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Adult Age, Moral Foundations, and Moral Stereotyping

Peter Khalatian

Abstract

The main aim of the current thesis was to investigate the role of adult age in the moral stereotyping of moral foundations. The five core moral foundations of Moral Foundations Theory were measured through an online self-report survey, including the individualizing foundations of *harm* and *fairness* and the binding foundations of *in-group loyalty, authority, and purity*. Participants (*n* = 597; age range 19 to 85) were randomly assigned to one of three experimental conditions: the self-evaluation condition where participants completed the moral questionnaire as themselves, a condition where participants provided ratings as they believed a typical younger adult would answer them (approximately 25 years old), and a condition where participants provided ratings as they believed a typical older adult would answer them (approximately 65 years old). Results found significant moral stereotyping, with participants imagining older adults providing significantly lower ratings on the individualizing moral foundations than younger adults but higher ratings on the binding moral foundations. Based on participants in the self-evaluation condition, participant age was found to positively and significantly relate to ratings on the individualizing foundations but not significantly with ratings on the binding foundations. These results suggest that adult age group is a salient factor with regard to generalizations and stereotypes of moral foundations, which may hold relevance to either real or perceived "generational divides" on various sociocultural issues.

MONTCLAIR STATE UNIVERSITY

Adult Age, Moral Foundations, and Moral Stereotyping

By

Peter Khalatian

A Master's Thesis Submitted to the Faculty of

Montclair State University

In Partial Fulfillment of the Requirements
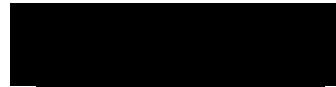
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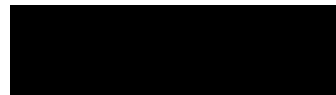College of Humanities and Social Sciences

Department of Psychology

Thesis Committee:

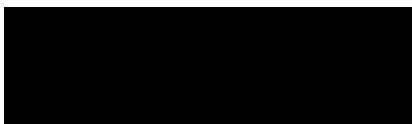Dr. Michael Bixter

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ADULT AGE, MORAL FOUNDATIONS, AND MORAL STEREOTYPING

A THESIS

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Introduction

Overview of Topic

A topic of much interest within the research literature over the past two decades has been on identifying core foundations of moral evaluation and judgment. Moral Foundations Theory (see below) has emerged as a prominent framework that posits five (sometimes six) underlying foundations. Recent research has explored salient group differences on these moral foundations (e.g., based on political orientation, religious affiliation), as well as the extent individuals perceive there to be differences in moral foundations between groups (referred to as moral stereotyping in the literature). A personal characteristic that has been overlooked in this literature is adult age (e.g., younger vs. older adults), which is of particular interest because age tends to intersect with other characteristics that have garnered a lot of attention (politics, religion). The aim of the current thesis was to provide an initial investigation into the role of adult age in the moral stereotyping of moral foundations.

Moral Foundations Theory

Moral Foundations Theory (Haidt & Joseph, 2004) is an influential multifactorial model that aims to explain how moral reasoning and judgment derive from five underlying moral foundations. These five moral foundations are commonly labeled as *harm*, *fairness*, *ingroup loyalty*, *authority*, and *purity*. Harm is defined by the ability to empathize and dislike the pain of others. Fairness is the motivation to achieve justice and relates to rights and autonomy. The ingroup loyalty foundation involves loyalty to one's own group, favoring fellow group members over those outside the group, protecting the interests of one's own group, self-sacrifice for the sake of one's group, and betrayal when a perceived group member prioritizes interests outside of one's group. Authority is shaped by historical desires to maintain a hierarchical structure in a

group, reinforcing leadership and followership, and maintaining traditions. Lastly, purity is built

upon the psychology of contamination, a motivation to suppress carnal desires and live in an

elevated, noble manner, both physically and spiritually "pure" (a notion popularly expressed by -

but not unique to - religious traditions). Due to their interrelated natures and consistent patterns

in the data, *harm* and *fairness* are sometimes paired together as the "individualizing"

foundations, while the *ingroup loyalty*, *authority*, and *purity* foundations are sometimes paired

together as more group-focused "binding" foundations (e.g., Graham, Nosek, & Haidt, 2012).

The above five foundations have demonstrated stability across a number of cultures,

including both WEIRD (Western, Educated, Industrialized, Rich, and Democratic) and non-

WEIRD societies (Doğruyol, Alper, & Yilmaz, 2019). However, individual differences have

been observed in the weighting of the five foundations. A main focus of this research has been

on differences in moral foundations between political or ideological orientations (Graham, Haidt,

& Nosek, 2009; Haidt & Graham, 2007; Haidt, Graham, & Joseph, 2009; Iyer, et al., 2012; van

Leeuwen & Park, 2009; Weber & Federico, 2013). Whereas political liberals tend to respond

relatively higher on the individualizing foundations compared to the binding foundations,

political conservatives tend to exhibit a more equal set of ratings across the five foundations

(Graham et al., 2009). It is purported that differences in these underlying moral foundations may

contribute to "culture war" issues and many other political issues or disagreements.

Adult Aging and Moral Cognition

Age is likely another relevant personal characteristic to take into account with regards to

moral foundations. Though individual differences in psychological characteristics, including

moral foundations, will always be observed within age groups, there are often discussions of

"generational divides" on certain political and social issues. It is possible that these opinion

differences derive from or are influenced by differences in moral foundations. Interestingly, adult

age has not been a variable that has garnered much direct focus within Moral Foundations

Theory. However, there is research that demonstrates the weighting of the five foundations might

vary across adulthood. For example, Cutler et al. (2021) investigated prosociality during the

Covid-19 pandemic, focusing on behaviors such as distancing and willingness to donate to

hypothetical charities. Approximately 46,500 participants aged 18 - 99 across 67 different

countries were analyzed and age was generally found to positively predict prosociality. There

were caveats to these patterns, though. Older adults expressed more ingroup preferences and

favored national charities over international charities to a greater extent than younger adults.

Though not discussed by Cutler et al. (2021), their results may indicate that older adults tend to

exhibit a more equal weighting of the individualizing and binding moral foundations compared

to younger adults.

Prior research has focused on differences in elements of moral cognition across

adulthood. One such process is theory of mind, which derives from one's ability to accurately

adopt the mental states of others. Theory of mind is often thought to underlie perspective-taking

abilities and contribute to empathy and other moral evaluations. In a meta-analysis of 23 studies,

Henry, Phillips, Ruffman, and Bailey (2013) found that older adults performed worse on a

variety of theory of mind tasks compared to younger adults. Sullivan and Ruffman (2004) also

observed declines in older adulthood on a theory of mind task that required social reasoning.

Participants read stories with questions about story characters' feelings and motivations. Memory

was also measured as a possible confounding variable, and while an effect of age group was

observed, no interaction with memory was found and memory was shown to be an unlikely

contributor to poorer theory of mind results. Conversely, fluid intelligence was shown to account

for age differences in some of the theory of mind tasks, raising the possibility that trends in

theory of mind in older adulthood may relate to other cognitive deficits. However, Sullivan and

Ruffman (2004) discussed the possibility that some individuals may experience decline in older

adulthood later or differently than others. Moran (2013) reviewed the literature on theory of

mind in older adulthood and its relation to general cognitive ability, highlighting cognitive

neuroscience results that suggest that some older adults can utilize compensatory mechanisms to

achieve theory of mind results similar to younger adults.

Time and experience can certainly also play a part in an individual's changing moral

judgment, but some longitudinal research suggests that aging alone does not change one's moral

values substantially. In a study analyzing older adults (64 - 80) and middle-aged adults (35 - 54)

over a 4 year period, neither age group showed change in moral reasoning (Pratt et al., 1996).

There were observed declines in perspective taking in the older adult group. Moreover,

complexity in reasoning of interpersonal social issues did decline a small amount for both age

groups. However, more education, social-cognitive support, and self-reported health were found

to be protective factors that helped combat declines in sociocognitive reasoning in the older

adults. Ultimately, age was not found to be a consistent predictor of decline or otherwise change

in morality. This suggests differences in moral judgment and behavior between younger and

older adults may not originate from aging per se, and instead possibly from generational cultural

differences or affiliation with subgroups.

Moral Stereotyping

As described above, prior research has investigated the extent group differences exist on

the five moral foundations (e.g., based on political orientation). Regardless of whether actual

differences are observed or not, another related research topic is whether people *perceive* there to

be differences in moral foundations between groups. This has been referred to as moral stereotyping in the literature (Scheffer et al., 2022; Simpson & Rios, 2016; Ward & King, 2021) and has been investigated in people's ratings of other members both in their respective ingroup and outgroup. In the research literature, moral stereotyping has usually been explored by having participants complete a moral evaluation self-report task as they would imagine a "typical" member of some target group would complete it. These responses can then be compared to responses from members of the target group, as well as vice versa.

Much of the research on moral stereotyping and moral foundations has centered around the political context. Graham et al. (2012) had both liberals and conservatives complete a self-report measure of the five moral foundations with their own answers, as well as how they believed a "typical liberal" or "typical conservative" would answer the items. A few patterns of results are of note. Moral stereotyping was observed, with both political orientations exaggerating the directional differences of both their respective ingroup and outgroup. That is, as described above, liberals tend to score higher on the individualizing foundations than conservatives, with the opposite being found for the binding foundations. However, participants tended to exaggerate these group differences in their ratings, with liberals being less accurate in their ratings of both their ingroup (liberals) or their outgroup (conservatives). Scherer, Windschitl, and Graham (2015) extended the previous study by investigating if Democrats and Republicans stereotype and exaggerate ideological differences on other relevant psychological traits, such as need for cognitive closure, social dominance orientation, beliefs in a dangerous world, and system justification. The results were similar to Graham et al. (2012) in that directional differences between political parties were accurately predicted by participants, but were exaggerated compared to the actual differences between groups. It was also found that

Democrats (and partisans more generally) exhibited more stereotype exaggeration (for similar

results, see Scheffer et al., 2022).

Another study (Eriksson & Funcke, 2015) investigated the perceptions of Democrats and

Republicans on desirable traits such as warmth and competence. The researchers first focused on

comparing self-evaluations with perceptions of others in the same ingroup. Data showed that

Democrats rated hypothetical typical other members of their ingroup higher than themselves on

warmth-related traits, such as likability or empathy, and Republicans rated hypothetical typical

other members of their ingroup higher than themselves on competence-related traits, such as

leadership and assertiveness. After these initial findings, a second study added the component of

perceiving hypothetical typical members of outgroup political parties. While Democrats and

Republicans rated themselves closely with other hypothetical members of their group, they also

showed exaggeratedly low ratings for hypothetical outgroup members, supporting evidence of

moral stereotypes from both Democrats and Republicans. It is discussed that the perceptions of

one's own ingroup in this context may be influenced by what characteristics each political party

found to be more valuable in a potential candidate for a high position in government, and what

characteristics each party perceived the outgroup to value more, but to an exaggerated,

inaccurate, stereotypical extent (Eriksson & Funcke, 2015).

Eriksson, Simpson, and Strimling (2019) were also interested in how the target "agent" of

a measure of moral foundations influences the relative weighting of the foundations (in some

scenarios the target agent would be a victim or a perpetrator). Once again, "liberals" and

"conservatives" were used as two different agent groups, but the methodology was expanded to

include "members of corporations" and "members of news media" (two organizations that have

been politicized recently). The researchers collected data from the U.S. and the United Kingdom

(U.K.). The U.K. also largely has a two-party system, with Conservative and Labour parties acting similarly ideologically to the Republican and Democratic parties in the U.S., respectively, and therefore is a valuable data source to compare. The results demonstrated political double standards. For example, conservatives would provide higher ratings for certain moral foundations when the target agent was believed to be a victim and someone they had affiliation with (e.g., other conservatives and members of a corporation). Liberals exhibited a similar pattern of results for agents they had affiliation with (e.g., other liberals and members of the news media). Similar patterns of results were found in the U.K. sample, but the political double standards regarding the organizational agents (corporations and news media) were weaker in effect size compared to the U.S. sample. Eriksson et al. (2019) discuss how these latter results might derive from corporations and news media being much less politicized in the U.K. than the U.S., which may contribute to less intense affiliations by political parties.

Other moral stereotyping research has focused on religious affiliations (e.g., Galen, Williams, & Ver Wey, 2014; Ward & King, 2021). Simpson and Rios (2016) investigated how U.S. Christians and atheists self-evaluate and evaluate others on the five moral foundations. Participants completed a measure of moral foundations from their own perspectives as well as from the perspective of a "typical" Christian or atheist. Results demonstrated that atheists perceived other atheists to score higher on the fairness foundation compared to Christians, whereas Christians perceived other Christians to score higher on all five foundations compared to atheists. The researchers concluded that both groups exhibited (inaccurate) stereotypes about the moral foundations of their respective outgroup. In a follow-up study, the researchers had participants write directly about the moral behavior of their respective outgroup. It was determined that atheists wrote more negatively about Christians than vice versa. Christians'

negative evaluations of atheist morality usually drew primarily from the *authority* foundation.

Moreover, according to previous survey data from Pew, as many as 57% of Americans reported

that a disbelief in a higher authority is a fundamental barrier in one's ability to be moral (Pew

Research Global Attitudes Project, 2007). At the same time, atheists have shown moral

stereotypes of Christians. These moral stereotypes appear to originate from moral concerns held

from different perspectives, such that atheists perceive Christians as too focused on moral

foundations considered relatively irrelevant to their own concept of morality, such as purity,

instead of foundations perceived to be more important like fairness.

Prior Study in MSU Lab

The previous section demonstrates that individuals can often stereotype the underlying

moral foundations of others based on salient group status (e.g., politics, religion). Due to age and

generational status being another salient personal characteristic with regard to sociocultural

beliefs, it is possible that a similar phenomenon occurs with regard to adult age. A prior study by

Dr. Bixter began to investigate this issue. Though the data are still unpublished, the current thesis

extended the study design of this earlier study. As a result, the study methods and results are

briefly summarized here.

Participants in the study were 75 younger adults (college students) and 75 older adults

(community members over the age of 65). Participants had to complete a measure of the five

moral foundations either as themselves (the standard condition) or as a "typical younger adult"

(stated to be approximately 25 years old) or "typical older adult" (stated to be approximately 65

years old). The manipulation was between-subjects so that every participant only completed one

of the three versions of the moral foundations questionnaire. This is different from most of the

moral stereotyping studies reviewed above, where participants would complete the measure as

themselves and the other target groups. It is possible that this within-subjects design creates demand/contrast effects that exaggerate the occurrence of moral stereotyping.

      To aid clarity, results are presented for the individualizing foundations (harm and fairness combined together) and the binding foundations (the ingroup loyalty, authority, and purity foundations combined together). For the individualizing foundations, a significant Age Group X Questionnaire Perspective interaction was observed. As demonstrated in Figure 1 below, older adults evaluated the Harm and Fairness items higher than the younger adults when answering as themselves (4.03 vs. 3.55). Moreover, when responding as a typical younger adult, older adults accurately predicted the response of the younger adults (3.49 vs. 3.55). In contrast, when responding as a typical older adult, younger adults inaccurately responded lower on these foundations (3.30 vs. 4.03).


Figure 1: Individualizing Foundations
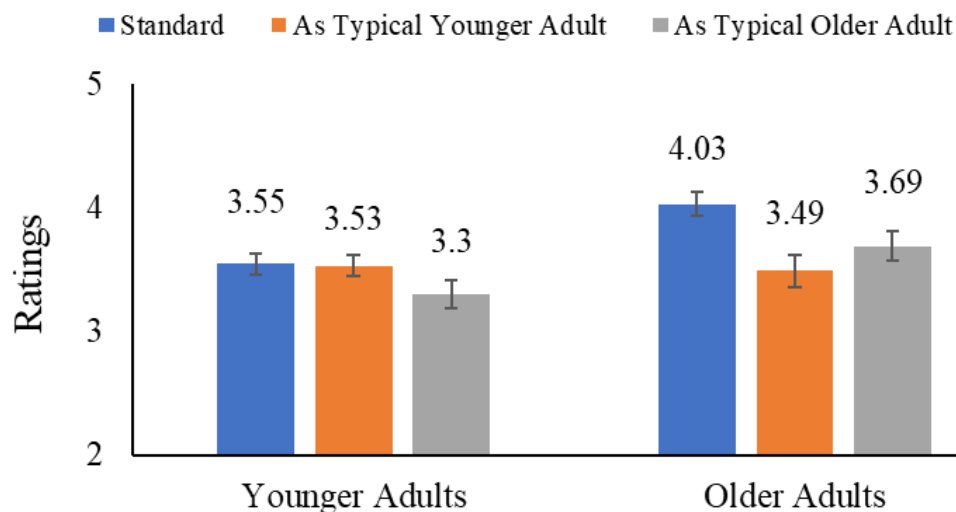
      The results for the binding foundations are presented in Figure 2 below. Another significant Age Group X Questionnaire Perspective interaction was observed. Older adults once again evaluated the foundations higher than younger adults when answering as themselves (3.33

vs. 2.71). When responding as a typical younger adult, older adults were in the accurate direction but underestimated the difference with younger adults (3.01 vs. 2.71). Conversely, when responding as a typical older adult, younger adults exaggerated the difference in older adults (3.88 vs. 3.33).

Figure 2: Binding Foundations
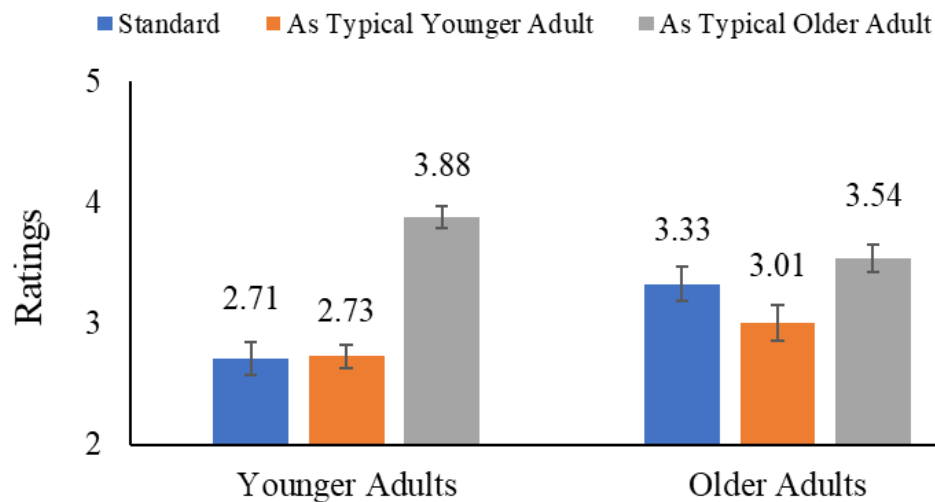
Overview of Current Study

The current thesis built off of the prior study conducted in lab summarized above. First, participants with a greater variation in adult age were utilized instead of only recruiting younger or older adults. This allowed the ability to observe differences in moral foundations across adulthood and not just at the extremes. Second, larger sample sizes were used due to the condition sizes being small in the previous study (25 participants per condition). The same study measures were utilized to measure either moral foundations for the participants themselves or as the participants believed them to be for a "typical younger adult" or "typical older adult".

Due to the research topic still being relatively novel and unexplored, research questions were formulated instead of hypotheses.

RQ1: What differences will be observed in participants' moral stereotyping of younger vs older adults?

RQ2: To what extent does participants' age relate to any moral stereotyping found in RQ1?

RQ3: Insofar as there is an interaction between age and moral stereotyping (RQ2), what is the relationship between age and scores on the individualizing and binding moral foundations in the three perspective conditions?

Method

Participants

Participants were adults over the age of 18 who completed the survey through Amazon Mechanical Turk (MTurk). The Cloud Research platform was used to help ensure data quality of the MTurk survey respondents. Specifically, the following MTurk and Cloud Research inclusion criteria were used for the online survey: approved 95% HIT (task) rate on MTurk, 100+ HITs approved, geographical locations restricted to the United States, Cloud Research approved participants, duplicate IP address block, and suspicious geocode block.

A target sample size of 600 was used, based on approximately 200 participants being randomly assigned to each of the three experimental conditions (see Materials below). To help ensure this target sample size was approximately met with quality data, Cloud Research actually administered the survey to 612 participants. The following exclusions then occurred: one participant's data was rejected because they completed the survey in less than 30 seconds and only selected one response option on every survey item, 8 participants completed the consent form but then did not provide a single response on the rest of the survey, and 6 participants completed the first part of the Moral Foundations Questionnaire (see below) but then stopped

completing the survey. As a result, all statistical analyses reported below were based on the 597

remaining participants who provided complete data. The sample size consisted of 197

participants randomly assigned to the self-evaluation condition, 203 participants assigned to the

imagine as typical older adult condition, and 197 participants assigned to the imagine as typical

younger adult condition.

The age of the sample ranged from 19 to 85 with a mean age of 43.72 ($SD = 13.04$). As it

relates to participant sex, 53.6% identified as Male, 45.6% identified as Female, 0.2% identified

as non-binary, and 0.7% chose the prefer not to say option. For participant race, the sample was

77.4% White, 8.2% Black or African American, 6.7% Asian American, 4.0% Hispanic/Latino,

2.7% Mixed Race, and 1.0% chose the race not listed option.

Materials

The Moral Foundations Questionnaire (MFQ; Graham et al., 2011) was used as a self-

report measure of the five moral foundations (*harm*, *fairness*, *ingroup loyalty*, *authority*, and

purity). The MFQ consists of 30 items with 6 items measuring each of the five foundations.

Participants were asked to measure how relevant items were to whether something was right and

wrong and to measure agreement with items. For example, measuring relevance of "whether or

not someone was cruel" and agreement with "compassion for those who are suffering is the most

crucial virtue" would measure participants' responses in accordance with the moral foundation of

harm. Measuring relevance of "whether or not someone was denied his or her rights" and

agreement with "when the government makes laws, the number one principle should be ensuring

that everyone is treated fairly" would measure participants' responses in accordance with the

moral foundation of fairness. Measuring relevance of "whether or not someone did something to

betray his or her group" and agreement with "people should be loyal to their family members

even if they did something wrong" would measure participants' responses in accordance with the moral foundation of in-group loyalty. Measuring relevance of "whether or not an action caused chaos and disorder" and agreement with "men and women each have different roles to play in society" would measure participants' responses in accordance with the moral foundation of authority. Measuring relevance of "whether or not someone acted in a way that God would approve of" and agreement with "people should not do things that are disgusting, even if no one is harmed" would measure participants' responses in accordance with the moral foundation of purity.

Three versions of the questionnaire were used based on the three perspective conditions for the study. The first condition consisted of participants receiving the standard instructions for the questionnaire, which involved participants completing all the items as themselves. The other two conditions involved instructions that participants were to complete the items as they believed either a "typical younger adult" or a "typical older adult" would answer them. The instructions for the typical younger adult condition included: "When a typical younger adult (approximately 25 years old) decides whether something is right or wrong, to what extent are the following considerations relevant to the younger adult's thinking? Remember, instead of selecting your own answers, answer all questions as a typical younger adult." The instructions for the typical older adult condition included: "When a typical older adult (approximately 65 years old) decides whether something is right or wrong, to what extent are the following considerations relevant to the older adult's thinking? Remember, instead of selecting your own answers, answer all questions as a typical older adult."

Procedure

Participants who met the inclusion criteria on Amazon Mechanical Turk and Cloud Research had the opportunity to complete the study. If deciding to complete this study, a link took participants to Qualtrics where the survey was held. Participants first read and agreed to a consent form. Then, Qualtrics randomly assigned participants to one of the three MFQ perspective conditions. After completing the MFQ, participants completed a few brief demographic items (age, sex, race/ethnicity). The entire procedure took less than 5 minutes on average and participants were compensated $0.75 upon successful completion.

Data Analysis Plan

Mean scale scores were created for the five moral foundations as well as the individualizing and binding combinations. The Cronbach's alphas were acceptable for all five moral foundations: Harm (α = .75), Fairness (α = .70), Ingroup Loyalty (α = .83), Authority (α = .85), and Purity (α = .88). All data were screened for outliers and violations of distributional assumptions. For RQ1, two one-way ANOVAs were performed to assess moral stereotyping. In both ANOVAs, experimental condition was the IV and moral foundation ratings were the DV (individualizing scores were the DV in the first model; binding scores were the DV in the second model). Tukey's HSD post-hoc tests were performed to assess relevant pairwise comparisons among the experimental conditions (RQ1). To assess RQ2, a series of moderated regression analyses were performed to measure the extent that participant age moderated moral stereotyping for the individualizing and binding foundations. To further explore any moderation effects, bivariate correlations were used to measure the relationship between participant age and moral foundations in the three experimental conditions (RQ3). Upon the completion of the study, all study materials, de-identified data, and analysis scripts will be posted to the Open Science Framework (OSF).

Results

Individualizing and Binding Moral Foundations

See Table 1 for the Pearson correlations among the five moral foundations (across all participants in the sample). As can be seen, the Harm and Fairness foundations correlated strongly together ($r = .65$) but weakly with the three binding foundations. Conversely, the three binding foundations correlated strongly together ($rs = .73$ to $.80$). Due to these patterns of relationships, and in an effort to reduce the number of statistical tests and the experimentwise Type 1 error rate, all analyses reported below combine the individualizing foundations and the binding foundations together, respectively.

Table 1. *Pearson Correlations among the Five Moral Foundations*

	Harm	Fairness	Loyalty	Authority	Purity
Harm	--				
Fairness	.65**	--			
Loyalty	.00	-.05	--		
Authority	-.04	-.11**	.78**	--	
Purity	-.05	-.12**	.73**	.80**	--

**. Correlation is significant at the 0.01 level (2-tailed).

RQ1: What differences will be observed in participants' moral stereotyping of younger vs older adults?

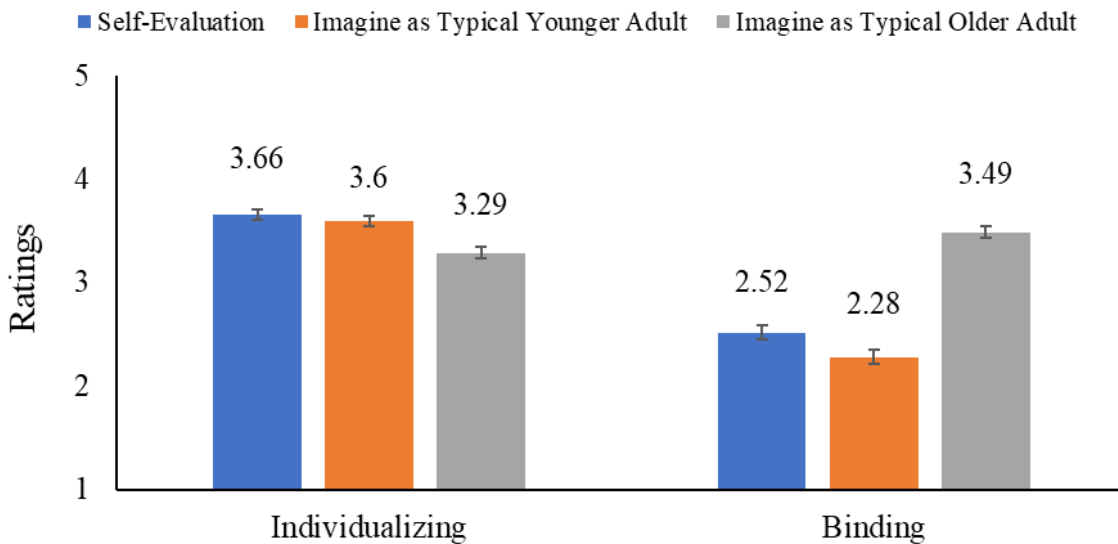The mean individualizing and binding scores in the three experimental conditions can be seen in Figure 3.

Figure 3. Mean individualizing and binding moral foundation scores across the three experimental conditions.

A one-way ANOVA was first performed with the individualizing scores as the dependent variable and the perspective condition as the independent variable. The descriptive statistics for the three conditions were as follows: self-evaluation ($M = 3.66$, $SD = 0.71$), imagine as typical older adult ($M = 3.29$, $SD = 0.81$), and imagine as typical younger adult ($M = 3.60$, $SD = 0.68$). The ANOVA was statistically significant, $F(2, 594) = 14.88$, $p < .001$, $\eta_p^2 = .05$. Tukey's HSD post-hoc tests were performed to assess differences between the three conditions. It was found that participants in the imagine as typical older condition provided lower individualizing scores than both the self-evaluation condition and the imagine as typical younger condition ($ps < .001$). The self-evaluation condition and the imagine as typical younger condition did not differ significantly ($p = .759$).

A second one-way ANOVA was performed with the binding scores as the dependent variable and the perspective condition as the independent variable. The descriptive statistics for

the three conditions were as follows: self-evaluation ($M = 2.52$, $SD = 0.98$), imagine as typical older adult ($M = 3.49$, $SD = 0.84$), and imagine as typical younger adult ($M = 2.28$, $SD = 0.95$). The ANOVA was statistically significant, $F(2, 594) = 96.58$, $p < .001$, $\eta_p^2 = .25$. Tukey's HSD post-hoc tests were performed to assess differences between the three conditions. It was found that participants in the imagine as typical older condition provided higher binding scores than both the self-evaluation condition and the imagine as typical younger condition ($ps < .001$). The imagine as typical younger condition provided lower binding scores than the self-evaluation condition ($p = .022$).

RQ2: To what extent does participants' age relate to moral stereotyping?

To explore the extent participants' age moderated the results observed in RQ1, two moderation analyses were performed utilizing PROCESS in SPSS. In both models, age was entered as a continuous moderator (and centered to reduce multicollinearity) and experimental condition was entered as a multi-categorical IV (with the self-evaluation condition acting as the reference condition). In the first model, the individualizing foundation scores were entered as the DV; in the second model, the binding foundation scores were entered as the DV.

In the first model with the individualizing foundation scores as the DV, a significant interaction was found between participant age and the imagine as typical younger adult condition (compared to the self-evaluation reference condition), $B = -0.015$, $SE = 0.005$, $t = 2.65$, $p = .008$. In the second model with the binding foundation scores as the DV, another significant interaction was observed between participant age and the imagine as typical younger adult condition (compared to the self-evaluation reference condition), $B = -0.020$, $SE = 0.007$, $t = 2.96$, $p = .003$. These results demonstrate that there are differences in the relationship between participant age

and moral foundation scores across the experimental perspective conditions. To better

understand the nature of these differences, RQ3 was investigated.

RQ3: What is the relationship between age and scores on the individualizing and binding

moral foundations in the three perspective conditions?

A series of Pearson correlations were computed to assess the relationships between

participant age and the individualizing and binding scores in the three experimental conditions.

In the self-evaluation condition, age was found to positively relate to individualizing scores ($r =$

.23, $p = .001$) but not significantly with binding scores ($r = .05$, $p = .492$). In the imagine as

typical older adult condition, participant age once again was found to positively relate to

individualizing scores ($r = .26$, $p < .001$) but not significantly with binding scores ($r = -.07$, $p =$

.306). Finally, in the imagine as typical younger adult condition, participant age was not

significantly related to individualizing scores ($r = -.03$, $p = .634$) but significantly and negatively

related to binding scores ($r = -.25$, $p < .001$). See Figures 4 and 5 for a visualization of these
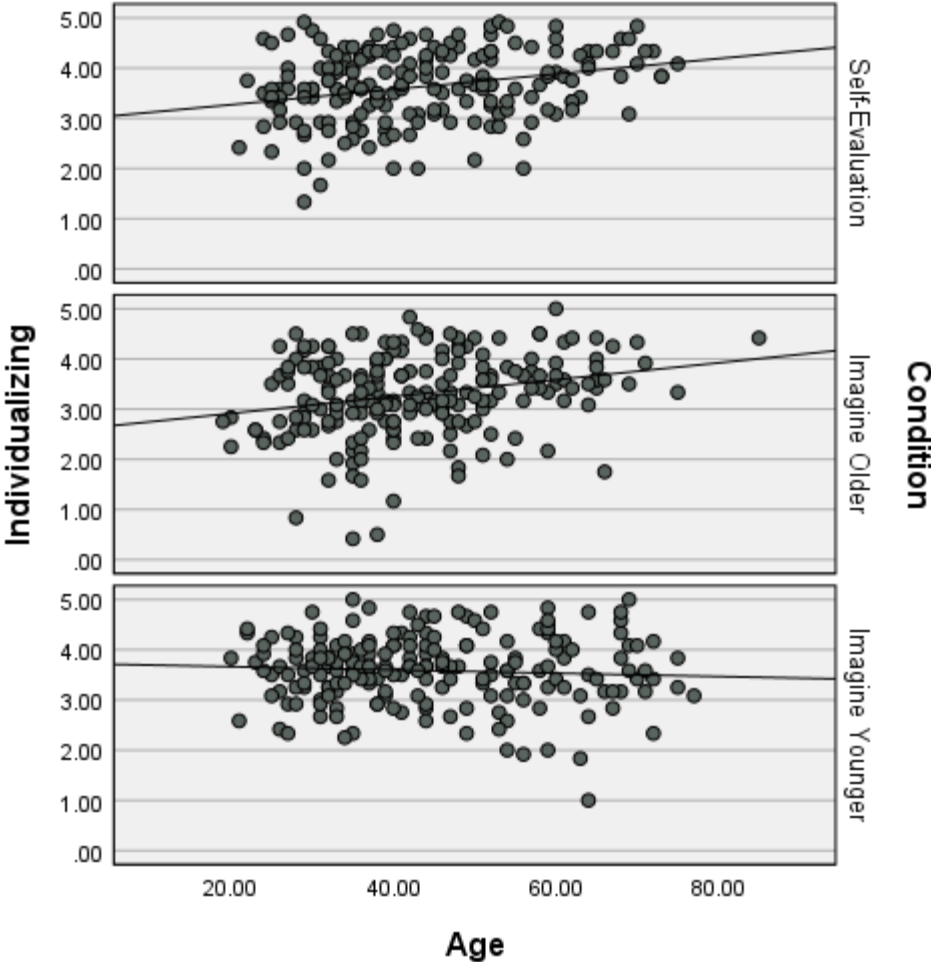
bivariate correlations.

Figure 4. Bivariate correlations between individualizing moral foundation scores and participant age in the three experimental conditions.
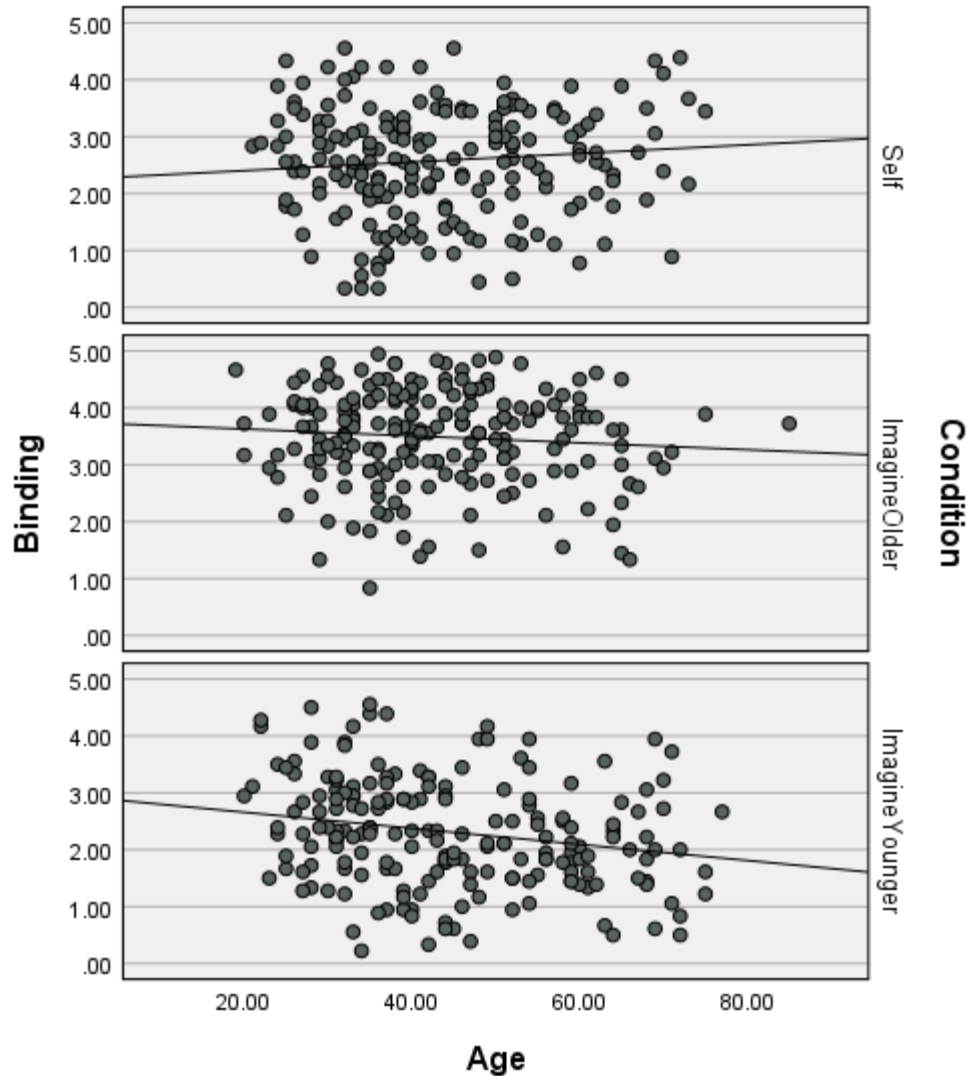
Figure 5. Bivariate correlations between binding moral foundation scores and participant age in the three experimental conditions.

Discussion

The main goal of the current thesis was to investigate the role of adult age in both self-evaluated moral foundations and the moral stereotyping of these foundations. The study extended a prior study from Dr. Bixter's research lab by including a sample with ages across the range of adulthood (instead of only the extremes of younger and older adults), as well as much larger sample sizes. In this thesis, participants were administered a version of the Moral

Foundations Questionnaire and either completed the items with their own ratings, as they believed a "typical younger adult" would complete them, or as they believed a "typical older adult" would complete them.

The findings suggest that moral stereotyping is present with regard to age. Specifically, participants imagined that older adults would have significantly lower scores on the individualizing moral foundations (harm and fairness) than younger adults. Conversely, participants imagined that older adults would have significantly higher scores on the binding moral foundations (in-group loyalty, authority, and purity) than younger adults. These patterns of results support the findings from Dr. Bixter's previous study in the lab, while building upon them with a more representative and larger sample of the adult population.

The results of RQ2 and RQ3 showed that participant age significantly interacted with experimental conditions in affecting moral foundation ratings. Focusing on the self-evaluation condition, though participants imagined older adults as having lower individualizing scores, age actually significantly positively correlated with ratings on the individualizing foundations. This finding supports Dr. Bixter's previous study where it was found that older adults scored significantly higher on the individualizing foundations than younger adults. In contrast, whereas participants in the current study imagined older adults as having higher binding scores (with a large effect size), participant age did not significantly correlate with ratings on the binding foundations. This was an unexpected result and differs from the findings of Dr. Bixter's previous study, where older adults scored significantly higher on the binding foundations compared to younger adults.

The cause of the non-significant relationship between participant age and self-evaluated binding foundation scores in the current sample can only be speculated about at this time. It is

possible that the stereotype that older adults will place higher value on binding foundations (i.e., loyalty, authority, and purity) no longer aligns with actual ratings of older adults. This could be due to changing sociocultural norms or other advancements that allow older adults to "feel" younger compared to past generations did at their ages, such as advancements in medical treatments that preserve physical health more than in the past, or the recent uptick in adoption of technologies such as social media in older adults. There are patterns of findings in the current results that could suggest an explanation such as this. For example, the average age was approximately 44 years old in the participants, which was nearly exactly in-between the two target ages in the imagined perspective conditions (25 and 65 years old, respectively). However, as shown in Figure 3, moral foundation ratings were more similar between the imagine as typical younger adult and self-evaluation conditions than between the imagine as typical older adult and self-evaluation conditions. As a result, it could be the case that a larger proportion of the sample still identified as being a younger adult compared to an older adult.

It could also be the case that the non-significant correlation between participant age and binding scores was due to the adult sample not being representative on other factors known to relate to binding foundations, such as political orientation and religiosity (e.g., Graham et al., 2009). Amazon Mechanical Turk has been known to collect samples that tend to lean towards the left, politically, and identify as less religious, but not enough to undermine scientific results (Levay et al., 2016). The use of Amazon Mechanical Turk in this study may explain the difference between the current results and the results of the previous study of Dr. Bixter. Because these factors were not measured in the current survey, this explanation cannot be ruled out and is mentioned below in the Limitations and Future Directions. The two age groups utilized in the previous study consisted of undergraduate students (the younger adults) and retired community

members in the Atlanta region (the older adults), which again is different from the online adult

age sample utilized in the current thesis.

The current thesis builds upon past research that has shown moral stereotyping being

present based on salient ideological factors, such as political orientation (e.g., Graham et al.,

2012) and religious commitment (e.g., Simpson & Rios, 2016; Ward & King, 2021). The present

results suggest that adult age group might be another salient factor that people form

generalizations about regarding moral foundations, which could then contribute to either real or

perceived "generational divides" on various sociocultural issues.

Limitations and Future Directions

There are some limitations in the current thesis that future research can improve upon. In

terms of racial diversity, the sample was predominantly White (77.4%), which can limit the

generalizability of the results to the larger diverse population of the United States. In exploring

the prevalence of moral stereotyping based on target age, future research may also find it more

beneficial to provide specific details when asking participants about imagined others, rather than

imagining a "typical" younger or older adult. Providing specific details about target others may

mitigate (or sometimes exacerbate) the prevalence of moral stereotyping.

It will also be beneficial for future research to explore how age, politics, religion, and

other social factors intersect in affecting moral foundations (as well as moral stereotypes). Prior

research has shown political orientation (Graham et al., 2009; Haidt & Graham, 2007; Haidt et

al., 2009; Iyer et al., 2012; van Leeuwen & Park, 2009; Weber & Federico, 2013) and religion

(Galen et al., 2014; Simpson & Rios, 2016; Ward & King, 2021) to be related to moral

foundations. Due to the relationship between age and these ideological factors, it will be

important for future research to disentangle any moral stereotypes that remain regarding age after

adjusting for other salient ideological factors. Moreover, because the current study did not

include measures of politics and religious commitment, it is not possible to rule out bias in the

sample affecting some of the reported results. For example, the self-evaluation binding

foundation scores were a bit lower in the thesis sample compared to some previous studies.

Because prior research has found binding scores to be lower in certain social groups (e.g.,

political liberals and libertarians; Graham et al., 2009; Iyer et al., 2012), it may be the case that

the current sample was skewed and included more representation of certain ideological groups.

As such, future research should build upon the current results by measuring and better

controlling for relevant factors such as political orientation and religiosity.

Finally, the thesis sample was restricted to individuals in the United States. Future

research could collect data from an international sample to explore any cross-cultural differences

in the relationship between age and moral foundations, as well as any differences in moral

stereotyping with regard to age group. Cutler et al. (2021) analyzed prosocial behavior near the

start of the Covid-19 pandemic across 67 different countries and controlled for age as a factor.

However, future research could build upon this study and explore how age correlates with

individualizing and binding moral foundations specifically. Similarly, Eriksson et al. (2019)

found some different results when comparing political stereotyping in both the US and the UK,

but age was not considered as a factor. Incorporating age as a salient factor with regard to moral

foundations may lead to more insight in future research revolving around cross-cultural

differences in individualizing and binding moral foundations.

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