

Patterns of Ageism in Different Age Groups

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abstract

This paper examines age-based stereotypes in accordance with the Stereotype Content Model in four different age groups: schoolchildren, adolescents, adults and elderly. Participants were asked to rank graphic portraits of both genders of four age groups in terms of warmth and competence. The hypothesis that age groups, besides a positive evaluation of their own age class, would rate old people in an increasingly negative way as they themselves get older, could not be confirmed. On the contrary, young children seem to have the most extreme prejudice against older people. Interestingly, adults and elderly appear to evaluate their own age class rather negatively too. Other relations between age groups indicate that ageism does not only affect the old age class, can include positive stereotypes, and has a changing pattern throughout the lifespan.

Keywords: ageism, Stereotype Content Model, warmth, competence

The focus of this study is on the development of stereotypes about the elderly, that is, how people of different ages evaluate old people, from school age through adolescence and adulthood to the senior age group. On the other hand, it will be an important aspect, what other tendencies are to observe among these age groups concerning their attitudes to other age classes and to their own (the term “age group” will simply be used to denote people of similar age, like the participating groups of this study, whereas “age class” will refer to people who are perceived to belong to a certain stereotypical category based on their age).

I chose this subject because of two main reasons. First, ageism, i.e., negative prejudices associated with old people (especially in terms of competence) is primarily a phenomenon originating from the Western, and particularly the American cultural context, and therefore is less researched in Eastern European countries (Pecze, 2007). Second, studies mostly concentrate on one age group’s stereotypes about the elderly, and thus do not provide a comprehensive insight into the potentially different patterns of ageism throughout the life cycle (Woolf, 1998).

Ageism is a form of prejudice, just like racism and sexism, and can lead to discrimination based merely on the age of an individual (Butler, 2006). Nelson (2004) underlines that while there are a large number of studies discussing racial and gender stereotypes, ageism still remains an insufficiently examined subject. This fact is all

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the more strange considering that other people's age is of great importance in everyday life, since it affects the basic rules of social contact and communication (Kite, Deaux, & Miele, 1991). It is also to assume that ageism too can possibly rear its head in every life stage: young children can already perform categorization not only by skin colour (Clark & Clark, 1950), but also by age, based on height, facial features and voice (Montepare & Zebrowitz, 2004).

A developmental point of view reveals an important and special characteristic of ageism, namely that the person who bares prejudice against the out-group of elderly people, becomes by necessity an in-group member of the former out-group as he ages (Nelson, 2004). This makes ageism a stereotype that can "backfire" over time, and that potentially affects everyone in the course of his or her life. Although it is possible that the age of other people is not equally relevant to different age groups, and that ageism is therefore more typical in certain periods of the life cycle: Greenberg, Schimel, and Mertens (2004), for example, suggest that the negative attitudes towards old people intensify when individuals themselves are on the edge of becoming old—as if they wanted to deny entering the final chapter of their own lives.

This explanation would be consistent with Tajfel's Minimal Group Paradigm and the Social Identity Theory, according to which people build their identity and self-esteem by seeing themselves as members of desirable in-groups, and making biased comparisons with other out-groups, who can be derogated (Tajfel & Turner, 1986). Later researches have noted that the tendency of out-group derogation is less strong than the effect of in-group favouritism (Hewstone, Rubin & Willis, 2002). However, in his Optimal Distinctiveness Theory, Brewer proposed that a satisfying in-group membership—besides meeting the need of assimilation and identification—provides an ideal degree of differentiation for the individual both within the in-group and between the in-group and other out-groups (as cited in Hewstone et al., 2002). Accordingly, if a person's own group fails to ensure sufficient distinction from other, non-desired groups, the in-group membership could become rather unpleasant. With regard to ageism, a person's in-group (e.g. the adult

age group) might provide less and less differentiation from the out-group of the elderly as time goes by, and so—with the weakening positive bias towards the own group—the derogation of the elderly age class may become increasingly important in maintaining optimal distance from its members.

Based on these theories, one can assume that the older someone gets, the more negative his or her attitudes become towards older people, before possibly reaching a new, positive social identity with the elderly as an in-group. On the other hand, the younger someone is, the less he or she needs to use old people as an out-group that can be devaluated.

This would predict that ageist prejudices reduce when we examine younger populations. There is empirical evidence that confirms this assumption, and states that children evaluate elderly people positively (Thomas & Yamamoto, 1975, Davidovic, Djordjevic, Erceg, Despotovic, & Milosevic, 2007) or neutrally (Woolf, 1998). However, studies have reported opposite results (Seefeldt, Jantz, Galper, & Serock, 1977), and other works also suggest that an early negative attitude towards the old can develop in children, in which the stereotypes of parents, the effect of media and the changes in family structure probably have an important role (contact with grandparents becomes less frequent in nuclear families, which provides less opportunity for positive experiences) (Montepare & Zebrowitz, 2004).

A study of adolescents stated positive attitudes towards the elderly, which showed that time spent with grandparents did not have a significant effect, but socioeconomic status (SES) did: participants of higher SES showed less negative stereotypes (Ivester & King, 1977). Of course, in this case too, there are contradictory data showing that adolescents can also bear negative prejudices against the aged (Kastenbaum & Durkee, 1964; Doka, 1985-86).

Further results regarding the effect of own age on ageism are also inconsistent. While the fact that only five per cent of an adult population saw middle and late adulthood as the happiest period of life (Woolf, 1998) seems to support the concept of adults refusing ageing,

other findings imply that there may be a process of identification with the elderly age class as a new in-group. For example, psychologists of higher age gave better prognosis for their old patients than younger psychologists (Ray, McKinney, & Ford, 1987).

As for the elderly age group, little research has been conducted, how they relate to old age and to their own age class. The biggest issue is that most studies have surveyed institutionalized persons, whose negative attitude towards old age can be a consequence of their own bad experiences (Woolf, 1998). However, other results also indicate that older people hold both implicit and explicit negative stereotypes of their own age class, while being positively biased towards the younger generation. The younger age group did not show such a pattern, but older people seemed to stereotype themselves (Hummert, Garstka, O'Brien, Greenwald, & Mellott., 2002).

One can see that the literature of ageism is highly contradictory in many cases. As Woolf (1988) points out, this can be accounted for by the diversity and also by the deficiencies of the methods applied, e.g. suggestive composition, and a reductionist approach of a multidimensional phenomenon. As for the latter aspect, the possibility that stereotypes may consist of different dimensions had been ignored for a long time. Earlier theories suggested that stereotypes were uniform reactions towards groups of people (Allport, 1954, as cited in Durante, 2008), and were simply based on social roles, e.g. work roles (Fiske, Xu, Cuddy, & Glick, 1999). In the case of age discrimination too, many studies have discussed stereotypes of the elderly solely in terms of their perceived abilities and competence (or rather incompetence), describing them as people who are regarded as less productive, less flexible, dependent and harder to train (Shore & Goldberg, 2004).

But as Fiske and colleagues (1999) argue, this kind of approach tends to overlook the complex and often ambivalent nature of stereotypes. The Stereotype Content Model (SCM) therefore proposes two separate dimensions in conceptualizing stereotypes: warmth and competence (Cuddy, Fiske & Glick, 2008). Warmth is composed of traits like friendliness, kindness and trustworthiness, and

can be used for assessing the perceived positive or negative intent of others. Competence, on the other hand, represents the capability of people to enact their intents and achieve their goals, and relates to traits like skillfulness, confidence, and intelligence. Based on the different combinations of ratings along these scales, the model describes four categories of stereotypes, two of them being consistent (high/high or low/low), and two of them being ambivalent (high/low or low/high) in evaluation (Cuddy et al., 2008). While consistent stereotypes can be regarded as classical, uniform biases of admiration (easily associated with in-group favouritism) and contempt (purely negative stereotypes of derogated out-groups), mixed stereotypes offer a new way of understanding specific attitudes towards certain groups. The envious prejudice targets groups who are evaluated as competent, but are regarded as threatening, or at least unfriendly (Cuddy et al., 2009). On the contrary, people who are viewed as warm but incompetent are affected by the paternalistic prejudice, which was found to be a typical form of stereotype towards the elderly (Cuddy & Fiske, 2002; Cuddy, Norton, & Fiske, 2005). Accordingly, the present research will examine ageist prejudices based on the SCM, the consistency of which has been tested in different cultures (Cuddy et al., 2009), but not in multiple age groups covering the major developmental stages, especially not amongst individuals as young as schoolchildren.

It is also important to note that most of the studies do not try to identify the intrapsychic factors behind ageism (Woolf, 1998). The most influential theory regarding this matter is the presumption that the fear of passing away, and with it the negative attitudes towards old people become more and more intense as individuals age (Greenberg et al., 2004; Nelson, 2005). Although this idea has not clearly proven to be true, it served as a basis for my expectations, in accordance with the Social Identity Theory and the Optimal Distinctiveness Theory mentioned above.

The two main hypotheses of this research were that 1. a pattern of ageism will unfold, where the evaluation of the elderly age class becomes more and more negative (at least on one dimension) as the age of other participating "out-

groups" increases, and that 2. every age group will evaluate its own age class the most positively (including the elderly age group), because of the need for a positive social identity.

Method

Participants

In all, 113 participants took part in the research, from 9 to 77 years old. Individuals of the schoolchildren group were fourth grade students of a primary school in Pilisszentiván (near the capital, Budapest). Some members of the elderly group were also inhabitants of this village, but others came from the capital. The groups of adolescents and adults consisted of individuals living in the capital: a graduating class from the Árpád High School, and various people from the Central Library.

While looking for participants, one of the main goals was to find persons who could easily be identified as members of one (and only one) of the four age classes represented by the pictures (they had to choose the picture that resembles them the most, see Appendix A).

Concerning schoolchildren and adolescents, age limits and self-categorization did not raise any questions or difficulties. Participating children, each of them either 9 or 10 years old, cannot be regarded as adolescents, even with consideration to the period of early puberty, and would be categorized as schoolchildren by various studies, regardless of cultural context (Berntsson & Gustafsson, 2000; de Assis et al., 2007; Mahajan et al., 2011, Yamamah et. al, 2012). Also, with none of the adolescents exceeding the age of 18, they fall under all of the modern categories using upper age limits of 18, 21 or 25 years in defining adolescence (American Psychological Association [APA], 2002).

Drawing the lines for an adult and an elderly age group was a more problematic issue. Since the distribution of age in the two older groups of participants could not be expected to be as homogeneous as in the groups of schoolchildren or adolescents, in this case, the question of age limits was especially important.

Because the early ages of young adulthood overlap with some definitions of adolescence (APA, 2002; Erber, 2009), only people from the age of 30 and above were included in the research (with the exception of one 28-year-old male, who categorized himself as an adult when filling in the test). With the age of 30 being around the midpoint of various age ranges describing young adulthood, this margin seemed to ensure a large enough gap between adolescents and adults.

Separating an elderly age group from adults was perhaps the most difficult task. As Erber (2009) points out, there is no solid consensus about when people are considered to enter old age. While participants targeted for the adult age group were not near the age limits of 60 and 65, proposed for marking the end of adulthood and the start of elderly age (Gorman, 2000), the age of some subjects, who were chosen as anticipated members of the elderly age group, may raise questions because of these different versions of age limits. Since the beginning of elderly age is widely connected to the point of retirement, which is the age of 65 in many Western countries (Gorman, 2000), I started looking for participants intended to belong to this age group in the local pensioners' club. However, the Hungarian law made it possible for many people to retire as early as at the age of 60 (for men) or 55 (for women), before the middle 1990s, the average actual retirement age being even lower, in 1994 for example 54 years for men and 52.7 for women (Ferge, 1999). So, the age of these participants, all of them already retired, ranged from 60 to 77 years. If we accept that age categories are more related to social age (roles and expectations connected to specific life stages) than chronological age (Erber, 2009), it is justifiable to compare these people to 65 year-old retired people from other countries. Furthermore, in a study assessing the characteristics and the living conditions of the elderly Hungarian population, the Hungarian Central Statistical Office (2004) also categorized people above 60 years as old, underlining that the life expectancy in Hungary is lower than in many other European countries. Based on these facts, it seemed plausible to define participants over 60 years as elderly. This decision was since supported by

current research, according to which the perceived onset of old age indeed lies around 60 years across European countries (Age UK, 2011).

The fact that many participants—mostly from the elderly and the adult age group—considered him- or herself as a member of a different age category than suspected, may be explained with the difference between chronological and subjective age. Goldsmith and Heiens argue that the older someone gets, the bigger the gap between their actual and their subjectively perceived age becomes, that is, they feel younger than they objectively are, and modify their view about the age limits of life periods (as cited in Erber, 2009). This assumption also concords with the result that only participants from the two older age groups chose another age category for themselves than expected, that other category being the next younger one.

In order to neutralize the subjective component of categorization, and to see if pictures used in the test material are recognizable as members of the age classes they were meant to represent, three independent judges were asked to assign the portraits used in the test (see Appendix A) to different variations of age and gender (see Table 1). These combinations were identical to the age and gender of participants with the minimum and maximum age values of each participating age group. In addition, these descriptions were complemented by generated ones, using rounded averages² of these minimum and maximum values, and assigning them to random genders (this served the purpose of making the categorization task less predictable by increasing the number of choices). This way, every potentially questionable border-line case of self-categorization was to be evaluated without any explicit personal consideration. Judges (a 22-year-old female psychology student [Judge 1], a 46-year-old male English and German teacher [Judge 2], and a 66-year-old female kindergarten teacher [Judge 3]) were presented the same portraits as to be seen in Appendix A, with the following instruction: “Please, observe the following

pictures and assign the letter of the most appropriate picture to the given descriptions of individuals (age and gender). You can use the letters more than once.”. Table 1 shows the choices of the three judges in each case in the presented order.

Table 1

Judges' choice of portrait for each age group's minimum and maximum ages, and for their mean value

Descriptions	Expected choice	Participant's own choice	Judge 1	Judge 2	Judge 3
40-yr-old female*	C	-	C	C	C
9-yr-old male	A	A	A	A	A
17-yr-old male*	D	-	D	D	D
18-yr-old female	E	E	E	E	E
10-yr-old female	H	H	H	H	H
17-yr-old female	E	E	E	E	E
51-yr-old male	F	F	G	G	G
10-yr-old male*	A	-	A	A	A
77-yr-old female	B	B	B	B	B
28-yr-old male	F	F	F	F	F
60-yr-old female	B	E	B	B	B
68-yr-old male*	G	-	G	G	G

Note. Generated descriptions (mean values with a random gender) are marked with a star. The letters represent portraits from the presented test material (see Appendix A). A: male schoolchild, B: elderly female, C: adult female, D: adolescent male, E: adolescent female, F: adult male, G: elderly male, H: female schoolchild.

As it can be seen, opinions of the three judges were consistent, also corresponding to the expected choice of categorization in all but one case. The 51-year-old male was matched with the picture of the elderly male by each judge. This might suggest that an even lower age limit for regarding someone as an elderly would be acceptable. However, since the participant's self-categorization was concordant with the expected choice based on the pre-determined age limits, there was no reason to exclude him of the age group of adults. The only participant with a limit value of age who crossed her predicted category was a 60-year old female, who chose the portrait of the adolescent female as the picture representing her age the most accurately. Based on the judges' evaluation, this choice seems more than questionable.

² In the case of schoolchildren and adolescents, the minimum or the maximum score was included twice, but with the opposite gender.

Since the post-hoc validation of age categories brought a congruent result, individuals between these minimum and maximum scores categorizing themselves differently than expected (11 adults and 15 elderly), along those who did not fill in the form correctly (8 people), were excluded from the study. That is how a final sample of 79 participants was formed; thereof 39 males and 40 females, with a mean age of 32.5, divided into four age groups (see Table 2).

Table 2

Groups and participants

Age group	Sample size (persons)	Males	Females	Mean age (years)
1. Schoolchildren	18	9	9	9.6
2. Adolescents	24	12	12	17.8
3. Adults	19	9	10	40.9
4. Elderly	18	9	9	65.8
Whole sample	79	39	40	32.5

Materials

A self-compiled form was presented to the participants, who had to rank graphic portraits of both genders of four age groups (that is, 8 pictures) by different attributes and descriptions (see Appendices A and B). Assigning a picture to the first cell in the appropriate line of the table would mean that the given item suits that represented person the most. Likewise, the picture associated with the 8th cell of the line would embody the given description the least.

The pictures were scanned and computer-adjusted self-drawn portraits, intended to be simple and equally neutral (see Appendix A). The order of the portraits was edited so that the factor of ageing would not be conspicuous. Also, faces of the same and different genders too were placed next to each other, in order to reduce one-sided, gender-based judgements.

The separate form handed over to the participants consisted of an introduction text, the 10 items rating table, and a short questionnaire for collecting basic data (see Appendix B).

The 10 items of the rating table gave two scales, the warmth scale and the competence scale. The warmth scale consisted of following five items: 1. friendly, 2. irritating (reversed item), 3. has a good sense of humour, 4. good-hearted, 5. selfish (reversed item). The items of the competence scale were: 6. can help other people, 7. has difficulties in understanding things (reversed item), 8. is successful in his/her tasks³, 9. has good manual skills, 10. requires help of others (reversed item). As a result of the eight-cell ranking table, the minimum and maximum scores for each picture were 5 and 40 points on both scales.

It was an important goal to use simple attributes and descriptions for each scale to make them easily understandable for every age group. Therefore I took the Perceived Competence Scale for Children (Harter, 1982) as starting point for the competence scale. Harter (1982) suggests that there are three main aspects of competence: cognitive, physical and social competence. The self-developed items were supposed to incorporate either intellectual or physical abilities, with less emphasis on social competence, which might have overlapped too much with the warmth scale due to its relation to successful and positive human interactions. In retrospect, item number 6 and 10 (“can help other people” and “requires help of others”) thus may seem undesirably connected to social aspects, but the original consideration behind these items was that one can be mastered in certain skills sought by others who do not possess them, and who are accordingly less competent. In this way, being able to help and being independent of other people’s help may grant a higher social status, and so can be regarded as traits which are self-profitable—an important aspect of traits belonging to the competence dimension, according to Cuddy and colleagues (2008).

On the contrary, the warmth dimension corresponds more to other-profitable traits, like being friendly, sincere and good-natured (Cuddy et al., 2008). Seen in this light, having a good sense of humour (item 3 of the warmth scale) might seem to be related to social competence, but again, when developing these items, the emphasis was

³ In Hungarian, there is no linguistic sex-differentiation in third person reference.

meant to be on having a pleasant nature, which makes one seem warm and friendly.

In this case, the reliability of the scales cannot be measured with Cronbach's Alpha, since it is not appropriate for rank order scales. Therefore, Spearman's rank order correlations of the items are presented in Table 3 for later discussion.

The closing questions of the test material served the purpose of determining whether the participants identified themselves with their predicted age group (see above), and whether the sympathy and antipathy choices were equally distributed among the pictures or not (which would possibly mean that the portraits were not neutral enough).

Table 3
Spearman correlations between items of the warmth and competence scales

Dimension / Items	Warmth dimension					Competence dimension				
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Warmth dimension										
1. friendly	—									
2. irritating	-.504**	—								
3. sense of humour	.330**	-.303**	—							
4. good-hearted	.350**	-.309**	.205**	—						
5. selfish	-.160**	.283**	-.166**	-.449**	—					
Competence dimension										
6. can help others	.153**	-.214**	.265**	.334**	-.360**	—				
7. difficulties underst.	-.187**	.300**	-.287**	-.123**	.127**	-.215**	—			
8. successful	.269**	-.264**	.345**	.208**	-.102*	.300**	-.405**	—		
9. good manual skills	.217**	-.226**	.191**	.167**	-.170**	.268**	-.223**	.262**	—	
10. requires help	-.101*	.127**	-.244**	-.045	-.055	-.333**	.304**	-.413**	-.227**	—

Note. * $p < .05$, ** $p < .01$. Some item names in this table are modified or abbreviated. For full items see above

Procedure

All participants received the test material in printed form. In the fourth grade class, the task had been additionally explained before the papers were handed out. Individual assistance was provided if there were any questions. Also, the text of the schoolchildren's material was edited in order to address them less formally⁴. The adolescent group were given the "adult version" of the form. They too worked in a classroom, but did not need any assistance. The adults and the elderly were asked individually to fill in the form. In case of the latter two groups, participants often worked completely on their own.

Results

General results

The distribution of sympathy and antipathy choices for each picture is illustrated by Figure 1, which shows that pictures of the adolescent age class (especially of the female adolescent) were the most likeable, and pictures of the elderly age class the least.

Table 4 summarizes each age group's warmth and competence ratings for each age class (these scores are the mean ratings of female and male faces of the same age).

⁴ There is a distinction between formal and informal second-person pronouns in the Hungarian language.

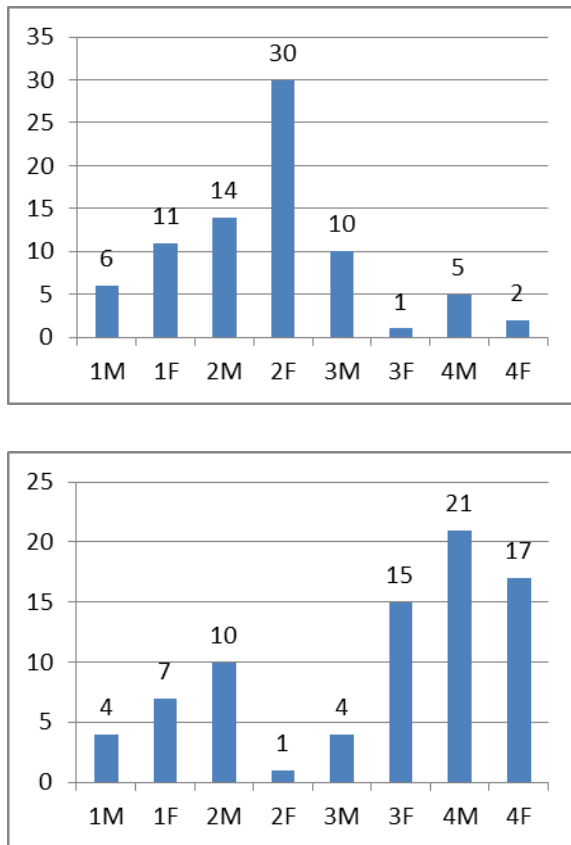


Figure 1. Frequencies of „most sympathetic” (upper figure) and „most antipathetic” (lower figure) choices for each picture. M/F is for male/female, numbers represent the pictures’ age class (1: schoolchild, 2: adolescent, 3: adult, 4: elderly).

Table 4

Participating age groups’ warmth and competence ratings for each age class

		Participating age groups				Average (whole sample)
Rated age classes		School-children	Adolescents	Adults	Elderly	
Schoolchildren	Warmth	27.78	19.17	24.16	23.94	23.42
	Competence	25.08	16.98	17.92	18.86	19.48
Adolescents	Warmth	26.31	25.69	25.11	23.72	25.24
	Competence	27.19	26.94	26.16	24.61	26.28
Adults	Warmth	19.72	22.27	20.74	21.58	21.16
	Competence	21.92	26.67	26.18	24.42	24.96
Elderly	Warmth	16.17	22.81	20.03	20.75	20.16
	Competence	15.94	19.42	19.76	22.11	19.32

Warmth. The Friedman test was used in order to determine if there were significant differences in how members of the age groups (and the whole sample) rated the different age classes on the warmth scale. For

identifying specific differences, Wilcoxon signed rank tests were run.

In the case of multiple paired comparisons, one has to calculate with the Type I error, and therefore a Bonferroni correction is usually recommended, where the level of significance is divided by the number of paired comparisons. However, this adjustment is often considered too overcautious, which can result in ignoring actual significant differences. An alternative variant of this method, designed to handle this issue, is the sequential Bonferroni correction, suggested by Holm (1979). In this adjustment, if the number of comparisons is k , the .05 level of significance is divided by k for the smallest p -value (strongest difference), then by $(k-1)$ for the second most significant p -value, by $(k-2)$ for the third most significant result, and so on. So here for example, in the case of age group comparisons, the most significant result has to have a p -value smaller than $.05/6=.008$ or than $.01/6=.0017$ in order to be regarded as significant at the .05 or at the .01 level. See Table 5 for the adjusted significance of Wilcoxon Z -values, and Table 4 for the compared mean scores.

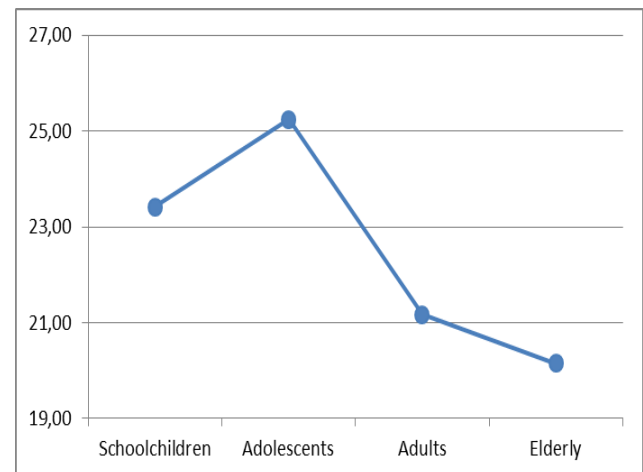


Figure 2. Mean warmth score for each age class (whole sample)

When examining the whole sample (see Figure 2), the Friedman test showed significant difference between warmth scores of age classes ($\chi^2=20.242$, $p<.001$). As for the Wilcoxon tests, the difference between ratings for adults and elderly was not significant ($Z=-1.178$, $p=.239$). The differences in rated warmth separating the age class of schoolchildren from adolescents ($Z=-2.151$, $p=.031$), from adults ($Z=-2.040$, $p=.041$) and from the elderly ($Z=-2.424$,

$p=.015$) cannot be regarded as significant either, because of the Bonferroni adjustment. However, significant difference was found between adolescents and adults ($Z=-4.270$, $p<.001$), and adolescents and the elderly ($Z=-3.971$, $p<.001$). In other words, adolescents had a clearly higher mean score than the two older age classes, while there was a tendency of rating both younger age classes higher, adolescents almost achieving a significantly higher warmth score than schoolchildren.

Now the same analyses will be reported broken down to age groups (see Figure 3). According to the Friedman test, significant difference is to be found in participating schoolchildren's (G1) ratings for age classes ($\chi^2=24.860$, $p<.001$). Based on the post hoc tests, schoolchildren rated their own age class as equally warm as the age class of adolescents ($Z=-1.092$, $p=.275$), but differences occurred in almost every other case: comparing the warmth scores of schoolchildren and adults ($Z=-3.312$, $p=.001$), schoolchildren and the elderly ($Z=-3.355$, $p=.001$), adolescents and adults ($Z=-3.436$, $p=.001$), adolescents and the elderly ($Z=-3.386$, $p=.001$) showed significant differences, and although the scores of the adult and the elderly age class ($Z=-2.008$, $p=.045$) did not differ significantly if regarding the Bonferroni correction, there was a tendency of schoolchildren evaluating the elderly even more negatively than adults. So, similarly to the pattern of the whole sample, mean warmth scores of the two younger age classes were higher than those of the older age classes.

The age group of adolescents (G2) also distinguished between the warmth ratings of age classes ($\chi^2=9.850$, $p=.020$). However, beside a tendency of adolescents rating their own age class higher than adults ($Z=-1.904$, $p=0.057$), only the difference between schoolchildren and adolescents proved to be significant ($Z=-3.244$, $p=.001$): schoolchildren's mean score was clearly lower.

As for the adult (G3) ($\chi^2=5.951$, $p=.114$) and the elderly (G4) age group ($\chi^2=2.039$, $p=.564$), the Friedman test did not report any significant differences regarding the warmth scores assigned to different age classes. However, in the case of adults there were some age class comparisons with p-values near the original level of

significance: in the relation of adolescents and the elderly ($Z=-1.952$, $p=.051$), adolescents and adults ($Z=-1.809$, $p=.071$), and schoolchildren and the elderly ($Z=-1.732$, $p=.083$), in favour of the two younger age classes. In the elderly age group all the differences were far from being significant, with the lowest p-value being .177 ($Z=-1.350$).

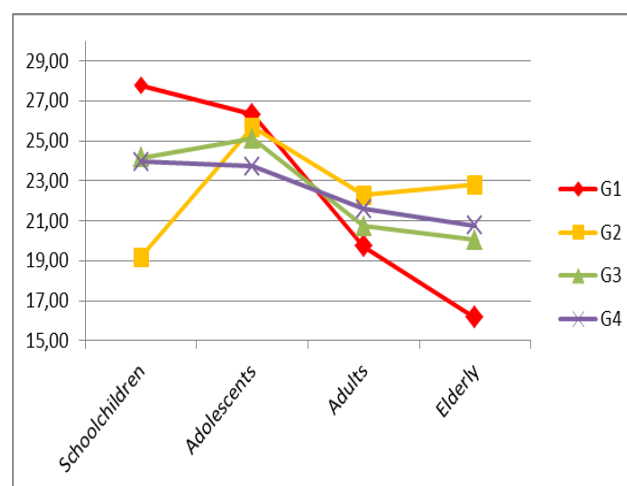


Figure 3. Warmth-ratings for each age class by each participating age group (G). G1: Schoolchildren, G2: Adolescents, G3: Adults, G4: Elderly.

Table 5

Wilcoxon Z-values for compared warmth scores of age classes by each age group

Age groups	Rated age classes					
	C1-C2	C1-C3	C1-C4	C2-C3	C2-C4	C3-C4
Schoolchildren	-1.092	-3.312*	-3.355*	-3.436*	-3.386*	-2.008
Adolescents	-3.244*	-1.572	-1.630	-1.904	-1.515	-4.57
Adults	-.545	-1.350	-1.732	-1.809	-1.952	-4.58
Elderly	-.611	-1.350	-1.042	-0.959	-.937	-.348
Whole sample	-2.151	-2.040	-2.424	-4.270*	-3.971*	-1.178

Note. * $p<.05$, after applying a sequential Bonferroni correction. C1=Schoolchildren, C2=Adolescents, C3=Adults, C4=Elderly.

Competence. With regard to competence scores too, the Friedman test found significant differences in participants' ratings for different age classes ($\chi^2=55.747$, $p<.001$). On this whole sample level (See Figure 4), competence scores differed statistically in four cases: when comparing the age class of schoolchildren to adolescents ($Z=-6.661$, $p<.001$) and to adults ($Z=-4.179$, $p<.001$), and in the relation of the elderly age class to adolescents ($Z=-$

5.412, $p < .001$) and to adults ($Z = -5.836$, $p < .001$). The age classes of schoolchildren and the elderly ($Z = -.038$, $p = .970$), and adolescents and adults ($Z = -1.334$, $p = .182$) were not separated in terms of competence values. This means that schoolchildren and elderly people were rated equally low on this scale, while the adolescent and the adult age classes both received high scores.

When examined on the level of age groups (See Figure 5), various tendencies can be found. Schoolchildren (G1) evaluated their own age class as being on the same level with adolescents ($Z = -1.661$, $p = .097$) and adults ($Z = -1.568$, $p = .117$), and higher than elderly people ($Z = -2.722$, $p = .006$). They rated adolescents higher than adults ($Z = -2.527$, $p = .012$) and than the elderly age class too ($Z = -2.940$, $p = .003$), and the mean competence score of adults was also higher than of the elderly ($Z = -2.772$, $p = .006$).

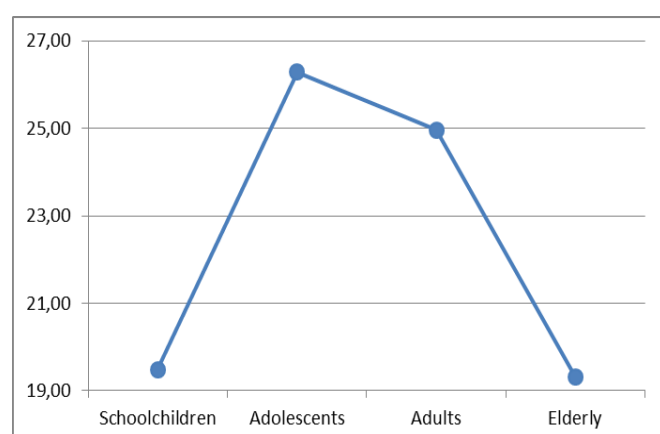


Figure 4. Mean competence score for each age class (whole sample)

Adolescents (G2) and adults (G3) showed the same pattern in rating age classes' competence. Both groups gave higher scores to adolescents than to schoolchildren ($Z_{G2} = -4.143$, $p_{G2} < .001$; $Z_{G3} = -3.362$, $p_{G3} = .001$) and than to the elderly ($Z_{G2} = -3.544$, $p < .001$; $Z_{G3} = -2.810$, $p_{G3} = .005$), and also rated adults higher than schoolchildren ($Z_{G2} = -3.372$, $p_{G2} = .001$; $Z_{G3} = -2.919$, $p_{G3} = .004$) and than the elderly age class ($Z_{G2} = -3.644$, $p_{G2} < .001$; $Z_{G3} = -3.465$, $p_{G3} = .001$). No difference was to be found between the competence-scores of schoolchildren and elderly ($Z_{G2} = -1.142$, $p_{G2} = .254$; $Z_{G3} = -.839$, $p_{G3} = .372$), or between

adolescents and adults ($Z_{G2} = -.243$, $p_{G2} = .808$; $Z_{G3} = -.196$, $p_{G3} = .845$) in either case.

From elderly participants' (G4) point of view, only schoolchildren were differentiated negatively in terms of competence from two other age classes: from adolescents ($Z = -3.313$, $p = .001$) and from adults ($Z = -2.550$, $p = .011$). Just like the compared values of adolescents and adults ($Z = -.207$, $p = .836$), the competence scores of the elderly did not significantly deviate from scores of adults ($Z = -1.010$, $p = .312$), adolescents ($Z = -.893$, $p = .372$) or schoolchildren ($Z = -1.700$, $p = .089$).

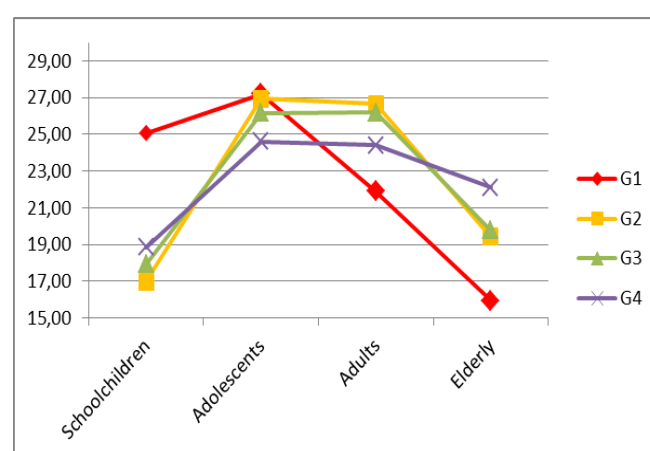


Figure 5. Competence-ratings for each age class by each participating age group (G). G1: Schoolchildren, G2: Adolescents, G3: Adults, G4: Elderly

Table 6

Wilcoxon Z-values for compared competence scores of age classes by each age group

Age groups	Rated age classes					
	C1-C2	C1-C3	C1-C4	C2-C3	C2-C4	C3-C4
Schoolchildren	-1.661	-1.568	-2.722*	-2.527*	-2.940*	-2.772*
Adolescents	-4.143**	-3.372**	-1.142	-.243	-3.544**	-3.644**
Adults	-3.362**	-2.919*	-.893	-.196	-2.810*	-3.465**
Elderly	-3.313**	-2.550*	-1.700	-.207	-.893	-1.010
Whole sample	-6.661**	-4.179**	-.038	-1.334	-5.412**	-5.836**

Note. * $p < .05$, ** $p < .01$ after applying a sequential Bonferroni correction. C1=Schoolchildren, C2=Adolescents, C3=Adults, C4=Elderly.

Comparison of warmth and competence ratings

Wilcoxon signed rank tests were run to determine if the participants had rated age classes differently on the warmth scale than on the competence scale (see Table 4 for the mean scores).

As for the whole sample, significant difference was found between the warmth and competence of schoolchildren (higher warmth, lower competence, $Z = -5.384$, $p < .001$), and adults (higher competence, lower warmth, $Z = -6.250$, $p < .001$), but not between these scores for the adolescent ($Z = -1.612$, $p = .107$) and the elderly age class ($Z = -.927$, $p = .354$).

Broken down to age groups, schoolchildren's differentiated rating of the adult age class on the two dimensions (more competent than warm) remains only a statistical trend ($Z = -2.159$, $p = .031$) because of the modified level of significance ($.05/4 = .0125$). Also, warmth and competence scores did not differ significantly in the case of the elderly ($Z = -.087$, $p = .931$), the adolescent ($Z = -.751$, $p = .452$) or their own age class ($Z = -1.591$, $p = .112$), both ratings being relatively low in the first case, and high in the latter cases.

In the evaluations of the adolescent age group, adults achieved higher competence and lower warmth scores ($Z = -3.346$, $p = .001$), while elderly people were rated less competent than warm ($Z = -2.633$, $p = .008$). The difference between the ratings for schoolchildren (higher warmth, lower competence) cannot be regarded as significant ($Z = -1.979$, $p = .048$) due to the Bonferroni-adjustment. The adolescent age class was also rated consistently high ($Z = -.761$, $p = .446$).

The test showed significant difference between adult participants' scale ratings for schoolchildren (less competent than warm, $Z = -3.342$, $p = .001$) and also for the adult age class (less warm than competent, $Z = -3.553$, $p < .001$), but not for adolescents (equally higher scores, $Z = -.938$, $p = .348$) and the elderly (equally lower scores, $Z = -.327$, $p = .744$).

Finally, the elderly age group showed the same pattern, but with different statistical values for each age

class (schoolchildren: $Z = -3.443$, $p = .001$; adults: $Z = -2.856$, $p = .004$; adolescents: $Z = -.698$, $p = .485$; elderly: $Z = -.923$, $p = .356$).

The interpretation of these results can serve as an alternative way to the analysis of inter-item correlations in determining how warmth and competence scales relate to each other, which will be the first issue to be addressed in the Discussion part.

Discussion

The goal of this study was to examine if ageist stereotypes can be observed in how elderly people, adults, adolescents and young children are evaluated by members of these different age groups. The nature of specific prejudices, assessed with the warmth and competence dimensions of the Stereotype Content Model, can best be described in two different ways: by analysing the convergent and divergent relations of these scales within each rated age class, and by comparing the ratings of different age classes along both dimensions.

Reliability and independence of the warmth and competence scales

As seen in Table 3, significant correlations were found between the items in all but two cases (between items number 4 and 10, and between items 5 and 10), that is, both within and between the warmth and competence dimensions. At first glance, this could mean that the independence of the theoretically distinct constructs of warmth and competence could not be replicated. However, there are some points, which are worth considering.

For instance, previous studies using the Stereotype Content Model were largely based on a Likert scale rating method (Durante, 2008; Cuddy et al., 2009). While the ranking method used in this paper has the advantage of delineating a more differentiated picture of stereotypes by not allowing to choose the "easy way" of giving about the same score to multiple objects to be rated, it may also have the disadvantage of a more inconsistent rating style.

Instead of focusing on one picture at a time and rating it along different items—which can be more easily recognized as similar elements of specific dimensions—in this case the structure of the test may encourage the participant to seek for slight differences between the meaning of items by picking a different “prototype” for each trait, that would embody it the most. In other words, giving the same Likert score to multiple objects following each other may seem more appropriate than choosing the same portrait for the same position consecutively. Also, properly arranging eight pictures requires more effort and planning than choosing one value of a scale at a time. If a picture is accidentally left out of the intended order, a less motivated participant may just insert it elsewhere instead of reorganizing the current ranking. As a result, the likelihood of a portrait receiving the same or approximately the same score on multiple items of a scale will decrease, making the item scores less homogeneous and the correlations less strong within the given scale.

At the same time, between-scale correlations cannot be expected to be as low as in Likert scale tasks, because the ranking structure does not allow for the distribution of ranks along two scales in a fully independent way. Since there is a continuity in the ranking, and so the rated age classes cannot be separated with a “gap” in the scores (like when using a Likert scale), and since there is a given latitude for arranging the pictures, there will most probably be pictures and age classes with similar scores on both scales, which brings these dimensions closer to each other.

However, if we accept that in this case the correlations cannot be expected to be strictly differentiated, it could be informative to examine the relative strength of different correlations. Omitting the direction and calculating only with the strength of the correlations (absolute values) the average inter-item correlation within the competence scale ($\bar{x}_{rc}=.295$) and within the warmth scale ($\bar{x}_{rw}=.305$) is by approximately 33 per cent stronger as compared to the average correlation between items of the two different scales ($\bar{x}_{rcw}=.203$). The removal of two questionable items mentioned above from each scale (items number 3 and 6) would make this

tendency become even more explicit ($\bar{x}_{rc2}=.305$, $\bar{x}_{rw2}=.343$, $\bar{x}_{rcw}=.177$), with the average within-scale correlations being by 42 and by 48.4 per cent stronger than the average between-scale item correlations. This relative analysis implies that the two scales may in fact measure different constructs.

Also, the correlations above were calculated on the level of single portraits. Since this paper examines the stereotypical perception of warmth and competence based on the average scores of the male and female portraits of an age class, it may be more adequate to examine how these scales relate to the level of age classes, rather than to separate pictures of people.

The comparison of warmth and competence ratings (see the Results section) makes it clear that these two scales could in fact be used to evaluate different aspects of certain age classes. These differences also take us to the first signs of ageism in the examined sample.

Prejudices of pity, envy, admiration and contempt

Analysing the convergence and divergence of warmth and competence scores can show whether the different types of mixed and consistent stereotypes suggested by the SCM manifest themselves in the present sample.

The significantly higher warmth and lower competence scores indicate the presence of the paternalistic prejudice in how schoolchildren are viewed. They are nice and kind, but lack competence and are thus not treated equally or with envious respect, which is consistent with previous findings (Cuddy et al., 2008, Cuddy et al., 2009).

On the other hand, adults are generally regarded as more competent than warm. Their skills are to be respected, but they also seem to be less approachable or likeable. This envious stereotype towards adults has also been confirmed earlier (Cuddy et al., 2008, Cuddy et al., 2009).

Besides these ambivalent prejudices, the other two, consistent type of evaluations could also be observed. Adolescents were rated as warm and competent, which

makes them objects of general admiration. This is in line with the pro-youth bias found to be prevalent in older age groups too (Hummert et al., 2002). However, the consistent prejudice of contempt towards the elderly observed on the whole sample level is in contrast with results supporting the universality of the paternalistic prejudice in evaluating old people (Cuddy et al., 2009). In this study, elderly people were rated as both cold and incompetent, which indicates a purely hostile form of stereotyping the elderly. But even more surprisingly, this result is strongly determined by ratings of one participating group, namely schoolchildren.

By examining evaluations on the level of age groups, it is clear that schoolchildren do not share the view of the other three groups regarding their own age class: they don't see themselves as less competent than warm, (and what is more, they rated young children as being as competent as adolescents and adults, and more competent than elderly people, see below). This can be regarded as evidence for the hypothesized need for a positive social identity, resulting in in-group favouritism (Hewstone, Rubin & Willis, 2002), which positive attitude is apparently extended to the age class of adolescents too. Although the result did not reach the modified level of significance, and given the relatively negative evaluation of adults, "envy" would not be the best term to describe schoolchildren's attitude towards adults, they still show a tendency to regard middle-aged people as being more competent than warm, while rating elderly people equally low on both dimensions.

In the group of adolescents, a paternalistic prejudice can be observed towards the elderly, and as a trend, towards schoolchildren too. The fact, that the former result could only be reported in the adolescent age group could indicate that they hold more diverse and milder stereotypes towards the old (also, see comparisons of between-class ratings below). One could assume that this calm attitude may be explained by adolescents having less fear of the elderly age class than children or adults do in some way. Children, with less knowledge about ageing and passing, may fear the unfamiliar (Mérei & Binét, 2006), while adults, being closer to the elderly age group than

adolescents, may fear the "too familiar" in the sense of non-optimal distinctiveness between in-group and out-group (Hewstone, Rubin & Willis, 2002). In any case, fear and perceived threat increases intergroup tension and can trigger out-group derogation (Hewstone, Rubin & Willis, 2002) resulting in contemptuous stereotypes.

Adults and elderly showed basically the same pattern in differentiating between the warmth and competence dimensions. While they too regard schoolchildren as being warmer than competent, adolescents are seen just as positively as adolescents evaluate themselves: they are both competent and warm (in the case of adults, not far from being significantly warmer than their own age class). This indicates that older age groups might indeed show the above mentioned pro-youth bias towards the younger generation, while holding less positive stereotypes toward their own age class (Hummert et al., 2002): both groups rated adults less warm than competent, while evaluating elderly people relatively low on both scales.

In order to better understand these tendencies, it is important to examine not only the relation of the two dimensions, but the differences between the rated age classes along each dimension.

Differences in rating various age classes

As seen above, based on the comparison of the warmth and competence scales, both convergent and divergent ratings can be observed. But how high or low these scores are to be considered is revealed by the comparison of ratings given to different age classes.

The general perception of old people's warmth and competence, supported by the tendency of sympathy and antipathy choices, speaks for the emergence of negative stereotypes towards the elderly age class. Pictures of older persons were rated as equally incompetent as young children, which supports findings that the elderly are regarded as people of substantially degraded skills, often infantilized in different ways, like with the patronizing form of communication termed "secondary baby talk" (Nelson, 2005). Also, this negative prejudice is not compensated with the perception of high warmth. Again,

only adolescents rated old people somewhat positively: as not being less warm than other age classes.

In general, adults too are rated less warm than the youth (especially than adolescents), and in this sense, negative stereotypes affect them too. On the other hand, together with adolescents, they are perceived to be more competent than schoolchildren or the elderly, which could be expected from previous studies (Cuddy et al., 2008, Cuddy et al., 2009).

As mentioned above, an important factor of the general negative stereotypes are the ratings of the schoolchildren group, the members of which regard themselves as competent as adolescents and adults, and by far more competent than old people. Young children have the most polarized stereotypes in terms of warmth as well. They are positively biased towards the groups of their own and of adolescents.

Adolescents do not seem to share this perception of equality: of all participating groups, they appear to like children the least. They distanced themselves from schoolchildren regarding competence too, and—just like young children—rated their own age class as being equal to the neighbouring older age class: adolescents seem to think of themselves as competent as adults, ranking the two groups clearly higher than the old.

Adults also evaluated the adolescent and adult age classes identically competent, placing them by far above the other two groups. In accordance with the pro-youth bias, described by Hummert and colleagues (2002), it appears that adults do not find their own age class very likeable: they put themselves on the same, relatively low level of warmth with the elderly, while showing a tendency of rating the youth higher.

The elderly age group shows the most balanced attitudes towards the different age classes, and does not seem to sharply distinguish between them in terms of warmth. As for competence, the elderly age group placed their own age class between the competent pair of adults and adolescents and the less competent schoolchildren.

Taken together, these results suggest an interesting pattern of in-group and out-group dynamics, and can point out important aspects of self-categorization. Apparently,

in-group favouritism is prevalent in younger age classes, complemented by the perception of equality with people of the next life stage, although with different types of attitudes: with the terminology of the SCM (Cuddy et al., 2008), schoolchildren regard adolescents as allies (rated both warm and competent), while adolescents see adults as competitors (rated more competent than warm). Either way, people of the younger age groups, while having a positive group identity, seem to appreciate the positive aspects of being a little bit older too.

Older age groups, on the other hand, appear to struggle with in-group favouritism in terms of warmth (adults) or both warmth and competence (elderly), and might not have a promising perspective of future values either. Instead, they seem to idealise the young (the “admired” adolescents), and to regard themselves as more or less comparable to younger age classes. Results suggest that adults may be able to retain one aspect of a positive group identity (competence), and to put themselves ahead of other groups (children and elderly) at least on one dimension. On the other hand, elderly people did not show such a tendency, and do not seem to counterbalance the negative stereotypes of their own age class by developing a positive in-group bias (rating old people higher) or excessively devaluating any other age class (e.g. the competence of children).

The fact, that older age groups do not show sign of in-group favouritism, may partly be explained by self-categorization and the various degrees of identification with different age categories. Since 2010, when the present research had been conducted, a comprehensive study of ageism in Europe was published (Age UK, 2011). In this survey too, participants were asked to categorize themselves as members of different age groups, and also to rate the sense of belonging to their group. Middle-aged participants reported weaker sense of belonging to their age category than younger or much older participants. As the study concludes, it might be harder to develop a strong sense of belonging to the group of middle-aged or the elderly, because the lack of consensus about the age marking the end of adulthood and the start of old age results in fuzzy categories (Age UK, 2011). It was

mentioned earlier, that a lot of adult and elderly participants were excluded from the present study because of unrealistic self-categorization. Although the remaining subjects showed objectively appropriate self-categorization after filling in the form, it might be reasonable to assume that many individuals had evaluated their actual age class with the sense of belonging to another, younger age group. This way, people can stereotype their own in-group without being aware of it (Levy & Banaji, 2002, as cited in Age UK, 2011). Interestingly, while this peculiar tendency of self-categorization was apparent, participants of the Age UK study showed positive attitudes towards the elderly, at least in terms of warmth, even in the Hungarian sample. This inconsistency could be attributed to methodological differences, namely to the fact, that the study mentioned used Likert-type scales for rating age classes (Age UK, 2011). While people tend to evaluate other people rather positively on Osgood and Likert scales, in accordance with social desirability and the denial of explicit prejudices (Fiske, 2006), a ranking task might serve as a better model for a real-life preference situation, in which implicit stereotypes may show their true nature.

In summary, the hypothesis that the closer a person gets to being regarded as old, the more negatively he or she evaluates elderly people, could not be confirmed. On the contrary, young children proved to have the most negative stereotypes of the old, which contradicts other findings (Thomas & Yamamoto, 1975; Davidovic et al., 2007).

The second assumption, according to which each group would rate its own age class the most positively, was only partially fulfilled. Apparently, younger individuals can easier achieve a positive social identity within their age group, while members of older age groups tend to evaluate their own in-group rather negatively or neutrally along one (adults) or both dimensions (elderly). From a developmental view, this may imply that over time, initially divergent and biased evaluations of different age classes transform into more convergent and generally neutral attitudes towards people of various ages. According to this, one remedy against ageism could be to get old.

The above results show that individuals of different age groups, including young children can hold stereotypes towards members of any age class. The specific relations of age categories to each other underline the importance of examining ageism in a broader, developmental context, focusing not only on the evaluation of elderly, but aiming to explore and explain perceptions of different ages in various stages of life.

Limitations and further research

A possible disadvantage of the applied method is that the ranking task might inevitably result in different evaluation of age classes along any dimension. However, the various items in both dimensions would allow an equalization of ratings, if no stable tendencies were present. In any case, examining a larger sample would probably shed light upon the reliability of these results. Also, questionable items of the warmth and competence scales mentioned above should be revised.

An unequal distribution of sympathy and antipathy choices may indicate that some portraits were not neutral enough. The replication of the research with another set of faces would be informative regarding this issue.

In order to understand intrapsychic factors behind the observed patterns, it might be useful to combine rating methods with more unstructured ways of data collection. Findings could also be compared with so far ignored, but potentially relevant subjects of developmental psychology.

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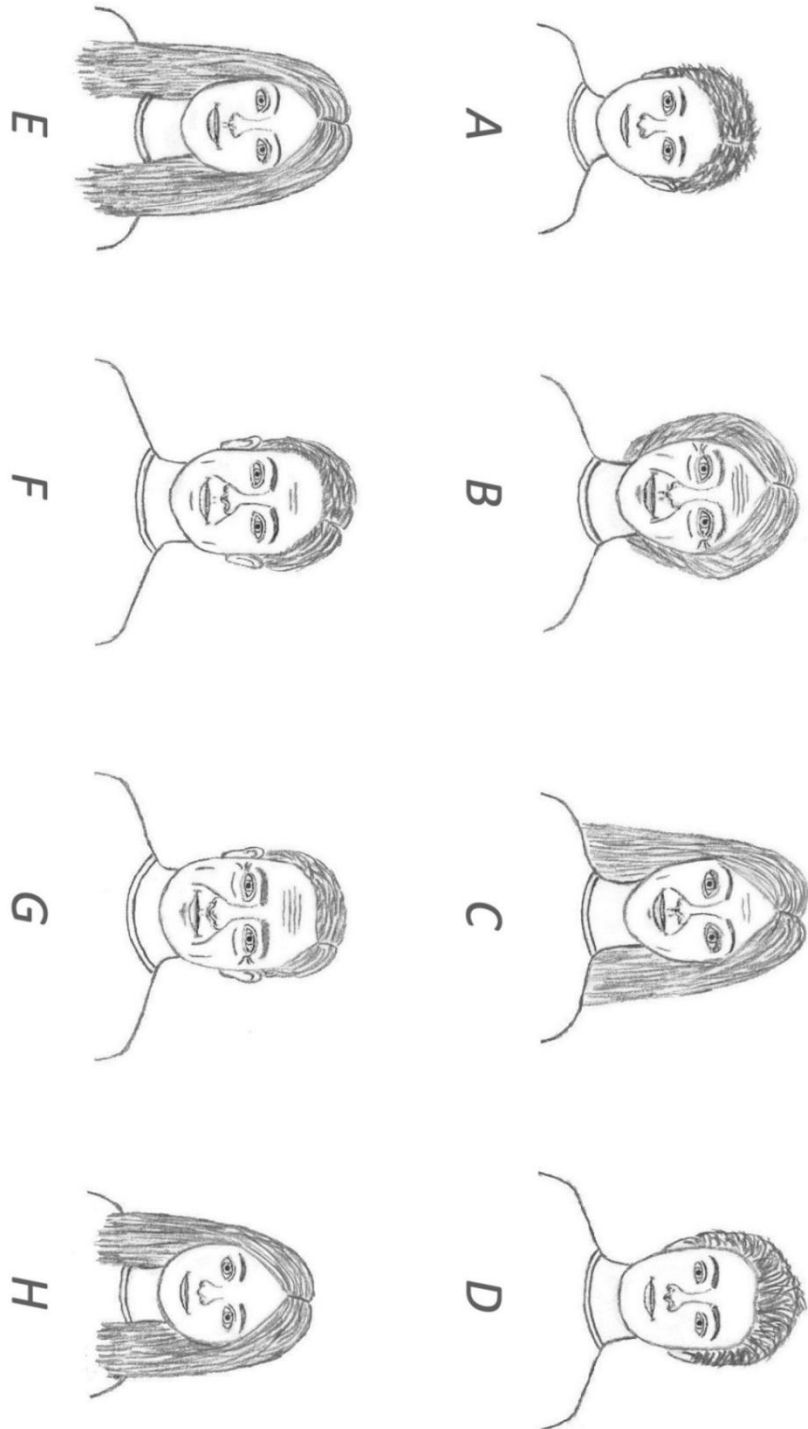
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Appendix A

The presented test material



Appendix B

English translation of the form filled in by the participants

Dear participant!

Thank you in advance for your help. On a separate sheet you will see drawings of people. After looking at them, please turn to the task on the next page. Thank you.

Below you will see different attributes and descriptions. Please rank the people on the pictures according to how much the given attribute or description suits them.

Fill in the letter of the person in the 1. box, who matches the given description *the most*. Fill in the letter of the person in the 8. box, who matches the given description *the least*. There is no correct or incorrect ranking, any face can be placed anywhere in the line, so listen to your first thoughts.

Please pay attention, so that every number is linked to a letter and that a letter is used only once in a row.

	1.	2.	3.	4.	5.	6.	7.	8.
<i>friendly</i>								
<i>irritating</i>								
<i>has a good sense of humour</i>								
<i>can help other people</i>								
<i>has difficulties in understanding things</i>								
<i>is successful in his tasks</i>								
<i>good-hearted</i>								
<i>selfish</i>								
<i>has good manual skills</i>								
<i>requires help of others</i>								

Now please fill in the letter of the picture

a) that you liked the most: ____

b) that you liked the least: ____

c) that resembles you the most (based on age and gender): ____

And finally, please fill in your age and underline your gender.

____-year-old MALE / FEMALE

Thank you for your help.

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