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Believe What I Believe: Correspondence Between the Beliefs of Young Adults and the Perceived Beliefs of Their Caregivers

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ABSTRACT

Little research has examined the mechanisms through which adult children adopt beliefs across a range of contexts. Through an online survey, the authors examined belief transmission via the correspondence between beliefs of 837 young adults and the perceived ideological beliefs of their caregivers as a function of attachment, parental behavior, and religious beliefs in four domains: moral, political, religious, and lifestyle. The strongest predictor of belief transmission across domains was the geographic location in which the participants were sampled, with individuals currently residing in the Southern region of the United States indicating greater belief transmission compared with those residing in the Midwestern region of the United States. Women also exhibited greater belief transmission compared with men. Controlling for these predictors, we also found that insecurity was negatively related to belief transmission, whereas authority, autonomy, and religious attachment were positively related to belief transmission in some contexts. Taken together, these results suggest that the relationships that young adults remembered having had with their primary caregivers were associated with the transmission of their caregivers' beliefs.

Beliefs, values, and attitudes shape the social lives of humans by playing a role in the establishment and maintenance of friendships and other social bonds. Value and belief systems are often shared within families and these family-specific belief schemas shape the thinking of individuals outside of the family environment (Hamon & Schrodt, 2012; Koerner & Fitzpatrick, 2002). Despite their central importance, relatively little is known about how beliefs come to be endorsed. In particular, little is known about how attachment to the caregiver and caregiver behavior might affect transmission of caregivers' beliefs in a variety of domains. In the present study, we examined belief transmission via correspondence between the ideological beliefs of young adults and the perceived beliefs of their primary caregivers. In addition, we examined the strength of belief transmission as a function of attachment to caregivers and recollection of caregivers' parenting behaviors, as well as religiosity.

Social learning theory predicts that more secure attachments lead to greater belief transmission (Bretherton, Golby, & Choi, 1997). This prediction is supported by findings that closeness promotes the transmission of at least religious beliefs (Bahr, Maughan, Marcos, & Li, 1998; Myers, 1996; Risch, Jodl, & Eccles, 2004). On the other hand, a more secure attachment might foster greater autonomy and freedom to explore individual choices (Kağıtçıbaşi, 1996), ultimately

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leading to less belief transmission. Parental acceptance is also a key factor promoting the sharing of religious beliefs (Bao, Whitbeck, Hoyt, & Conger, 1999; Rossi & Rossi, 1990; Sherkat & Wilson, 1995). There are likely to be other aspects of parental behavior that impact a child's internalization of parents' beliefs. This area of study has not yet been extended beyond the investigation of parental discipline techniques and the internalization of standard societal values (Hoffman, 1975) despite a proposal by Grusec, Goodnow, and Kuczynski (2000) and Grusec and Kuczynski (1997) almost two decades ago to do so. Questions about the transmission of beliefs in domains other than religion, such as moral, political, and lifestyle beliefs, remain relatively unexplored, providing the impetus for the present study.

Little attention has been given to the ideological beliefs of adult children. Kapinus and Pellerin (2008) examined the impact of parents' religiosity and child-parent closeness on their adult children's attitudes toward divorce. These authors argued that religion can serve to increase the bond between parent and child, and thus lead to greater transmission of parental attitudes (Myers, 1996). Formal institutions with the goal of strengthening beliefs, such as churches, provide one means by which families develop shared belief systems (Waite & Lehrer, 2003). For example, Kapinus and Pellerin (2008) found that young adults may share parents' attitudes toward divorce even if they do not share their parents' religious beliefs and practices, suggesting that moral values may be influenced even when religious beliefs and practices diverge. Bader and Desmond (2006) found that when attitudes and behaviors were consistent among religious parents, adolescents were more religious. When attitudes and behaviors were inconsistent, attitudes took precedence over behaviors, such as church attendance, with regard to religious transmission. Religion appears to be one domain in which beliefs that a child is exposed to early in life are strongly associated with their later beliefs (Heiphetz, 2018), and also their distinction between reality and fiction (Corriveau, Chen, & Harris, 2015). These studies, although limited to a focus on religious beliefs, also highlight the importance of the strength of the bond between parent and child for fostering the adoption of similar beliefs and behaviors.

Parents who exhibit greater authority and competence may be more likely to instill similar beliefs and behaviors in their offspring. Children use a variety of cues when determining which factual information should be believed. For instance, they accept novel information more readily from informants who have previously made known correct statements (Corriveau, Pickard, & Harris, 2011; Jaswal & Neely, 2006; Koenig, Clement, & Harris, 2004; Tenney, Small, Konrad, Jaswal, & Spellman, 2011), speak with certainty (Jaswal & Malone, 2007; Tenney et al., 2011), and have expertise (Koenig & Jaswal, 2011; VanderBorght & Jaswal, 2009). Although not extensively examined, a secure relationship with an attachment figure has also been shown to facilitate trust in the attachment figure, which may make belief transmission more likely (Bretherton, Golby, & Cho, 1997). One relevant study showed that different patterns of attachment to the mother were associated with the extent to which children accepted their mother's claims over conflicting claims made by a stranger (Corriveau et al., 2009). Children with secure attachments were the most likely to accept their mother's claims if clues as to the veracity of the claims were ambiguous. For those children who were insecurely attached, those that showed a resistant pattern of attachment were more likely to accept the mothers' claims whereas those that showed an avoidant pattern were the least likely to accept the mothers' claims regardless of the clues. Corriveau et al. (2011) pointed out that securely attached children may have more confidence in their own judgments in the absence of information explicitly endorsing the caregiver's beliefs when compared with insecurely attached children.

Although much of the existing research focuses on beliefs about factual information, in the present study, we focused on ideological beliefs or opinions, which may be seen as somewhat intermediate between fact- and preference-based beliefs (Heiphetz, Spelke, Harris, & Banaji, 2013). Although individuals may recognize that others may hold different opinions, varying opinions are generally perceived as more acceptable for controversial beliefs compared with widely

held beliefs (Heiphetz, 2018). Moral beliefs—such as the belief that it is wrong to intentionally harm others—are widely held beliefs that evoke shared societal values. Thus, there may be large consequences for an individual who does not share the commonly held beliefs of one's culture. Therefore, parents may be less flexible in instilling these broad moral beliefs in their children (Grusec et al., 2000). For example, to the extent that an individual is religious, they may be considered moral or immoral by others (Gervais, Shariff, & Norenzayan, 2011; Heiphetz et al., 2013). Therefore, we might expect to see the strongest influence of parental authority on religious and moral beliefs, which are often tightly connected (Heiphetz, 2017) and weaker influences on opinions about politics and general lifestyle practices. For example, parents' beliefs about premarital sex, abortion, and sexual orientation may have a stronger bearing on their adult children's beliefs about these things, compared with their perspectives on exercise and hobbies.

Heiphetz (2018) also noted that religious beliefs can be the fabric of one's identity in the sense that there are labels associated with religious beliefs. The same can be said of political beliefs. One can be described as a Christian or an Atheist, and as a Republican or a Liberal. There is not a similar universal label to describe someone who believes that spicy food is better than bland food or that one should exercise daily. Beliefs associated with identity labels will thus be the most strongly connected with an individual's sense of identity and, therefore, may be most likely to diverge from those of caregivers when secure attachment has fostered autonomy and self-esteem.

We focused on the adult child's attachment to his or her primary caregiver and retrospective reports of the behaviors of that caregiver as predictors of belief transmission. Rather than classifying parenting style in general terms as, for example, authoritarian, authoritative, or permissive (e.g., Baumrind, 1967), we used a parenting behavior measure that assessed the specific traits of conformity to parental expectations, parental authority, and adolescent autonomy (Bush, Peterson, Cobas, & Supple, 2002; Peterson, Rollins, & Thomas 1985). Because previous research has identified a key role of religious practices in shaping family belief systems, we additionally investigated associations with emotionally based and socialization-based religiosity (Granqvist & Hagekull, 1999) and belief transmission. We selected these particular measures of religiosity because these scales focus on the manner in which religious beliefs are instilled in children, using a model of attachment. Last, we sampled participants in two different areas of the United States (Southern and Midwestern regions) to increase the diversity and representativeness of our sample, and we were interested in whether there were regional differences in belief transmission given the rather large discrepancy in religious and political beliefs in these regions of the United States. Unlike previous research, we asked about beliefs that constituted opinions in various domains such as religion, morality, politics, and lifestyle choices. Because this is a relatively novel approach, and we examined only college student beliefs, the present study should be considered a preliminary attempt to establish findings of belief transmission across several domains.

Method

Participants and procedure

Participants were 837 students (175 men and 662 women) enrolled in undergraduate psychology courses at a midsize university in either the Southern region of the United States ($n = 563$) or the Midwestern region of the United States ($n = 274$) who participated voluntarily in return for partial fulfillment of a research participation requirement. The mean age of participants was 21.42 years ($SD = 6.24$ years). The racial/ethnic composition was 63% White, 30% Black, 3% Hispanic, and 4% other. Although this is not a representative sample of the more general population, it is a convenience sample that is similar to those commonly used to examine individual differences in young adults. Participants completed measures of parental behavior, attachment, Emotionally Based Religiosity Scale (EBRS), and Socialization-Based Religiosity Scale (SBRS) and

belief transmission via a secure website (surveymonkey.com). Participants also completed some additional measures not relevant to the present study, including measures of narcissism. Data from this sample were previously reported in Cater, Zeigler-Hill, and Vonk (2011).

Measures

Parent Behavior Measure. The Parent Behavior Measure (PBM) scale has been well validated with American and international samples (Supple, Peterson, & Bush, 2004). We used the following subscales from the Parent Behavior Measure (Bush et al., 2002; Peterson, 1982):

Adolescent autonomy. Adolescents' reports of behavioral autonomy from mothers ($\alpha = .93$) and fathers ($\alpha = .93$) was measured with 10 items based on previous research dealing with the growth of self-direction by children (Sessa & Steinberg, 1991). These items measure the extent to which mothers and fathers allow adolescents to make their own decisions and engage in activities without excessive parental intrusion regarding choices about friendships, lifestyle preferences, clothing selection, educational goals, and career plans. The participants responded to the items on Likert-type scales that ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). The items were summed for a total score of autonomy from each parent, with higher scores indicating higher levels of autonomy from their mother or father.

Parental authority measure. Adolescents' perceptions of parental authority were measured with a 23-item revised version of a previously developed measure of parental power bases and authority (Henry, Wilson, & Peterson, 1989; Peterson, Rollins, & Thomas, 1985). This scale assesses adolescents' perceptions of their parents' interpersonal resources and was composed of items measuring referent, expert, legitimate, reward, and coercive authority. The participants responded to the items on Likert-type scales that ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). With the negatively valenced items reverse-coded, the items within each subscale were summed for a total score in reference to each parent (mother: $\alpha = .89$; father: $\alpha = .93$), with higher scores indicating higher levels of authority.

Conformity to parental expectations. Adolescents' reports of conformity to mothers ($\alpha = .85$) and fathers ($\alpha = .88$) was composed of nine items used in several earlier studies (Bush, Peterson, Cobas, & Supple, 2002) that measured whether adolescents conformed to parents' values, beliefs, and expectations about leisure time activities, friends, dating, education, and careers. The participants responded to the items on Likert-type scales that ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). With the negatively valenced items reverse-coded, the items were summed for a total score in reference to each parent, with higher scores indicating higher levels of conformity.

Attachment History Questionnaire. Early life experiences were measured using the Attachment History Questionnaire (AHQ; Pottharst, 1990). The AHQ is a 51-item measure that assesses representations of childhood relationships during the time when the respondent was living at home with his or her parents. Unlike many of the more commonly employed measures of attachment that are used with adults, the AHQ assesses retrospective accounts of attachment bonds with parents and peers during childhood rather than focusing on current relationships with romantic partners. The items that constitute the AHQ address issues such as family interactions, family discipline, and support systems. Responses were made on Likert-type scales ranging from 1 (*never/not at all*) to 7 (*always/very much*). This instrument captures four aspects of early life experiences: secure attachment base (24 items; e.g., "How often did you feel you could trust your parents?" [$\alpha = .73$]), peer affectional support (8 items; e.g., "Did you find it easy to form new relationships with other people?" [$\alpha = .66$]), parental discipline (10 items; e.g., "How often did your parents hit or physically hurt you?" [$\alpha = .89$]), and threats of separation (9 items; e.g., "How often did your parents tell you they would leave you some place if you did not behave?" [$\alpha = .81$]).

Emotionally Based Religiosity Scale. To discern the level of attachment and security that religion offers individuals, the EBRS was utilized (Granqvist & Hagekull, 1999). The EBRS contains ten items including statements such as "When I feel lost I find support in my religious faith" and "I strive to maintain closeness to God." Items were rated using Likert-type scales that ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). The internal consistency for this measure was $\alpha = .98$.

Socialization Based Religiosity Scale. As religious views are often passed down from parent to offspring, the SBRS was used to measure the degree to which religious standards have been transmitted from parent to participant (Granqvist & Hagekull, 1999). Like the EBRS, the SBRS consists of 10 items that were rated using Likert-type scales that ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). Items included such statements as, "My religious beliefs correspond to my mother's beliefs" ($\alpha = .96$).

Belief Transmission Survey. This scale was constructed for the present study and included 64 items to assess attitudes, and agreement with caregiver attitudes in four domains: moral (14 items; e.g., "Abortion is always wrong regardless of the circumstance"), political (28 items; e.g., "The government should increase funding for welfare programs [e.g., giving food stamps to the poor, unemployment benefits]"), religious (18 items; e.g., "It is important to believe that there is a God"), and lifestyle (14 items; e.g., "A good work ethic leads to greater success in life"). The participants responded to the items on scales that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Additionally, participants were asked to indicate how they believed their caregiver would respond to each statement using the same rating scales. Then, correlations were computed between their own and their primary caregiver's perceived attitudes. Statements were framed in both the affirmative and the negative. Because the statements within each category expressed a range of sentiments on diverse issues, it did not make sense to expect high reliability on responses within categories. We were measuring consistency within participants' beliefs and those of their caregivers, but not consistency within their own beliefs within categories. Therefore, we do not report Cronbach's alphas for this measure.[1]

Results

Bivariate correlations and descriptive statistics for the predictor and outcome variables are reported in Table 1. Principal component analyses were conducted on the subscales of the PBM and AHQ to extract meaningful components capturing shared variance. A varimax rotation with Kaiser normalization was applied to the analyses and three components were extracted with eigenvalues greater than 1, explaining 63.78% of the variance. The first component was authority, which was comprised of the parental authority for both parents, and conformity to parental expectations for both parents. The second component was insecurity, which was comprised of the reverse of secure attachment base, along with parental discipline, and threat of separation. The third component was autonomy, which comprised adolescent autonomy as well as peer affectional support. Associations were .59 or greater. Components were formed by averaging the standardized scores of each component variable that was associated with the higher-order construct.

Correlations were calculated between participants' self-reported beliefs and perceived caregiver beliefs (i.e., self-caregiver correspondence or belief transmission) about the same issues. Belief transmission in each of the four areas (i.e., moral, political, religious, and lifestyle) were regressed on the composites from the AHQ and the PBM (authority, insecurity, and autonomy) as well as scores on the EBRS and SBRS in hierarchical linear regressions. Sex and geographic location (Southern vs. Midwestern regions of the United States) were entered on Step 1 of the regressions. Authority, insecurity, and autonomy along with EBRS and SBRS were entered on Step 2. Coefficients from the regressions are shown in Table 2. We corrected for multiple analyses using a Bonferroni correction, such that our adjusted alpha was .01.

Table 1. Correlations and descriptive statistics for belief correspondence between self and caregiver, sex, geographic location, authority, insecurity, autonomy, EBRS, and SBRS.

	1	2	3	4	5	6	7	8	9	10	11
1. Self-caregiver moral	—										
2. Self-caregiver political	.40***	—									
3. Self-caregiver religious	.26***	.70***	—								
4. Self-caregiver lifestyle	.27***	.71***	.71***	—							
5. Sex	.11***	.14***	.09**	.04	—						
6. Geographic location	−.07*	−.59***	−.65***	−.72***	.01	—					
7. Authority	.24***	.17***	.16***	.23***	−.07	−.15***	—				
8. Insecurity	−.19***	−.22***	−.15***	−.17***	−.07	.05	−.16***	—			
9. Autonomy	.19***	.12***	.14***	.08*	−.04	.00	.23***	−.28***	—		
10. EBRS	.24***	.29***	.40***	.27***	.11***	−.27***	.22***	−.13***	.13***	—	
11. SBRS	.30***	.26***	.33***	.26***	.05	−.21***	.33***	−.20***	.24***	.67***	—
MD	0.67	0.62	0.56	0.60	1.79	1.33	−0.15	0.01	−0.01	4.24	3.94
SD	0.34	0.32	0.50	0.37	.41	0.47	0.76	0.77	0.74	1.61	1.61
Minimum	−0.83	−0.53	−1.00	−0.53	1.00	1.00	−2.65	−1.80	−2.77	1.00	1.19
Maximum	1.00	1.00	1.00	1.00	2.00	2.00	2.53	2.36	1.90	6.00	6.00

Note. EBRS = Emotionally Based Religiosity Scale; SBRS = Socialization Based Religiosity Scale.
*$p < .05$.
**$p < .01$.
***$p < .001$.

Table 2. Hierarchical multiple regression analysis of belief correspondence between self and caregiver on to authority, insecurity, autonomy, EBRS, and SBRS.

	Self-Caregiver: Moral		Self-Caregiver: Political		Self-Caregiver: Religious		Self-Caregiver: Lifestyle	
	R^2	β	R^2	β	R^2	β	R^2	β
Step 1	.02***		.37***		.42***		.51***	
Sex		−.07*		.14***		.10***		.05
Location		.12***		−.59***		−.64***		−.71***
Step 2	.14***		.41***		.48***		.53***	
Authority		.14**		.04		−.01		.08**
Insecurity		−.11**		−.14***		−.06*		−.10***
Autonomy		.08*		.06		.10***		.02
EBRS		.07		.07		.17***		.01
SBRS		.17***		.04		.06		.07

Note. EBRS = Emotionally Based Religiosity Scale; SBRS = Socialization Based Religiosity Scale.
*$p < .05$.
**$p < .01$.
***$p < .001$.

For moral beliefs, sex influenced belief transmission such that women were more likely than men to adopt their primary caregiver's moral beliefs ($\beta = .12$, $t_{834} = 3.27$, $p = .001$). After controlling for sex and geographic location, the following predictors were significant. Authority ($\beta = .14$, $t_{831} = 3.99$, $p < .001$), insecurity ($\beta = −.11$, $t_{831} = −3.05$, $p = .002$), and SBRS ($\beta = .17$, $t_{831} = 3.74$, $p < .001$) predicted participants' agreement with their caregiver's moral beliefs.

For political beliefs, sex influenced belief transmission such that women were more likely than men to adopt their primary caregiver's moral beliefs ($\beta = .14$, $t834 = 5.04$, $p < .001$). Geographic location also influenced belief transmission with individuals from the Midwestern United States being less likely to adopt caregiver's beliefs compared with individuals from the Southern United States ($\beta = −.59$, $t_{834} = −20.75$, $p < .001$). After controlling for sex and geographic location, insecurity ($\beta = −.14$, $t_{831} = −4.82$, $p < .001$) predicted participants' agreement with their caregiver's political beliefs.

For religious beliefs, sex influenced belief transmission such that women were more likely than men to adopt their primary caregiver's religious beliefs ($\beta = .09$, $t_{834} = 3.47$, $p = .001$). Geographic location also influenced correspondence, with individuals from the Midwestern

United States being less likely to adopt caregiver's beliefs compared with individuals from the Southern United States ($\beta = -.64$, $t_{834} = -23.63$, $p < .001$). After controlling for sex and geographic location, the following predictors were significantly associated with religious belief transmission: autonomy ($\beta = .09$, $t_{831} = -3.44$, $p = .001$) and EBRS ($\beta = .17$, $t_{831} = 4.89$, $p < .001$).

For lifestyle beliefs, geographic location influenced belief transmission with individuals from the Midwestern United States being less likely to adopt caregiver's beliefs compared with individuals from the Southern United States ($\beta = -.71$, $t_{834} = 28.48$, $p < .001$). After controlling for sex and geographic location, the following predictors were significant: authority ($\beta = .08$, $t_{831} = 2.94$, $p = .003$) and insecurity ($\beta = -.10$ $t_{831} = -3.77$, $p < .001$) predicted participants' agreement with their caregiver's lifestyle beliefs.

Discussion

Our regression models accounted for a significant amount of the variability in participants' correspondence to their primary caregiver's beliefs in the areas of political, religious, and lifestyle beliefs. However, the models did not account for a significant amount of variability beyond the sex and geographic location of the participant. Furthermore, the model for Moral beliefs accounted for only 14% of the variability in belief transmission. After controlling for sex and location, however, several interesting patterns did emerge. First, insecurity—which comprised threat of separation, parental discipline, and insecure attachment—was negatively associated with belief transmission in all four domains. That is, individuals who reported a high degree of insecure attachment and threat of parental separation were less likely to adopt caregivers' beliefs, supporting the idea that attachment insecurity diminishes the likelihood of internalizing caregivers' beliefs.

Second, other aspects of attachment and parental behavior were associated with a greater likelihood of adopting caregiver's beliefs in specific domains. Parental authority was associated with greater belief transmission in the areas of moral and lifestyle beliefs. This finding is consistent with previous research demonstrating a positive relationship between authoritarianism and conformity orientation (Hamon & Schrodt, 2012). Authority included conformity to mother and father expectations as well as the authority of both the mother and father. Grusec et al. (2000) alluded to the idea that conformity to societal ideals in the domain of morality may be more rigidly expected by parents, relative to conformity to lifestyle choices, such as food preferences, exercise habits, and so on, which have less of an impact on society as a whole. However, we found that parents that were remembered as having a high degree of authority tended to elicit conformity to beliefs that are critical to societal functioning (i.e., moral beliefs) as well as those that may be expected to be more individual and flexible (i.e., lifestyle choices).

Autonomy—which includes peer affectional support—was also associated with greater transmission of moral beliefs. Thus, interestingly, those whose parents were remembered as exhibiting more authority as well as those who had more autonomy from their parents were more likely to share their moral beliefs. This somewhat confusing pattern of results may be explained by acknowledging that there may be multiple routes to belief transmission in this domain. Having parents who exert power and authority may compel some individuals to conform both in their behavior and their beliefs. In addition, others who have been granted significant autonomy from their parents may also come to share their parents' beliefs for different reasons; in this case, due to a close attachment relationship and mutual respect. Both somewhat negative and positive aspects of children's relationships with their parents can therefore be influential in their developing belief systems.

Previous research has shown that children from more religious families might be more inclined to share parents' religious beliefs (Hayes & Pittelkow, 1993), and that religiosity may encourage conformity (Van Cappellen, Corneille, Cols, & Saroglou, 2011). We found that EBRS

scores predicted beliefs only in the specific domain of religious beliefs, but not in other domains. SBRS scores, on the other hand were not predictive of belief transmission for religious beliefs but did predict belief transmission for moral beliefs. We expected that religious socialization would predict moral, political, and religious beliefs, so these results were somewhat surprising. Researchers have found that religious individuals tend to value ideals such as conformity and tradition and to devalue ideals that promote openness and autonomy (Saroglou, Delpierre, & Dernelle, 2004), which is consistent with the finding that those higher in religiosity would be more likely to conform to the beliefs of caregivers. In addition, Van Cappellen et al. (2011) found that, when primed with religious compared with control primes, participants were more inclined to conform to their peers' estimates in a numerical estimation task, suggesting that priming individuals with thoughts of religion leads to an increase in conformity behavior. Thus, our results are consistent with prior findings that stress the importance of religious beliefs in the home with regard to belief transmission (Hayes & Pittelkow, 1993), but also extend these previous studies by showing the limits of such influences. That is, religious beliefs do not appear to influence agreement with more general beliefs and values.

Previous studies have shown that parental religious beliefs are the primary predictor of their children's religious and moral beliefs (Hayes & Pittelkow, 1993), but the present data build on these findings to demonstrate the impact of particular aspects of parental attachment and behavior to belief transmission across multiple domains. Most prior studies have focused on shared religious affiliation, or belief in the major tenets of religion (Hayes & Pittelkow, 1993), whereas in the present study, we asked respondents about specific opinions that were tied to the areas of religion, politics, and morality, as well as general lifestyle ideals.

Parental behavior and attachment to the parents accounted for a significant additional portion of the variance, but in unique ways depending on the domain examined. In general, the findings suggest that individuals are more likely to conform to parents' beliefs when there is a strong expectation of conformity, and authority from the caregivers, but that political and religious beliefs may actually be more independently formed—especially for men—compared with general moral values.

Limitations and future directions

We were able to examine several components of caregivers' behaviors and relationships with adult participants using the PBM and the AHQ to provide a more comprehensive examination of the factors responsible for belief transmission. However, we did not interview or survey the caregivers themselves so we were unable to asses some of the markers of parenting that might be most critical for imparting beliefs and values to one's children. Grusec et al. (2000), for instance, recommended assessments of the parent's empathy and perspective-taking skills, and the child's understanding of agency as well. We agree that future researchers should examine these variables and study the development of beliefs within the parent-child dyads themselves. A "one to many" design should be used in the future whereby respondents can have relatives also respond to the survey to provide such information.

A related potential limitation of the present study is the fact that all data were self-reported. However, that is perhaps the best means to obtain information about people's beliefs, which can only be inferred from behavior, rather than being directly assessed. In addition, we did not directly assess caregivers' beliefs, but rather assessed the beliefs of the caregivers as perceived by the adult child. However, because the goal of the study was to assess the extent to which children adopted or conformed to the beliefs of their caregivers, their perceptions of agreement may be just as important as actual agreement.

In addition to being self-report, the data were also retrospective in nature, meaning that memory distortions may have exerted a strong influence over the patterns evident in our data. For

example, individuals that remembered their caregiver relationships as being warmer or more supportive may be more likely to report congruence between their beliefs and the perceived beliefs of their caregivers, regardless of the true nature of the relationship. Although it would be ideal to control for actual behaviors and recency of recollection, we believe that the data are of interest despite the risk of memory distortions over time. We are still able to assess whether the manner in which relationships are remembered is associated with differences in belief transmission.

Another limitation may be the age range of the participants. Because beliefs change over time, and are impacted by experience, it is possible that studying children's beliefs at an earlier age would reveal greater correspondence with the beliefs of their caregivers compared with studying their beliefs once in early adulthood. However, previous research has shown that parents have the most influence over beliefs (at least with regard to divorce) when the children are in late adolescence (Kapinus, 2004). In addition, in our study, rates of correspondence were actually quite high (e.g., correlations of .56–.67 on average).

Despite our comprehensive approach to examining factors influencing individuals' adult beliefs, most of the variability in our models was accounted for by the sex of the participant and, especially, the geographic location in which we conducted the surveys. Unfortunately, we do not know where our participants originated from, only where they resided at the time of data collection. Knowing where individuals grew up is admittedly more important than current residence and any future study should ask for this information. Nonetheless, geographic location of the participants was the strongest predictor of belief transmission, indicating that individuals living in the Southern United States are most likely to adopt caregiver's beliefs across a variety of domains regardless of parenting style or attachment. The model for moral beliefs accounted for only 14% of the variance even with the inclusion of additional factors, pointing to the need for further development of the moral beliefs section of the questionnaire.

Related to the issue of the importance of geographic location is the fact that, like Heiphetz et al. (2013), our sample was primarily Christian. Although Saroglou et al. (2004) found consistent relationships between religiosity and various values across religious denominations, we may have uncovered different relationships between early childhood experiences and the formation of beliefs if we had examined participants from a range of backgrounds and beliefs. In addition, our sample was predominantly women and, given the large sex differences observed here, this bias may have skewed the results. We also do not know whether participants grew up in single parent or two-parent households. It is possible that children are more likely to adopt a parent's beliefs if they are exposed to beliefs of a single primary caregiver, rather than being exposed to beliefs from two or more parental figures. The degree of agreement between parents is also likely a significant factor that we were unable to examine here but would be interested in pursuing in future research.

Last, although we focused on socialization of beliefs, we do not disregard the role of genetics in contributing to belief formation. Biological parents pass on inherited traits to their offspring that may contribute to the likelihood of adopting similar beliefs. Unfortunately, degree of relatedness and heritability of traits was another facet that was not examined in the current work. Despite its limitations, the current work has value as it is among the few studies designed to shed light on the development of beliefs across a range of domains, whereas much existing work focuses only on facts or religious beliefs. Furthermore, we have developed a novel method for assessing agreement of beliefs across these various domains that may prove useful moving forward with the inclusion of additional variables listed previously.

Note

1. We also asked participants to indicate how they believed their peers would respond to each statement using the same rating scales. However, we did not include that information in our analyses in the interest of parsimony.

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