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Abstract

Ageism is an increasing concern in aging populations such as Asia and Europe. A prevalent assumption in psychology is that Eastern cultures may be less prone to ageism because of norms and values that honour and respect elders. Yet, evidence for this *culture hypothesis* is inconclusive. The current study examines this issue by comparing attitudes towards older people in an Eastern and Western samples of 184 young people from the UK and 249 from Taiwan. Attitudes to old age were measured both as meta-perceptions (the perceived normative context) and personal attitudes in regard to the cognitive, affective, and behavioural components of ageism. Consistent with the *culture hypothesis*, meta-perceptions about competence and admiration were more positive in Taiwan than in the UK, yet other meta-perceptions were more negative pointing to the existence of old age subtypes. Personal attitudes about older people in regard to the affective and behavioural, but not the cognitive component, were more negative in Taiwan than in the UK. Thus, cultural differences in ageism are more nuanced than suggested by previous research. The importance of distinguishing between the normative context and personal attitudes as well as the different components of ageism is highlighted by the present findings.

Keywords: ageism, meta-perceptions, personal attitudes, age stereotypes, cultural differences

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Asia and Europe are regions of the world in which population ageing is most pronounced and where, therefore, ageism is most likely to occur. Ageism can be defined as stereotyping (positive or negative), prejudice and/ or discrimination against older people on the basis of their chronological age or the perception of them as being old (Iversen, Larsen, & Solem, 2009). The literature suggests that Eastern cultures are less ageist than Western cultures because Eastern cultural values dictate that older people should be held in higher esteem (Nelson, 2009). However, empirical evidence for this assumption remains far from conclusive. A key methodological problem in past studies is that perceptions about cultural norms and personal opinions are not clearly separated from each other (e.g., Löckenhoff et al., 2009) or that the research focuses on only one or two of the three components of ageism (i.e., either stereotypes, prejudice or behaviour; for a recent review, see North & Fiske, 2015). This study addresses the gap by examining both cultural norms and personal attitudes in regard to all three components of ageism. We will contrast the UK with Taiwan, since these two countries are supposed to differ substantially in terms of their cultural values, but are similar in regard to their level of socio-economic development. Given that the socio-economic context is also related to ageism (Vauclair et al., 2014), any differences that we may find can be more safely attributed to culture through this targeted sampling.

East-West Differences in Ageism

There is relatively little research on cultural differences in ageism. The prevailing opinion in the literature is that Eastern cultures are influenced by Confucian values (e.g., filial piety) which promote positive views of aging and teaches younger people to respect, obey, and care

for their elders (Ng, 1998; Sung, 2001). Western societies, on the other hand, are seen as youth-oriented leading to more negative views about aging and older people (e.g., Palmore, 1975).

Consistent with this *culture hypothesis*, Eastern cultures do indeed score higher on Schwartz´ embeddedness value orientation which includes a value item assessing how important it is to honour elders (Schwartz, 2006). Eastern cultures also tend to be more interdependent (Nisbett, 2003) and collectivistic-oriented (Schwartz, 2006). Consequently, greater importance should be placed on relational harmony; and taking care of older people should be seen as a duty. Western societies, on the other hand, place relatively greater value on independence, personal control and innovation which is less compatible with older people who represent stability and tradition (Nelson, 2009). Hence, the normative climate that dictates how older people are to be seen and treated is likely to differ substantially between Eastern and Western cultures.

Direct evidence for the *culture hypothesis* is surprisingly sparse and inconclusive. Studies in which Eastern and Western cultures were compared showed that there is a wide disparity of attitudes towards older people among younger persons within Eastern cultures (Ng, 1998). Moreover, Westerners might perceive older persons more positively in intergenerational interactions than Easterners (e.g., Giles et al., 2003). Other studies showed that Eastern and Western respondents have similarly positive or mixed attitudes toward older people (e.g., Lin & Bryant, 2009; Runkawatt, Gustafsson, & Engström, 2013). Nevertheless, it has also been found that Easterners endorse more duties in relation to their elders than Westerners (e.g., to obey and respect; Ng, 1998) and that they hold somewhat more positive attitudes (e.g., Boduroglu, Yoon, Ting, & Park, 2006).

We suggest that these inconclusive findings are due to the kinds of questions researchers have asked. It seems likely that, when asked about cultural norms, Easterners may indeed show more positive judgments than Westerners because Easterners' underlying cultural values accord greater respect to the elderly. However, their responses to questions about their personal opinion might be very different compared to their perception of cultural norms (see also Williams et al., 1997). Moreover, there may be important cultural differences depending on the components of ageism that are assessed, such as intergenerational behaviour (see Giles, et al., 2003).

Meta-perceptions

Normative perceptions about age in a cultural community can be assessed through meta-perceptions which describe beliefs about how generalized others (e.g., most people in society) perceive older people. Although there might be some connection between meta-perceptions and personal beliefs, they should not be equated (see Yzerbyt & Demoulin, 2012). We argue that it is important to keep them separate in order to arrive at a better understanding of culturally perpetuated beliefs as opposed to personal opinions about older people.

It is noteworthy that assessing individuals´ meta-perceptions is not the only approach for studying how the normative climate is related to attitudes to age. An alternative is to use aggregated cultural values and to study how these are associated with attitudes to age. For instance, Löckenhoff and colleagues' (2009) 26 country study showed that cultural values of *collectivism* correlated positively with aggregated personal beliefs about received respect, family authority and societal views on aging. On the other hand, a very recent meta-analytic

study on East-West differences in attitudes to age showed that normative cultural expectations of *individualism* predicted relative *positivity* toward older adults in regard to age stereotypes and behaviour (North & Fiske, 2015). One explanation for the divergent results might be that neither study clearly separates between meta-perceptions and personal attitudes. The results are also not very informative for our purposes since they are tied to the country-level which means that inferences to the individual-level would be tantamount to committing the ecological fallacy (see van de Vijver & Leung, 1997). In our study, we aim to assess the normative climate *not* through statistical aggregates at the culture-level, but by asking individuals about their perceptions of normative content (cf. Chiu, Gelfand, Yamagishi, Shteynberg, & Wan, 2010).

Cognition, affect, and behaviour. Like any other attitudes, ageist attitudes can be distinguished in terms of their cognitive (e.g., stereotypes), affective (e.g., prejudiced feelings), and behavioural (e.g., avoidance behaviours) components (cf. Iversen, et al., 2009). There is very little research that examined ageist attitudes in the form of meta-perceptions, and cross-cultural comparisons are even sparser. Studies on old age meta-perceptions usually employ the stereotype content model (Fiske, et al., 2002) or the Behaviors from Intergroup Affect and Stereotypes (BIAS) map (Cuddy, et al., 2007) as theoretical frameworks. The results show that when older people are evaluated relative to the respective ingroup as well as other social minority groups (e.g., the homeless, rich), they score relatively high on the stereotypical dimension warmth, but low on competence. Moreover, older people are associated with feelings of pity as well as patronizing behaviours (referred to as active facilitation and passive harm). We are not aware of any comprehensive cross-cultural studies using the BIAS map

framework (i.e., studying stereotypes, affect and behaviour). Yet, a cross-cultural study using the SCM showed that both Eastern and Western samples evaluated older people as more warm than competent (see Cuddy, et al., 2009). North and Fiske´s (2015) meta-analysis on Eastern and Western differences included these types of studies, although the results are not entirely clear. It seems that sometimes age stereotypes in the East were slightly more positive than in the West, yet in other studies they were more negative. Hence, our predictions are based on the cultural theories we reviewed earlier which we refer to as the *culture hypothesis:* Eastern cultures should have more positive normative perceptions of older people than Western cultures because of cultural values that emphasise respect and care for the elderly (e.g., Ng, 1998) and a greater interdependency with others (e.g., Nisbett, 2003).

Personal Attitudes

The large majority of studies on East and West differences in ageism have examined personal attitudes. However, there is a great diversity in regard to the measures used, as described in North and Fiske´s (2015) meta-analysis. Some studies used established attitudes to age scales, whereas others created single item measures, for example, in the form of semantic differentials in order to assess these constructs. A drawback of any meta-analysis is the need to combine effect estimates from different types of study and different operationalisations of outcome measures and not all of these differences can be examined as potential moderators owing to rarity of particular combinations or instances. With these caveats in mind, we note that North and Fiske´s meta-analysis revealed that on average Easterners held more negative views than Westerners. In the following we will provide a more detailed picture of these East-West comparisons by taking into account the different components of ageist attitudes.

Beliefs and behaviours. North and Fiske´s (2015) meta-analysis does not include measures of affect or prejudice, but only studies that employed trait (e.g., stereotypical evaluations) or behaviour measures. Although we cannot provide empirical evidence for East-West differences in the affect component, prejudice is usually a highly reliable predictor of the behavioural component (cf. Cuddy, et al., 2007) and therefore, these two components are likely to yield similar results.

The meta-analysis distinguished between some outcome variables that are relevant for our study; i.e. evaluations of warmth (beliefs about kindnesss), competence (beliefs about ability), and behaviour/ behavioural intent (beliefs concerning actions with or towards older adults). The results showed that Eastern negativity was consistent across assessment types, but the behavioural measures showed the strongest effect. It is noteworthy that these results include also a few studies that examined meta-perceptions, but too few to carry much weight on the effect size estimation. North and Fiske (2015) also found that a recent rise in population aging significantly predicted negative elder attitudes in the East. Moreover, individualist cultural values explained why some cultures had more *positive* attitudes, a finding that stands in contrast to the original culture hypothesis. Again, this might indicate that personal attitudes, which are the primary focus of the meta-analysis, do not fit the culture hypothesis. An explanation might be that Easterners' interactions with seniors are more likely to be limited to their grand-parents than are those of Westerners. Moreover, a higher level of age segregation, less dialogue about ageism and intergenerational relations in society and schools, as well as a rising youth-oriented consumerist culture may be responsible for these trends (Luo, Zhou, Jin, Newman, & Liang, 2013). In particular, the latter may clash with the strongly hierarchical family

relationships in the Asian context that characterize collectivist culture and that have also produced the values of filial piety (Ng, 1998).

Our study aims to contribute to this body of research by taking a more fine-grained approach. Following the culture hypothesis, we expected to find evidence for Eastern *positivity* when it comes to assessments of the normative climate in the form of meta-perceptions. However, following the meta-analytic evidence we expected to find greater Eastern *negativity* towards older people in regard to personal attitudes. We explored whether these biases are evident in all three components that make up ageist attitudes.

Method

Participants and Procedure

Data were collected from 507 university students residing in the UK and Taiwan. Participants were only included in the analyses if they were nationals from the respective countries and if they indicated the country as the one they identify with, leaving an effective sample size of 433 (UK: $N = 184$; $M_{age} = 21.76$, $SD = 6.56$, 71.2% female; Taiwan: $N = 249$; $M_{age} = 20.72$, $SD = 1.67$, 52.2% female). Participation was completely voluntary and anonymous. Participants completed a questionnaire with measures on meta-perceptions and personal attitudes towards older people as well as socio-demographics. The data were collected via paper and pencil in Taiwan and via an online questionnaire in the UK. The questionnaire was developed in English and then translated and back-translated into Mandarin Chinese.

Meta-perceptions

Meta-stereotypes. We used measures from the BIAS map (Cuddy et al., 2007) to assess the warmth and competence dimensions of age stereotypes. Participants were asked to

indicate how likely it is that people in [country] view those over 70 "…as competent? …capable? … friendly? … warm?" (1 = "not at all likely to be viewed that way", 7 = "very likely to be viewed that way). The two items tapping into warmth and competence correlated highly in both samples (r_s = .65 to .83, p_s < .001) and were averaged to form indices for warmth and competence stereotypes.

Meta-prejudice. Perceptions about how most people feel towards older adults were measured with the four questions "how likely is it that most people in [country] view those over 70 … with pity? … with envy? … with contempt? … with admiration?" (1 = "extremely unlikely", 7 = "extremely likely").

Meta-behaviour. Perceptions about how most people in the participant´s country tend to treat older adults were assessed with eleven items that measure the behavioural tendencies *active harm* (to fight, attack), *passive harm* (to exclude, demean, derogate, hinder), *active facilitation* (to help, protect, assist), and *passive facilitation* (to cooperative with, associate with; see Cuddy et al., 2007). Participants were asked how likely it is that people in their country act in these ways towards elderly people, followed by a 7 point Likert scale ranging from 1 = "extremely unlikely" to 7 = "extremely likely". Cronbach´s alphas for each behavioural tendency and cultural sample were satisfactory ranging from .68 to .90. Hence, indices were computed by averaging item responses tapping into the respective behavioural tendency.

Personal Attitudes

Stereotypes. As a proxy for age stereotypes, we assessed perceptions of social structural variables (perceived social status and threat perceptions) which have been found to be precursors of stereotyping (see Cuddy, et al., 2007). We asked respondents "how they

personally view the social status of people over 70?" (1 = "extremely low status", 7 = "extremely high status). Status was defined as referring to prestige, social standing or position in society (see also Abrams, Russell, Vauclair, & Swift, 2011).

We used items on economic and symbolic threat in relation to age (see also Abrams et al., 2011): "People over 70 contribute a great deal to the economy these days", "Most people in their 70s have a good effect on [country] customs and way of life", "People in their 70s contribute a great deal to upholding [country] traditions and moral values" (1 = "strongly disagree", 7 = "strongly agree"). The latter two items correlated highly in the two samples (r_{min} = .51, $p < .001$) and were averaged to form an index of symbolic threat perceptions. Note that assessing perceived threat directly through negatively worded items is likely to evoke social desirability response tendencies. Accordingly, some previous studies have phrased these items positively (e.g., Lucassen & Lubbers, 2012) in order to mitigate this issue. We recoded all items so that higher scores indicate greater threat perceptions.

Prejudice. As a measure of *direct prejudice*, we asked respondents how they felt overall towards people over 70. The response scale ranged from 1 = "extremely negative" to 7 = "extremely positive". We recoded the item so that higher scores indicate more direct prejudice.

As a more *indirect measure of prejudice*, we employed four questions that assess how comfortable the respondents would feel in situations of more or less social distance to an older person: "how comfortable would you feel if a 70 year old was …your boss? …your neighbour? …spending an entire day alone with you? …talking to you?" (1 = "not comfortable at all", 7 = "completely comfortable"). The four items showed satisfactory Cronbach alphas in both

samples (α_{UK} = .80, α_{Taiwan} = .70) and were averaged to form an index of indirect prejudice. Note that we recoded all items so that higher scores indicate greater prejudice.

Behaviour. We assessed behaviour towards older people through a question on intergenerational friendships. Respondents were asked how many friends, other than family members, they had over the age of 70 ("none", "1", "2-5", "6-9", "10 or more").

Personal values. We used the Short Schwartz´s Value Survey (SSVS) to assess individuals´ personal values. We employed Lindeman and Verkasalo´s (2005) equation to obtain individuals´ scores on the value dimensions conservation vs. openness-to-change which assesses motivational goals of following one's own interests (individualistic focus) or the interests of the social group by preserving the status quo (collectivistic focus). Note that conservation is also defined by value items that assess to what extent it is important to honour parents and elders. Values tapping into this bipolar dimension assess a form of individualistic versus collectivistic values (Fischer, Vauclair, Fontaine, & Schwartz, 2010) and should distinguish the cultural samples.

Socio-demographics. Participants responded to questions about their age, gender (1 = female, 2 = male), nationality, country of identification, and importance of religion (1 = not at all important, 4 = very important).

Measurement Invariance for Multi-item Constructs

We assessed measurement invariance for *meta-stereotypes* (2 factors) and *meta-behaviours* (4 factors) in one single model (6 factor model), since these constructs are theoretically related. We also assessed measurement invariance for the *indirect prejudice measure* (1 factor) in a separate model. First, the baseline model was established for each

sample separately (*UK*: meta-perceptions: $\chi^2(75) = 139.25$; $p < .001$, $\chi^2/df = 1.86$; *CFI*=.94; *RMSEA*=.07; indirect prejudice: $\chi^2(2) = 10.70$; $p < .01$, $\chi^2/df = 5.35$; *CFI* = .97; *RMSEA* = .15[1]; *Taiwan*: meta-perceptions: $\chi^2(75) = 151.02$; $p < .001$, $\chi^2/df = 2.01$; *CFI* = .96; *RMSEA* = .06; indirect prejudice: $\chi^2(2) = 19.79$; $p < .001$, $\chi^2/df = 9.89$; *CFI* = .90; *RMSEA* = .18). The subsequent measurement invariance tests in Mplus 7 using means and covariance matrices (MACS) across groups yielded satisfactory results (cf. Vandenberg & Lance, 2000). See Table 1 and Table 2 for all results of the measurement invariance tests. The results support partial scalar invariance for meta-perceptions and for indirect prejudice. Byrne and colleagues (1989) argued that when at least two loadings and intercepts are constrained equal across groups, there is a justification to make valid inferences about the differences between latent factor means. We accepted partial scalar invariance, since the △ CFI was below or equal to the benchmark of -0.01.

- Table 1 and Table 2 -

Results

We verified that the two samples differed culturally by comparing their means on the value dimension conservation vs. openness-to-change. As expected, there was a significant difference, $t(425) = -2.01$, $p < .05$, with the Taiwanese sample scoring higher on conservation values ($M = .86$, $SE = .06$) than the UK sample ($M = .68$, $SE = .07$). The samples also differed in regard to religiosity ($t(429) = -2.76$, $p < .01$) with the Taiwanese sample scoring higher ($M = 1.83$, $SE = .05$) than the UK sample ($M = 1.60$, $SE = .96$). Moreover, there were significant differences in regard to their age, $t(431) = 2.38$, $p = .018$, and gender distribution, $\chi 2(1) = 15.93$, $p < .001$. Hence, in the following analyses we included religiosity, age and gender as covariates in order to adjust for between-group differences due to socio-demographics.

Cultural Differences in Meta-perceptions

A one-way between-groups MANCOVA was performed with religiosity, gender, and age as covariates and ten dependent variables. The results indicated a statistically significant difference between Taiwan and the UK on the combined dependent variables, $F(10, 417) = 46.09$, $p < .001$; Wilks´ Lambda = .46; $\eta p^2 = .53$. There was no significant relationship between religiosity or gender and the combined dependent variables (religiosity: $F(10, 417) = 1.30$, $p = .23$; Wilks´ Lambda = .97; $\eta p^2 = .03$; gender: $F(10, 417) = 1.38$, $p = .19$; Wilks´ Lambda = .97; $\eta p^2 = .03$). However, there was a significant effect of age on the combined meta-perceptions, $F(10, 417) = 2.01$, $p = .03$; Wilks´ Lambda = .95; $\eta p^2 = .05$.

When the results for the dependent variables were considered separately and a Bonferroni adjusted alpha level of 0.005 was applied[2], meta-perceptions on pity, active facilitation and warmth did not reach statistical significance (see Table 3). All other variables showed highly significant differences. Table 3 shows that Taiwanese respondents reported significantly more positive meta-perceptions for competence and admiration which is consistent with our *culture hypothesis*. However, they also scored significantly higher than the UK sample on meta-perceptions of envy, contempt and active harm. Respondents from the UK scored significantly higher on the passive behavioural tendencies than the Taiwanese sample (passive harm and passive facilitation).

An inspection of the mean scores and a one-sample t-test with the midpoint of the scale as the test value shows that older people were in general perceived as warm, admired and pitied, and as actively facilitated (see Table 3).

- Table 3 -

Cultural Differences in Personal Attitudes

We next tested whether there are any cultural differences in respondents´ personal opinions about older people. We conducted a one-way between-group MANCOVA with religiosity, gender and age as covariates and six dependent variables. The results indicated a statistically significant difference between Taiwan and the UK on the combined dependent variables, $F(6, 412) = 68.21$, $p < .001$; Wilks´ Lambda = .50; $\eta p^2 = .50$. There were also significant but much smaller relationships between religiosity as well as age and the combined personal attitudes about older people (religiosity: $F(6, 412) = 3.16$, $p = .005$; Wilks´ Lambda = .96; $\eta p^2 = .04$; age: $F(6, 412) = 6.14$, $p < .001$; Wilks´ Lambda = .92; $\eta p^2 = .08$), but not gender, $F(6, 412) = 1.14$, $p = .34$; Wilks´ Lambda = .98; $\eta p^2 = .02$. When the results for the dependent variables were considered separately and a Bonferroni adjustment of $p < .008$ was applied[3], we found that all variables except for symbolic threat showed highly significant differences (Table 4): respondents from the UK scored lower on direct and indirect prejudice measures and had more intergenerational friendships. However, Taiwanese respondents showed more favourable responses in regard to perceived social status and economic threat than UK respondents.

It is noteworthy that personal attitudes were relatively positive: older people were perceived as posing relatively little symbolic and economic threat as well as eliciting rather positive than negative feelings. However, both samples scored also significantly below the midpoint of the scale for the number of intergenerational friendships (see Table 4).

- Table 4 -

Discussion

In this paper, we aimed to better understand whether Eastern cultures are indeed less ageist than Western ones, as so often portrayed in the literature. By disentangling perceptions about cultural norms and personal beliefs as well as the cognitive, affective, and behavioural components of ageism, our findings provide new insights into the issue of cultural differences in ageism. We scrutinized the *culture hypothesis*, which holds that Eastern cultures hold older people in higher regard than Western cultures. We examined to what extent this prediction was supported in regard both to meta-perceptions (cultural norms) about older people and individuals´ personal attitudes.

Meta-perceptions

Drawing upon cultural theories -- culminating in the *culture hypothesis* -- we expected to find Eastern *positivity* in meta-perceptions of older people because of cultural values that prescribe that people should honour and respect the elderly as well as the emphasis on interdependence with others and relational harmony (e.g., Ng, 1998; Nisbett, 2003; Schwartz, 2006). Our results partly support this hypothesis by showing that the sample from Taiwan scored more positively on the meta-stereotype of competence and the meta-emotion admiration.

Nevertheless, like the UK sample, the Taiwanese sample showed an ambivalent age stereotype of higher warmth than competence evaluations which is consistent with previous research (Cuddy & Fiske, 2002). This might also explain why the two samples did not differ in their pity and active facilitation meta-perceptions, since patronizing tendencies should be related to this specific ambivalent perception (Cuddy, et al., 2007). It is very likely that this ambivalent meta-perception is associated with a *prototype* of older people triggered through

universal physical cues of aging (such as white hair, wrinkled skin, etc.). Future cross-cultural research could ascertain this assumption as we are not aware of any old age prototype study that has been conducted across cultures.

We also found that both envy and contempt meta-perceptions were higher in Taiwan which stands in contrast to our earlier finding on admiration – especially since admiration and contempt constitute incompatible emotions. One explanation could be that besides the positive cultural norms that hold the *prototype* of older people in high esteem and which are fuelled by cultural values, there are also *subtypes* of older people that are associated with less favourable societal factors, and therefore, with more negative views. For instance, the highly debated pension system with its large expenses in Taiwan may account for feelings of contempt, but also envy since the younger generation is unlikely to benefit from these government expenses when they are old themselves. This is also consistent with recent findings showing that rises in population aging predict negative elder attitudes in Eastern cultures (North & Fiske, 2015). Hence, some older people may be seen as a burden to Taiwanese society since they are not actively contributing anymore, but are benefitting from the contributions of the younger generation resulting in derogatory attitudes. Hence, the perception of older people may be more nuanced than currently thought. There is some research on the subtyping of other social groups in society (e.g., immigrants, see Lee & Fiske, 2006), but we are not aware of any cross-cultural study that has examined this issue in relation to the perception of older people.

Personal Attitudes

Drawing upon previous meta-analytic evidence (North & Fiske, 2015), we expected to find greater Eastern *negativity* towards older people in regard to personal attitudes. We

explored whether these biases are evident in all three components that make up ageist attitudes.

In fact, globally we found relatively positive personal attitudes across the two cultural samples. It was possible to identify a clear ageist bias for only some of the constructs (e.g., intergenerational friendships). This finding may be explained by the issue of social desirable responding when it comes to assessing personal opinions, especially for direct prejudice measures. Our study does not allow conclusions regarding whether responses to personal beliefs were indeed influenced by a social desirability bias. Nevertheless, we identified systematic group differences and in this case, the relative mean score differences seem to be more insightful than an interpretation of the absolute mean scores.

We found that the positive meta-perceptions in the Taiwanese sample compared to the UK sample, which supported the *culture hypothesis,* were indeed not represented in assessments of personal beliefs about older people. Although, the sample from Taiwan reported more favourable opinions regarding the perceived status and economic threat of older people, it also made more ageist responses in regard to both direct and indirect prejudice and intergenerational behaviours than the UK sample. This negativity bias in an Eastern culture is largely consistent with previous findings using personal attitude measures (see North & Fiske, 2015). Future research should examine the underlying reasons for the responses to these attitudinal components and whether they extend to other Eastern cultures. As mentioned earlier, there is recent evidence that a rise in population aging as well as cultural values of collectivism are related to ageist attitudes in Eastern cultures (North & Fiske, 2015). It is conceivable that there is a cultural change happening in the younger generation in the East

which is characterized by a more youth-oriented consumerist culture and which clashes with the traditional values of collectivism and filial piety (Luo, et al., 2013). Hence, personal attitudes may be strongly informed by contextual factors such as subcultures as well as government expenditure on older people which can create intergenerational tensions.

One explanation for why status and threat perceptions were more positive in Taiwan may be that these variables, as precursors of stereotyping (see Fiske, et al., 2002), still assess a form of widely shared image of older people. By asking about the *social position* of older people and their contribution to the economy, an implicit reference is made to their standing in the larger society. Hence, although these measures were framed as assessing personal opinions, they are somewhat confounded by containing a societal view as well which might be informed by societal factors such as the media. This may explain why responses to these constructs were more positive in Taiwan compared to the UK, which is in fact consistent with our findings on meta-perceptions.

Limitations

One limitation is that single-item measures were used for some constructs which do not allow conducting measurement invariance tests. However, when we were able to assess measurement invariance for other constructs, we obtained satisfactory fit indices indicating that the samples can be compared in their responses to the items. However, due to the fact that we only yielded partial scalar measurement invariance and that not all indices yielded a satisfactory fit (especially the chi-square difference tests), conclusions should be done drawn cautiously. On the other hand, it has also been argued that conventional measurement invariance tests may be too strict for cultural comparisons and that some wriggle room should

be allowed in cross-cultural research for assessing model fit (van de Schoot, Kluytmans, Lugtig, Hox, & Muthén, 2013).

Another limitation of our study is that we employed different measures in order to assess meta-perceptions and personal attitudes. One way of directly comparing meta-perceptions and personal attitudes could have been to ask the same questions but by framing them differently (e.g., what do *most others* think vs. what do *you* think). An important drawback of this method is that participants may adopt a response style in which they answer the two questions in the same way. This may be especially the case in more collectivistic-oriented cultures in which an obvious discrepancy between normative and personal perceptions is more likely to trigger a cognitive dissonance. Our approach signifies that we cannot directly compare responses to meta-perceptions and personal attitudes. Hence, an alternative explanation for our findings could be that differences in the measures account for our results. We think that this explanation is very unlikely given the large number of dependent variables on which we found consistent differences between the two samples. In sum, every study design has its (dis)advantages and we hope that more studies, including repeated-measure designs on meta-perceptions and personal attitudes, will be conducted in order to replicate and extend our findings.

Conclusion

This study goes beyond previous research by distinguishing between multiple components of ageist attitudes and different framings. This provides a more comprehensive picture of ageism in Eastern and Western cultures and points in fact to an intriguing avenue for

future research, the possible existence of an *ageism paradox* – the co-existence of both positive and negative views about older people in the East.

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References

Abrams, D., Russell, P.S, Vauclair, M., Swift, H. (2011). *Ageism in Europe: Findings from the European Social Survey*. London: AgeUK. http://www.ageuk.org.uk/documents/en-gb/id10704%20ageism%20across%20europe%20report%20interactive.pdf?dtrk=true

Boduroglu, A., Yoon, C., Ting, L., & Park, D. C. (2006). Age-related stereotypes: A comparison of American and Chinese cultures. *Gerontology*, *52*, 324–333. doi:10.1159/000094614

Byrne, B.M., Shavelson, R.J., & Muthén, B.O. (1989). Testing for equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin, 105*, 456-466. doi: 10.1037/0033-2909.105.3.456

Chiu, C.-Y., Gelfand, M. J., Yamagishi, T., Shteynberg, G., & Wan, C. (2010). Intersubjective culture: The role of intersubjective perceptions in cross-cultural research. *Perspectives on Psychological Science, 5*, 482–493. doi:10.1177/1745691610375562

Cuddy, A. J. C., & Fiske, S. T. (2002). Doddering but dear: Process, content, and function in stereotyping of older persons. In T. D. Nelson (Ed.), *Ageism: Stereotyping and Prejudice against Older Persons* (pp. 3–26). Cambridge, MA: MIT Press.

Cuddy, A. J. C., Fiske, S. T., & Glick, P. (2007). The BIAS map: Behaviors from intergroup affect and stereotypes. *Journal of Personality and Social Psychology*, *92*, 631–648. doi:10.1037/0022-3514.92.4.631

Cuddy, A. J. C., Fiske, S. T., Kwan, V. S. Y., Glick, P., Demoulin, S., Leyens, J.-P., … Ziegler, R. (2009). Stereotype content model across cultures: Towards universal similarities and some differences. *British Journal of Social Psychology*, *48*, 1–33. doi:10.1348/014466608X314935

Fischer, R., Vauclair, C.-M., Fontaine, J. R. J., & Schwartz, S. H. (2010). Are individual-level and country-level value structures different? Testing Hofstede's legacy with the Schwartz Value Survey. *Journal of Cross-Cultural Psychology*, *41*, 135–151. doi:10.1177/0022022109354377

Giles, H., Noels, K. A., Williams, A., Ota, H., Lim, T.-S., Sik Hung, N., … Somera, L. (2003). Intergenerational communication across cultures: Young people's perceptions of conversations with family elders, non-family elders and same-age peers. *Journal of Cross-Cultural Gerontology,* 18, 1–32. doi: 10.1023/A:1024854211638

Iversen, T. N., Larsen, L., & Solem, P. E. (2009). A conceptual analysis of ageism. *Nordic Psychology*, *61*, 4–22. doi: 10.1027/1901-2276.61.3.4

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2015). The performance of RMSEA in models with small degrees of freedom. *Sociological Methods & Research*, 44, 486-507. doi: 10.1177/0049124114543236

Lee, T., & Fiske, S. T. (2006). Not an outgroup, not yet an ingroup: Immigrants in the Stereotype Content Model. *International Journal of Intercultural Relations*, 30, 751–768. doi:10.1016/j.ijintrel.2006.06.005

Lin, X., & Bryant, C. (2009). Students' attitudes toward older people: A cross-cultural comparison. *Journal of Intergenerational Relationships*, *7*, 411–424. doi: 0.1080/15350770903285320

Lindeman, M., & Verkasalo, M. (2005). Measuring values with the short Schwartz's value survey. *Journal of Personality Assessment*, *85*, 170–178. doi: 10.1207/s15327752jpa8502_09

Löckenhoff, C. E., De Fruyt, F., Terracciano, A., McCrae, R. R., De Bolle, M., Costa Jr., P. T., … Yik, M. (2009). Perceptions of aging across 26 cultures and their culture-level associates. *Psychology and Aging*, *24*, 941–954. doi:10.1037/a0016901

Lucassen, G., & Lubbers, M. (2012). Who fears what? Explaining far-right-wing preference in Europe by distinguishing perceived cultural and economic ethnic threats. *Comparative Political Studies, 45*, 547–574. doi:10.1177/0010414011427851

Luo, B., Zhou, K., Jin, E. J., Newman, A., & Liang, J. (2013). Ageism among college students: A comparative study between U.S. and China. *Journal of Cross-Cultural Gerontology, 28*, 49–63. doi:10.1007/s10823-013-9186-5

Nelson, T. D. (2009). Ageism. In T. D. Nelson (Ed.), *Handbook of Prejudice, Stereotyping, and Discrimination* (pp. 431–440). New York, NY: Psychology Press.

Ng, S. H. (1998). Social Psychology in an ageing world: Ageism and intergenerational relations. *Asian Journal of Social Psychology*, 1, 99–116.

Nisbett, R. E. (2003). *The Geography of Thought: How Asians And Westerners Think Differently ... And Why*. New York, NY: Free Press.

North, M. S., & Fiske, S. T. (2015). Modern attitudes toward older adults in the aging world: A cross-cultural meta-analysis. *Psychological Bulletin*. Advance online publication. http://dx.doi.org/10.1037/a0039469

Runkawatt, V., Gustafsson, C., & Engström, G. (2013). Different cultures but similar positive attitudes: A comparison between Thai and Swedish nursing students' attitudes toward older people. *Educational Gerontology*, *39*, 92–102. doi: 10.1080/03601277.2012.689934

Schwartz, S. H. (2006). A theory of cultural value orientations: Explication and applications. *Comparative Sociology*, *5*, 136–182. doi: 10.1163/156913306778667357

Sung, K. (2001). Elder respect: Exploration of ideals and forms in East Asia. *Journal of Aging Studies*, *15*, 13–26. doi: http://dx.doi.org/10.1016/S0890-4065(00)00014-1

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods, 3*, 4-69.

van de Vijver, F., & Leung, K. (1997). *Methods and Data Analysis for Cross-cultural Research*. Thousand Oaks: Sage Publication, Inc.

Vauclair, C.-M., Marques, S., Lima, M. L., Bratt, C., Swift, H., & Abrams, D. (2014). Subjective social status of older people across countries: The role of modernization and employment. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 70, 650–660. doi:10.1093/geronb/gbu074

van de Schoot, R., Kluytmans, A., Lugtig, P., Hox, J., & Muthén, B. (2013). Facing off with Scylla and Charybdis: A comparison of scalar, partial, and the novel possibility of approximate measurement invariance. *Frontiers in Psychology*, 1-15. doi:10.3389/fpsyg.2013.00770/abstract

Williams, A., Ota, H., Giles, H., Pierson, H. D., Gallois, C., Ng, S.-H., … Harwood, J. H. (1997). Young people's beliefs about intergenerational communication: An initial cross-cultural comparison. *Communication Research*, *24*, 370–393. doi: 10.1177/009365097024004003

Yzerbyt, V. Y., & Demoulin, S. (2012). Metacognition in stereotypes and prejudice. In P. Briñol & K. DeMarree (Eds.), *Social Metacognition* (pp. 243–262). New York, NY, US: Psychology Press.

Table 1. Measurement Invariance Tests for Meta-Perceptions

Model	χ^2 (df)	χ^2 /df	△ χ^2 (△df)	CFI (△ CFI)	TLI	RMSEA	Comparison	Decision
Model 1: configural	336.51 (156)	2.157	--	.939	.918	.073	--	accept
Model 2: metric invariance	377.71 (171)	2.208	41.20 (15)	.930 (-.009)	.914	.075	Model 1 vs Model 2	accept
Model 3a: full scalar invariance	912.37 (186)	4.905	534.66 (15)	.754 (-.176)	.723	.134	Model 2 vs Model 3a	reject
Model 3b: partial scalar invariance	409.22 (179)	2.286	31.51 (8)	.922 (-.008)	.909	.077	Model 2 vs Model 3b	accept

Table 2. Measurement Invariance Tests for Indirect Prejudice

Model	χ^2 (df)	χ^2 /df	△ χ^2 (△df)	CFI (△ CFI)	TLI	RMSEA	Comparison	Decision
Model 1: configural	10.866 (3)	3.622	--	.983	.932	.110	--	accept
Model 2: metric invariance	15.792 (4)	3.948	4.926 (1)	.975 (-.008)	.924	.117	Model 1 vs Model 2	accept
Model 3a: full scalar invariance	241.195 (11)	21.927	225.403 (7)	.504 (-.471)	.458	.311	Model 2 vs Model 3a	reject
Model 3b: partial scalar invariance	23.817 (6)	3.969	8.025 (2)	.962 (-.013)	.923	.117	Model 2 vs Model 3b	accept

Table 3. ANCOVA results for meta-perceptions about older people.

Dependent variables	*M* (*SD*)		$F_{(1, 426)}$	*Partial* η^2
	UK	Taiwan		
Competence	**2.79** (.99)	**3.76** (1.07)	79.57*	0.16
Warmth	**4.78** (1.05)	**5.03** (.95)	4.55	0.01
Admiration	**4.41** (1.32)	**5.06** (1.12)	24.67*	0.06
Envy	**2.28** (1.10)	**3.23** (1.18)	59.43*	0.12
Pity	**4.93** (1.07)	**4.89** (1.02)	0.04	0.00
Contempt	**3.42** (1.32)	4.01 (1.33)	23.36*	0.05
Active Harm	**2.17** (1.06)	**3.53** (1.08)	175.25*	0.29
Active Facilitation	**5.58** (0.75)	**5.65** (0.81)	0.64	0.00
Passive Harm	**4.25** (.94)	**3.74** (1.11)	18.50*	0.04
Passive Facilitation	**4.34** (1.07)	3.94 (.98)	17.76*	0.04

*$p < .005$. Covariates are religiosity, gender, and age. Mean scores in bold are those that are significantly higher or lower than the midpoint of the scale.

Table 4. ANCOVA results for personal opinions about older people.

Dependent variables	*M* (*SD*)		$F_{(1, 417)}$	*Partial* η^2
	UK	Taiwan		
Perceived Social Status	3.99 (1.21)	**4.61** (1.14)	19.64*	.05
Economic Threat	**3.43** (.85)	**2.79** (1.24)	39.55*	.09
Symbolic Threat	**2.60** (.65)	**2.59** (.91)	0.07	.00
Direct Prejudice	**2.96** (.97)	**3.27** (.99)	34.32*	.08
Indirect Prejudice	**2.30** (1.01)	**3.65** (.96)	179.38*	.30
Intergenerational Friendships	**2.41** (.97)	**1.19** (1.09)	142.12*	.25

*$p < .008$. Covariates are religiosity, gender, and age. Mean scores in bold are those that are significantly higher or lower than the midpoint of the scale.

[1] It is not unusual to yield a higher RMSEA if the model is presented by only a few items and thus has low degrees of freedom (see Kenny, Kaniskan, & McCoach, 2015). Furthermore, it is very likely to have some non-invariant items among all items tested, if the number of items is low (see Byrne, 2012).

[2] Using the Bonferroni adjustment to evaluate the covariates contribution to predicting each of the meta-perceptions, we found that the covariate gender was significantly related to active harm, $F(1, 426) = 7.85$, $p = .009$, $b = -.28$. The covariate age was significantly related to warmth, $F(1, 426) = 13.69$, $p < .001$, $b = -.04$, and admiration, $F(1, 426) = 11.86$, $p = .004$, $b = -.04$.

[3] Using the same procedure as for meta-perceptions, we found that the covariate religiosity was significantly related to social status, $F(1, 417) = 12.91$, $p = .002$, $b = .21$, and symbolic threat, $F(1, 417) = 6.57$, $p = .001$, $b = -.15$. Moreover, age was significantly related to economic threat, $F(1, 417) = 18.76$, $p < .001$, $b = -.04$ and indirect prejudice $F(1, 417) = 11.38$, $p = .001$, $b = -.04$.