditional clothes, walking problems and health aids such as cane or glasses. Although both older and younger persons were predominantly depicted as

being smiling, there were few drawings representing a sad older person (Dias & Miguel, 2012).

In the present research our goal is to explore children's attitudes regarding older persons by applying the HFD and an interview about the drawings' content. Following our previous findings regarding the developmental pattern of explicit and implicit ageism (please, see Chapters 3 and 4), we included a sample with two different age groups: first graders and fourth graders. Based on our previous findings, we expect children from both age groups to show implicit bias, by representing younger persons more positively than older ones. Moreover, we expect fourth graders to show more implicit ageism than first graders by representing older persons in a more stereotyped way. Given the fact that children often draw their own grandparents (e.g. Robinson et al., 2014), we also wished to assess the level of contact with grandparents.

Method

Participants

The sample consisted of 156 elementary school students from two schools in Lisbon. Participants were divided into two sub-groups: 61 first graders with an age between 75 and 99 months (M = 81.34, SD = 4.65, 30 boys and 31 girls) and 95 fourth graders with an age between 111 and 164 months (M = 118.80, SD = 8.08, 51 boys and 44 girls).

Children were asked about the frequency and quality of their relationships with the grandparent with whom they had more contact (Appendix F). This information was gathered by the researcher by asking orally those questions to participants. The frequency of contact with children's grandparent had six possible answers: "every day", "every week", "every month", "sometimes during the year", and "once a year" and "less than once a year". Regarding the quality of contact, children were asked to think about when they are with their grandparent and to express how they usually feel in that situation. In order to facilitate this task, children were shown "smiley" and "frowny" faces with corresponding labels: "I do not like it at all", "I do not like it", I like more or less", "I like it", "and I like it very much".

Most first graders (43.9%) reported to be with their grandparent on a weekly basis, followed by "every month" (24.6%), "every day" (19.3%), sometimes during the

year (7%) and less than once a year (5.3%). Most of them did not live with that grandparent (96%). Regarding the quality of contact, most first graders expressed liking "very much" to be with their grandparent, followed by 10.5% who referred to "like" to be with this relative. Solely 1.8% said that they like more or less to be with this their grandparent. In the case of fourth graders, most of them revealed to be with their grandparent on a weekly (37.2%), daily, (33.3%) or monthly basis (23.1%), followed by "sometimes during the year" (3.8%) and "less than once a year" (2.6%). Most of them did not live with that grandparent (93.8%). Regarding the quality of contact, most of them expressed liking very much to be with their grandparent (91%), followed by "like" (6.4%) and "like more or less" (2.6%). There were no differences between the two age groups regarding both the frequency and quality of children's contact with their grandparents.

Materials and Procedure

Participants were provided with two white A4-sized paper, each one containing a different label in its heading: "younger adult" or "older adult". The order of drawings was counterbalanced and, consequently, in each session, participants drew the older adult or the younger adult first. This allowed controlling the effect of fatigue on children´s performance in the task. The other materials distributed to participants were: a pencil, a rubber and a package of 12 colored pencils (red, blue, dark blue, green, light green, yellow, orange, black, brown, pink, dark pink and purple). Participants were asked to draw a "younger person" and an "older person" and to color it. Besides, they were encouraged to add written tags and a legend to clarify or to emphasize parts of the drawing to which they attributed more relevance (adapted from Villar & Fabà, 2012). In the specific case of first graders, the researcher helped them to add these clarifications, due to their restrictive writing skills.

The task was performed in groups of five with the exception of one session with first graders which included six children (12 sessions in the first grade and 19 sessions in the fourth grade) in a separate room in the school without the presence of the teacher. After completing the human figure drawing, participants were interviewed individually about the content of each drawing (adapted from Lichtenstein et al., 2005) (see the data collection protocol on Appendix G) and their answers were recorded. Participants took approximately 45 to 50 minutes to complete the whole task (20 minutes to each drawing and 10 minutes for the interview). Six participants (three first graders and three fourth

graders) did not finish the interview due to time constraints and consequently were not considered in the analyses.

In order to comply with the standards of integrity in research, we submitted our proposal to the University's Ethics Committee. After receiving a positive deliberation from this committee, we presented our research proposal to each director of the group of schools where the data was collected. Prior to the study, written parental consent was obtained (Appendix C).

Scoring the Drawings. The scoring of the HFD was made based on a mixed methodology. Following a top-down approach, 10 variables were predetermined according with evidence from the literature using the HFD to assess social representations (e.g. Teichman, 2001): image complexity (Linville, 1982) (an ordinal cumulative variable indicating the number of items in the drawing); drawing's quality, attributed status and attributed affect. The variables representing quality included: proportions, posture, connections and distortions. Attributed status was assessed by the figure size (length and width in cm) and also by the level of education or profession attributed to the human figure. The attributed affect included: the rating of affect projected by the figure, the number of colors and also the colorfulness of the drawings.

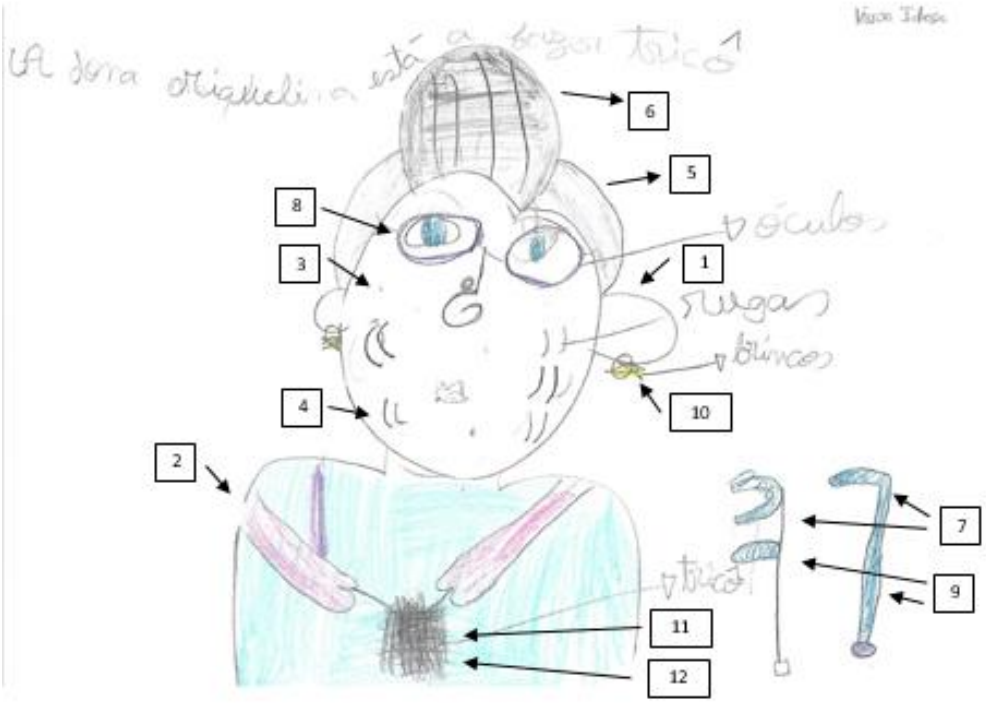
The other 46 variables were derived from the suggestions of two judges who examined a sample of 30 drawings (15 young adults and 15 older persons). This top-down approach allowed to identify variables covering the human figure's sex, physical characteristics, clothing & accessories, health problems & physical aids, activity, setting and level of interpersonal relationships. The description and rating of each of the drawing's variables are presented in Table 6 and an example of a coded drawing representing an older person is presented in Figure 7.

Scoring the Interview. The interview consisted of six questions intended to elicit additional information regarding the drawing's content. These questions referred to the human figure's age, attributed behavior, thoughts and affect, children's connection and perceived level of difference with the figure. The description and rating of each of the interview's variables are presented in Table 7.

Interjudge Reliability. Agreement was evaluated on 90 drawings (45 younger persons and 45 older persons). On the drawings, agreement was 0.98 (k = 0.98) for the drawing of a younger person and 0.98 (k = 0.98) for the drawing of an older person. On the interview, agreement was 0.97 (k = 0.97) for the drawing of a younger person and

0.98 (k = 0.98) for the drawing of an older person. All these Kappa values are considered “almost perfect” (Landis & Koch, 1977).

Figure 7. Example of a coded drawing representing an older person



Coded variables

- Figure orientation: horizontal
- What is drawn: incomplete body
- Image complexity: 18
- Proportions: two or more umproportional or displaced limbs[1]
- Connections: one bad connection[2]
- Posture: a straight and stable figure
- Distortions: no distortion
- Level of education/profession: no indication regarding level of education/profession
- Affect: neutral
- Number of colors: five to six colors
- Colorfulness of the drawing: five or more colored areas
- Sex of the figure: feminine
- Physical characteristics: freckles[3], wrinkles[4], grey/white hair[5], bun[6].
- Walking problems[7]
- Physical aids: eye glasses[8], crutches/cane[9].
- Clothing: neutral
- Jewelry[10]
- Facial expression: neutral
- Activity: handwork[11]
- Level of activity: low activity[12]
- Figure's position: sitting
- Setting: no setting
- Setting image complexity: 2
- Level of interpersonal relationships: the person is represented alone.

Table 6. Description and rating of the variables coded from drawings from first and fourth graders.

Variables coded	Description	Rating
Image complexity	Detail level of the humane figure drawing based on the number of items it contains: head, hair, eyebrows, eyelashes, eyes, nose, nostrils, ears, mouth, lips, beard, freckles, wrinkles, neck, trunk, breasts, shoulders, elbows, arms, hands, fingers, legs, feet, dress, shirt, trousers, shorts, shoes, slippers, accessories (hair accessories (e.g. hat), jewelry, glasses, cane, ball – the accessories must be attached to the figure).	• Number of items in the drawing (ordinal cumulative variable).
Drawing quality		
Proportions	Size and location of the figure´s limbs.	• Two or more unproportional or displaced limbs - 1 • One unproportional or displaced limb - 2 • No unproportional or displaced limb - 3
Connections	Connections of the figure´s limbs (e.g. the connections of the hand and arm).	• Two or more bad connections - 1 • One bad connection - 2 • No bad connections - 3
Posture	Level of stability of the figure.	• A figure leaning by more than 30º - 1 • A figure leaning slightly by 15º-30º - 2 • A straight and stable figure - 3
Distortions	Level of humanity attributed to the figure.	• Hardly recognizable human figure - 1 • Mildly distorted human figure - 2 • No distortion - 3
Attributed affect		
Colorfulness of the drawings	Number of colored areas in the human figure drawing.	• No colored areas • One or two colored areas - 1 • Three to four colored areas - 2 • Five or more colored areas - 3
Number of colors	Number of colors in the human figure drawing.	• No colors • One or two colors - 1 • Three to four colors - 2 • Five to six colors - 3
Rating of affect	Rating of affect projected by the figure´s expression.	• Negative (e.g. anger, threat, disgust) – 1 • Neutral (unspecified) – 2 • Positive (e.g. joy, happiness, pleasure) - 3
Attributed status		
Level of education/profession		• Low level – 1 • No indication – 2 • High level - 3
Figure size	Figure size: length and width	• Length (cm)

	measured as the longest distance between both parts of the trunk.	• Width (cm)
Sex of the human figure drawing	Sex of the human figure drawing (this question was further explored within the interview).	• Feminine – 1 • Masculine – 2 • Inconclusive - 3
Physical characteristics		
Face	Characteristics presented in the human figure´s face.	• Freckles, wrinkles, mustache/beard, makeup (No = 0/Yes = 1)
Hair	Characteristics presented in the human figure´s hair such as: color and hair size.	• Grey/white hair; blond hair; brown hair; black hair; bun; short; long; bald (No = 0/Yes = 1)
Clothing	Type of clothes as more modern (t-shirt) or more traditional (e.g. knitted sweaters)	• Old-fashioned clothes – 1 • Neutral clothes – 2 • Modern clothes – 3 • Both old-fashioned and modern clothes - 4
Accessories	Accessories	• Jewelry (e.g. rings, neckless), handbag, hat, belt (No = 0/Yes = 1)
Physical aids		• Wheelchair, glasses, crutches/cane (No = 0/Yes = 1)
Health problems		
Hearing problems	Reference to hearing problems (hearing aid)	• (No = 0/Yes = 1)
Walking problems	Reference to walking problems (walking aids such as cane)	• (No = 0/Yes = 1)
Hospitalization	The human figure is drawn in a hospital setting.	• (No = 0/Yes = 1)
Facial expression	Facial expression of the human figure.	• Frown – 1 • Neutral – 2 • Smile - 3
Attributed behavior		
Type of activity	Type of activity performed by the human figure.	• Housework; singing; working; shopping; celebrating; eating; speaking; showing affection; pose for a photo; walk; physical exercise; read; cooking; watch TV; Is with the partner; handwork; violence. (No = 0/Yes = 1)
Level of activity	Level of intensity of the activities performed by the human figure.	• Passive (e.g. sleep, sitting staring, lying down, standing) – 1 • Low activity (e.g. watching TV, reading, knitting) – 2 • Medium activity (e.g. walking) – 3 • High activity (e.g. doing sports, working) – 4 • Inconclusive - 5
Figure´s position	Figure´s position in the drawing.	• Lying (e.g. lying on the bed) – 1 • Sitting/Kneeling (e.g. sitting on a chair) – 2 • Standing/upright – 3 • Inconclusive - 4
Setting variables		
Setting	Context where the human figure drawing is represented.	• Indoors (the human figure is represented indoors) - 1 • No setting (the human figure is represented without any context) – 2 • Outdoors (the human figure is represented outdoors) – 3
Indoor: nursing home	The human figure is drawn in a nursing home.	• (No = 0/Yes = 1)
Image complexity	Detail level of the human figure drawing based on the number of items it contains (e.g. tree, sun, cloud, flower, chair, bed, house, etc).	• Number of items in the setting (ordinal cumulative variable)
Level of interpersonal	The human figure can be represented alone or in contact with animals	• The person is represented alone – 1 • The person is represented in contact with pets – 2

relationships	(usually pets) or other persons.	• The person is represented in contact with other persons –

Table 7. Description and rating of the variables coded from interviews from first and fourth graders

Variables coded	Description	Rating
Age of the figure	Children were asked about the figure's age.	• Age in years.
Attributed behavior	Level of activity attributed to the human figure.	• Passive - 1 • Low activity – 2 • Medium activity – 3 • High activity - 4
Attributed thoughts	Valence of thoughts attributed to the human figure.	• Negative – 1 • Neutral – 2 • Positive - 3
Attributed affect	Valence of affect attributed to the human figure.	• Negative – 1 • Neutral – 2 • Positive - 3
Child's connection with the figure	Type of relationship that the child has with the human figure.	• None (imaginary person) - 1 • Someone that the child knows from real life – 2 • Someone familiar (e.g. parent; grandparent) – 3 • The child himself - 4
Perceived level of difference with the figure	Level of difference perceived by the child with respect to the human figure.	• More different – 1 • A little different – 2 • More similar - 3

Results

The frequency distributions for each of the 57 characteristics abstracted from the 156 drawings are presented in detail in Table 8. Comparisons of the two images between the two age groups were performed with chi-square tests. In the case of a significant result for age comparisons in the chi-square test, follow-up comparisons were performed based on the adjusted residual. In the cases where the chi-square assumptions were violated, we performed the likelihood ratio test. Comparisons within age groups for the two drawings (younger vs. older) were performed using McNemar test. In the case of having more than two output variables, analyses were performed using the McNemar Bowker test followed by post-hoc comparisons.

Other characteristics of the drawings as image complexity, setting image complexity, length and width are presented in Table 9. Comparisons between age groups were performed by *t* tests for independent samples, whereas comparisons within each age group were performed by *t* test for paired samples.

Image Complexity

Significant differences between the two age groups were found in each type of drawing. Specifically, fourth graders included more elements in both the drawing of the younger, $t(146.732) = -4.949$, $p < .01$, and older persons, $t(126.432) = -6.072$, $p < .01$, compared with first graders. There were no differences among the same age group between the two different types of drawings.

Drawing quality

Proportions. There were no significant differences between the two age groups in each type of drawing, nor among the same age group between the two drawings.

Connections. There were significant differences between the two age groups regarding both the drawings of the younger, X^2 (2, $N = 156$) = 20.462, $p < .01$, and the older persons, X^2 (2, $N = 156$) = 14.511, p = .001. In both types of drawings, first graders drew more frequently two or more bad connections followed by one bad connection than fourth graders. Inversely, fourth grader's drawings included more frequently no bad connections compared with those from first graders.

Posture. There were significant differences between the two age groups regarding the drawing of the older person, ($p = .005$, *likelihood ratio test*). In this case, first grader's drawings included more often a figure leaning by more than 30º (8.2%) or a figure leaning slightly by 15º to 30º (8.2%) than those from fourth graders (1.1% on both cases). Inversely, fourth graders drew more frequently a stable and straight figure (97.9%) compared with first graders (83.6%). There were no differences between the two age groups regarding the drawing of the younger person nor among the same age group between the two different types of drawings.

Distortions. There were significant differences between the two age groups regarding both the drawings of the younger, ($p < .01$, *likelihood ratio test*) and the older persons, ($p < .01$, *likelihood ratio test*). In both cases, first grader's drawings included more frequently hardly recognizable and mildly distorted human figures than fourth graders. Inversely, fourth grader's drawings included more frequently no distorted human figures than first graders. There were no differences among the same age group between the two drawings.

Attributed Affect

Colorfulness of the drawings. There were significant differences between the two age groups regarding both the drawings of the younger, ($p = .002$, *likelihood ratio test*) and the older persons, ($p < .01$, *likelihood ratio test*). In both cases, first grade

children's drawings included more frequently no colors (8.2% in the drawing of a younger person and 9.8% in the drawing of an older person) or three to four colored areas (23% in the drawing of a younger person and 32.8% in the drawing of an older person). Fourth graders' drawings were more colorful, including more frequently five or more colored areas compared with first graders' ones (85.3% in the drawing of a younger person and 84.2% in the drawing of an older person).

Number of colors. There were significant differences between the two age groups regarding both the drawings of the younger, (p = .001, *likelihood ratio test*) and the older persons, (p < .01, *likelihood ratio test*). In the case of the representation of the younger person, first graders' drawings included more frequently no colors (8.2%) than the fourth graders' ones (0%). Inversely, fourth graders drew more frequently drawings with five to six colors (56.8%) than first graders (32.8%). Regarding the drawing of the older person, first graders included more frequently no color (9.8%) and one or two colors (23%) than fourth graders (0% for no color and 7.4 for one or two colors). Conversely, fourth graders' drawings included more frequently five to six colors (53.7%) than first graders' ones (21.3%). There were no differences among the same age group between the two drawings.

Rating of affect. Both age groups attributed more negative affect to the older person figure (first graders = 1.6%; fourth graders = 8.4%) than to the younger one (first graders = 0%; fourth graders = 1.1%) (although these differences did not reach a significant level).

Attributed Status

Level of education/profession. There were no significant differences between the two age groups in each type of drawing nor among the same age group between the two drawings.

Length of the figure. In the drawing of the older person, fourth graders' figures were significantly higher than those from first graders, $t(125.070) = -5.254$, $p < .01$. There were no significant differences between the two age groups in the drawing of the younger person. Although first graders drew the older person smaller (M = 7.07) than the younger one (M = 9.24), this difference did not reach a significant level.

Width of the figure. In the drawing of the older person, fourth graders' figures were marginally larger than those from first graders, $t(111.967) = -1.955$, p = .053. There were no significant differences between the two age groups in the drawing of the

younger person. Moreover, both age groups drew the older person figure smaller than the younger one (although these differences did not reach a significant level).

What is Drawn

Both younger and older persons were depicted by children's drawings of their full body, followed by incomplete body (e.g. lack of feet or hand) and, in fewer cases, by exhibiting just the figure's head. There were no differences between groups when considering each drawing target nor among the same age group when comparing the two type of drawings.

Sex

Children from both age groups drew more female younger (first graders = 65.3%; fourth graders = 51.6%) and older persons (first graders = 57.4%; fourth graders = 51.6%). However, there were no significant differences between the two age groups in each type of drawing nor among the same age group between different drawings.

Physical Characteristics

Younger persons were commonly portrayed as having freckles, wearing makeup, long, blond, brown or black hair. On these variables, children from both age groups depicted the younger person as having browner (first graders, McNemar p = .039, N = 61; fourth graders, p < .01) and longer hair (first graders p < .01; fourth graders, McNemar p < .01, N = 95) than the older person. Moreover, fourth graders depicted the younger person as wearing more makeup, McNemar p = .039, N = 95, and having blonder, McNemar p = .004, N = 95, and blacker hair, McNemar p = .019, N = 95, than the older person. An example of a typical younger person is given in Figure 8.

Figure 8. Typical representation of a younger person by a fourth grader

Some characteristics were exclusive of older people's drawings for both age groups: wrinkles (first graders = 27.9%; fourth graders = 54.7%), grey/white hair (first graders = 32.8%; fourth graders = 56.8%), bun (first graders = 3.3%; fourth graders = 11.6%), being bald or having reduced amounts of hair (first graders = 9.8%; fourth graders = 10.5%). The representation of older persons as having wrinkles, X^2 (1, N = 156) = 10.871, p = .001, grey/white hair, X^2 (1, N = 156) = 8.621, p = .003 and short hair, X^2 (1, N = 156) = 3.697, p = .054 (partially significant) was more frequent in fourth graders' drawings. An example of a typical older person is given in Figure 9.

Figure 9. Typical representation of an older person by a fourth grader

Clothing & Accessories

Although most of the participants depicted both younger and older persons as wearing neutral clothes, some differences were perceived. In the drawing of the younger person, children from different age groups drew different types of clothing, (p = .019, *likelihood ratio test*). More specifically, fourth graders ascribed neutral and modern clothes to the younger person more often than first graders. Regarding the drawing of the older person, we also found differences between the two age groups, (p =.002, *likelihood ratio test*). In this case, fourth graders ascribed old-fashioned and neutral clothes to the older person more frequently than first graders. Moreover, we also found differences between the clothing attributed to younger vs. older persons among children from the first (McNemar p = .019; N = 61) and fourth grades (McNemar p < .01; N = 95). Children from both age groups who ascribed modern clothes to the younger person more often were also the ones who attributed neutral ones to the older person. Regarding accessories, the handbag was exclusively depicted in the drawing of an older person by fourth graders. In this drawing, fourth graders also included more frequently the hat than first graders, (p = .020, *likelihood ratio test*). Furthermore, younger and older persons were depicted by children from both age groups as wearing other fashion accessories such as jewelry (e.g. earrings, necklaces) and also a belt. Regarding these two accessories, there were no differences between the two age groups in each drawing nor among the same age group between different drawings.

Health problems & Physical aids

Only older people were depicted as having walking problems and requiring physical aids. On these variables, fourth graders rated more regularly older persons as having walking problems, X^2 (1, N = 156) = 4.069, p = .044, and using crutches/cane, X^2

(1, N = 156) = 6.022, p = .014, and eye-glasses, X^2 (1, N = 156) = 26.173, p < .01, than first graders. Although this representation was more common in older children, first graders' drawings also included wheelchairs, indicating some degree of disability. Examples of older problems using crutches are given in Figures 10 and 11.

Figure 10. Typical representation of an older person by a fourth grader

Figure 11. Typical representation an older person by a first grader

Person´s Activity

Level of activity. There were significant differences between children from both age groups in the drawing of the older person, (p < .01, *likelihood ratio test*). In this case, fourth graders drew older persons performing low level activities (12.6%) more

frequently than first graders (0%). There were no differences among the same age group between the two drawings.

Type of activity. Children from both age groups depicted younger and older persons mostly taking a walk (e.g. in a park). Some activities were attributed solely to older persons by fourth graders: showing affection, knitting and cooking.

Setting

Children from both age groups drew the figure of the older person more frequently at home (indoors) (first graders = 18%; fourth graders = 12.6%) than the one of the younger person (first graders = 11.5%; fourth graders = 11.6%). Moreover, first graders drew the figure of the younger person more frequently outdoors (68.9%) than the older one (57.4%) (although these differences did not reach a significant level).

Setting image complexity. There were significant differences between children from both age groups in the drawing of the younger, $t(85.678) = 5.482$, $p < .01$ and older persons, $t(106.531) = 4.839$, $p < .01$. On both cases, first graders drew more elements of setting than fourth graders.

Level of interpersonal relationships

There were no significant differences between the two age groups in each type of drawing nor among the same age group between the two drawings.

Table 8. Frequency of the characteristics coded from each drawing category by first and fourth graders

	Image of a Younger Person				Image of an Older Person			
	First Graders		Fourth Graders		First Graders		Fourth Graders	
Characteristic coded	n	%	n	%	n..	%	n.	%
Proportions								
Proportions – two or more unproportional or displaced limb	8	13.1	8	8.4	7	11.5	7	7.4
Proportions – one unproportional or displaced limb	22	36.1	49	51.6	33	54.1	43	45.3
Proportions – no unproportional or displaced limb	31	50.8	38	40	21	34.4	45	47.4
Connections								
Two or more bad connections	10	16.4	3	3.2	9	14.8	6	6.3
Connections – one bad connection	25	41	19	20	27	44.3	21	22.1
No bad connections	26	42.6	73	76.8	25	41	68	71.6
Posture								
A figure leaning by more than 30º	-	-	-	-	5	8.2	1	1.1
A figure leaning slightly by 15º - 30º	2	3.3	-	-	5	8.2	1	1.1
A straight and stable figure	59	96.7	95	100	51	83.6	93	97.9
Distortions								
Hardly recognizable human figure	3	4.9	-	-	6	9.8	-	-
Midly distorted human figure	19	31.1	5	5.3	17	27.9	3	3.2

	Image of a Younger Person				Image of an Older Person			
	First Graders		Fourth Graders		First Graders		Fourth Graders	
Characteristic coded	n	%	n	%	n..	%	n.	%
No distortion	39	63.9	90	94.7	38	62.3	92	96.8
Colourfulness of the drawings								
No colours	5	8.2	-	-	6	9.8	-	-
One or two coloured areas	3	4.9	4	4.2	5	8.2	3	3.2
Three to four coloured areas	14	23	10	10.5	20	32.8	12	12.6
Five or more coloured areas	39	63.9	81	85.3	30	49.2	80	84.2
Number of colours								
No colours	5	8.2	-	-	6	9.8	-	-
One or two colours	8	13.1	9	9.5	14	23	7	7.4
Three to four colours	28	45.9	32	33.7	28	45.9	37	38.9
Five to six colours	20	32.8	54	56.8	13	21.3	51	53.7
Rating of affect								
Negative	-	-	1	1.1	1	1.6	8	8.4
Neutral	4	6.6	8	8.4	9	14.8	6	6.3
Positive	57	93.4	86	90.5	51	83.6	81	85.3
Level of education/profession								
Low level	-	-	1	1.1	-	-	1	1.1
High level	-	-	3	3.2	-	-	1	1.1
No indication	61	100	91	95.8	61	100	93	97.9
Sex of drawn person								
Female	38	62.3	49	51.6	35	57.4	49	51.6
Male	23	37.7	46	48.4	24	39.3	46	48.4
Face								
Freckles	2	3.3	6	6.3	-	-	2	2.1

	Image of a Younger Person				Image of an Older Person			
	First Graders		Fourth Graders		First Graders		Fourth Graders	
Characteristic coded	n	%	n	%	n..	%	n.	%
Wrinkles	-	-	-	-	17	27.9	52	54.7
Mustache/beard	1	1.6	13	13.7	7	11.5	11	11.6
Makeup	3	4.9	13	13.7	2	3.3	5	5.3
Hair								
Blond hair	8	13.1	16	16.8	3	4.9	4	4.2
Brown hair	15	24.6	48	50.5	7	11.5	19	20
Black hair	21	34.4	24	25.3	11	18	11	11.6
Grey/White hair	-	-	-	-	20	32.8	54	56.8
Bun	-	-	1	1.1	2	3.3	11	11.6
Short hair	17	27.9	49	51.6	29	47.5	60	63.2
Long hair	39	63.9	42	44.2	22	36.1	17	17.9
Bald	-	-	-	-	6	9.8	10	10.5
Clothing								
Old fashioned clothes	1	1.6	1	1.1	1	1.6	14	14.7
Neutral clothes	49	80.3	55	57.9	58	95.1	70	73.7
Modern clothes	11	18	38	40	2	3.3	8	8.4
Both modern and old-fashioned clothes	-	-	1	1.1	-	-	3	3.2
Accessories								
Jewerly	9	14.8	15	15.8	6	9.8	6	6.3
Handbag	-	-	2	2.1	-	-	6	6.3
Hat	2	3.3	7	7.4	1	1.6	10	10.5
Belt	2	3.3	5	5.3	1	1.6	3	3.2
Physical aids								
Wheelchair	-	-	-	-	2	3.3	-	-
Eye-glasses	2	3.3	13	13.7	5	8.2	45	47.4
Crutches/cane	-	-	1	1.1	14	23	40	42.1
Health problems								

	Image of a Younger Person				Image of an Older Person			
	First Graders		Fourth Graders		First Graders		Fourth Graders	
Characteristic coded	n	%	n	%	n..	%	n.	%
Hearing problems	-	-	-	-	-	-	1	1.1
Walking problems	-	-	-	-	16	26.2	40	42.1
Hospitalization	-	-	-	-	-	-	1	1.1
Facial expression								
Frown	-	-	1	1.1	-	-	8	8.4
Neutral	4	6.6	4	4.2	11	18	5	5.3
Smile	57	93.4	90	94.7	50	82	82	86.3
Type of activity								
Housework	2	3.3	-	-	-	-	-	-
Singing	1	1.6	-	-	-	-	-	-
Working	1	1.6	-	-	-	-	-	-
Shopping	-	-	-	-	1	1.6	-	-
Celebrating	-	-	2	2.1	-	-	1	1.1
Eating	-	-	1	1.1	-	-	1	1.1
Speaking	-	-	2	2.1	-	-	1	1.1
Showing affection	-	-	-	-	-	-	1	1.1
Pose for a photo	1	1.6	4	4.2	-	-	2	2.1
Walk	14	23	16	16.8	13	21.3	27	28.4
Physical exercise	5	8.2	11	11.6	6	9.8	3	3.2
Read	-	-	1	1.1	-	-	2	2.1
Cooking	-	-	-	-	-	-	2	2.1
Watch TV	1	1.6	1	1.1	-	-	2	2.1
Is with the partner	1	1.6	-	-	-	-	-	-
Handwork	-	-	-	-	-	-	3	3.2
Violence	-	-	1	1.1	-	-	-	-
Level of activity								
Passive	34	55.7	53	55.8	39	63.9	50	52.6
Low	2	3.3	9	9.5	-	-	12	12.6
Medium	18	29.5	18	18.9	14	23	30	31.6
High	6	9.8	14	14.7	6	9.8	3	3.2

	Image of a Younger Person				Image of an Older Person			
	First Graders		Fourth Graders		First Graders		Fourth Graders	
Characteristic coded	n	%	n	%	n..	%	n.	%
Inconclusive	1	1.6	1	1.1	2	3.3	-	-
Figure's position								
Lying	1	1.6	1	1.1	2	3.3	-	-
Sitting/kneeling	1	1.6	2	2.1	3	4.9	4	4.2
Standing/upright	56	91.8	82	86.3	53	86.9	81	85.3
Inconclusive	3	4.9	10	10.5	3	4.9	10	10.5
Setting								
Indoors	7	11.5	11	11.6	11	18	12	12.6
No setting	12	19.7	52	54.7	15	24.6	51	53.7
Outdoors	42	68.9	32	33.7	35	57.4	32	33.7
Indoor setting related with dependence								
Indoor – Nursing home	-	-	-	-	-	-	2	2.1
Level of interpersonal relationships								
The person is represented alone	56	91.8	90	94.7	53	88.3	90	94.7
The person is represented in contact with pets	2	3.3	1	1.1	3	5	3	3.2
The person is represented in contact with other persons	3	4.9	4	4.2	4	6.7	2	2.1

Table 9. Mean and standard deviation of image complexity, setting image complexity, length and width of each drawing category by first and fourth graders

	Image of a Younger Person		Image of an Older Person	
	First Graders	Fourth Graders	First Graders	Fourth Graders
Characteristic coded	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
Image complexity	11.93 (2.59)	14.26 (3.25)	12.10 (2.80)	14.92 (2.83)
Setting image complexity	4.08 (3.61)	1.29 (2.07)	3.62 (3.03)	1.40 (2.39)
Figure size				
Length	9.24 (16.77)	10.71 (4.99)	7.07 (4.73)	11.16 (4.70)
Width	6.21 (5.69)	7.20 (4.58)	4.98 (4.15)	6.25 (3.58)

Interview

The frequency distributions for each of the 5 characteristic abstracted from the 149 interviews are presented in detail in Table 10.

Age of the figure. When asked about the age of the younger person drawn, first graders attributed an age between 1 and 82 years old (M = 28.41, SD = 15.27) and fourth graders' answers varied between 9 and 52 years old (M = 26.40, SD = 8.65). Regarding the age of the older person drawn, first graders attributed an age between 9 and 1000 years old (M = 106.79, SD = 176.31) and fourth graders' answers varied between 44 and 172 years old (M = 73.84, SD = 15.50).

Attributed behavior. When asked about the younger and older person's behavior, most children described actions involving passive (e.g. the person represented is sleeping or standing) followed by medium (e.g. the figure is walking; housework) level of activity. Regarding the younger person drawing, there were no differences between the two age groups. Inversely, differences were found between the two age groups regarding the drawing of the older person, (p = .009, *likelihood ratio test*). More specifically, when reasoning about the older person's behavior, first graders described high-level activities (e.g. doing sports; working) (16.7%) more often than fourth graders (2.2%). No differences were found regarding the attributed behavior between the younger vs. the older person's drawings among both age groups.

Attributed thoughts. When asked about younger and older person's thoughts, most children attributed a positive or neutral connotation. In children's representation of an older person, differences were found between children from different age groups, (p = .005, *likelihood ratio test*): negative attributed thoughts were exclusively reported by

fourth graders (10.9%). No differences were found between the attributed thoughts to the younger and older persons among children from the same age group.

Attributed affect. Most children from both age groups attributed a positive affect to the representations of both younger and older persons. In fact, when asked about both younger and older person's feelings, most children said that the figure was "happy" or "feeling good". Inversely, some children from both age groups attributed a negative affect to the young and old person by saying that they feel "bad" or "sad". However, no differences were found between the two age groups in each type of drawing nor among the same age group between the two drawings.

Child's connection with the figure. Differences were found between both age groups regarding children's connection with the younger, X^2 (3, N = 152) = 23.508, $p < .01$ and the older persons represented, ($p = .003$, *likelihood ratio test*). In the case of the drawing of the younger person, first graders drew more frequently someone familiar to them (e.g. parent, teacher) (56.7%) than fourth graders (23.9%). Fourth graders, in their turn, drew more frequently an imaginary person (44.6%) and even theirselves (16.3%). Regarding the drawing of the older person, first graders described more frequently the drawn person as their own grandparent (56.7%) than fourth graders (29.3%). Differently, most fourth graders drew more frequently an imaginary person (59.8%) than first graders (38.7%). No differences were found among the same age group between the two drawings.

Level of perceived difference with the figure. Although fourth graders expressed a higher level of difference regarding the older person figure (72.8%) than first graders (57.6%), this difference did not reach a significant level. However, when considering each age group individually, significant differences were found regarding children's level of perceived difference with the figure of the younger person vs. older person (first graders, McNemar $p = .003$; N = 58; fourth graders, McNemar $p < .01$; N = 91). Hereof, children from both age groups who answered to be a little different from the younger person were the ones who also considered themselves to be more different from the older person. All in all, these results showed that children rated themselves as more different than the older person and more similar to the younger one. When reasoning about the differences between them and the older person, children referred to age (older person as "old" or "having more years") physical features (e.g. wrinkles, bald, lack of teeth), clothing, physical aids (e.g. crutches, cane, hearing aid, eyeglasses, wheelchair), physical limitations (e.g. cannot run, not so strong, limited mobility, get

tired), low level of activity (e.g. “likes to sleep”, “they are always on the couch”), type of activity (e.g. “they like to cook”, “they do not like to stay on the street until very late”, “do not play football”) and even referenced death (e.g. “the person is invisible because is in the sky”). Moreover, they also referred to positive characteristics such as wisdom (e.g. “knows more things”). Conversely, children referred to share similarities with the younger person: age (e.g. “we are both young”), physical features (e.g. face, hair, do not having wrinkles), clothing and accessories (e.g. skirt, hair ties, shoes) and type of activities (e.g. walking at the park, “playing games”, “doing sports”).

Table 10. Frequency of the characteristics coded from interviews from first and fourth graders about each drawing category

	Image of a Younger Person				Image of an Older Person			
	First Graders		Fourth Graders		First Graders		Fourth Graders	
Characteristic coded	No.	%	No.	%	No.	%	No.	%
Attributed behaviour								
Passive	14	23.3	31	33.7	23	38.3	35	38
Low activity	13	21.7	19	20.7	6	10	15	16.3
Medium activity	26	43.3	30	32.6	21	35	40	43.5
High activity	7	11.7	12	13	10	16.7	2	2.2
Attributed thoughts								
Negative	3	4.9	2	2.2	-	-	10	10.9
Neutral	20	32.8	46	50	27	46.6	42	45.7
Positive	38	62.3	44	47.8	31	53.4	40	43.5
Attributed affect								
Negative	6	9.8	6	6.5	7	12.1	15	16.3
Neutral	4	6.6	5	5.4	4	6.9	3	3.3
Positive	51	83.6	81	88	47	81	74	80.4
Child's connection with the figure								
None (imaginary person)	16	26.7	41	44.6	23	38.7	55	59.8

Characteristic coded	Image of a Younger Person				Image of an Older Person			
	First Graders		Fourth Graders		First Graders		Fourth Graders	
	No.	%	No.	%	No.	%	No.	%
Someone that the child knows from the real life	10	16.7	14	15.2	3	5	6	6.5
Someone familiar	34	56.7	22	23.9	34	56.7	27	29.3
The child himself	-	-	15	16.3	-	-	4	4.3
Level of perceived difference with the figure								
More different	16	27.6	40	44	34	57.6	67	72.8
A little different	16	27.6	24	26.4	8	13.6	11	12
More similar	26	44.8	27	29.7	17	28.8	14	15.2

Discussion

To the best of our knowledge, this is the first study exploring Portuguese children's attitudes regarding older persons through the HFD. The present study also differs from others in the ageism field in general by including structural representations (Teichman, 20011) in the drawings' scoring.

The results of our study showed that both age groups revealed a heterogeneous and multidimensional view of older persons which is in line with previous findings in the literature (Lichtenstein et al., 2005; Dias & Miguel, 2012). However, some differences were noted between first and fourth graders' human figure representations of a younger and an older person. Fourth graders' drawings had more quality and were more complex and colorful than those from first graders. This can be possibly explained by younger children's restricted cognitive abilities (Bar-Tal & Teichman, 2005).

Fourth graders' representations of older persons reflected a more stereotypical view about this group by including age-related physical characteristics (e.g. wrinkles, grey/white hair), old-fashioned clothes and fashion accessories (e.g. handbag, hat). Moreover, older children drew more frequently older persons performing low level activities, having walking problems and requiring medical aids (e.g. eyeglasses, crutches) than first graders.

Children from both age groups drew the older person's figure smaller than the younger one. This was true regarding both the length and width for first graders and solely the width in the case of fourth graders (although these differences did not reach a significant level). These results are concordant with those found in previous studies (e.g. Falchikov, 1990) in which the representations of older persons were found to be significantly smaller than those of younger ones.

The interview allowed us to get a deeper understanding about children's mental images projected by their drawings. When reasoning about their drawings, first graders ascribed more positive behavior and thoughts to the older person than fourth graders. More specifically, first graders described more frequently the older person drawn as performing high level activities (e.g. sports) than fourth graders. In the same vein, negative thoughts were attributed to the figure of the older person solely by fourth graders. Along with this more positive view about the figure of the older person, first graders also referred to have drawn mostly their own grandparents. Inversely, older children referred to have drawn more frequently an imaginary person. These results are

concordant with previous findings in the literature indicating that when children drew someone familiar, especially a grandparent, they were more likely to produce a positive image than children who drew an imaginary figure (e.g. Lichtenstein et al., 2005). Moreover, this also implied that for older children, an "older person" does not include their own grandparents implying that they exclude their own grandparents from this general, abstract category of older people in society, thus possibility revealing some degree of implicit ageism. It is interesting to note that these results occurred even considering that contact with grandparents was the same for both age groups.

Children from both age groups mentioning being more similar to the younger person and more different than the older person. Fourth graders were the ones who expressed a higher level of difference regarding the older person (although this difference did not reach significant levels).

Overall, these results are aligned with our initial hypotheses that although at more explicit levels (see Chapters 3 and 4 of this dissertation) ageism levels may decrease as children age, at the implicit level ageism should remain the same or increase in older children. The drawing method, by its implicit nature, allowed to capture these implicit and subtle expressions of ageism especially in older children: they tend to draw a more stereotyped image of a general unfamiliar older person, dressed in old-fashioned clothes, with more negative mood and with lower levels of activity.

However, despite its merits, this study has important limitations which need to be considered when interpreting the results. Firstly, the sample is not representative of the Portuguese population and therefore the results cannot be generalized to the entire population. Secondly, the application of the HFD had time constraints. Although the time was the same for both age groups, for the first graders there may not have been enough time for children to think about this task and to produce figure drawings that truly represent their mental images. This limitation appeared to be especially relevant in the HFD of an older person in the sense that, for most of the children, this was the first time that they were asked to perform such activity. A third limitation is related to children's ability to produce what they wanted according with their developmental stage. In this regard, first graders may have experienced more difficulty performing the human figure drawing and, consequently, their drawings may not reflect the complexity of their mental images. In order to overcome this limitation, we encouraged children to add written tags and a legend to clarify drawings' content. A fourth limitation is the group application of the HFD which may have jeopardized the results. While

performing the HFD in groups of five elements is a common methodology used in previous studies (Teichman, 2001) children tended to observe their peers' drawings and, consequently, may have influenced each other. A fifth limitation is the reliability of the information gathered about children's frequency of contact with their grandparents. Although we have asked children about these variables, their answers may not have been reliable due to their restrictive sense of time (i.e. children expressed difficulty when reasoning about their frequency of contact with their grandparent). In order to overcome this limitation we also had a parent version of this questionnaire, where we asked them about the level of contact of their child with their grandparents. However, only a small amount of the parents returned these questionnaires, which made us not include these results in the present study.

Future studies should explore the influence of children's contact with their grandparents in their human figure drawings of an older person.

Despite these limitations, we think that the drawing method is an interesting way to map into children's more implicit forms of ageism and should be further considered in future studies.

Chapter 6

GENERAL DISCUSSION

Our main goal in this thesis was to explore, in a systematic and consistent way, the development of ageism along childhood. In order to achieve this goal, we firstly carried out a literature review about the available measures to assess ageism in children (Chapter 2) followed by four empirical studies (Chapters 3, 4 and 5). These studies allowed us to reach interesting findings and a coherent pattern of ageism development with implications at both theoretical and applied levels.

In this section, we will: a) revisit the main goals of this thesis and interpret the assorted findings; b) highlight the theoretical and practical implications of this work; c) present the main limitations of these studies as well as future directions of research in this field and finally d) present the concluding comments.

Interpretation of findings

This thesis' subject emerged from an absence of an integrated body of research about children's views on ageing. At that moment, the existing literature about ageism in children presented mixed findings and was, therefore, inconclusive. Based on the assumption that the lack of congruency of the results was due to the variety of the measures used, we carried out a literature review about the available measures to assess ageism in children and the assorted findings (Chapter 2). By classifying the measures according to the dimensions covered and to their level of automaticity, we were able to outline different patterns of results also associated with participants' age. Our findings revealed that the most positive results were found in studies using explicit measures or a combination of both explicit and implicit measures. Moreover, the most positive results were found in studies with older children and adolescents. Conversely, children's negative attitudes regarding older persons emerged in studies using implicit measures. In this chapter, we also pointed to several limitations of the available measures to assess ageism in children namely their lack of information about psychometric indicators (e.g. validity, reliability) and the overlap of two different constructs: children's attitudes regarding older persons and about their own ageing process. Moreover, most of the measures only provided a partial assessment of children's attitudes by not covering the three dimensions of the tri-partite model (cognitive, affective and behavioral).

This literature review laid the foundations for our following study (**Chapter 3**) in which we aimed to explore the developmental pattern of ageism at both implicit and explicit levels in

three age groups: preschoolers (Study 1); first and fourth graders (Study 2). Our results revealed that in Study 1 preschoolers were aware of the *doddering but dear stereotype* widely shared by society (SCM – Fiske et al., 2002), also showing an explicit preference for younger faces in detriment of older ones. Conversely, at implicit level, preschoolers scores on the IAT did not reach a significance level, suggesting that they have not yet internalized negative stereotypes about older persons. In Study 2, results showed that both first and fourth graders revealed implicit ageism and a deeper internalization of the stereotype about older persons as warmer than competent. Conversely, a different pattern of results was found when explicit measures were used, with fourth graders revealing less ageism than first graders. Overall, these findings suggested that explicit and implicit ageism follow different developmental trends. This pattern of results is in line with our previous findings from the literature review carried out in **Chapter 2** and also with research on ethnic, racial and national prejudice development (Raabe & Beelmann, 2011). In both cases, it was found that the decrease of prejudice occurs between middle and late childhood but only when explicit measures were used. In this regard, we advanced the hypothesis that older children, more cognitively sophisticated, may be aware of the existence of an unprejudiced social norm leading them to not show bias (França & Monteiro, 2004).

Building upon our findings, we developed two qualitative studies (**Chapter 4** and **Chapter 5**) aimed to explore the specific content of ageing stereotypes held by children at different developmental stages. Specifically, in **Chapter 4** we applied an interview followed by a thematic analysis in order to explore children's views on ageing. Based on the definition of ageism as a multidimensional construct (see **Chapter 1**), we analyzed children's views considering what they think, feel and how they (intend to) act regarding older persons and their future ageing self. Our results showed that children have more negative attitudes when envisioning their own ageing process than when thinking about older persons in general. Furthermore, fourth graders expressed more positive attitudes regarding older persons and their own ageing process than first graders. These results are in accordance with the developmental pathway of explicit ageism found in **Chapter 3**: while explicit ageism was mostly expressed by first graders, older children revealed more positive views on ageing. Also, as expected, older children also showed knowledge of the anti-prejudice social norm regarding age.

In **Chapter 5** we continued to explore the content of ageing stereotypes while overcoming the social norm related biases usually ascribed to explicit measures such as the

interview used in the previous study. However, in this chapter, we applied an implicit measure – the Human Figure Drawing - to children from different age groups in order to assess their representations of a younger and an older person. Our findings revealed that fourth graders drew a more stereotyped and unfamiliar image of an older person than first graders, expressing a subtle ageism. These results are aligned with the developmental pattern of implicit ageism found in **Chapter 3** as remaining the same or even increasing as children age.

In sum, present findings suggest that children's negative attitudes regarding older persons are acquired early in childhood and continue to develop as children age with explicit and implicit ageism following different developmental trends: while implicit bias tends to remain the same or even increase as children age, explicit bias tends to decline when children reach the fourth grade. Additionally, we got a deeper understanding about the stereotypes held by children regarding both older persons and their future ageing self. Once again, fourth graders revealed more positive ageing stereotypes than first graders but only when explicit measures were used.

Theoretical and practical implications of the present findings

Regarding the theoretical implications, the studies developed in this thesis allowed us to get a deeper understanding about children's views on ageing. Specifically, our research advanced the field by proposing that explicit and implicit ageism follow different developmental trends. This developmental pathway of ageism through childhood was firstly hypothesized based on the pattern of results found in our literature review (Chapter 2) and later verified empirically through the adaptation and application of both implicit and explicit measures to children from different age groups (Chapter 3 to Chapter 5). Additionally, in Chapter 4, our study moved beyond previous literature by assessing children's attitudes regarding older persons and their own ageing process as two distinct attitudinal constructs.

We would also like to highlight that the tri-partite model of attitudes was a common background for all the studies carried out in the present thesis. Hence, we explored, for the first time in the literature, what children think, feel and (intend to) act regarding older persons and their future ageing self individually and in a systematic way.

This thesis also presents important practical implications, namely by reinforcing the need to intervene against ageism at an early age. The developmental pathway of ageism suggested in the present thesis should be taken into account when developing intervention programs aiming to

fight ageism among children. Intervention programs are crucial in order to promote positive intergenerational relationships and also to minimize the internalization of negative ageing stereotypes during childhood which tend to become self-stereotypes when children reach old age. Moreover, our findings also emphasize the potential relevance of promoting age-inclusive social norms to reduce the expressions of ageism.

Limitations and future directions

We have identified some limitations in this thesis that should be considered when interpreting the results. First, the samples in our studies are not representative of the Portuguese population and therefore the results cannot be generalized to the entire population. Future studies should address this sampling issue by using larger and more heterogeneous samples and also by covering a broad range of ages. Additionally, longitudinal studies aiming to assess children's views on ageing since preschool to adolescence would give important insights on the individual development of ageism.

Second, several limitations were identified regarding the measures used in the different studies. For instance, it is uncertain that the IAT scores revealed automatic negative reactions toward individual exemplars of a group. In addition, IAT scores can also reflect the influence of other factors such as stimulus familiarity (Degner & Wentura, 2010). Also, both qualitative measures used in this thesis present limitations that should be taken into account. Specifically, in Chapter 4, the use of an interview to elicit children's views on ageing was reliant on children's comprehension and oral expression abilities. In Chapter 5, the application of the HFD was limited in time and dependent on children's ability to produce their mental images. These limitations may have influenced children's performance on this task, especially the younger ones. Besides, the application of this measure in groups of five elements may have jeopardized the results in the sense that children were prone to observe and influence each other while performing the drawing task.

Third, in Chapter 5, the information gathered about children's frequency of contact with their grandparents may not have been reliable due to children's restrictive sense of time. We tried to overcome this limitation by applying a similar questionnaire to children's parents but unfortunately we got answers from few participants and therefore, we were not able to include that information in our analysis. This is an important limitation because there is evidence

suggesting a positive influence of children's frequency of contact with their grandparents on their views of older persons in general (e.g. Kwong See & Nicoladis, 2010). Therefore, future studies should explore the influence of children's quality and frequency of contact with their grandparents in their attitudes regarding older persons in general.

Finally, based on our findings, we suggested that the anti-ageist social norm may play a fundamental role to explain the developmental pathway of ageism. In our studies, we advanced the hypothesis that older children may be aware about the existence of an unprejudiced social norm leading them to not show bias. This explanation may help to uncover, for instance, why older children revealed more positive explicit attitudes regarding older persons and their future ageing self when the interview was applied (Chapter 4) and, conversely, more implicit bias when representing an older person by means of drawing (Chapter 5). The relevance of the anti-ageist social norm to explain ageism expressions is reinforced by evidence that, in countries in which this norm is more salient, older persons perceived less discrimination due to their age (Vauclair et al., 2016). Hence, future studies should explore the existence of an anti-ageist social norm among children in order to explain the developmental pathway of implicit and explicit ageism proposed in this thesis.

Concluding comments

In this thesis we aimed to gain a deeper understanding on how ageism develops across childhood. We adopted a multi-dimensional approach by assessing the implicit and explicit forms of ageism and analyzing what children think, feel and how they (intend to) act regarding older persons and their future ageing self. Overall, we found that implicit and explicit ageism follow different developmental trends: while implicit bias tends to remain the same or even increase along childhood, explicit bias tend to decrease as children age.

This thesis brings new insight into children's views on ageing which can inform intervention programs aimed to fight ageism and to promote intergenerational relationships. We strongly believe that this work represents a step further regarding the promotion of a more inclusive society – a society for all ages.

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APPENDIX A - Data collection protocol from studies 1 and 2 from Chapter 3

Part 1
Instructions about the PSIAT-Age

O experimentador irá acompanhar todo o processo de aplicação do IAT dando instruções no início da aplicação tal como no decorrer da mesma. As crianças irão ser encorajadas a responder o "mais rapidamente possível", colocando as mãos nos botões da caixa de resposta e pressionando o botão que considerem correcto. Os lembretes visuais colocados na parte superior esquerda e direita do écran indicam qual o botão a seleccionar para dar a resposta correcta. Por exemplo, numa tarefa em que o estímulo "idosos" e o "*smile* feliz" partilhem o lado de resposta esquerdo (e o estímulo "jovens" e o *smile* triste partilharem o lado de resposta direito), a pressão do botão de resposta esquerdo constitui a resposta correcta para imagens de idosos e palavras positivas e a pressão do botão de resposta direito constitui a resposta correcta para imagens de jovens e palavras negativas.

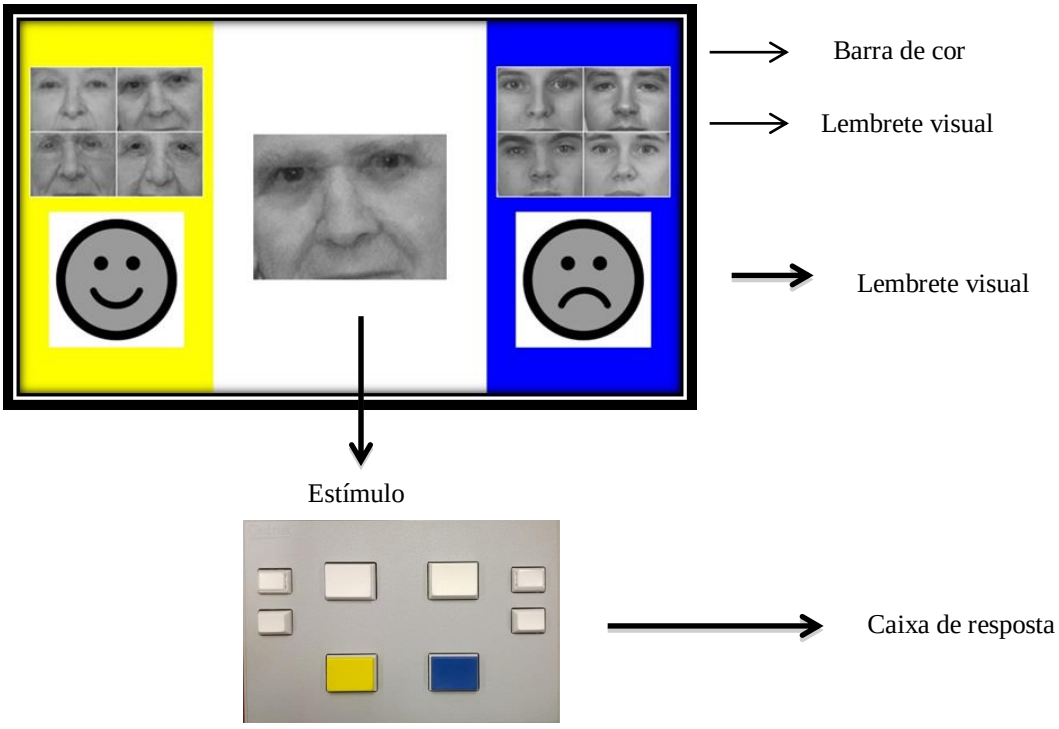
Na tarefa acima descrita, a pressão do botão direito constitui uma "*resposta de erro*" para imagens de idosos ou palavras positivas e, por sua vez, a pressão do botão esquerdo constitui uma "*resposta de erro*" para imagens de jovens ou palavras negativas. As respostas de erro (pressão do botão errado) são seguidas por um ponto de interrogação que surge no centro do *écran* a vermelho ao lado do estímulo. Neste caso, a criança não consegue avançar para o *trial* seguinte sem seleccionar a resposta correcta. Após cada tarefa será dado um reforço positivo à criança, felicitando-a pelo seu desempenho e encorajando-a relativamente ao *trial* seguinte ("*bom trabalho"; "estás a ir muito bem*").

Atitudes em relação a jovens e idosos. No início da tarefa, é pedido às crianças que categorizem as imagens que surgem no centro do écran (caras de jovens ou de idosos), carregando no botão esquerdo no caso das caras de idosos e no botão direito no caso de caras de jovens. Seguidamente, é pedido às crianças que categorizem palavras boas (*bom, feliz, divertido e simpático*) e palavras más *(mau, malvado, triste* e sujo) utilizando os mesmos botões. Seguidamente a estas duas tarefas de discriminação singular (16 *trials* cada), as crianças irão completar duas tarefas de discriminação combinadas (figura 2) nas quais se utilizam os 4 conceitos. Cada tarefa de discriminação combinada é constituída por dois blocos de 24 *trials*

num total de 48 *trials* por tarefa combinada. Nestas tarefas combinadas, 2 dos 4 estímulos partilham o mesmo botão de resposta. Numa condição, o estímulo "idosos" e "palavras positivas" partilham o mesmo botão de resposta e o estímulo "jovens" e "palavras negativas" partilham o outro botão de resposta; na outra condição verifica-se a situação inversa: o estímulo "idosos" e "palavras negativas" partilham o mesmo botão de resposta e "jovens" e "palavras positivas" partilham o outro botão de resposta.

Ao longo de todo o processo de aplicação do IAT, a investigadora irá desempenhar um papel activo de apoio e incentivo à realização da tarefa estando igualmente atenta a sinais de fadiga e/ou mal-estar que poderão requerer a interrupção da tarefa.

Figura 1 – *Implicit Association Test* (IAT) - Tarefa de discriminação combinada



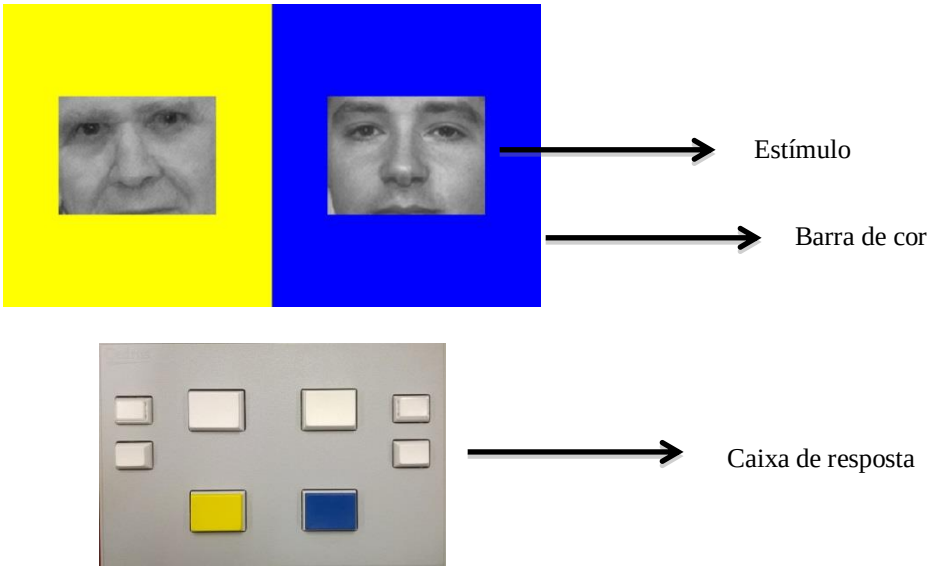
Part II

Measure of forced choice

Esta medida irá ser aplicada no computador e é baseada nos mesmos estímulos visuais utilizados no IAT - "caras de pessoas jovens" e "caras de pessoas idosas" – sendo que também se irá

utilizar a mesma "caixa de resposta". De forma mais específica, irão ser apresentadas no *écran* duas caras em simultâneo – uma de uma pessoa jovem e outra de uma pessoa idosa. Esta apresentação é feita de forma aleatória sendo que a cara da pessoa jovem pode aparecer no lado esquerdo do *écran* e a cara da pessoa idosa poderá aparecer no lado direito do écran e vice-versa. Aquilo que será pedido às crianças é que escolham qual a cara que preferem ("*De qual gostas mais?*) e que seleccionem o botão correspondente. Para tal, irão surgir, tal como acontece no IAT, duas barras no *écran* do computador, uma de cada cor (a barra do lado esquerdo do écran é amarela e o botão do lado esquerdo também é dessa cor e a barra do lado direito do écran é azul e o botão do lado direito também é dessa cor) (figura 5). Desta forma, as crianças irão saber qual o botão em que têm de carregar de acordo com a sua preferência.

Figura 2 – Medida explícita aplicada - adaptação da medida de atribuição de traços estereotípicos de Cvencek et al. (2011)



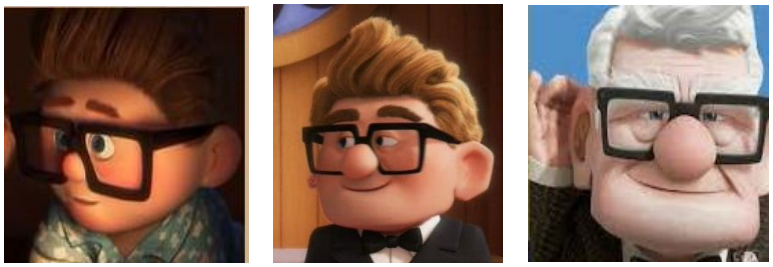
Part III

Behavioural measure "Up"

A medida comportamental consiste na apresentação de 3 "cromos" com personagens do filme "*Up - Altamente*", sendo que cada um deles representa a mesma personagem em diferentes fases

da sua vida: criança, adulto e idoso (figura 3). A tarefa consiste em pedir à criança que escolha 2 destas 3 opções ("*Deste 3 cromos escolhe 2 que vais poder levar para casa*").

Figura 3 – Cromos do filme "*Up – Altamente*" exibidas às crianças.



Part IV

Measure of stereotypical ratings of competence and warmth of older people (SCM)

ID Participante: _____
Data de aplicação:_____

Apresentação de fotografias de jovens e idosos

1. Jovem e Idoso
"Nestas fotografias, quem é novo? E quem é velho?"
Sabe □ Não sabe □
"Quem parece mais alegre, mais feliz?"
Jovem □ Idoso □
"Quem parece contar melhor histórias?"
Jovem □ Idoso □
"Quem parece mais bonito?"
Jovem □ Idoso □
"Quem parece mais lento?"
Jovem □ Idoso □
"Quem parece fazer mais disparates?"
Jovem □ Idoso □
"Quem parece mais doente?"
Jovem □ Idoso □
"Quem parece ter mais energia?"

Jovem □ Idoso □
"Quem parece mais simpático?"
Jovem □ Idoso □
"Quem parece fazer melhor as coisas?"
Jovem □ Idoso □
"Quem parece ser mais querido? (Dar mais miminhos)"
Jovem □ Idoso □
"A quem pedias ajuda para arranjar um brinquedo?"
Jovem □ Idoso □
"Com quem gostavas mais de dar um passeio?"
Jovem □ Idoso □
"A quem pedias ajuda se caísses no chão?"
Jovem □ Idoso □
"A quem pedias para te contar uma história?"
Jovem □ Idoso □

2. Jovem e Idosa
"Nestas fotografias, quem é nova? E quem é velha?"
Sabe □ Não sabe □
"Quem parece mais alegre, mais feliz?"
Jovem □ Idosa □
"Quem parece contar melhor histórias?"
Jovem □ Idosa □
"Quem parece mais bonita?"
Jovem □ Idosa □
"Quem parece mais lenta?"
Jovem □ Idosa □
"Quem parece fazer mais disparates?"
Jovem □ Idosa □
"Quem parece mais doente?"
Jovem □ Idosa □
"Quem parece ter mais energia?"
Jovem □ Idosa □
"Quem parece mais simpática?"
Jovem □ Idosa □
"Quem parece fazer melhor as coisas?"
Jovem □ Idosa □
"Quem parece ser mais querida? (Dar mais miminhos)"
Jovem □ Idosa □
"A quem pedias ajuda para arranjar um brinquedo?"
Jovem □ Idosa □
"Com quem gostavas mais de dar um passeio?"
Jovem □ Idosa □
"A quem pedias ajuda se caísses no chão?"
Jovem □ Idosa □

“A quem pedias para te contar uma história?”
Jovem □ Idosa □

Figura 4 – Caras masculinas de um adulto jovem e de um adulto idoso

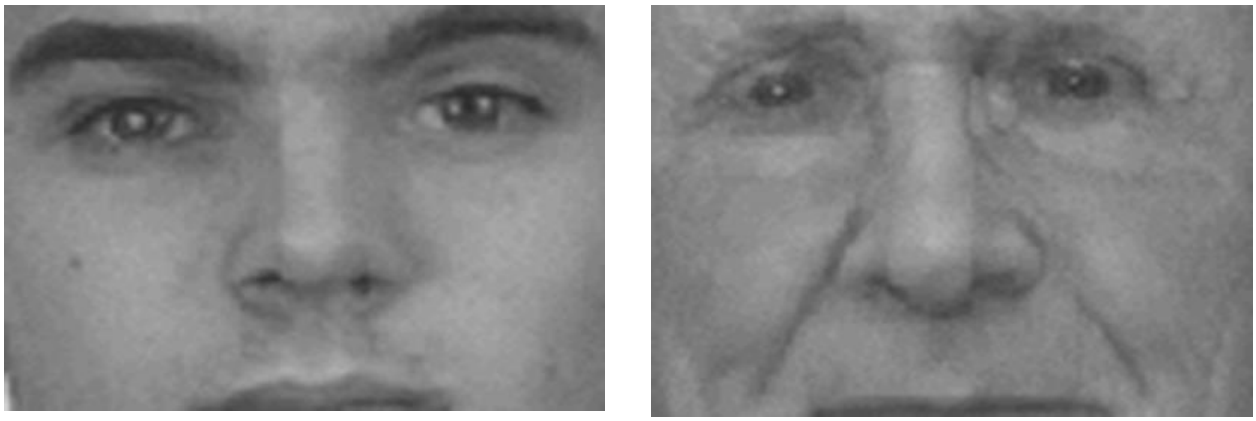
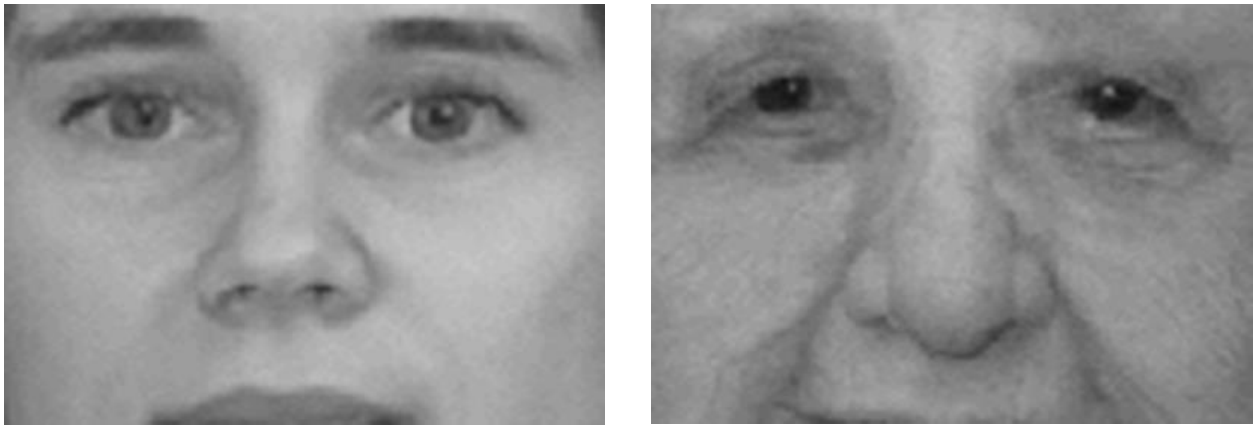


Figura 5 – Caras femininas de um adulto jovem e de um adulto idoso



APPENDIX B - Analyses of the stereotypical ratings of competence and warmth of older people (SCM)

1. "Quem parece mais alegre, mais feliz?"
2. "Quem parece contar melhor histórias?"
3. "Quem parece mais bonito?"
4. "Quem parece mais lento?"
5. "Quem parece fazer mais disparates?"
6. "Quem parece mais doente?"
7. "Quem parece ter mais energia?"
8. "Quem parece mais simpático?"
9. "Quem parece fazer melhor as coisas?"
10. "Quem parece ser mais querido? (Dar mais miminhos)"
11. "A quem pedias ajuda para arranjar um brinquedo?"
12. "Com quem gostavas mais de dar um passeio?"
13. "A quem pedias ajuda se caísses no chão?"
14. "A quem pedias para te contar uma história?"

Measure structure – Exploratory Factor Analyses

In order to investigate the structure of the SCM measure, an exploratory factor analyses was conducted. Due to the very high correlation between the measures for women and for men (given that the same traits are being evaluated) it was not possible to run a unique factorial analyses including both sexes. So, we computed two separate analyses: one for older women and one for older men. In both cases, and since the responses are given in a nominal scale (0 = if the trait is attributed to younger person or 1 = if the trait is attributed to the older person), we followed the proposal by Lorenzo-Seva and Ferrando (2006) using the FACTOR software, based on the calculation of a polychoric correlation matrix (Ferrando & Lorenzo-Seda, 2017). An exploratory factor analysis using a principal component analyses was conducted to determine the factor structure.
In this analysis we used the sample of children from Study 1 (presschoolers) and Study 2 (first and fourth graders) together in order to keep an adequate sample size. We only included children that were able to correctly identify the age of the person presented in the pictures during the initial sreening question. The final sample size in these analyses was of 162 children.

Analyses for older women

As a first step we used Paralell Analyses to determine the number of factors to retain based on the 14 items considered in this measure. The values of the Keyser-Mayer-Olkin index (KMO = 0.89) and the Bartlett test ($\chi^2_{(1)} = 1736.50$, $p \leq .001$) indicated that it was acceptable to conduct this analyses.

The Paralell Analyses recommended a two-factor solution, explaining 61.03% of the total variance. For interpretation of the two factors, a varimax orthogonal rotation was used (Table 1). Given the number of missing data, we also considered the results with Hot Deck Multiple Imputation in Exploratory Factor Analyses (Lorenzo-Seva & Van Ginkel, 2016) (Table 2)

Table 1

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Women Including All Items (N = 162)

	Factor Loadings	
Item	Stereotype Content Model (SCM)	Other traits
1.Who seems joyful, happier?	**0.44**	**0.45**
2. Who seems to tell stories better?	**0.82**	- 0.39
3. Who do you think is the most beautiful?	0.14	**0.79**
4. Who do you think is slower?	0.19	**- 0.91**
5. Who do you think does more foolish things?	**- 0.82**	0.25
6. Who do you think is more ill?	- 0.13	**- 0.79**
7. Who do you think has more energy?	- 0.07	**0.89**
8. Who do you think is nicer?	**0.82**	- 0.20
9. Who do you think does things better?	**0.55**	0.32
10. Who do you think is friendlier?	**0.76**	0.09
11. Who would you ask for help to fix a toy?	**0.57**	0.11
12. Who would you like to go for a walk?	**0.64**	0.35
13. Who would you ask for help if you fell on the ground?	**0.66**	0.17
14. Who would you ask for help to tell you a story?	**0.44**	**0.45**
Eigenvalues	4.36	3.57
% of variance	33.56	27.47

Note: Factor loadings over .40 appear in bold.

Table 2

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Women Including All Items with Hot Deck Multiple Imputation (N = 162)

	Factor Loadings	
Item	Stereotype Content Model (SCM)	Other traits
1.Who seems joyful, happier?	**0.47**	**0.44**
2. Who seems to tell stories better?	**0.83**	- 0.38
3. Who do you think is the most beautiful?	0.19	**0.81**
4. Who do you think is slower?	0.18	**- 0.90**
5. Who do you think does more foolish things?	**- 0.83**	0.23
6. Who do you think is more ill?	- 0.17	**- 0.80**
7. Who do you think has more energy?	- 0.08	**0.86**
8. Who do you think is nicer?	**0.82**	- 0.16
9. Who do you think does things better?	**0.57**	0.31
10. Who do you think is friendlier?	**0.76**	0.09
11. Who would you ask for help to fix a toy?	**0.63**	0.13
12. Who would you like to go for a walk?	**0.61**	0.33
13. Who would you ask for help if you fell on the ground?	**0.64**	0.18
14. Who would you ask for help to tell you a story?	**0.47**	**0.44**
Eigenvalues	4.36	3.57
% of variance	33.56	27.47

Note: Factor loadings over .40 appear in bold.

Than, and in order to further explore the competence and warmth dimension we decided to conduct once again the analyses, but this time forcing a two-factor solution only retaining the itens considered in the previously identified Factor 1 (with items tapping into the SCM dimension). Given the high correlation between item 14 and item 2, we had to chose to keep only item 2 in the analyses (this item also as a higher loading). This analyses (KMO = 0.70.; Bartlett test ($\chi^2_{(1)}$ = 825.00, $p \leq .001$) allowed to identify two factors, explaining 64.79% of the total variance: one for competence and one for warmth (Table 3).

Table 3

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Women Including Only the SCM Items (N = 162)

	Factor Loadings	
Item	Warmth	Competence
Who seems joyful, happier?	0.07	**0.67**
Who seems to tell stories better?	**0.85**	0.20
Who do you think does more foolish things?	**- 0.67**	**- 0.46**
Who do you think is nicer?	**0.71**	0.38
Who do you think does things better?	0.09	**0.85**
Who do you think is friendlier?	**0.88**	0.08
Who would you ask for help to fix a toy?	0.20	**0.75**
Who would you like to go for a walk?	**0.81**	0.04
Who would you ask for help if you fell on the ground?	**0.41**	**0.60**
Eigenvalues	4.40	1.48
% of variance	48.85	16.45

Note: Factor loadings over .40 appear in bold

Below we present the results of the Hot Deck Multiple Imputation in Exploratory Factor Analyses (Lorenzo-Seva & Van Ginkel, 2016) (Table 4)

Table 4

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Women Including Only the SCM Items and with Hot Deck Multiple Imputation (N = 162)

	Factor Loadings	
Item	Warmth	Competence
Who seems joyful, happier?	0.09	**0.70**
Who seems to tell stories better?	**0.84**	0.23
Who do you think does more foolish things?	**- 0.67**	**- 0.46**
Who do you think is nicer?	**0.71**	0.39
Who do you think does things better?	0.11	**0.86**
Who do you think is friendlier?	**0.88**	0.09
Who would you ask for help to fix a toy?	0.21	**0.76**
Who would you like to go for a walk?	**0.81**	0.05

Who would you ask for help if you fell on the ground?	**0.42**	**0.56**
Eigenvalues	4.40	1.48
% of variance	48.85	16.45

Note: Factor loadings over .40 appear in bold

Given these results, we decided to retain two items with higher loadings in the warmth and the competence dimension and with higher facial value to measure these concepts. We repeated the analyses considering juts these four items. This analyses (KMO = 0.60.; Bartlett test ($\chi^2_{(1)}$ = 135.70, $p \leq .001$) allowed to identify two factors, explaining 77.90% of the total variance: one for competence and one for warmth. The pattern of results is the same considering the Hot Deck Multiple Imputation results (Table 5 and 6).

Table 5

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Women Including Only the 4 SCM Items (N = 162)

	Factor Loadings	
Item	Warmth	Competence
Who do you think is nicer?	**0.84**	0.28
Who do you think does things better?	0.06	**0.88**
Who do you think is friendlier?	**0.92**	0.04
Who would you ask for help to fix a toy?	0.22	**0.82**
Eigenvalues	2.06	1.05
% of variance	51.56	26.34

Note: Factor loadings over .40 appear in bold

Table 6

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Women Including Only the 4 SCM Items and Hot Deck Multiple Imputation (N = 162)

	Factor Loadings	
Item	Warmth	Competence
Who do you think is nicer?	**0.84**	0.28
Who do you think does things better?	0.07	**0.88**
Who do you think is friendlier?	**0.91**	0.05
Who would you ask for help to fix a toy?	0.23	**0.82**
Eigenvalues	2.06	1.05
% of variance	51.56	26.34

Note: Factor loadings over .30 appear in bold

Analyses for older men

We followed the exact same procedure as for the analyses of older women. As a first step we used Paralell Analyses to determine the number of factors to retain based on the 14 items considered in this measure. The values of the Keyser-Mayer-Olkin index (KMO = 0.89) and the Bartlett test ($\chi^2_{(1)} = 1721.20$, $p \leq .001$) indicated that it was acceptable to conduct this analyses.
The Paralell Analyses recommended a two-factor solution, explaining 61.55% of the total variance. For interpretation of the two factors, a varimax orthogonal rotation was used (Table 7).

Table 7

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Men Including All Items (N = 162)

	Factor Loadings	
Item	Stereotype Content Model (SCM)	Other traits
1.Who seems joyful, happier?	**0.55**	**0.41**
2. Who seems to tell stories better?	**0.82**	- 0.17
3. Who do you think is the most beautiful?	0.25	**0.74**
4. Who do you think is slower?	0.18	**- 0.80**
5. Who do you think does more foolish things?	**- 0.79**	0.27
6. Who do you think is more ill?	0.16	**- 0.68**
7. Who do you think has more energy?	- 0.28	**0.73**
8. Who do you think is nicer?	**0.83**	- 0.16
9. Who do you think does things better?	**0.42**	**0.55**
10. Who do you think is friendlier?	**0.84**	- 0.20
11. Who would you ask for help to fix a toy?	**0.76**	0.24
12. Who would you like to go for a walk?	**0.81**	0.11
13. Who would you ask for help if you fell on the ground?	**0.61**	0.37
14. Who would you ask for help to tell you a story?	**0.80**	- 0.09
Eigenvalues	5.59	3.02
% of variance	39.97	21.58

Note: Factor loadings over .40 appear in bold

Table 8

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Men Including All Items and using Hot Dock Multiple Imputation (N = 162)

	Factor Loadings	
Item	Stereotype Content Model (SCM)	Other traits
1.Who seems joyful, happier?	**0.52**	0.33
2. Who seems to tell stories better?	**0.80**	- 0.13
3. Who do you think is the most beautiful?	0.26	**0.71**
4. Who do you think is slower?	0.18	**- 0.82**
5. Who do you think does more foolish things?	**- 0.79**	0.29
6. Who do you think is more ill?	0.11	**- 0.72**
7. Who do you think has more energy?	- 0.29	**0.80**
8. Who do you think is nicer?	**0.82**	- 0.15
9. Who do you think does things better?	**0.42**	**0.53**
10. Who do you think is friendlier?	**0.84**	- 0.19
11. Who would you ask for help to fix a toy?	**0.71**	0.23
12. Who would you like to go for a walk?	**0.82**	0.10
13. Who would you ask for help if you fell on the ground?	**0.56**	0.35
14. Who would you ask for help to tell you a story?	**0.87**	-0.09
Eigenvalues	5.59	3.02
% of variance	39.97	21.58

Note: Factor loadings over .40 appear in bold

Than, and in order to further explore the competence and warmth dimension we decided to conduct once again the analyses, but this time forcing a two-factor solution only retaining the itens considered in the previously identified Factor 1 (with items tapping into the SCM dimension). This analyses (KMO = 0.90.; Bartlett test ($\chi^2_{(1)}$ = 1736.50, $p \leq .001$) allowed to identify two factors, explaining 67.09% of the total variance: one for competence and one for warmth (Table 9).

Table 9

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Men Including Only the SCM Items (N = 162)

	Factor Loadings	
Item	Warmth	Competence

1. Who seems joyful, happier?	**0.65**	0.16
2. Who seems to tell stories better?	0.17	**0.87**
5. Who do you think does more foolish things?	- 0.30	**- 0.72**
8. Who do you think is nicer?	0.16	**0.85**
9. Who do you think does things better?	**0.84**	0.05
10. Who do you think is friendlier?	0.07	**0.90**
11. Who would you ask for help to fix a toy?	**0.56**	**0.58**
12. Who would you like to go for a walk?	0.35	**0.73**
13.Who would you ask for help if you fell on the ground?	**0.58**	0.39
14. Who would you ask for help to tell you a story?	0.35	**0.82**
Eigenvalues	5.51	1.19
% of variance	55.16	11.93

Note: Factor loadings over .40 appear in bold

Given the number of missing data, we considered the results with the results of the Hot Deck Multiple Imputation in Exploratory Factor Analyses (Lorenzo-Seva & Van Ginkel, 2016) (Table 10)

Table 10

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Men Including Only the SCM Items using Hot Deck Multiple Imputation (N = 162)

	Factor Loadings	
Item	Competence	Warmth
Who seems joyful, happier?	**0.70**	0.24
Who seems to tell stories better?	0.18	**0.86**
Who do you think does more foolish things?	- 0.29	**- 0.73**
Who do you think is nicer?	0.19	**0.85**
Who do you think does things better?	**0.83**	0.05
Who do you think is friendlier?	0.10	**0.90**
Who would you ask for help to fix a toy?	**0.53**	**0.59**
Who would you like to go for a walk?	0.43	**0.70**
Who would you ask for help if you fell on the ground?	**0.63**	0.30
14. Who would you ask for help to tell you a story?	0.38	**0.82**
Eigenvalues	5.51	1.19
% of variance	55.16	11.93

Note: Factor loadings over .40 appear in bold

Given these results, and as these items were loading respectively in the warmth and competence dimensions, we decided to retain the same items as we did for the evaluation of older women, in order to allow for a direct comparison of both sexes. We repeated the analyses considering juts these four items. This analyses (KMO = 0.63; Bartlett test ($\chi^2_{(1)} = 271.30$, $p \leq .001$) allowed to identify two factors, explaining 82.75% of the total variance: one for competence and one for warmth (Table 11 and 12). However, the solution for men is not as good as for women since although the item "*who would you ask for help to fix a toy*?" loads higher in the warmth dimension (0.68), still also loads in the warmth dimension (0.56).

Table 11

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Men Including Only the 4 SCM Items Retained (N = 162)

	Factor Loadings	
Item	Competence	Warmth
Who do you think is nicer?	0.19	**0.93**
Who do you think does things better?	**0.95**	0.02
Who do you think is friendlier?	0.07	**0.93**
Who would you ask for help to fix a toy?	**0.68**	**0.56**
Eigenvalues	2.43	1.01
% of variance	60.76	25.34

Note: Factor loadings over .40 appear in bold

Table 12

Summary of Exploratory Factor Analysis Results for Traits Associated with Older Men Including Only the 4 SCM Items Retained and Hot Dock Multiple Imputation (N = 162)

	Factor Loadings	
Item	Competence	Warmth
Who do you think is nicer?	0.19	**0.92**
Who do you think does things better?	**0.96**	0.04
Who do you think is friendlier?	0.06	**0.93**
Who would you ask for help to fix a toy?	**0.64**	**0.60**
Eigenvalues	2.43	1.01
% of variance	60.76	25.34

Note: Factor loadings over .40 appear in bold

The main goal of the Stereotype Content Model used in the studies reported in Chapter 3 was to keep the comparability with the other measures namely the Age Preschool Implicit Association Test (IAT) and the Forced Choice Evaluative Task, both including a composite measure of men and women in the total scores. Hence, we decided to build a common index containing both the ratings of competence and warmth, for both women and men. Given this requirement, and the previous analyses for women and men, we chose to keep the following traits for the competence dimension: "*who do you think does things better*?" and "*who would you ask for help to fix a toy*?" and for the warmth dimension: "*who is nicer*?" and "*who is friendlier*?". Reliability of this measure for each age group is presented in the method section of Studies 1 and 2 of Chapter 3. Reliability analyses revealed adequate levels.

References for these analyses:

Ferrando, P.J., & Lorenzo-Seva, U. (2017). Program FACTOR at 10: origins, development and future directions. *Psicothema*, 29(2), 236-241. doi: 10.7334/psicothema2016.304

Lorenzo-Seva, U., & Ferrando, P.J. (2006). FACTOR: A computer program to fit the exploratory factor analysis model. *Behavioral Research Methods*, 38(1), 88-91. 10.3758/bf03192753

Lorenzo-Seva, U., & Van Ginkel, J. R. (2016). Multiple Imputation of missing values in exploratory factor analysis of multidimensional scales: estimating latent trait scores. *Anales de PsicologÌa/Annals of Psychology*, 32(2), 596-608. doi:10.6018/analesps.32.2.215161

APPENDIX C – Ethical approval for the studies conducted (C1 and C2) and example of a written parental consent (C3)

C1. Approval from the University's Ethics Committee

ISCTE IUL
Instituto Universitário de Lisboa

COMISSÃO DE ÉTICA

PARECER FINAL

14/2016

Projeto: " Idadismo em crianças em idade pré-escolar"

O Projeto **" Idadismo em crianças em idade pré-escolar",** submetido pela investigadora Joana Mendonça foi analisado pela Comissão de Ética na reunião de 06 de Dezembro de 2016.

Analisado o projeto, a Comissão de Ética entendeu fazer os seguintes reparos:

a) O pedido de autorização de participaçãp no projeto dirigido aos encarregados de educação dos participantes no estudo indica apenas crianças com 6-7 anos, estando omissos os dois restantes grupos etários (4-5 e 9-10 anos);

b) Deverá igualmente constar deste pedido de autorização que a participação dos educandos no projeto será suspensa se estes manifestarem, em qualquer momento, o desejo de o fazerem.

O Presidente da Comissão, *Prof. Doutor Jorge Costa Santos*

O Vogal, *Prof. Doutor Manuel Pita*

C2. Approval from the School directive board

SANTA CASA
Misericórdia de Lisboa. Por boas causas.

CIS IUL
CENTRO DE INVESTIGAÇÃO E INTERVENÇÃO SOCIAL
Instituto Universitário de Lisboa

DECLARAÇÃO

O Programa SEEyourAGE foi desenvolvido pela Santa Casa da Misericórdia de Lisboa (SCML) em parceria com o CIS-IUL com o objectivo de promover uma sociedade mais inclusiva, uma sociedade para todas as idades. De forma mais específica, este programa visa o combate ao idadismo, isto é, às atitudes e práticas negativas generalizadas em relação a indivíduos com base num só factor – a sua idade. Para tal, encontram-se a ser desenvolvidos diferentes projectos de estudo do desenvolvimento e expressão do idadismo ao longo da infância tal como projectos de intervenção que visam a desconstrução dos estereótipos negativos associados às pessoas mais velhas e a promoção de relações intergeracionais positivas.

O Agrupamento de escolas Patrício Prazeres implementou este programa promovendo a participação dos alunos do 1º e 4º ano no projecto de estudo do desenvolvimento e manifestação do idadismo ao longo da infância no sentido de desenvolvimento de capacidades para uma visão mais justa e igualitária para todas as idades.

Lisboa, 09 de Julho de 2019,

AGRUPAMENTO DE ESCOLAS PATRÍCIO PRAZERES LISBOA

Teresa Biu
(Directora do Agrupamento de Escolas Patrício Prazeres)

C3. Example of a written parental consent

Pedido de autorização de participação no projeto "Uma sociedade para todas as idades"

O Centro de Investigação e Intervenção Social do ISCTE-Instituto Universitário de Lisboa encontra-se a desenvolver um projecto sobre as percepções acerca de pessoas de diferentes idades no sentido de promover uma sociedade mais inclusiva.

Vimos desta forma solicitar a participação do/a seu/sua educando/a neste projeto, o qual visa explorar as percepções que as crianças têm acerca de pessoas em diferentes etapas da sua vida. Para tal, iremos aplicar a técnica do desenho da figura humana e um questionário acerca das ideias partilhadas pela sociedade acerca de pessoas de diferentes idades.

Estas atividades irão realizar-se na escola X no decorrer dos meses de fevereiro e março e cada criança irá participar em 2 sessões (uma de 40 minutos e outra de 10 minutos). Nestas sessões, as respostas dos participantes irão ser gravadas (áudio).

Este projecto teve o aval da Comissão de Ética do ISCTE-IUL e a participação do seu educando nestas sessões será suspensa a qualquer momento caso este assim o deseje.

Para qualquer esclarecimento ou dúvida não hesite em contactar-nos para os seguintes endereços de e-mail : joana_mendonca@iscte.pt; sibilamarques@iscte-iu1.pt.

Sem outro assunto, com os melhores cumprimentos:

Joana Mendonça

Joana Mendonça (CIS-IUL)

Eu _____ **autorizo/não autorizo** o meu **educando (nome do aluno/a)** _____ **a participar no projecto** *"Uma sociedade para todas as idades".*

Assinatura: _____ **Data:** _____

APPENDIX D - The Children's Attitudes Toward the Elderly scale" (CATE) (adapted)

CATE

Associação de palavras (Secção A)

1. O que me podes dizer acerca das pessoas idosas (pessoas mais velhas)?

Série de fotografias (Secção B)

Direcções: As fotografias encontram-se colocadas de forma aleatória em cima da mesa.

B1. Qual é a pessoa que achas que é a mais velha?

B2. Porquê?

As fotografias permanecem dispostas sob a mesa.
Direcções: Se a criança tiver respondido correctamente à questão A, o investigador prossegue. Caso a criança não tenha respondido correctamente a esta questão, o investigador aponta para a fotografia do homem mais velho.

B3. Como achas que te vais sentir quando tiveres esta idade?

Direcções: O investigador aponta para a pessoa mais velha.

B4. Em que coisas é que achas que podias ajudar esta pessoa?

Direcções: O examinador aponta para a pessoa mais velha.

B5. Em que coisas é que achas que esta pessoa te poderia ajudar?

Direcções: O investigador aponta para as 4 fotografias.

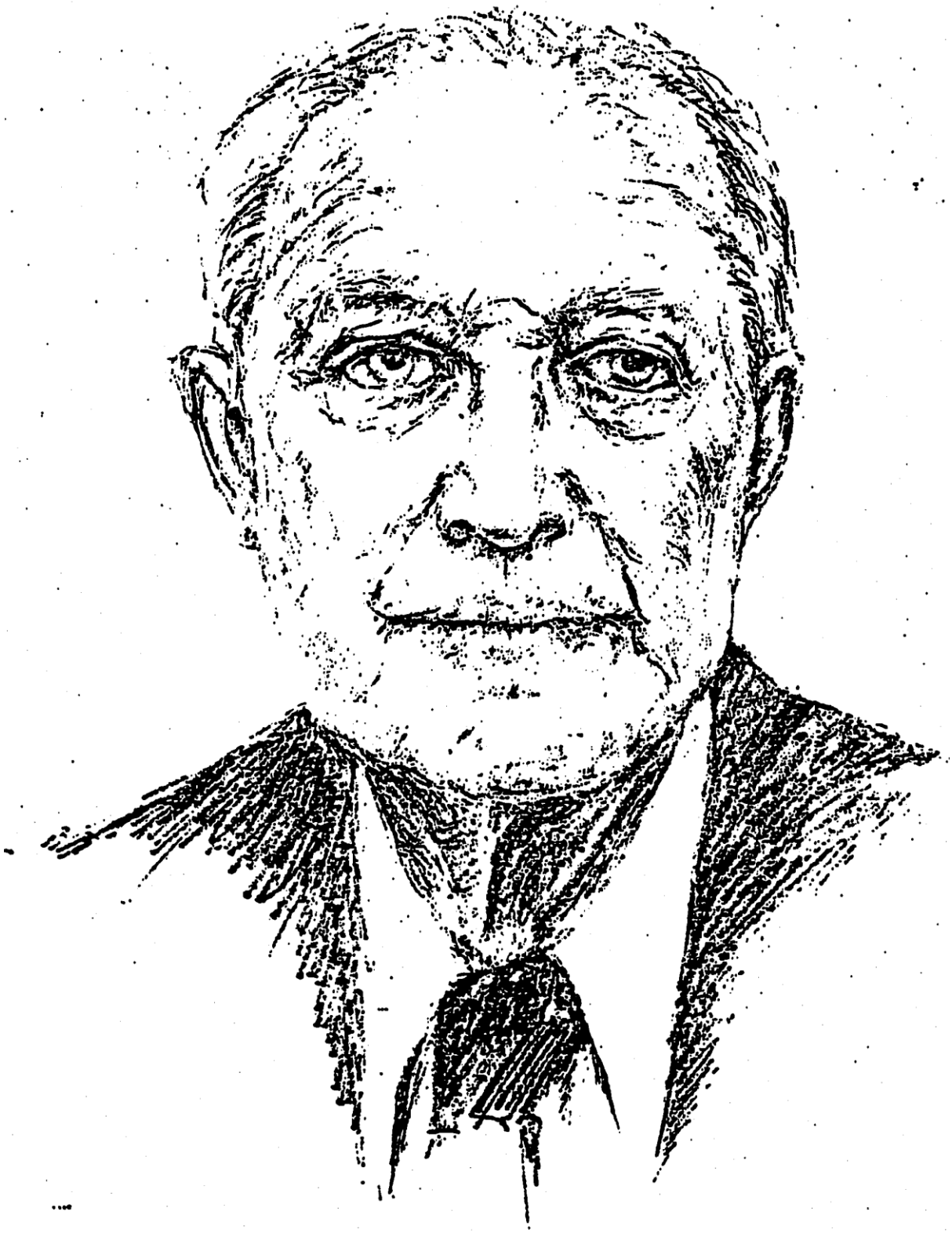
B6. Com qual destas pessoas preferias estar?

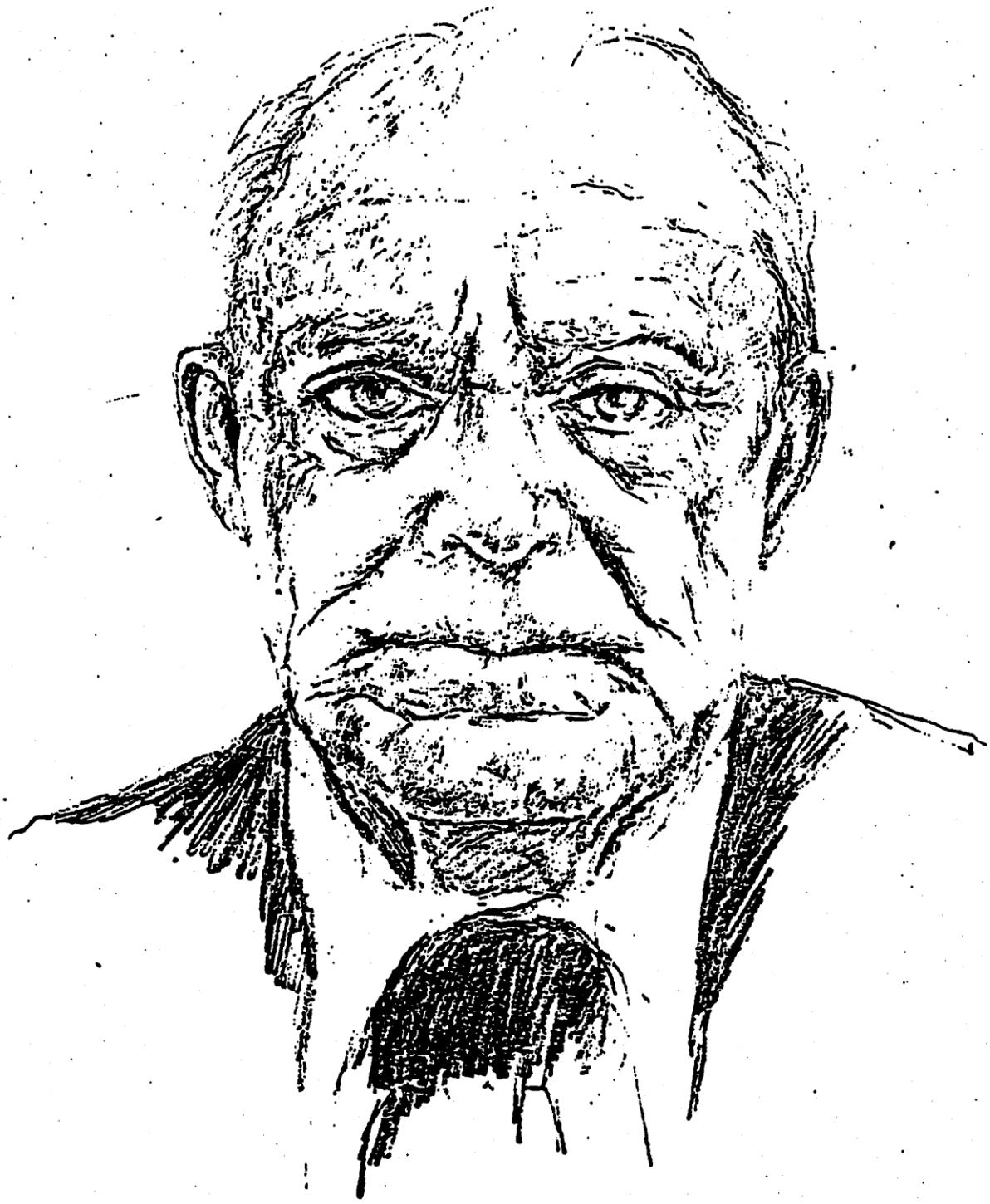
B7. Porquê?

Direcções: O investigador aponta para a fotografia escolhida.

B.8 Que tipo de coisas poderias fazer com essa pessoa?

Figura 6 – Caras representativas um adulto em 4 diferentes fases da sua vida





APPENDIX E - Two examples of transcribed interviews from first and fourth graders

Transcribed interview from a first grader (ID 29)

Word Association

A1. Inv. Let's go. We have been talking all this time about the same subject, elderly people. So, my question is, what are older persons after all?

ID 29.: They are misses, they are misters and misses more, older.

Inv: Yes.

ID 29.: They walk more slowly.

Inv: Hum, hum.

ID 29.: They don't do many things faster, they can't run.

Inv: Hum, hum.

ID 29.: They don't work anymore, some work others don't.

Inv: Ah. There are some that still work, right? Hum, hum. And?

ID 29.: Some are not very patient anymore.

Inv: Hum, hum.

ID 29.: Some sleep more than others, they like to lie in bed…

Inv: Hum, hum. Then tell me something, are they all the same or different among themselves?

ID 29.: Some are different.

Inv: hum, hum.

ID 29.: Because some have short air, some have long hair.

Inv: It depends.

ID 29.: Yes.

Inv: And how are they, with other people? Interacting with others, how are they? As persons?

ID 29.: As persons…

Inv: How are they?

ID 29.: They talk a bit slowly.

Inv: Hum, hum.

ID 29.: But they are good…

Inv: They are good what?

ID 29.: They talk nicely with others.

Pictures Series

B1. Inv: Challenge! Who is the oldest person here?

ID 29.: Hum… (*points to the right one*)

B2. Inv: The oldest of them all, who is it? Is it? Very well! Why is that the oldest one?

ID 29.: Because he looks, because he has these…

Inv: These what?

ID 29.: These warts.

Inv: Wrinkles?

ID 29.: Wrinkles. And he also doesn't have much hair anymore.

Inv: He doesn't have much hair anymore, he has wrinkles, and?

ID 29.: Hum… he seems to have his eyes more worn-out.

Inv: More worn-out, also from the wrinkles around his eyes. And?

ID 29.: Ah…I think he is a bit more forward.

Inv: You think? But... more slouched? More?

ID 29.: Because some people sometimes walk like that…

Inv: More slouched? And?

ID 29.: They don't have much patience to dress themselves.

Inv: Why do you say that?

ID 29.: Because I think they are already old, they like more to stay inside, they don't like to go outside.

Inv: They don't?

ID 29.: I think they like more to stay in their house, it's quieter.

B3. Inv: Hum, hum. Very well. Look, tell me something. When you are this mister's age, how do you think you will feel?

ID 29.: Hum…I can become sickly, but afterwards I will treat myself well.

Inv: Who will treat you well, dear?

ID 29.: The doctors and then sometimes when the doctors prescribe something I will take it.

Inv: Really?

ID 29.: As many times as necessary.

Inv: As many times as needed, right?

ID 29.: I have blemishes, I have to take a syrup which is very sweet as many times as needed.

Inv: Exactly. And more? And how do you think you will feel more with this age?

ID 29.: I will feel slower…

Inv: You think? And?

ID 29.: Hum…

Inv: Slower. And?

ID 29.: Nothing else, I think.

B4. Inv: Is that so? Look, tell me something Leonor. Could you help this mister with anything in his life? In what?

ID 29.: The streets, to go up.

Inv: help him going up streets? How would you help?

ID 29.: With a, with the…ai that ramp we have there to …

Inv: Yes, I know. It's very steep, yes.

ID 29.: We can help.

Inv: Could we? How would you help?

ID 29.: I would help him climb.

Inv: Yes, what other things could you do for him? You already said helping him going up the ramp, what else?

ID 29.: I could help him sit…

Inv: hum, hum.

ID 29.: Walking, getting up…things like that.

B5. Inv: Something else? No? Look, and could he help you with something? With what?

ID 29.: Who was sick, if my father or my mother were somewhere else, because Frederico's sister is in Germany with their grandparents and she could be sick and then their grandparents need to help.

B6. Inv: Look, if you had to choose one of these persons to be with, ok? Who would you rather be with? Tell me. With this one? Why? He has… this one here is the second oldest, right?

ID 29.: Yes.

B7. Inv: Why?

ID 29.: Because I think he can still help me with some things, like my grandfather.

B8. Inv: Like what?

ID 29.: With clippings, drawing…

Inv: Hum, hum. So, you could do arts and crafts with him? Is it? Clippings, drawings, and?

ID 29.: Collages…

Inv: Collages, you do collages and then draw based on the collages?

ID 29.: No, I draw first, then clip and then glue.

Inv: Ah ok. Very well. Yes ma'am, this part is done.

Transcribed interview from a fourth grader (ID 51)

Word Association

Inv: Let me see how long will we take talking, so, let me write here your name. So, we have been talking about what, in these past few days?

ID 51.: Older persons.

A1. Inv: Older persons, people of different ages, younger people, older people, wasn't it? Then say, about older persons, what can you tell me about them? How are older persons, in general?

ID 51.: Short.

Inv: They're short? First of all, what is an older person? It's a person…?

ID 51.: That is older.

Inv: Older, and what are they like, then? You were saying they are short, more? You can think as long as you want, tell me whatever comes into your head.

ID 51.: They need more help.

Inv: They need more help, they-re short, more? And, sweetie? Tell me more things.

ID 51.: Sometimes they go to an elderly home.

Inv: Sometimes they go to an elderly home.

ID 51.: Which is the same as up there.

Inv: Hum hum…

ID 51.: They spend more time in an elderly home, in an elderly home that in their house.

Pictures Series

B1. Inv: Hum hum. They, learn more things, you learn more things, is that important for you? Ok Carlos, challenge, challenge, challenge, challenge for you. So, we have here several faces, several faces, several faces, which one is the oldest face? Don't rush. Look closely!

ID 51.: (undistinguishable 5:01).

Inv: Yes, but one of them is older than the other.

ID 51.: It's this one.

B2. Inv: Correct. Why? How do you look at this face and are able to see that it's older than the others?

ID 51.: It looks sadder.

Inv: It looks sadder, more? What's the difference? You look at this face and you look at the others and what are the differences you find here?

ID 51.: It's shorter than this one.

Inv: Hum, shorter.

ID 51.: And stronger.

Inv: And? Look closely at the faces, what do you see here?

ID 51.: The gaze is different when they are older.

Inv: How is the gaze?

ID 51.: A bit like this.

ID 51.: More closed? And? What does he have in his face that lets you see that he's older?

ID 51.: The nose, because the nose continues growing.

Inv: The nose continues growing?

ID 51.: Yes, it does.

Inv: Becomes larger? Oops! The nose becomes larger?

ID 51.: Yes, sometimes.

Inv: Hum, and?

ID 51.: We have the nose until here and then it continues growing gradually more.

Inv: Ah, it continues growing gradually more.

ID 51.: My father's is like this.

Inv: Oh, really?

ID 51.: Very big, because my father is already fifty years old. And also because of the face, when they get older they become a bit sad.

Inv: Oh, really?

ID 51.: They can be abandoned.

ID 51.: Oh, really?

ID 51.: They can have no one in their families and they become sad.

B3. Inv: Really? Hum, very well. Look, one thing, I know that it will take some time for you to become old, right? But you, looking at this face, how do you think you will feel when you are this age, of this mister?

ID 51.: Sad.

Inv: Sad? Why?

ID 51.: Because... Someone in the family might die.

ID 51.: Someone in the family might die, you become sad? And?

ID 51.: A bit abandoned.

ID 51.: You think? Why, why does it make you feel abandoned?

ID 51.: Because I'm really old and I might need those crutches.

B4. Inv: Hum hum, very well. Look, but tell me something, could you, imagine this mister here showed up in your real life, could you help him with something?

ID 51.: Yes.

Inv: What could you help him with?

ID 51.: Walking if he had trouble walking.

Inv: You could help him walk, and?

ID 51.: I would take him to where he needs to go.

Inv: Hum hum.

ID 51.: To the elderly home.

Inv: Hum hum, and?

ID 51.: I would help him cook if he wasn't able.

Inv: If he wasn't able, right? And?

ID 51.: Also take care of him.

Inv: Take care of him, very well. Do you think he needs to be taken care of?

ID 51.: When he's alone.

Inv: Hum hum, ok, very well.

ID 51.: Because there are people who have problems and this mister can have some.

B5. Inv: Look Carlos, and could he do something for you? Could he help you with something?

ID 51.: (*shakes his head in denial*)

ID 51.: Because he's too old and can't do much.

B6./B7. Inv: Then Carlos, just imagine that you had to choose one of these persons to be with, with whom would you rather be? The oldest? Why?

ID 51.: To help him.

B8. Inv: To help him, in what? What could you do with him?

ID 51.: A game.

Inv: A game? What game, for example?

ID 51.: Like a puzzle.

Inv: A puzzle, do you think he would enjoy it?

ID 51.: Sometimes.

Inv: Very well, now I will take these pictures, we're done.

APPENDIX F – Questionnaire about the frequency and quality of children's contact with their grandparents

INQUÉRITO

Opinião sobre a relação entre avós e netos

ID participante _____

Data de nascimento _____

1. **Pensa no avô/avó com quem estás mais vezes.**

Nome desse avô/avó:_____

Idade desse avô/avó_____

2. **Estás com esse avô/avó:**

1	2	3	4	5	6
Todos os dias	Todas as semanas	Todos os meses	Algumas vezes por ano	Uma vez por ano	Menos de uma vez por ano

3. **Pensa nos momentos em que estás com esse avô/avó. Como te sentes?**

APPENDIX G – Data collection protocol used for the application of the Human Figure Drawing

Medida do desenho da figura humana

Materiais:
1 lápis de carvão e 1 borracha por participante;
1 caixa de 12 lápis de cor por participante (todos os participante têm acesso aos mesmos lápis de cor durante a tarefa);
2 folhas em branco com a o tipo de desenho requerido no cabeçalho.

Duração:
Tempo máximo de cada sessão: 50 minutos
As crianças do 1º e 4º ano de escolaridade irão realizar esta actividade em grupos de 5 pessoas.

Procedimento:
No início de cada actividade são dadas às crianças duas folhas em branco com o tipo de desenho requerido no cabeçalho: "Pessoa Idosa" e "Pessoa Jovem"
A ordem dos desenhos vai ser contrabalançada de forma a controlar o factor "cansaço".
No início da sessão, a investigadora diz às crianças que gostaria que elas fizessem dois desenhos: *"Durante este mês temos vindo a falar sobre pessoas com diferentes idades. Hoje gostaria que vocês fizessem dois desenhos de acordo com o que está indicado nas folhas em branco que vos dei: um de um adulto jovem e outro de um adulto mais velho (idoso). Peço-vos que façam o melhor desenho possível de cada um usando os lápis de cor que vos dei. Além disso, têm um lápis de carvão com o qual podem acrescentar legendas caso queriam clarificar alguma parte do desenho menos perceptível… Eu vou andar pela sala durante este bocadinho para vos ajudar nesta tarefa das legendas".*
O investigador incentiva e auxilia a execução do desenho e das legendas principalmente no caso das crianças do 1º ano as quais ainda têm bastante dificuldade em escrever.

No final é realizada uma entrevista individual aos participantes acerca de cada um dos desenhos realizados a qual irá ser gravada.

Guião da entrevista (adaptado de Lichtenstein et al., 2005):

1. Que idade tem esta pessoa que desenhaste?
2. O que é que esta pessoa está a fazer?
3. Em que é que achas que esta pessoa está a pensar?
4. O que achas que ela está a sentir neste momento?
5. Esta pessoa tem alguma relação contigo (é da tua família, amigo ou vizinho)?
6. Em que é que achas que esta pessoa é diferente de ti?