



Brief Report

Do age stereotypes as social role expectations for older adults influence personality development?



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ABSTRACT

Age stereotypes as social role expectations for older adults were hypothesized to influence personality development in later life for specific stereotype domain \times personality trait combinations. $N = 965$ participants aged 50–60 from the Midlife Development in the U.S. (MIDUS) study provided ratings about “people in their late sixties” in four domains at T_1 and completed a personality questionnaire at T_1 and at T_2 ten years later. Personality at T_2 was regressed on age stereotypes and personality at baseline. Age stereotypes in the domains *Family/Relationships* and *Wisdom* were related to changes in both *Agreeableness* and *Extraversion* over ten years. The findings provide tentative support for the role of positive age stereotypes in personality development in older age.

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1. Introduction

Even though personality in adulthood, here defined by the Big Five personality traits (*Agreeableness*, *Conscientiousness*, *Extraversion*, *Neuroticism*, *Openness to Experience*, e.g. McCrae & Costa, 2008), is characterized by considerable stability, there is also evidence for change in personality traits even in mid- and later life (e.g., Kandler, Kornadt, Hagemeyer, & Neyer, 2015; Roberts & DelVecchio, 2000; Roberts, Walton, & Viechtbauer, 2006; Specht, Egloff, & Schmukle, 2011). It is assumed that besides physiological maturation processes, personality changes throughout the entire life span as a function of a person’s interaction with environmental affordances and demands (i.e. *plasticity principle*), and that a driving force of this development is the investment in normative, age-graded social roles, such as for example the work or parent role (i.e. *social investment principle*, Roberts, Wood, & Smith, 2005). Furthermore, social roles are considered to entail a variety of normative expectations with regard to certain behavior characteristics (e.g. being conscientious in the workplace). Thus, behavior that is in accordance with the social role is rewarded and reinforced (Roberts et al., 2005).

Evidence for the social investment principle in general has accumulated (e.g. Lodi-Smith & Roberts, 2007). A method to investigate these principles is to measure personality around social role and other developmental transitions (e.g. the start of one’s first job, getting married, moving, etc.), and examine whether personality

changes as a function of the transition expectation and/or experience (cf. Hutteman, Hennecke, Orth, Reitz, & Specht, 2014). Some studies have specifically looked at role transitions in mid- and later life and mostly focused on the retirement transition as the most salient social role change in this age group (Löckenhoff, Terracciano, & Costa, 2009; Specht et al., 2011). For example, these studies find that *Conscientiousness* decreases after the retirement transition, indicating that social role changes have an influence on older adults’ personality (Specht et al., 2011).

One central feature of social roles is that they can be conceptualized as “parallel to expectations of a social clock” (Roberts et al., 2005, p. 174), and thus parallel to societal expectations for behavior and personal characteristics at a given age. This provides another possibility to investigate age-graded social role expectations and personality development in later life, namely by using age stereotypes as proxy for expectations about the characteristics that are inherent in the roles of older adults. Age stereotypes are mental representations of older persons, their typical characteristics, (normative) behavior, changes, and life situations, and they exist in all age groups (e.g. Kornadt & Rothermund, 2011). As people grow older and age stereotypes become self-relevant, they become internalized into peoples selves, turn into self-fulfilling prophecies (*Stereotype embodiment*; Levy, 2009, see for example Madon, Jussim, & Eccles, 1997, for social psychological research on self-fulfilling prophecies) and thus influence outcomes such as health in older age (e.g. Levy, 2009). A central feature of age stereotypes is their multidimensionality and domain-specificity, which have received considerable attention in recent research (for an overview,

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see Kornadt & Rothermund, 2015). The predictive value of domain-specific stereotypes has been shown in several studies that for example link age stereotypes in the memory domain to memory functioning, but not physical functioning and vice versa (e.g. Levy & Leifheit-Limson, 2009).

Up to now, no study has directly related stereotypes of older adults to aging persons' personality development. One notable study that delivers tentative evidence for the possible influence of age stereotypic expectations as proxy for social role expectations in adulthood comes from Wood and Roberts (2006). They showed that the expectations people have for personality traits of grandparents (e.g. high agreeableness) matches actual patterns of personality development in older adulthood. However, this evidence is limited to the grandparent role, and also rather indirect. The authors compared patterns of expectations with developmental patterns but did not directly look at associations of people's endorsement of stereotypes about older adults and their own personality development.

The goal of this study was thus to test the influence of age stereotypes as social role expectations for older adults on personality development in a group of adults for whom these stereotypes become relevant. Considering that age stereotypes are domain-specific (Kornadt & Rothermund, 2011), this relationship should not be universal. Instead, holding a specific age stereotype should lead to personality trait development that is consistent with the content of the stereotype in a domain- and trait specific way. To the best of my knowledge, there is no research specific to the relation between personality traits and age stereotypes in the life domains measured in this study. So in order to develop my hypotheses, I (1) inspected the respective scales and matched them by content, and (2) also considered previous research on the relation between personality and functional domains, i.e. studies relating personality with life transitions in a certain domain, or the content of a specific life domain. As a result, I expected the following pattern of (positive) relations: Age stereotypes in the domain *Work/Life* should be related to *Conscientiousness*, since *Conscientiousness* has long been related to transitions in and out of work life (e.g. Lodi-Smith & Roberts, 2007; Specht et al., 2011). Due to its interpersonal nature, the domain *Family/Relationships* should be related to *Agreeableness* and *Extraversion* (e.g. Neyer & Lehnart, 2007; Wiggins & Trapnell, 1996). Age stereotypes in the domain *Fitness/Energy* should be related to changes in *Openness* and *Extraversion*, reflecting the active and enterprising component inherent in these traits (e.g. Courneya & Hellsten, 1998; Stephan, 2009). And since conceptualizations of wisdom incorporate for example knowledge about the self, self-regulation, but also tolerance and openness (e.g. Staudinger & Kunzmann, 2005), stereotypes in *Wisdom* should be related to increases in *Openness*, *Agreeableness*, and decreases in *Neuroticism*.

2. Method

2.1. Sample

I used data from the Midlife Development in the U.S. longitudinal study (MIDUS I and II; Brim, Ryff, & Kessler, 2004). In 1995/96 (T_1), a total of 7108 Americans aged 20–75 completed a phone interview and 6325 of them also a self-administered questionnaire that comprised the variables of interest for the present analysis. Participants of MIDUS I were contacted again in 2004/2005 (T_2), and 4963 (69.8%) persons participated also in the second wave of data collection. In order to answer my research question, I selected a subsample from the overall MIDUS sample. In the first step, the 3929 participants that completed the self-administered questionnaire at both time points were selected. In the next step all participants that were aged 50–60 at T_1 ($n = 965$, $M_{age} = 54.74$,

$SD_{age} = 3.13$) were selected.¹ Over the course of the 10-year study interval, those participants turned 60–70 and were thus close or “on their way” to the age of the targets for the stereotype ratings (see below). This is important since for those persons, stereotypes become more self-relevant and are thus more easily incorporated into their selves (Levy, 2009). Furthermore, for this group of persons, social role changes associated with older age are imminent and they might thus invest in these roles (Roberts et al., 2005). And finally, personality changes in older age have been reported especially for people aged 50–65 (Roberts et al., 2006), making this a suitable period to detect influences on personality change. Of the selected participants, 94% were white, 56% female, 73.3% married, 61.6% had at least some college education, and 62.4% rated their health as somewhat or much better compared to most women/men their age.

2.2. Measures

2.2.1. Age stereotypes

Age stereotypes were assessed only at T_1 via a scale named “Images of Life Change”. Participants had to rate how well 13 adjectives (e.g. energetic) and domains (e.g. marriage/close relationship) described “people in their late 60ies (65–70 years old)” on a 10-point scale ranging from 0 (not at all/worst) to 10 (very much/best). Since to the best of my knowledge, no scale development for these items has been reported previously, and the assumption that stereotypes are multidimensional is well supported, an exploratory principle axis factor analysis with Oblimin rotation was performed on the total MIDUS sample that completed the age stereotype questionnaire at T_1 (analysis $N = 5929$). Three factors with an Eigenvalue > 1 were extracted, however, inspection of the scree plot was ambiguous, and the items for the *Family* domain had considerable loadings on both the *Wisdom* and *Work/Life* factors. Therefore, and due to the theoretical considerations described below, a four-factor solution (with Eigenvalues of 5.23, 1.52, 1.07 and 0.74, respectively) was selected that explained 65.83% of the variance and yielded a simple structure and no cross loadings: *Family/Relationships* (three items: contributions to others, marriage/close relationship, relationship with their children), *Fitness/Energy* (three items: willing to learn, energetic, physical health), *Work/Life* (three items: work, finances, overall lives), and *Wisdom* (four items: calm, caring, wise, knowledgeable). Thus the stereotype domains cover the major developmental tasks for older adulthood that have been recently proposed by Hutteman et al. (2014) as a frame for personality development in older age (work, relationships/family, physical changes), and the domain of *Wisdom* adds the additional facet of personality growth in older age that was proposed by Staudinger and Kunzmann (2005). To support the assumption of a four-factor structure of the data, a confirmatory factor analysis was performed on the sample aged 50–60 ($N = 965$) and the four-factor model with correlated factors provided an acceptable fit to the data ($\chi^2 = 216.39$, $df = 65$, $CFI = .96$, $rmsea = .06$). Latent factors were computed for each domain from the respective indicators.

2.2.2. Big Five personality traits

Big Five personality traits were assessed at T_1 and T_2 with the Midlife Development Inventory adjective list (MIDI, Lachman & Weaver, 1997). I used the items and factor structure that were shown to have good measurement properties in all age groups by Zimprich, Allemand, and Lachman (2012). The five factors were thus assessed with 24 items: *Conscientiousness* (three items: organized, responsible, hardworking); *Openness to experience* (seven items: creative, imaginative, intelligent, curious, broad-minded,

¹ At T_1 , the number of participants aged 50–60 that completed the self-administered questionnaire was $N = 1407$, so the number of participants at T_2 represents a participation rate of 69% for eligible participants.

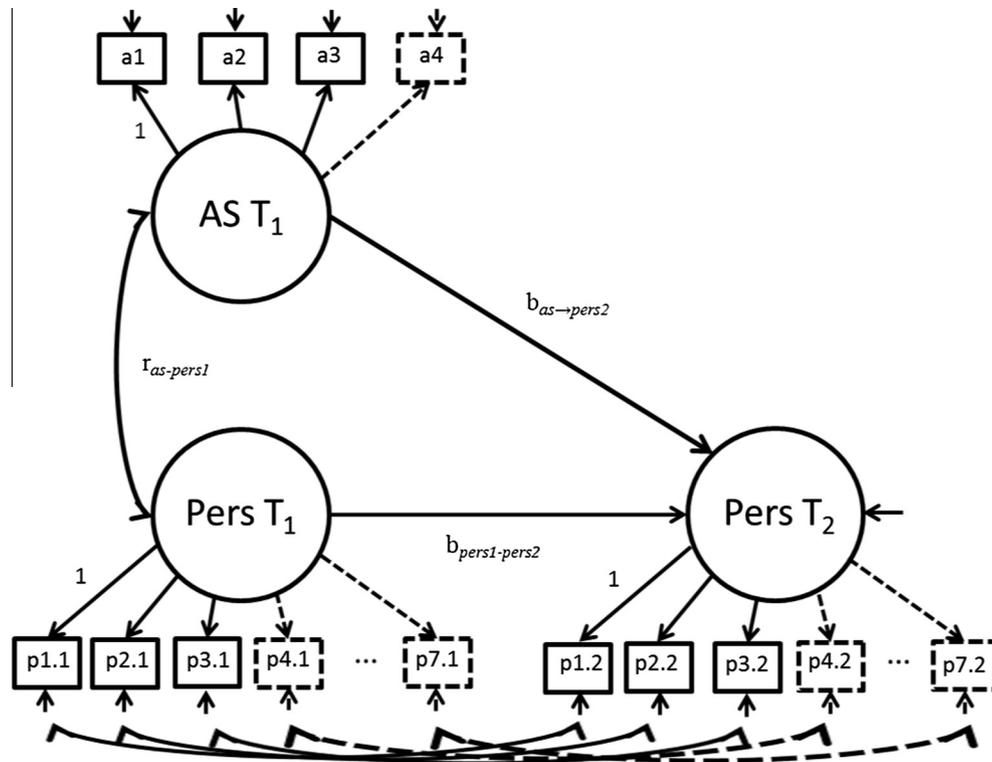


Fig. 1. Latent regression model estimating the effect of age stereotypes (AS) at T₁ on personality (Pers) at T₂ ($b_{as-pers2}$), while controlling for personality stability ($b_{pers1-pers2}$) and the bivariate correlation ($r_{as-pers1}$). Since depending on domain/Big Five factor, age stereotypes were measured by 3–4 items, and personality by 3–7 items, respectively, dashed lines represent the possible number of indicators per factor. Loadings and intercepts are set equal across time points for personality and models were controlled for gender, marital status, education, and self-rated health at T₁.

sophisticated, adventurous); *Agreeableness* (five items: helpful, warm, caring, softhearted, sympathetic); *Extraversion* (five items: outgoing, friendly, lively, active, talkative); *Neuroticism* (four items: moody, worrying, nervous, calm (r)). Participants had to rate how well each item describes them (1 – a lot, 4 – not at all). To facilitate the interpretation of relations, all answers were recoded so that higher values indicate higher agreement with the statement and thus match the direction of the stereotype measure, and latent factors for each trait were computed.

2.3. Analytic procedure

In order to test whether age stereotypes at T₁ predict changes in personality traits, I conducted latent multiple regression analyses for each trait x domain combination (Fig. 1). Personality at T₂ was regressed on age stereotypes at T₁ while controlling for the rank-order continuity of personality, gender, marital status, education, and self-rated health at T₁, as well as initial correlations between all variables. Since the sample was homogeneous with regard to age and race those variables were not included as covariates. Factor loadings and intercepts for corresponding personality traits were constrained to be equal across time points. Analyses were computed with AMOS 21 (Arbuckle, 2012) and all analyses were based on full information maximum likelihood (FIML) estimates. Descriptive information and bivariate correlations for all scales are reported in Supplemental Table 1.

3. Results

All models had an acceptable fit to the data (all $\chi^2/df < 4$, all $r_{mse} < .06$, and all $CFI > .92$); model fit indices and standardized path estimates are presented in Table 1. Personality traits displayed considerable rank-order stability over the 10-year period

in this age group (paths $r_{pers1-pers2}$), with stability coefficients ranging from .63 (*Conscientiousness*) to .81 (*Openness*). Age stereotypes and personality at T₁ were correlated low to moderately (paths $b_{as-pers1}$), with the exception of *Openness*, which was not related to any of the stereotype scales at T₁. Most relevant for the current research question was path $b_{as-pers2}$ indicating the influence of age stereotypes at T₁ on personality change. There were significant relationships for age stereotypes in the domains *Wisdom* and *Family/Relationships* on *Extraversion* and *Agreeableness* ten years later. The more positive participants aged 50–60 at T₁ thought about people in their late sixties in these domains, the more agreeable and extraverted they were when approaching this age group themselves. Contrary to the hypotheses, age stereotypes in the domains *Fitness/Energy* and *Work/Life* at T₁ were not related to personality development for *Openness*, *Extraversion*, and *Conscientiousness*, respectively (and neither to any other traits). Furthermore, *Wisdom* stereotypes were not related to *Openness*.

4. Discussion

The goal of the current study was to examine whether age stereotypes in different life domains, as proxies for social roles in older adults, have an influence on personality development. Therefore, I investigated these effects over a time span of 10 years in a sample of participants that were on their way to the age of the to-be-rated older age group during the course of the study. Age stereotypes in the domains *Fitness/Energy* and *Work/Life* had no effect on Big Five personality trait change, however, *Family/Relationship* and *Wisdom* stereotypes were positively related to changes in *Agreeableness* and *Extraversion* ten years later. Participants that had more positive (negative) expectations of “people in their late sixties” with regard to wisdom and family were more (less) agreeable and extraverted 10 years later. Expectations were thus only

Table 1
Results of the longitudinal structural equation models: Standardized model parameter estimates and fit indices.

Big Five factor	Age stereotype – Family/Relationships		Age stereotype – Wisdom		Age stereotype – Fitness/Energy		Age stereotype – Work/Life	
	<i>r</i> _{as-pers1}	<i>b</i> _{as-pers2}	<i>r</i> _{as-pers1}	<i>b</i> _{as-pers2}	<i>r</i> _{as-pers1}	<i>b</i> _{as-pers2}	<i>r</i> _{as-pers1}	<i>b</i> _{as-pers2}
Openness	.08	.00	.04	.02	.05	.01	.03	-.02
$\chi^2(df)$, CFI, rmsea [90% C.I.]	653(173), .92, .05 [.05, .06]		712(193), .92, .05 [.05, .06]		669(173), .92, .06 [.05, .06]		667(173), .92, .05 [.05, .06]	
Conscientiousness	.29	-.01	.27	.04	.15	-.04	.22	.06
$\chi^2(df)$, CFI, rmsea [90% C.I.]	172(49), .94, .05 [.04, .06]		206(61), .94, .05 [.04, .06]		158(49), .95, .05 [.04, .06]		152(49), .95, .05 [.04, .06]	
Extraversion	.27	.07	.19	.06	.23	.01	.22	.00
$\chi^2(df)$, CFI, rmsea [90% C.I.]	404(101), .93, .06 [.05, .06]		432(117), .94, .05 [.05, .06]		385(101), .94, .05 [.05, .06]		397(101), .94, .06 [.05, .06]	
Agreeableness	.34	.06*	.31	.08	.22	.04	.24	.02
$\chi^2(df)$, CFI, rmsea [90% C.I.]	282(103), .96, .04 [.04, .05]		305(119), .97, .04 [.03, .05]		288(103), .96, .04 [.04, .05]		298(103), .96, .04 [.04, .05]	
Neuroticism	-.17	-.03	-.08	-.01	-.08	-.05	-.15	-.01
$\chi^2(df)$, CFI, rmsea [90% C.I.]	229(73), .96, .05 [.04, .05]		231(87), .96, .04 [.03, .05]		213(73), .96, .05 [.04, .05]		196(73), .97, .04 [.03, .05]	

Note. Values in bold print are significant at $p < .05$ (*one-tailed). All estimates are based on FIML estimation. as = age stereotype T₁; pers1 = personality trait T₁; pers2 = personality trait T₂.

partially supported. Still the results have implications for research regarding age stereotype influence across the life span and also provide partial and tentative evidence for the hypothesis that social role expectations for older adults are related to personality development.

Interestingly, the two stereotype domains in which effects were found, *Wisdom* and *Family* are the most salient positive age stereotypes (e.g. Kornadt & Rothermund, 2011), and becoming wise and being integrated in one's family are among the most desirable features of older age. Expectations in those rather positive domains seem to be especially relevant for personality development. This is consistent with notions of social role change in older adulthood. For example investment in the community and social engagement become more relevant and influential than the roles usually occupied in midlife (Lodi-Smith & Roberts, 2012). This might also explain why the *Work* domain did not have an influence, despite also yielding positive ratings. In line with research on the individual self-regulation of development that has lately been extended to the study of personality development (for an overview, see Specht et al., 2014), especially the desirable, positively valued features of social roles, that may also be perceived as most controllable or malleable, become relevant in later stages of life and seem to be influential for personality change in this age group.

Still, the impact of our results is clearly limited by the fact that of the hypothesized relationships, only a small subset emerged, and the effects are also relatively small in size and confined to a select age group. Therefore, other factors than just social role expectations might be more relevant for personality trait development in that age group. For some domains, the stereotype measures might also not directly capture the content of social roles that is important for personality development. It might also be possible that individual differences in stereotypes are due to actual differences in the older adult reference population. Individuals with less positive stereotypes might have contact with less positive older adults in their community and due to acculturation or being impacted by the same ecological forces they might change in the direction of those personalities. Additionally, a general positivity bias that impacts self-ratings (e.g., Paulhus & John, 1998) might account for the reported associations.²

Nevertheless, the results still call for a further, more detailed investigation, since some effects that were hypothesized are still significant over a time span of ten years, while controlling for important variables, and the effects also show an interpretable pattern. For example, studies are necessary that include more sophisticated and comprehensive measures of age stereotypes and social role expectations and replicate the domain-specificity of the relations. This could be achieved by including more life domains (i.e., related to leisure and commitment, or autonomy), and also items that are more ecologically valid (e.g. statements instead of adjective ratings; cf. Kornadt & Rothermund, 2011). Furthermore, instead of having participants rate "people in their late 60ies", not specifying the concrete target age (and have participants simply rate "older persons") would allow for more flexibility regarding the age of included participants. Incorporating other context factors such as neighborhood characteristics is also desirable. In addition, Big Five measures that break down the trait factors on the facet level would allow for examination of the relationships in an even more differentiated way and thus shed more light on the mechanisms and conditions of stereotype influence on older adults' personality development. Future studies should also include all variables at both time points in order to allow the estimation of reciprocal effects. Since 10 years is also a large time span

² I thank an anonymous reviewer for suggesting the latter two alternative explanations.

that makes it difficult to detect small effects, measuring the variables in shorter intervals is also desirable. In order to address problems with regard to a positivity bias, studies that assess peer reports should be conducted.

Taken together, this study provides a first attempt of a more direct investigation of social roles for older adults and their influence on personality development in older age. It extends findings of stereotype influence on developmental outcomes and the impact of certain social roles expectations on personality development.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.jrp.2015.11.005>.

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