Psychology and Aging

A World of Difference? Domain-Specific Views on Aging in China, the US, and Germany
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CITATION
Research on cross-national differences in views on aging has often focused on a comparison between Asian and Western countries. However, the results are mixed showing either more positive views in Asia, no difference at all, or even more positive views in Western countries. A potential moderator of country differences that might explain some of the heterogeneity is the fact that views on aging differ in their content and valence depending on life domains such as health versus family relations. Therefore, our aim was to systematically address domain-specific views on aging in a cross-national study, also considering that cross-national differences are age group-specific. We examined differences in views on aging between China, the United States, and Germany in eight life domains using samples with a broad age range. For most of the domains, cross-national differences indicated more negative views on aging in China compared with the Western countries and more positive views among the American compared with the German participants. Intriguingly, the differences between China and the United States or Germany were absent or even reversed in the domains friends, personality, and finances. Cross-national differences also varied by age group. Our results show that explanations of cross-national differences in views of aging probably do not apply uniformly across all life domains or age groups. They underline the importance of acknowledging the domain-specific nature of views on aging in cross-national research.

Keywords: cross-national comparison, views on aging, life domains

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Views on old age and aging can be conceived of as cultural and societal phenomena going beyond mere reflections of universal biological processes (Laws, 1995). They are defined as “shared cultural representations” (Löckenhoff et al., 2009, p. 942) or “cultural archetypes” (Hummert, Garstka, Shaner, & Strahm, 1994, p. 249) that are assumed to be associated with characteristics reflecting specific societal conditions of old age and aging like social security systems (e.g., McConatha, Schnell, Volkwein, Riley, & Leach, 2003). Accordingly, views on aging vary from country to country (e.g., Chung & Lin, 2012; McConatha et al., 2003), with cross-national differences being traced back to several aspects of societies from sociodemographic development to culture specific values (North & Fiske, 2015a). Since views on aging have been shown to influence developmental outcomes (for a review regarding their effects on health and longevity, see Westerhof et al., 2014), the investigation of their culture-specific characteristics is important to better understand the conditions of global aging. A special focus in this area of research lies in the comparison between views on aging in Asian and Western countries.

Generally, there are three different assumptions regarding the question of how views on aging differ between the East and the West (for an in-depth review, see North & Fiske, 2015a). First, one widespread assumption is that views on aging are more positive among Asians, attributable to specific characteristics of the Asian
culture. Here, the influence of Confucian values (Levy & Langer, 1994) and the stronger focus on collectivism (e.g., Nelson, 2009) are considered. According to a second assumption, attitudes of Asian and Western countries may become more similar, as the basis of more positive views on aging has been eroded. This second perspective takes historical and more recent changes of Asian and Western societies into account (e.g., urbanization and industrialization, aging of societies). Research has shown that the modernization level of cities in China is associated with a decrease in filial piety (Cheung & Kwan, 2009). Considering that filial piety can be defined as “unconditional material and emotional support for parents” (Cheung & Kwan, 2009), this change in support structures for older adults might also affect how they are perceived, leading to a homogenization of views on aging between Western and Asian cultures. A third hypothesis states that views on aging might even be more negative in Asian countries. In particular, societal trends regarding the aging of populations might increase intergenerational ageism (North & Fiske, 2012). Recent analyses show that the proportion of older adults in a population as well as recent rises in population aging are related to more negative attitudes toward older adults (Löckenhoff et al., 2009; North & Fiske, 2015a). It can be argued that demographic changes with a growing proportion of older adults in the population should affect Asian cultures more strongly due to the larger absolute magnitude of older people, which potentiates problems related to intergenerational resource conflicts, leading to stronger ageist tendencies in Asian cultures.

Views on Aging in Different Countries

Studies comparing attitudes from participants based on their nationality provide evidence for all three perspectives. Some studies found no difference between views on aging in Asia and in Western countries or their results were rather mixed (e.g., Lin & Bryant, 2009; Xiao, Shen, & Paterson, 2013). Others found views on aging to be more positive in Asia (e.g., Chung & Lin, 2012; Levy & Langer, 1994; Tan, Zhang, & Fan, 2004; Yoon, Hasher, Feinberg, Rahhal, & Winocur, 2000) or, alternatively, more positive in Western countries (e.g., Cha & Seo, 2009; Huang, 2013; Luo, Zhou, Jin, Newman, & Liang, 2013; Sharps, Price-Sharps, & Hanson, 1998). To complicate matters further, there is also variance within the groups of Eastern and Western countries. For example, comparisons of aging anxiety between participants from Germany and the United States revealed more negative views on aging among Germans than Americans (McConatha et al., 2003). A recently published meta-analysis by North and Fiske (2015a) sheds light on the debate centered around the question of how views on aging vary between different geographical regions, especially Asian and Western countries. A comparison of attitudes toward older adults and the aging process revealed overall more negative views on aging in Asian compared with Western countries. Additionally, the authors identified higher individualism (lower collectivism) and a lower population aging rate as predictors of more positive views on aging.

It seems likely, however, that the mechanisms assumed to underlie cross-national differences in views on aging will not have a uniform effect across different life domains. Studies examining intergroup relations show that feelings toward group members reflect the specific threats they pose (Cottrell & Neuberg, 2005). Accordingly, these explanations for cross-national differences should primarily hold in specific domains where a conflict over resources exists. For instance, prejudice against older adults in the work domain is assumed to be rooted in the expectation that they should make room for younger adults (North & Fiske, 2013a; for a review on intergenerational tension in the workplace, see North & Fiske, 2015b). This might reflect economic pressure as illustrated by a study by North and Fiske (2016) who showed that perceived resource scarcity in a workplace reinforced the tendency to exclude older workers. Additionally, tension between generations in the workplace might be related to stereotypes such as the perception that older workers are less capable or unable to learn new things (North & Fiske, 2015b). It is less plausible that these evaluations of older people as incompetent are salient in other domains, in which no such conflict over resources is evident (e.g., domains of leisure or personal relations).

Another domain where generations compete for resources is the health sector. This area is fraught with perceptions of older people as frail and cognitively impaired, often accompanied by the view that life is less valuable or not worth living in old age. These negative views of aging are instrumental for justifying disadvantages or unequal treatment of older people in getting access to medical or care services. However, again, they do not necessarily transfer to views of and attitudes toward older people in other life domains. This might be especially the case for domains such as family or friends, in which no such conflicts are apparent or where the older generation is typically seen as a resource for younger people (e.g., finances, childcare). Thus, both individualism/collectivism-based as well as population aging explanations leave room for more positive views on aging in certain life domains.

Given the considerable variability regarding the content and valence of views about aging across different life domains, we argue that consideration of such context specificity might provide a better basis for understanding cross-national differences in views on aging. Domain specificity might also help explain mixed results within or across studies as some of them might more or less implicitly touch upon specific domains with their assessment of age stereotypes.

Domain- and Age Group-Specificity of Views on Aging in Different Countries

Although many studies comparing views on aging across different countries have used unidimensional or aggregated valence-based measures without taking different life domains into consideration, there are noteworthy exceptions (e.g., Boduroglu, Yoon, Luo, & Park, 2006; Cha & Seo, 2009). For example, Cha and Seo (2009) examined attitudes toward older adults that included perceptions of their physical and cognitive functioning and found more positive attitudes among American participants compared with South Korean participants. Yoon and colleagues (2000), however, used an open format leaving the life domains participants thought of unspecified and found the opposite effect, namely, that Asian participants had more positive attitudes than Western participants. Accordingly, other studies using scales aggregating across different domains (e.g., finances and leisure activities, Fraboni Scale of Ageism; Fraboni, Saltstone, & Hughes, 1990) might neglect potentially contradictory effects at the level of single domains.
The most comprehensive study so far regarding domain-specific cross-national differences in views of old age considered seven life domains, such as the ability to do everyday tasks, wisdom, and authority in the family. Each domain was assessed with a single item assessing perceived changes in older adults in the respective domain and mostly in student samples (Löckenhoff et al., 2009). The authors found that cross-national variability depended on domain and was the smallest in the domain physical attractiveness. It was assumed that the effect of culture is stronger in domains that do not depend on biological changes. Moreover, the authors found a consistent pattern of perceived increase regarding wisdom and knowledge with old age. Although only few domains and/or selective samples were used in most previous studies, their results have already pointed to the importance of considering domain-specific views on aging in cross-national research.

Furthermore, a number of studies have shown that people of different ages hold different views on aging (e.g., Hummert et al., 1994; Kite, Stockdale, Whiteley, & Johnson, 2005), and that these age group differences further depend on life domain (Kornadt & Rothermund, 2011; Kornadt, Voss, & Rothermund, 2013) and the countries considered (Boduroglu et al., 2006; Chung & Lin, 2012). Boduroglu and colleagues (2006) compared stereotypes of younger and older American and Chinese participants, and found that positive and negative age stereotypes were named with equal frequency among younger Chinese people whereas all other groups reported a higher proportion of negative age stereotypes. Most important is a study by Yun and Lachman (2006), who found no interaction of culture with age group for the overall score of aging anxiety, but significant interactions for two of the four subscales related to specific domains indicating that cross-national differences can depend on the age groups and life domains considered. Those age-group variations in cross-national differences could point to actual changes in societies (e.g., because “Eastern countries are becoming more Westernized” Chung & Lin, 2012, p. 40). It was also assumed that cultural norms and values affect development as they become internalized over the life span leading to more pronounced cross-national differences with advancing age (Fung, 2013). In this case, larger differences between older participants from different countries would reflect development instead of cohort differences.

**Current Study**

Drawing on research investigating the domain- and context-specificity of views on aging, the aim of our study was to clarify some of the mixed results in the literature regarding the difference in views on aging in Eastern and Western countries. By investigating views on aging in eight different life domains (family, friends, religion, leisure, personality, finances, work, and health), we identified a potential moderator of cross-national differences that might explain the heterogeneity of previous study results. Additionally, our sample covers a broad age range, which allowed us to investigate age group-specific cross-national differences.

Sampling from China (Hong Kong), the United States (Wake County, NC), and Germany (Jena, Erlangen), we included data from three highly developed countries. However, these countries also differ substantially regarding cultural values, population aging, and social security systems. Collectivism, for example, is higher in China when compared with the other two countries (Hofstede, 2001), and the highest level of individualism can be found in the United States (Hofstede, 2001). Adding data from Germany is not only relevant because European countries were shown to differ from North America in how they compared with Asian countries (North & Fiske, 2015a), but also because it was the country with the third highest proportion of people aged 65+ in 2013 (World Bank, 2013). Accordingly, Germany combines unique characteristics because it shares individualistic values with other Western countries, but also faces high population aging, both of which were found to have the opposite association with views on aging (North & Fiske, 2015a). Regarding social security systems in the three countries, the most extensive health care system can be found in Germany. Additionally, both Western countries have stronger pension systems compared with China. With this selection of countries, we can thus compare countries that share basic similarities while also contrasting differential aspects that shape old age and aging and its perception and construction. Especially relevant for this study is the fact that the United States, China, and Germany differ regarding cultural backgrounds, demographic realities, and social infrastructure.1

Based on existing evidence, we expected more negative views on aging overall in China compared with Germany and the United States, and more positive views on aging among the American participants compared with the Germans (e.g., Conodana et al., 2003; North & Fiske, 2015a). Differences in individualism might account for those cross-national differences (North & Fiske, 2015a). Most importantly, however, we assumed that this pattern does not hold across all life domains. Moreover, we expected cross-national differences to vary depending on age group. Although the results of existing studies are not fully conclusive in that regard, we expected fewer cross-national differences in the younger age group than in older adults. This assumption is in line with the westernization (Chung & Lin, 2012) and “aging in culture” (Fung, 2013) hypotheses. With Asian cultures becoming more similar to Western cultures, the socialization of younger adults in the different cultures might differ less, leading to more similar views on aging in this age group. Additionally, an accumulated impact of culture to which older people have been exposed throughout their lives should magnify culture-based differences in views on aging in older samples.

Also based on existing research (e.g., Boduroglu et al., 2006) and cross-national differences in individualism/collectivism, we expected smaller differences between the Western countries and China in the domain of family, or even a reversed effect with more positive views on aging in China compared with Germany and the

1 We acknowledge that there is variability in every country depending on geographical region and city. This might be especially the case with Hong Kong due to the time under British administration, which had a profound impact on how the society emerged (Harwood et al., 1996) and differentiates Hong Kong from Mainland China. However, to stay consistent within the terms, we decided to refer to the country for each of our samples even though they are not necessarily representative for the respective population.

2 Chiu, Chan, Snape, and Redman (2001) proposed that a comparison of Western countries with data from Hong Kong might constitute a rather conservative approach for East-West comparisons. They argue that differences between Western and Asian cultures might be underestimated based on a comparison with Hong Kong due to the historical Western influence in Hong Kong.
United States in those domains that were related to interpersonal relations. Similarly, considering culture specific values and findings regarding related characteristics such as wisdom that point to a more homogenous expectation across different countries (Löckenhoff et al., 2009), we also assumed smaller differences or more positive views in China compared with the United States and Germany in the domain of personality. Cultural characteristics related to elder respect (due to experience and wisdom) might especially take effect in this domain as it is mostly independent of sociostructural conditions. In the domain of work, we expected more pronounced cross-national differences with more negative views in China considering the higher collectivism and the assumed resulting conflict (North & Fiske, 2015a). This should especially be the case among younger adults, but considering that age stereotypes are internalized into self-views as they become more self-relevant (Rothermund & Brandstädter, 2003; see also Kornadt, Voss, & Rothermund, 2017; Levy, 2009), this should also hold for older adults. Additionally, based on the idea that views on aging in the domains health, appearance, and fitness reflect universal biological changes, there should be smaller or no cross-national differences (Löckenhoff et al., 2009). Alternatively, views on aging in these areas might be influenced by how age-related changes are addressed in a society, for example, in health care systems. When people perceive that older adults are successfully taken care of not only in case of an illness but also regarding preventive measures, views on aging might be more positive in that domain. In our case, this might result in more positive views on aging in Germany, due to a more structured health care system compared with the United States and China.

Method

Sample

A total of 1,894 participants from China (Hong Kong), the United States (Wake County, NC), and Germany (Jena and Erlangen) took part in the questionnaire study. The selection procedure differed slightly depending on country. Whereas participants in the United States and in China were identified using information from marketing firms, contact information was obtained from local registry offices in Germany. Potential participants were asked for their consent to participate either by telephone (Hong Kong) or mail (United States, Germany). Participants were recruited in several waves in order to obtain samples that are stratified regarding gender and across the targeted age range. After completing and returning their questionnaire, participants received a gift card worth approximately $20. Research procedures were approved by the Institutional Review Boards at North Carolina State University and Chinese University of Hong Kong. This was not required at Friedrich-Schiller-University Jena as it was a questionnaire study and people participated voluntarily and anonymously.

Table 1 provides an overview of demographic information of the three subsamples; information on the measures is presented in the next paragraph. In order to test for differences between the countries, we conducted chi-square tests and one-way between-subjects analyses of variance (ANOVAs). Because of the heterogeneity of variances, we report results of the Welch test for the ANOVAs. The samples were balanced regarding gender, $\chi^2(2) = 4.93, p = .085$, but differed regarding marital status (married vs. not married), $\chi^2(2) = 13.98, p = .001$, age, $F(2, 1136.51) = 6.10, p = .002$, subjective health, $F(2, 1213.83) = 92.23, p = .000$, education (based on the International Standard Classification of Education [ISCED 2011]; Organisation for Economic Cooperation and Development [OECD], European Union, UNESCO Institute for Statistics, 2015), $F(2, 1145.99) = 365.42, p = .000$, and income $F(2, 1034.23) = 68.66, p = .000$. Post hoc tests indicated that the Americans were slightly younger compared with the Hong Kong Chinese and Germans and reported better subjective health. In both cases, there were no differences between Hong Kong Chinese and German participants. Additionally, all three samples differed regarding education level with the highest education in the American sample and the lowest in the Hong Kong Chinese sample. Americans also reported the highest household income while the lowest was reported by Germans. We therefore decided to include age, self-reported subjective health, marital status, level of education, and income as covariates in our analyses.

Measures

The measures used in this study were part of a larger questionnaire. It included not only perceptions of older adults but also other variables related to old age and aging, such as views on one’s own aging, attitudes toward life in old age, and life satisfaction.

Views on aging. We assessed views on aging in eight life domains using a questionnaire developed by Kornadt and Rothermund (2011). For every domain, the set of questions started with “Old people . . . ” followed by three to five bipolar items per domain. All items are presented in the online supplemental materials (Table A1). The life domains are (a) family and one’s committed relationships; (b) friends and acquaintances; (c) religion and spirituality; (d) leisure and volunteer activities; (e) personality and life management; (f) financial situation and dealing with money; (g) work and professional life; and (h) physical and mental fitness, health and appearance. On each of the items, participants rated the degree of their agreement with one of the two poles on an 8-point Likert scale, whereby higher values indicated more positive views on aging or more perceived spirituality in the domain religion and spirituality. For the main analysis, the three to five items of each domain were used as manifested indicators of the respective latent views on aging variable. Cronbach’s alpha for the resulting eight scales ranged between .87 (work) and .95 (leisure) in China, .70 (family) and .91 (health) in the United States, and .74 (work) and .85 (health) in Germany.

Covariates. We included those sociodemographic variables as covariates that differed between countries. Accordingly, age, self-reported subjective health, marital status (0 = not married,
1 = married), level of education, and income were included in the models. Self-reported subjective health was assessed using a single item asking participants to answer the question “How would you describe your current state of health?” using a 5-point rating scale with the poles not good at all and very good. Education level was coded in accordance with the guidelines provided in the ISCED 2011 (1 = primary education, 2 = lower secondary education, 3 = upper secondary education, 4 = postsecondary nontertiary education, 5 = short-cycle tertiary education, 6 = bachelor’s or equivalent level, 7 = master’s or equivalent level, 8 = doctoral or equivalent level; OECD, European Union, UNESCO Institute for Statistics, 2015). Self-reported household income was assessed on an 8-point scale with the currency adapted to the respective country and then recoded into five categories, to improve the commensurability of the scale.

**Analytic Procedure**

**Measurement invariance.** The comparison of mean values in views on aging in eight different life domains across China, the United States, and Germany was based on a multiple-group confirmatory factor analysis (CFA). In order for these comparisons to be meaningful, we first had to show that the measure assessing views on aging was invariant across the three countries. Due to missing values on all items assessing views on ageing eight participants were not included in the analyses. Accordingly, we tested four models to establish measurement invariance using a stepwise approach. Fit indices for the models are reported in Table 2. First, we tested whether the model fit separately for each of the three countries. Based on criteria proposed by Chen (2007), the comparison between goodness of fit indexes showed that weak invariance should be preferred over configural invariance. We then tested configural, weak, and strong measurement invariance. Both the configural (Model 1) and weak (Model 2) measurement invariance models had an acceptable fit. However, additionally constraining the intercepts to be equal in all three countries (strong invariance, Model 3) led to a poor fit and was also worse compared with the metric model. Therefore, we decided to relax some of the constraints added in Model 3 based on the modification indices to establish partial strong measurement invariance (Model 4). The resulting model had an acceptable fit. Although the change in the comparative fit index (CFI) was slightly higher than recommended by Chen (2007), it was just above the cutoff value and, considering that changes in the root-mean-square error of approximation (RMSEA) and standardized root-mean square residual (SRMR) are within the proposed guidelines, we decided to keep the partial invariance model as the basis of the mean-value comparison of views on aging between China, the United States, and Germany.

The mean value of each of the eight scales assessing views on aging was fixed to zero in the reference group and for the other two groups the deviation from the mean values in the reference group was estimated. Hence, the latent mean differences in views on aging between two pairs of countries were estimated (e.g., if China is the reference group the deviation of means between China and the United States as well as China and Germany is estimated) and corresponding standard errors and p values were computed. These deviations and their standard errors are depicted in Figure 1. In order to obtain the remaining deviations we reran the model with a different country as the reference.

**Covariates.** Model 4 was used as the basis to test whether sociodemographic variables could account for cross-national mean differences. The covariates included were education, age, marital status, subjective health, and income. Due to missing values on those covariates 59 participants were not included in this analysis. In order to test for differential influences of covariates across the three countries, we specified an unconstrained model with covariates as predictors of the eight latent views on aging and compared its fit with a model with regression weights constrained to be equal across the three countries (Hox, De Leeuw, & Zijlmans, 2015). The model fit indexes and changes can be found in Table 2. Considering the criteria by Chen (2007) regarding changes in model fit indexes, we decided to report the results of the constrained model. Because the latent variables were dependent vari-

### Table 2

**Model Fit Indices of the CFA in China, the US, and Germany, the Multiple-Group CFA With Configural, Weak, Strong, and Partially Strong Measurement Invariance (With and Without Covariates) as Well as Differences Between Model Fit Indexes Across Different Levels of Measurement Invariance and Across Models With Constrained and Unconstrained Regression Weights of Covariates**

<table>
<thead>
<tr>
<th>Fit statistics</th>
<th>CN</th>
<th>US</th>
<th>DE</th>
<th>Configural</th>
<th>Weak</th>
<th>Strong</th>
<th>Without covariates</th>
<th>Covariates</th>
<th>Covariates constrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$</td>
<td>528</td>
<td>506</td>
<td>750</td>
<td>1,771</td>
<td>1,992</td>
<td>3,262</td>
<td>2,224</td>
<td>2,862</td>
<td>3,031</td>
</tr>
<tr>
<td>df</td>
<td>296</td>
<td>296</td>
<td>296</td>
<td>888</td>
<td>926</td>
<td>964</td>
<td>953</td>
<td>1,238</td>
<td>1,318</td>
</tr>
<tr>
<td>p</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.040</td>
<td>.035</td>
<td>.043</td>
<td>.040</td>
<td>.043</td>
<td>.062</td>
<td>.046</td>
<td>.046</td>
<td>.046</td>
</tr>
<tr>
<td>CFI</td>
<td>.966</td>
<td>.959</td>
<td>.941</td>
<td>.955</td>
<td>.946</td>
<td>.883</td>
<td>.935</td>
<td>.923</td>
<td>.919</td>
</tr>
<tr>
<td>SRMR</td>
<td>.045</td>
<td>.043</td>
<td>.046</td>
<td>.045</td>
<td>.056</td>
<td>.074</td>
<td>.058</td>
<td>.054</td>
<td>.058</td>
</tr>
<tr>
<td>$\Delta$RMSEA</td>
<td>.003$^a$</td>
<td>.019$^b$</td>
<td>.003$^c$</td>
<td>.003$^d$</td>
<td>.000$^d$</td>
<td>.004$^d$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta$CFI</td>
<td>$-.009^a$</td>
<td>$-.063^b$</td>
<td>$-.11^c$</td>
<td>$-.011^d$</td>
<td>$-.004^d$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta$SRMR</td>
<td>.011$^a$</td>
<td>.018$^b$</td>
<td>.002$^a$</td>
<td>.002$^a$</td>
<td>.004$^a$</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Note.** CFA = confirmatory factor analysis; CN = China; US = United States; DE = Germany; RMSEA = root-mean-square error of approximation; CFI = comparative fit index; SRMR = standardized root-mean-square residual.

$^a$ Refers to the difference between configural and weak measurement invariance. $^b$ Refers to the difference between weak and strong measurement invariance. $^c$ Refers to the difference between weak and partially strong measurement invariance. $^d$ Refers to the difference between constrained and unconstrained regression weights of covariates.
ables in this model, we compared their intercepts (Heerwegh & Loosveldt, 2011).

**Age group differences.** In order to compare not only the mean values of participants from different countries but also of different ages, we divided each subsample into two age groups (up to 59 years old, 60 years old and older) and followed the same steps as before using a multiple-group CFA with six groups (3 countries × 2 age groups). Fit indices for the respective models are reported in Table 3. The model showed an acceptable fit in each country and age group. Both the configural (Model 1) and weak (Model 2) measurement invariance models had an acceptable fit, and the changes in fit indexes indicated that metric invariance could be assumed. However, Model 3, assuming strong measurement invariance, had a poor fit which was also worse compared with Model 2. Therefore, we decided to test for partial measurement invariance. In order to achieve a model that was relatively similar to the model comparing only the countries, we decided to free the same intercepts as before in the younger and older samples of each country, respectively. The resulting model had an acceptable fit. Furthermore, changes in the model fit indices RMSEA and

![Figure 1. Cross-national differences in views on aging across eight life domains with China (CN) as the reference category (US = United States, DE = Germany). Covariates are age, education, marital status, subjective health, and income. Differences marked with an asterisk are significant at p < .05.](image)

<table>
<thead>
<tr>
<th></th>
<th>CN</th>
<th>US</th>
<th>DE</th>
<th>Without covariates</th>
<th>Covariates constrained</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>χ²</strong></td>
<td>486</td>
<td>475</td>
<td>476</td>
<td>461</td>
<td>491</td>
</tr>
<tr>
<td><strong>df</strong></td>
<td>296</td>
<td>296</td>
<td>296</td>
<td>296</td>
<td>296</td>
</tr>
<tr>
<td><strong>RMSEA</strong></td>
<td>.050</td>
<td>.051</td>
<td>.044</td>
<td>.047</td>
<td>.046</td>
</tr>
<tr>
<td><strong>CFI</strong></td>
<td>.952</td>
<td>.949</td>
<td>.940</td>
<td>.933</td>
<td>.932</td>
</tr>
<tr>
<td><strong>SRMR</strong></td>
<td>.054</td>
<td>.051</td>
<td>.053</td>
<td>.054</td>
<td>.051</td>
</tr>
<tr>
<td><strong>ΔRMSEA</strong></td>
<td>.003</td>
<td>.019</td>
<td>.004</td>
<td>.007</td>
<td>.006</td>
</tr>
<tr>
<td><strong>ΔCFI</strong></td>
<td>-.010</td>
<td>-.069</td>
<td>-.016</td>
<td>-.006</td>
<td>-.007</td>
</tr>
<tr>
<td><strong>ΔSRMR</strong></td>
<td>.012</td>
<td>.017</td>
<td>.002</td>
<td>.007</td>
<td>.007</td>
</tr>
</tbody>
</table>

**Note.** CFA = confirmatory factor analysis; CN = China; US = United States; DE = Germany; RMSEA = root-mean-square error of approximation; CFI = comparative fit index; SRMR = standardized root-mean-square residual.

*Refers to the difference between configural and weak measurement invariance. \(^b\) Refers to the difference between weak and strong measurement invariance. \(^c\) Refers to the difference between weak and partially strong measurement invariance. \(^d\) Refers to the difference between constrained and unconstrained regression weights of covariates.
SRMR were within recommendations; however, ΔCFI again exceeded the cutoff value recommended by Chen (2007). Nevertheless, considering the complexity of the model with measurement invariance not only across countries but also across age groups, we decided to keep this model for further analyses. Additionally, we included education, age, marital status, subjective health, and income as covariates and compared the model fit with and without equality constraints on the regression weights. Again, based on criteria by Chen (2007), results of the model fit comparison indicated that the model with constrained regression weights can be preferred over the one without constraints. To obtain all relevant mean differences, we ran this model four times choosing the younger or older subgroup of the United States and China as the reference groups, respectively.

Results

Cross-National Differences in Views on Aging

The results of the multiple-group CFA with covariates and partial measurement invariance across China, the United States, and Germany are depicted in Figure 1. As expected, most deviations from views on aging in China were positive, indicating overall more positive views on aging in Germany and the United States compared with China. Furthermore, most differences between the United States and Germany indicated more positive views on aging among American participants. In line with our hypothesis, however, there were also some exceptions from this pattern. In the domain of friends, there was no difference between China and Germany. In the domain of finances, there was no significant difference between views on aging in any of the countries, which thus was the only domain without cross-national differences. The personality domain was marked by more positive views in the Hong Kong Chinese subsample when compared with the German and American subsamples. Furthermore, participants from the United States and Germany did not differ regarding their views on aging in the domains of family, finances, or work. Effect sizes for the significant cross-national differences range from $d = 0.22$ (difference between older Germans and Americans in the domain family) to $d = 1.03$ (difference between younger Hong Kong Chinese and younger Americans in the domain religion). The mean effect sizes for the contrast between the two Western countries and China among the younger subsamples are smaller, ranging from $d = 0.30$ (mean Cohen’s $d$ for the differences between Hong Kong Chinese and German participants) to $d = 0.47$ (mean Cohen’s $d$ for the differences between Hong Kong Chinese and American participants). Among the older subsamples mean Cohen’s $d$ ranges between small and medium effects, $d = 0.35$ (mean Cohen’s $d$ for the differences between Hong Kong Chinese and German participants), and $d = 0.51$ (mean Cohen’s $d$ for the differences between Hong Kong Chinese and American participants).

Cross-National and Age Group Differences in Views on Aging

Results of the multiple-group (CFA with covariates and partial measurement invariance across the three countries and two age groups) are depicted in Figure 2a and 2b. Including comparisons across the two age groups showed no clear pattern regarding the amount of cross-national differences in the older subsamples and the younger subsamples. The overall pattern of more positive views on aging in the Western countries compared with China and more negative views on aging in Germany compared with the United States held for each age group. The pattern of country differences that was obtained in the overall analysis was replicated for both age groups in the domains of friends, finances, and work. For the domains of family, religion, leisure, personality, and health, however, the pattern of country differences varied between the two age groups: In contrast to the respective older subsamples, no country difference between the younger Hong Kong Chinese and German subsamples was obtained in the leisure domain. In the older subsamples, however, the country difference between China and Germany regarding religion and between the United States and Germany regarding health were not significant. Additionally, fewer country differences were obtained for the older subsamples in the personality domain. Interestingly, differences between Germany and the United States in the domain of family were reversed depending on the age group, with more negative views in Germany among the younger subsample and more positive views among the older subsample, compared with the Americans. Effect sizes for the significant cross-national differences range from $d = 0.22$ (difference between older Germans and Americans in the domain family) to $d = 1.03$ (difference between younger Hong Kong Chinese and younger Americans in the domain religion). The mean effect sizes for the contrast between the two Western countries and China among the younger subsamples are smaller, ranging from $d = 0.30$ (mean Cohen’s $d$ for the differences between Hong Kong Chinese and German participants) to $d = 0.47$ (mean Cohen’s $d$ for the differences between Hong Kong Chinese and American participants). Among the older subsamples mean Cohen’s $d$ ranges between small and medium effects, $d = 0.35$ (mean Cohen’s $d$ for the differences between Hong Kong Chinese and German participants), and $d = 0.51$ (mean Cohen’s $d$ for the differences between Hong Kong Chinese and American participants).

Discussion

Analyzing data from China, the United States, and Germany from a sample covering a large age range, we investigated age group and domain-dependent cross-national differences in views on aging. Overall, and in line with our expectations, we found more negative views on aging in China as compared with the Western countries, and more positive views in the United States compared with Germany. However, as predicted, we also found domain-specific deviations from this pattern. After including covariates, views on aging in China were similar to those in Germany and/or the United States in the domains of friends and finances, and even more positive in China compared with the Western countries in the personality domain. Furthermore, the age group-specific deviations from views on aging in China were positive, indicating overall more positive views on aging in Germany and the United States compared with China. Furthermore, most differences between the United States and Germany indicated more positive views on aging among American participants. In line with our hypothesis, however, there were also some exceptions from this pattern. In the domain of friends, there was no difference between China and Germany. In the domain of finances, there was no significant difference between views on aging in any of the countries, which thus was the only domain without cross-national differences. The personality domain was marked by more positive views in the Hong Kong Chinese subsample when compared with the German and American subsamples. Furthermore, participants from the United States and Germany did not differ regarding their views on aging in the domains of family, finances, or work. Effect sizes for the significant cross-national differences range from $d = 0.17$ (difference between Germans and Americans in the domain personality) and $d = 1.03$ (difference between Hong Kong Chinese and Americans in the domain religion).

3 The results of the same analysis without covariates were similar. However, without covariates in the model, American participants showed more positive views on aging in the financial domain compared with Hong Kong Chinese participants and more positive views on the work domain compared with German participants. Additionally, instead of more positive views on aging in the personality domain, the Hong Kong Chinese did not differ from American participants in this domain.

4 Compared with the analysis with covariates, the results without covariates were similar. Among the younger subsamples, differences between Germany and China in the family domain and between the United States and China in the personality domain were not significant without covariates. In contrast to results without covariates, among the older participants, differences between Germans and Americans were not significant in the work domain but were significant in the family domain. Moreover, without covariates, the difference between Germany and China in the personality domain was not significant but the difference between the United States and China in the finance domain was significant.
specific analysis showed that East-West differences in domain-specific views on aging were not more frequent among the older subsamples.

**Cross-National Differences**

The overall more negative views on aging in China compared with the Western countries (Germany, the United States) are in line with the results from North and Fiske (2015a) regarding the overall East-West comparison, and more specifically reflect the region- and country-specific contrasts, indicating that views on aging are more negative in China compared with the Western countries. The overall more positive views on aging among American participants than among German participants are also in line with existing research (McConatha et al., 2003; North &
Fiske, 2015a). North and Fiske found that within the group of Western countries, European countries have more negative views on aging as compared with non-European and Anglophone Western countries.

Variations in both individualism/collectivism as well as the extent of population aging might explain these East-West differences. Individualism was found to be associated with more positive views on aging (North & Fiske, 2015a) and, as for the countries included in our study, individualism is highest in the United States and lowest in Hong Kong (Hofstede, 2001). Additionally, the population aging rate and the proportion of older adults aged 65 and older within the respective society predict more negative views on aging (Löckenhoff et al., 2009; North & Fiske, 2015a). However, the highest proportion of adults aged 65+ is present in Germany and not in Hong Kong (World Bank, 2013), indicating that population aging alone does not explain the overall cross-national differences in views of aging we observed. Additionally, other variables might play a role as it was, for example, found that a bigger proportion of older adults in a society was not necessarily associated with more negative views on aging in certain domains if the population was more educated (Löckenhoff et al., 2009). This has to be tested in further studies that enable the inclusion of country-level explanatory variables (see below).

Domain- and Age Group-Specific Cross-National Differences

Cross-national and age group differences in health-related views on aging contradict the idea that these views are primarily based on biological changes that are universal concomitants of aging. Although there is some cross-national agreement on the age trajectories of health-related characteristics like the ability to perform everyday tasks (Löckenhoff et al., 2009), there still seems to be some variation in the overall views on aging in the health domain. Additionally, there seems to be no clear relation between health-related views on aging and the extent of country-specific health care provision. The social security system in Germany is considered to be more comprehensive as compared with the United States (McConatha et al., 2003), but in our study health-related views on aging were overall more positive in the United States than in Germany.

As expected, in the personality domain we found more positive views on aging in China compared with Western countries. This domain is characterized by a relatively low dependence on country-specific social structures or support systems, and is also independent of biological changes. Instead, views on aging in this domain refer to the ability to solve problems and find solutions for important questions in life and accordingly might be colored more strongly by cultural characteristics (Löckenhoff et al., 2009).

Our hypothesis that views on aging are more positive in China (or at least similar to those in the United States and Germany) in the domain of family was not supported. The more negative views on aging in this domain in Hong Kong are probably due to reduced levels of filial piety, which is lower in cities with advanced modernization (Cheung & Kwan, 2009).

In contrast to our hypothesis, views on aging in the financial domain were surprisingly similar across all countries, especially after including covariates into the model. This is an interesting finding, considering that the objective financial situation and support structures differ strongly between the three countries. Poverty rates of people aged 65+ for example were 4% in Germany, 13% in the United States, and 29% in China (urban areas; Saunders, 2007). The results underline that people do not perceive the financial situation of older adults in absolute terms, but rather in relation to some reference standard that might differ strongly between countries (OECD, 2010).

Although we found some variation regarding cross-national differences in views on aging between the two age groups, there was no support for the general hypothesis that cross-national differences in views on aging are overall more common among older people. Interestingly, the opposite pattern occurred in the personality domain, where we found larger differences among the younger participants. However, in line with our hypothesis, overall effect sizes for East-West differences were somewhat smaller among the younger subsamples compared with the older ones. Accordingly, although our data do not provide unequivocal support for the idea, our results point to somewhat more similar views on aging among the younger participants in the different countries. One might speculate whether such a trend reflects age or cohort differences. In the case of the former, the shorter exposition and reduced internalization of cultural values in younger people might provide an explanation for the smaller differences in the younger subsamples. In the case of the latter, processes of globalization or “Westernization” (e.g., Chung & Lin, 2012) might account for the higher similarity of views on aging among the younger people. Due to their cross-sectional nature, our data do not allow us to answer questions regarding historical or within-person changes in views on aging. Expanding the analysis of cross-national comparisons across larger time spans would be a fascinating endeavor that would provide insights into the temporal dynamics of these differences.

Limitations and Directions for Future Research

Even though our study is extending existing research by addressing domain-specific views on aging in three countries and across a large age range, it is based on data from only a few countries that are part of different geographical regions and, accordingly, it does not cover the heterogeneity within each region. Therefore, future studies should try to include more regionally diverse samples within countries. Capturing the regional diversity within countries will help to improve the representativeness of the samples for the respective countries, thereby increasing the generalizability of findings. It will also allow for an investigation of within-country heterogeneity and variability, and of the factors that determine diversity in views on aging within a cultural context. Including data from more countries (>5) in future studies will also allow the inclusion of country-level variables (such as extent of social security systems or population aging) as potential explanations for the cross-national differences in certain domains in a multilevel analysis. By highlighting the fact that country differences in views on aging are domain-specific, our findings already indicate that any such explanation of country differences is necessarily complex. The diverse patterns of country differences that emerged for specific domains implies that either (a) different background variables are responsible for country differences in
different domains, or that (b) certain background variables predict views on aging in different domains in the opposite direction.

In this regard—but on an individual level—it might also be interesting to include measures of perceived prescriptive norms regarding the behavior of older adults (how older people “should be,” e.g., they should not exploit scarce resources, or should make way for younger people, especially in domains with shared resources such as health care and pensions) in addition to more descriptive variables (North & Fiske, 2013b). It was shown that the perceived violation of such normative obligations and prescriptions by older adults is associated with less positive evaluations of older adults (North & Fiske, 2013a). Those prescriptions might differ depending on the country considering that social security systems are established to different degrees and also with regard to their acceptance and perceived fairness (Footman, Roberts, Mills, Richardson, & McKee, 2013). Moreover, such individual and societal variables might interact. It was proposed, for example, that the extensive health care system in Germany in combination with population aging makes it more and more difficult to maintain the system (McConatha et al., 2003); this might foster intergenerational conflict, perceived unfairness, and more negative views of older people.

Another caveat concerns the inclusion of additional covariates. Although we included several variables (subjective health, income, education), there might be some limitations in their assessment (e.g., income was only assessed with a few categories, and thus rather roughly). Furthermore, other variables might be important predictors that could—at least in part—explain the country differences we observed. Objective measures of health status might be an interesting candidate to take into account. Our study focused on personal and social constructions of old age, and included no objective indicators of health status beyond self-reported subjective health. It should be noted, however, that although subjective health differed considerably between countries, with participants from the United States sample reporting higher levels of subjective health than the German and Hong Kong Chinese samples, which showed similar levels of subjective health, the pattern of country differences in views on aging did not change markedly after including subjective health as a covariate—not even for the domain of health-related views on aging. Although subjective health status does have strong positive relations with personal views of old age (“future selves”; Kornadt & Rothermund, 2011), relations with other-related views of old age and aging that were investigated in the current study are comparatively weak or even nonsignificant. We thus do not expect objective measures of health to play an important role for explaining country differences in views on old age and aging.

Furthermore, the models only allow testing relational views on aging rather than comparing absolute values. It is important to keep in mind that overall more negative views on aging in China compared with the United States and Germany and more negative views on aging in Germany compared with the United States are not equal to overall negative views on aging within these countries. In Germany, for example, views on aging seem to be overall rather positive (Kornadt & Rothermund, 2011). In addition, the questionnaire used in this study was developed based on a literature search and interviews in Germany (Kornadt & Rothermund, 2011) whereby domains identified from existing research were verified and further refined using interviews. Due to this etic approach, we cannot preclude that important domains that are specific to the United States or China were not part of this study. A construction procedure similar to the one used in Germany could be used to ensure that the questionnaire covers the most important areas in each country.

Conclusion

Using a domain-specific approach, we demonstrate that views on aging in China are neither uniformly more negative nor more positive compared with the United States and Germany. Instead we find a more complex pattern indicating that cross-national differences in views on aging depend on the particular life domain and also on the age group considered. Findings of our study thus underline the claim of other researchers that comparing “Asian” with “Western” countries is an oversimplification (e.g., North & Fiske, 2015a). Going beyond this global claim, we could show that using aggregated scales or assessing views on aging in a single domain yields only a fraction of the whole picture. The heterogeneity in cross-national comparisons of views on aging across life domains and, to a lesser degree, across age groups also provides a possible explanation for the diversity of results in previous studies that investigated these differences.

Importantly, the variability in cross-national differences also speaks against explanations of these differences in terms of general underlying factors. Our results imply that explanations for cross-national differences are domain-specific, too. The domain-specific perspective provides a promising starting point for generating hypotheses and identifying the determinants and driving forces that underlie context- and age group-specific differences in views on aging between countries.

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