Predicting Age of Atheism: Credibility Enhancing Displays and Religious Importance, Choice, and Conflict in Family of Upbringing

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Abstract

The cultural learning concept of Credibility Enhancing Displays (CREDs) concerns the extent to which behavioral models consistently live out their professed ideals. While researchers have suggested that past CRED exposure is an important variable for predicting who does and does not become a religious believer, it is unclear how CREDs relate to *when* a person rejects the religious beliefs modelled to them during their upbringing. Using a large sample of formerly believing atheists, two analyses assessed the ability of CREDs to predict the age at which an individual became an atheist. In the first analysis (n = 5,153), CREDs were positively associated with a delay in Age of Atheism, with family-level religious variables (Religious Importance, Religious Choice, and Religious Conflict) moderating this relationship. In the second analysis (n = 3,210), CREDs remained a stable predictor of Age of Atheism while controlling for demographics, parental quality, religious variables, relational variables, and institutional variables. Overall, while findings support a robust relation of CREDs to atheistic outcomes even when controlling for many other variables that influence religious transmission processes, they also highlight the importance of considering how such other variables modify the impact of CREDs on (non)religious outcomes.

Keywords: credibility enhancing displays; atheism; religious conflict; religious choice; parental quality; religious socialization; cognitive science of religion

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1. Introduction

In order to understand the ubiquity of specific concepts and behaviors that have been referred to as "religious", the cognitive science of religion (CSR) focuses upon recurring cognitive and cultural processes that have evolved or otherwise developed across the world and over time (Xygalatas, 2014). Over the last few decades, researchers in this area have proposed a number of cognitive and cultural constructs linked to varying levels of religious beliefs and ideas (cf. Barrett, 2007). Because CSR is still a relatively new area of research, many open questions remain concerning these theoretical constructs, particularly how they relate to religious conditions and outcomes across different cultures in the modern social landscape. One of these constructs is *credibility enhancing displays* (CREDs), introduced in the work of anthropologist Joseph Henrich (2009). Derived from a cultural evolution standpoint, CREDs imply a "walk the walk" notion: if individuals faithfully engage in the *behaviors* that are logical expressions of their own *professed beliefs*, then this should increase the probability that those who observe these behaviors will adopt the beliefs that underlie such behaviors. More precisely, CREDs are behaviors that a cultural model would not perform if they did not believe what they said they did. As Gervais and colleagues (Gervais, Willard, Norenzayan, & Henrich, 2011, p. 392) explain:

> An unscrupulous [behavioral] model might knowingly transmit false information to others, perhaps to maintain a competitive advantage. In this case, it is important for learners to ensure that their models actually hold the beliefs they espouse before adopting the belief themselves. Actions speak louder than words: they are great cues of another's underlying beliefs…If models engage in behaviors that would be costly if opposing beliefs were held (that is, if they engage in credibility-enhancing displays of their beliefs)

> learners can be more confident that the model actually holds the belief, and as a result they would be more receptive to these beliefs (Henrich 2009).

While CREDs are related to various CSR constructs, such displays are perhaps best described as constituting a *cultural evolution* construct, insofar as CREDs were partially developed in response to, and as a critique of, CSR emphases on content biases rather than context biases (see Gervais and Henrich, 2010, for a discussion of context versus content biases). As such, the importance of CREDs can be understood not only in relation to the physical survival and genetic reproduction of humans via the learning of which behaviors to perform (i.e., obtaining food; cultural norms) or not perform (i.e., avoiding dangerous areas, foods, and animals), but also specifically in relation to *social learning*, in this case as it pertains to religious beliefs and behaviors (Bandura, 1971, 2003; cf. also Dudley, 1999). Stated bluntly, we have an evolved bias toward the learning of behaviors that keep us alive and enhance or ensure successful reproduction, but this bias also pertains to how and why we learn the various aspects of our culture from important cultural models. Consequently, since religious socialization is central to the intergenerational transmission of religious beliefs and behaviors (Bengtson, Putney, & Harris, 2013), evolved cultural learning mechanisms that bias humans toward conforming to the behavior of important cultural models should be more influential than verbal expressions of religious beliefs from such models. While research shows that either of these aspects may influence religious outcomes among offspring (Flor & Knapp, 2001; King, Furrow, & Roth, 2002), CREDs should play a unique role in the youthful acquisition and later sustainment of religious ideas and practices.

Although they are not entirely without mixed results, a number of studies provide support for the efficacy of CREDs in distinguishing between believers (i.e., theists) and nonbelievers (i.e., atheists), as well as general levels of religiosity in national populations (Gervais & Najle, 2015;

Hitzeman & Wastell, 2017; Lanman, 2010, 2012; Lanman & Buhrmester, 2016; Maij, van Harreveld, Gervais, Schrag, Mohr, & van Elk, 2017; Willard & Cingl, 2017)[2]. Because such research suggests that CREDs influence the acquisition and intergenerational transmission of religious belief, a logical implication of this is that CREDs should impact the *age at which one becomes an atheist*. However, CREDs do not exist within a vacuum, but are likely related to other important influences on the acquisition of (religious) culture (e.g., family-level variables). That is, if CREDs are related to the age at which one stops believing in a god or gods, then there is a question of how CREDs might fare next to, interact with, or even *compete with* other social and family variables which have been shown to affect religious outcomes. Such variables would include (among many others; cf. Clark & Worthington, 1990): (1) peer religiosity and religiosity of social networks (Barry & Christofferson, 2014); (2) family structure (e.g. two-parent versus one parent) (Petts, 2014); (3) parental religious homogamy (Bruce & Glendinning, 2010); (4) quality of relationship with parents and other key social relationships (e.g., grandparents, siblings, adolescent and young adulthood peers; Smith & Denton, 2005); (5) degree of personal religious choice allowed to children by parents (Okagaki, Hammond, & Seamon, 1999; Potvin & Sloane, 1985); (6) conflict over religion in one's family during upbringing (Bengtson, Putney, & Harris, 2013, pp. 160-161; Mahoney, 2005; Pasquale, 2009); and (7) formal religious education and institutional religious contexts (Putney et al., 2013).

Of these factors, religious *choice* and religious *conflict* are of special interest. The former may especially be considered in post-industrial, modernized liberal democracies (Norris & Inglehart, 2011), which, purportedly due to their increased levels of existential security, are generally characterized by elevated levels of personal choice, individualism, and secular liberal values (i.e., personal autonomy; Thiessen & Wilkins-LaFlamme, 2017; Voas & Doebler, 2011,

2014; cf. also Berkers, 2018, in press). Lanman (2012) has suggested that increased levels of existential security should lower the overall number of CREDs in the cultural learning environment, thus rendering belief in supernatural agents less plausible for future generations. At any rate, insofar as the ability and effort of parents to transmit religious values and ideologies is compromised by such environments (whether through fewer CREDs or greater personal choice), this could influence a population increase in atheism. In line with this, Voas and Doebler (2014) suggested that religious change across generations is closely connected to the relation between religion and childrearing values: parents may have become less committed than in the past to ensuring religious conformity in their children, and thus perhaps more committed to allowing their children to make their own choices about religious matters (for supporting arguments, see also Thiessen, 2016, and Manning, 2015, on nonreligious parenting and values of choice and autonomy).

Religious choice may have an expected relationship with conflict over religion in the family. If children and adolescents in the aforementioned cultural contexts are subject to greater expectations of personal choice and self-determination, then such an expectation, when upset by (religious) authoritarian parenting, might lead to conflict over religion and subsequently result in degrees of alienation, personal disappointment, and rebellion, regarding both religion and one's parents. Pasquale[1] (2009, p. 82) suggested that "more aggressive or stringent [religious] doctrinal or behavioral expectations will tend, on average, to produce greater numbers of individuals who experience confusion, conflict, or critical reaction." Similarly, in discussing families of nonreligious youth, Bengtson, Putney, and Harris (2013, pp. 160-161) explicitly stated that family religious conflict has been identified in other research as a common path to atheism. As they pointed out, the religious socialization efforts of overly demanding and zealous parents can

work against the goal of transmitting their religious tradition to offspring. In describing such conflict with parents over religion, tellingly, one nonreligious respondent's childhood was described as not allowing for individual choice in matters of religion; this person went on to become an atheist.

Defining *atheism* explicitly as non-belief in a god or gods (i.e., a lack of theism; cf. also Cliteur, 2009), and using a sample consisting only of former believers, in the current paper we explored the relationship between CREDs and the age of atheism using two main analyses. First, we sought to determine if CREDs predicted age of atheism, and whether this relationship would be influenced by three specific family- and parent-level religious variables (i.e., religious importance, religious choice, and religious conflict). As part of this analysis, we also tested statistical interactions between CREDs and religious importance, religious choice, and religious conflict.

Second, we investigated whether the relationship between CREDs and age of atheism was substantially attenuated or eliminated by the inclusion of a broader assortment of other social and family covariates (as enumerated above) which have been shown to affect the acquisition and transmission of religious beliefs. Because CREDs are related to broader (religious) socialization, there is a question of the relationship to CREDs of other variables which are regarded as mainstays of the religious socialization process. While we would expect higher levels of parental religious CREDs to be associated with a delay in the "onset" of atheism, little is known about the influence of other candidate family, social, and religion variables in relation to CREDs, regarding their collective impact on age of atheism.

2. Methods

2.1. Participants

Data was collected via an online Qualtrics survey from September to October in 2017. The study was advertised as research into how family and social processes influence becoming an atheist. We explicitly stated that a person *was not* eligible for the study if they (a) currently believed in the existence of god(s), or if they (b) believed in a spiritual or higher power. We included two general instructions prior to the survey, quoted as follows:

> [1.] In the questions and answers below, we use the words “god” and “gods”. Please interpret these terms to stand for whatever image or idea you primarily associate with them, such as a specific god or gods you once believed existed, or a specific god or gods that other people believe exist(s).
>
> [2.] At least one existing research study indicates that people who call themselves "atheists" do not uniformly agree on the definition of the term. Other research indicates that not every person who either (a) believes that god or gods do not exist or (b) lacks a belief in god or gods, self-identifies or uses the label "atheist" for themselves. However, for the purposes of this current study, we use the term "nonbeliever" and we refer broadly to "not believing in" the existence of god or gods (see #1, above).

We sent our survey to more than 100 atheist, secular, and freethought organizations across a global setting, to include social media platforms (e.g., Facebook, Reddit). After removing incomplete cases and those who incorrectly answered any one of three “attention check” questions, a total of 7,173 respondents remained. In the current study we report on a maximum total of 5,153 respondents who answered all questions of interest. Because our second main analysis included many additional variables, we

provide descriptive statistics for both samples in Table 1, as they were used in each analysis.

[Insert Table 1 about here]

A special note of interpretive caution regarding our sample must be sounded before we can continue. As one of our reviewers pointed out, our sample was largely acquired via organizational channels, and thus likely does not represent the growing collection of nonbelievers in Western societies more generally. In other words, they would be highly atypical outside of contexts and countries where "religion" is not (or is no longer) a salient part of history and culture (Zuckerman, 2010; Garcia & Blankholm, 2016). As a result, our sample is likely mostly constituted by persons for whom religious nonbelief is an important component of their social identities, as they were ultimately self-selected into a study targeted at a specific subcultural group within the broader atheist milieu. Consequently, we are probably *not* studying the kind of nonbelievers that would turn up in a nationally representative probability sample. In this sense, our analysis would most properly be regarded as centering upon, not generic *atheists* or *atheism* per se, but on the explicit rejection of prior religious beliefs, or *self-aware atheist converts*, and the age at which they actively rejected the religion of their upbringing.

2.2. Measures

Age of atheism. The dependent variable was captured with the question, "At what age did you no longer believe in god(s)?". Because we sought to recruit only those who had once been believers in a god or gods but were no longer, we chose to exclude from analyses those respondents who reported becoming an atheist prior to the age of five.

Demographic covariates. Sex (ref = female), current age, race (ref = non-white), education (ref = high school or less), marital status (ref = single/never married), religious upbringing (ref =

None) and country of residence (ref = United States; four other categories included Canada, Great Britain, Australia, and Other) were all included as covariates in predictive analyses. Due to the fact that the "Other" country category was large (75 countries in total), its meaningfulness as an analytical category in our models should be considered limited.

Quality of parental relationships. Six questions (cf. Hunsberger, Pratt, & Pancer, 2002) assessed parental quality: "While you were growing up, would you say that your [Mother or Father] was (1) *Easy to Talk With*, (2) *Strict*, and (3) *Warm and Loving.* Each of these was rated on a seven-point Likert scale (1 = Not at all, 4 = Somewhat, 7 = Completely). In subsequent analyses, Strictness ratings were reverse coded.

Family religion variables. Three items addressed various aspects of religious dynamics in one's family of upbringing, including *Religious Importance* ("Religion was important in my family."), *Religious Choice* ("My parent(s)/caretaker(s) allowed me to make my own choices about religious beliefs and practices."), and *Religious Conflict* ("There was conflict between my parent(s)/caretaker(s) and I about religion."). Each item was rated on a seven-point Likert scale (1 = Strongly disagree, 4 = Neither agree nor disagree, 7 = Strongly agree).

Credibility enhancing displays (CREDs). We used Lanman and Buhrmester's (2016) seven-item CREDs measure (see appendix), which captures respondents' perceptions and self-reports of a variety of parental and/or caregiver religious behaviors during upbringing. Each item was rated on a seven-point Likert scale (1 = To no extent at all, 7 = To an extreme extent). Consistent with previous validation by the scale's creators, principal components analysis and factor analysis (principal axis factoring, Varimax rotation) revealed that all seven items loaded onto a single factor (Eigenvalue = 4.3, 61.2%); loadings ranged from .70 to .86. Therefore, we indexed

all seven items (Cronbach's $\alpha = .91$), with higher scores indicating greater CREDs exposure during upbringing.

Peer religiosity. We employed eight questions from a recently developed measure of peer religiosity (cf. Tratner et al., 2017). For these items, we asked respondents to think of the one person who they would have considered to be their best friend for most of their adolescent years (ages 13 to 18). Three questions referenced frequency of certain behaviors (1 = *never*; 7 = *very often*), e.g. "We prayed together." The remaining questions were answered by degree of true or untrue (1 = *very untrue*; 7 = *very true*), e.g. "My friend showed their faith by how they talked and acted." Initial principal components analysis and factor analysis (principal axis factoring, oblimin rotation) revealed a two-factor solution across the eight items. Based upon weak factor loadings and inter-item correlations, we dropped one item ("We agreed in our religious attitudes and beliefs"). A subsequent promax rotation yielded a more simplified factor structure than the oblimin rotation, and retained a two-factor solution, with the two factors correlated at .57. The first 4-item factor was interpreted as the extent to which one shared religious activities with one's best friend, whereas the second 3-item factor was interpreted as synonymous with CREDs; that is, it reflected the fidelity and consistency of peer behavioral religious modelling.

Family structure and parental religious homogamy. One question addressed whether respondents grew up with (or, while growing up, mostly lived with) both biological parents (dummy coded, 1 = yes). A second question asked whether respondents' parents shared the same religion while the respondent was growing up (dummy coded, 1 = yes).

Known atheist others. One question addressed whether or not the respondent knew any other atheist(s) prior to themselves becoming an atheist (dummy coded, 1 = yes), regardless of whether this was a friend, family member, acquaintance, or significant other.

Institutional religiosity. One item addressed whether respondents had incurred a two-year gap in religious worship service attendance between the ages of 13 and 18 (*Yes, No, Never/hardly ever attended before age 13)*. A second item addressed the number of years an individual attended religious school during upbringing (0 = Never attended religious school, 1 = Attended 1 year of religious school, 2 = Attended 2 years of religious school, etc.)

2.3 Procedure and Analysis Plan

The current study had two main analyses, both of which explored the relationship between CREDs and Age of Atheism, but using different variables of interest. The major thrust of all analyses was to determine how different social factors influenced a person's age of arrival at nonbelief in a god or gods, in relation to CREDs. We tested underlying statistical assumptions for the analyses used, and made corrections where appropriate (e.g., correcting standard error terms due to heteroscedasticity).

2.3.1 Approach for the First Set of Analyses

The purpose of the first analysis (Table 2) was twofold: first, to determine the relationship between CREDs, Religious Importance, Religious Choice, Religious Conflict, and Age of Atheism; and second, to determine if this relationship was moderated by family-religion variables (importance, choice, and conflict). We used hierarchical linear regression to determine if CREDs and our three family religion variables predicted Age of Atheism, while controlling for demographic variables. Because Breusch-Pagan tests were significant for heteroscedasticity, $\chi 2 = 1111.00$, $p < .001$, we used robust standard errors (i.e., HC3 corrections) with coefficients. Age of Atheism, Religious Importance, Religious Choice, Religious Conflict, and CREDs were all standardized ($M = 0$, $SD = 1$) to improve the interpretability of the overall models (West, Aiken, & Krull, 1996). As such, the reported regression coefficients for Age of Atheism, Religious

Importance, Religious Choice, and Religious Conflict could be interpreted as changes in their respective standard deviations. For example, in Block 2 of Table 2, CREDs has a B/ß coefficient of 0.14. This means that for every 1 unit increase in standard deviation for CREDs, one would expect an increase of 14% of 1 unit of standard deviation for Age of Atheism. Seeing that Age of Atheism had a standard deviation of 10.4 years (Table 1), the reader could infer that increasing CREDs one unit of standard deviation was associated with a delay in the Age of Atheism by approximately 1.5 years (10.4*0.14 = 1.456).

After we determined if CREDs, Religious Importance, Religious Choice, and Religious Conflict predicted Age of Atheism, we then explored moderation terms. Specifically, we investigated if CREDs' prediction of Age of Atheism changed as a function of Religious Importance, Religious Choice, and Religious Conflict. That is, we investigated whether CREDs became *more* or *less* important in predicting Age of Atheism when controlling for whether a respondent had high, moderate, or low levels of Religious Importance, Religious Choice, and Religious Conflict. When or if moderation terms for CREDs and family religion variables were significant, meaning that CREDs' importance changed as a function of Religious Importance, Religious Choice, and Religious Conflict, we then investigated how groups differed from each other using marginal means tests.

2.3.2 Approach for the Second Set of Analyses

We conducted a second analysis (see Table 3) to explore how CREDs predicted Age of Atheism, and to determine how this relationship was impacted by (religious) socialization variables that we selected from the research literature explicitly because they have been shown to influence the acquisition and transmission of religious beliefs and identity. This was accomplished through serial entry and removal of model blocks. As can be seen in Table 3,

CREDs remained in the hierarchical linear regression model for entire set of analyses, but its coefficients fluctuate as a product of being entered into the block along with other candidate variables.

Because the sample size for the second main analysis was substantially lower than the sample size for the first analysis, we reran Breusch-Pagan tests, which were again significant for heteroscedasticity, $\chi^2 = 250.11$, $p < .001$. As a result, we again used robust standard errors (i.e., HC3 corrections) with coefficients. Within this model, no issues of multicollinearity emerged, with the highest non-dummy-coded variable having a VIF of 2.51 ($M_{VIF} = 1.77$). When discussing the impact of CREDs on Age of Atheism, we provided β values along with regular B coefficients, as this allowed for a more intuitive understanding of the CREDs-Age of Atheism relationship.

3. Results

3.1. First Set of Analyses

Age of Atheism was regressed onto demographic covariates in Block 1 (see Table 2), $F(19, 4222) = 28.49$, $p < .001$, $R^2 = .159$. CREDs was added in Block 2, $F(1, 4221) = 85.67$, $p < .001$, $R^2 = .177$, $\Delta R^2 = .018$, and, as predicted, was associated with a significant delay in the Age of Atheism. Compared to average CREDs scores, High CREDs scores (+1 *SD*) were associated with a 1.5-year delay in becoming an atheist. In Block 3, the addition of Religious Importance, Religious Choice, and Religious Conflict significantly improved the overall model, $F(3, 4218) = 76.07$, $p < .001$, $R^2 = .218$, $\Delta R^2 = .041$. Both Religious Choice and Religious Conflict reduced the predicted Age of Atheism, while Religious Importance increased it.

Overall, our analyses suggest that CREDs and family religion variables (i.e., Religious Importance, Religious Choice, and Religious Conflict) predict Age of Atheism. However, the

importance of whether a parent provides consistency in religious messaging and modelling (i.e., CREDs) for predicting the Age of Atheism, is likely related to other family religion variables. Given these results, we set out to determine if Religious Importance, Religious Choice, and Religious Conflict *moderated* the relationship between CREDs and Age of Atheism. For these analyses, each moderator term was added after Block 3, meaning that the ΔR^2 for Block 4, Block 5, and Block 6 are in relation to Block 3.

3.2. Interaction terms

For each interaction term we compared low (-1 *SD*), moderate (*M*), and high (+1 *SD*) levels of Religious Importance, Religious Choice, and Religious Conflict, across low (-1 *SD*), average (M), and high (+1 *SD*) levels of CREDs. We report mean differences (M_{diff}) in terms of absolute values for significant interaction terms.

3.2.1. *CREDs * Religious Importance*

A moderator term (CREDs*Religious Importance) was added in Block 4, which was statistically significant, $F(1, 4217) = 13.89$, $p < .001$, $R^2 = .221$, $\Delta R^2 = .003$, with $t = 3.73$, $p < .001$, B = 0.08, 95% CI [0.04, 0.12]. Thus, the relationship that CREDs had with Age of Atheism changed as a function of Religious Importance.

At low levels of CREDs (-1 *SD*), we compared Age of Atheism across low (*M* = 21.84 years), moderate (*M* = 22.76 years), and high (*M* = 23.71 years) levels of Religious Importance. Differences between these groups were significant, $t = 3.56$, $p < .001$, with $M_{diff} = 0.94$ years for high vs. average levels of Religious Importance, and $M_{diff} = 1.87$ for high vs. low levels for Religious Importance.

At average levels of CREDs (*M*), we again compared Age of Atheism across low (*M* = 21.44 years), moderate (*M* = 23.19 years), and high (*M* = 24.95 years) levels of Religious Importance.

Differences between these groups were significant, $t = 5.84$, $p < .001$, as well as noticeably larger than at low levels of CREDs (high vs. average Religious Importance, $M_{diff} = 1.75$ years; high vs. low Religious Importance, $M_{diff} = 3.51$ years).

At high levels of CREDs (+1 *SD*), we assessed Age of Atheism across low ($M = 21.04$ years), moderate ($M = 23.61$ years), and high ($M = 26.18$ years) levels of Religious Importance. Like previously, differences were significant, $t = 5.64$, $p < .001$, and again larger (high vs. average Religious Importance, $M_{diff} = 2.57$ years; high vs. low Religious Importance, $M_{diff} = 5.14$ years).

*3.2.2. CREDs * Religious Choice*

In Block 5, we added a moderator term for CREDs*Religious Choice, $F(1, 4217) = 4.26$, $p < .001$, $R^2 = .219$, $\Delta R^2 = .001$, with $t = -2.06$, $p = .039$, B = -0.03, 95% CI [-0.06, -0.00]. These results suggest that the relationship of CREDs to Age of Atheism changes with levels of Religious Choice.

At low levels of CREDs (-1 *SD*), we compared Age of Atheism across low ($M = 23.3$ years), moderate ($M = 23.01$ years), and high ($M = 22.7$ years) levels of Religious Choice. Differences between these groups were not significant, $t = -1.05$, $p = .293$.

At average levels of CREDs (*M*), we again compared Age of Atheism across low ($M = 24.3$ years), moderate ($M = 23.6$ years), and high ($M = 22.98$ years) levels of Religious Choice. Differences were significant, $t = -3.39$, $p < .001$ (high vs. average Religious Choice, $M_{diff} = 0.63$ years; high vs. low Religious Choice, $M_{diff} = 1.26$ years).

At high levels of CREDs (+1 *SD*), Age of Atheism was assessed across low ($M = 25.2$ years), moderate ($M = 24.2$ years), and high ($M = 23.2$ years) levels of Religious Choice. As with

previous analyses, differences were significant, t = -4.08, p < .001, and again larger (high vs. average Religious Choice, M_{diff} = 0.99 years; high vs. low Religious Choice, M_{diff} = 1.97 years).

*3.2.3. CREDs * Religious Conflict*

We removed the moderator term from Block 6, and added the CREDs * Religious Conflict moderator term, $F(1, 4217) = 3.91$, $p = .048$, $R^2 = .219$, $\Delta R^2 = .001$; this moderator term was significant, t = -1.98, p = .048, B = -.035, 95% CI [-0.06, -0.00]. This suggests that the ability of CREDs to predict Age of Atheism, varied at low, average, and high level of Religious Conflict.

At low levels of CREDs (-1 *SD*), we compared Age of Atheism across low (M = 24.93 years), moderate (M = 23.10 years), and high (M = 21.27 years) levels of Religious Conflict. Differences between these groups were significant, t = -7.89, p < .001, with M_{diff} = 1.83 years for high vs. average levels of Religious Conflict, and M_{diff} = 3.67 for high vs. low levels for Religious Conflict.

At average levels of CREDs (*M*), we again compared Age of Atheism across low (M = 25.92 years), moderate (M = 23.78 years), and high (M = 21.63 years) levels of Religious Conflict. Differences between these groups were significant, t = -13.95, p < .001, as well as noticeably larger than at low levels of CREDs (high vs. average Religious Conflict, M_{diff} = 2.15 years; high vs. low Religious Conflict, M_{diff} = 4.29 years).

At high levels of CREDs (+1 *SD*), Age of Atheism was assessed across low (M = 26.91 years), moderate (M = 24.45 years), and high (M = 22.00 years) levels of Religious Conflict. Like previously, differences were significant, t = -11.88, p < .001, and again larger (high vs. average Religious Conflict, M_{diff} = 2.45 years; high vs. low Religious Conflict, M_{diff} = 4.91 years).

Overall, the data analyses revealed a pattern that was not unexpected: while higher levels of CREDs continued to predict higher Age of Atheism, this was influenced by family religion variables. In a sense, the "protective" influence of CREDs is stronger in some scenarios (e.g. high Religious Importance, low Religious Choice, and low Religious Conflict) than in others.

3.3. Second Set of Analyses

Age of Atheism was regressed onto CREDs in Block 1 (see Table 3), $F(1, 3208) = 76.06$, $p < .001$, $R^2 = .03$, which suggested that CREDs predicted 3% of the variance in Age of Atheism. For CREDs specifically, $t = 8.72$, $p < .001$, B = 0.16, 95% CI [0.12, 0.19], which meant that increasing CREDs by 1 *SD* corresponded with a 20-month delay in becoming an atheist. Demographic covariates were entered in Block 2, $F(19, 3189) = 23.18$, $p < .001$, $R^2 = .19$, $\Delta R^2 = .16$, but CREDs remained virtually unchanged, $t = 8.79$, $p < .001$, B = 0.15, 95% CI [0.12, 0.19]. Again, increasing CREDs by 1 *SD* was associated with a 20-month delay in becoming an atheist.

We then removed Block 2 and entered Block 3 (six parental relationship quality items), $F(6, 3202) = 4.67$, $p < .001$, $R^2 = .03$, $\Delta R^2 = .01$, and with this CREDs remained with a similar relationship, $t = 8.70$, $p < .001$, B = 0.17, 95% CI [0.13, 0.21], which was approximately a 22-month delay in the age of atheism. Generally, demographics and parental relationship quality had limited impact on how CREDs predicted Age of Atheism.

We then added family predictors in Block 4, $F(5, 3203) = 43.83$, $p < .001$, $R^2 = .09$, $\Delta R^2 = .06$. CREDs remained significant but experienced its first substantive decline of influence, $t = 3.65$, $p < .001$, B = 0.09, 95% CI [0.04, 0.13]. With the inclusion of family religion predictors [Religious Conflict, Religious Choice, Religious Importance, Family Structure (lived with both parents), and Parental Religious Homogamy (whether parents had the same religion or not)], going up 1 *SD* on CREDs predicted a delay of just 11 months or so, suggesting that part of

CREDs explanatory power lies in familial structures. We then removed family religion predictors from Block 4 and entered relational predictors [Peer Religiosity 1, Peer Religiosity 2, and Known Atheist Others] in Block 5, $F(3, 3205) = 2.68$, $p = .045$, $R^2 = .03$, $\Delta R^2 = .002$, but this did not improve the overall model. With relational predictors, CREDs remained significant, $t = 7.75$, $p < .001$, B = 0.15, 95% CI [0.11, 0.19], and was associated with a 19-month delay in Atheism.

After removing relational predictors, institutional predictors were entered in Block 6, $F(3, 3205) = 56.20$, $p < .001$, $R^2 = .07$, $\Delta R^2 = .04$, which were significant. With the inclusion of institutional predictors [Two-year gap in religious worship service attendance between the ages of 13 and 18, and number of years of religious schooling during upbringing], CREDs was significant, $t = 3.29$, $p = .001$, B = 0.06, 95% CI [0.02, 0.11], but only predicted a 9-month delay. Given the performance of institutional predictors, we attended to the pattern of coefficients within this new block. Moving from *No* (base) to *Stopped attending (before age 13)* was especially noteworthy, $t = -12.49$, $p < .001$, B = -8.67, 95% CI [-10.03, -7.31], as it was associated with becoming an atheist 8.5-years earlier. Despite the obvious conceptual links between ceasing/failing to attend religious worship services in childhood and the overarching CREDs score, there was only a weak correlation between these variables ($r = -.22$), and multicollinearity was decidedly not an issue. Overall, knowing whether a person had ceased attending religious worship services prior to the age 13 made a far more substantial prediction of Age of Atheism than did CREDs.

As a final step, all variables were entered in Block 7, $F(36, 3172) = 24.30$, $p < .001$, $R^2 = .26$, $\Delta R^2 = .23$, which was significant. With the inclusion of all variables, CREDs was not significant,

t = 1.73, p = .08, B = 0.04, 95% CI [-0.00, 0.09], but given the strong performance of Block 6, this was not altogether surprising.

4. Discussion

Our first analysis yielded three noteworthy observations. First, Religious Importance predicted a delay in the Age of Atheism, whereas Religious Choice and Religious Conflict predicted an earlier onset of Age of Atheism. Second, as hypothesized, CREDs positively predicted Age of Atheism. Third, there was an interdependency of Religious Importance, Religious Choice, and Religious Conflict with CREDs.

As Figure 1 shows, as Religious Importance increased within the sample, the age at which a person became an atheist increased. At low levels of CREDs (-1 *SD*), the difference in the timing of atheism for persons low or high on Religious Importance was not even two years. In contrast, at high levels of CREDs, this same difference was over five years. In other words, Religious Importance matters, but not in isolation: parents espousing the importance of religion may delay atheism in their progeny, but consistent modelling enhances this effect.

When investigating the relationship between CREDs and Religious Choice, Religious Choice negatively predicted Age of Atheism. Conceptually, then, the freedom to choose may be one part of a familial atmosphere conducive to atheism earlier in life. However, this interaction term was quite modest, and, when considering persons at the highest levels of CREDs, the contrast in reported Age of Atheism between participants reporting low and high levels of Religious Choice was less than two years' difference (see Figure 2). That said, the pattern of findings was such that higher CREDs were again associated with a "protective" influence against Age of Atheism, suggesting that even *with* religious freedom, high levels of CREDs still "push" respondents toward retaining a belief in god(s).

In the third interaction term, Religious Conflict was negatively associated with Age of Atheism, while CREDs were again positively associated with Age of Atheism. As can be seen in Figure 3, at lower levels of CREDs the gap between low and high Religious Conflict was approximately 3.5 years, while at higher levels of CREDs the gap between low and high Religious Conflict was over 5 years. Again, this pattern supports the idea that consistency between messaging and modelling influences the timing of atheism. In follow-up analysis, we compared low and high CREDs at high levels of Religious Conflict, and found that there was no difference between Age of Atheism for these two groups, $t = 1.51$, $p = .15$. In contrast, when we compared low and high CREDs at low levels of Religious Conflict, the difference was statistically significant, $t = 3.93$, $p < .001$, $M_{\text{diff}} = 2.30$ years. Framed differently, this pattern of findings suggests that in a high Religious Conflict home, strong religious modelling is *not* associated with a delayed Age of Atheism, but in a low Religious Conflict Home it is.

General findings from regression analyses suggested that higher CREDs levels were associated with delayed Age of Atheism. Functionally, when participants perceived their parents as having high degrees of religious credibility, this was associated with a "protective" influence against atheism, and this effect was the most pronounced when Religious Importance was high and Religious Conflict was low. However, substantive effects were also present at moderate levels of both Religious Importance and Religious Conflict, but only at high levels of Religious Choice. Also of note, religion of upbringing had a varied impact on the age at which a person became an atheist. Compared to those with a nonreligious upbringing, being raised as a Muslim or a religious Other was associated with a delay in becoming an atheist. However, when controlling for Religious Importance, Religious Choice, and Religious Conflict, these relationships became non-significant. And yet, even with these controls, those raised in Judaism

were exceptions, and reported an *earlier* age of atheism (M = 6.02 years) despite the influence of these family-religion variables. Residence in the United Kingdom and Northern Ireland also displayed a robust and negative association with Age of Atheism, when compared to the much more religious United States. Thus, both religion of upbringing and nationality should be considered if we wish to understand the formal influence of CREDs and other modern or current relational dynamics on a person becoming an atheist.

All three family religion variables are consequential for the timing of atheism (although only Religious Conflict is retained in Block 7 of the second main analysis, thus surviving the influence of all other [religious] socialization candidate variables), and, among their interrelationships, we can suggest certain possibilities. To the extent that religion is (perceived as) important in the family, this may diminish Religious Choice, which in turn may lead to Religious Conflict. However, even if parents faithfully model their own religion, religion may or may not always be (perceived as) important in the family of upbringing. We would suggest that whether or not it is, either arrangement is likely to be differentially associated with arrangements of higher/lower Religious Choice and higher/lower Religious Conflict.

Our second analysis demonstrated that CREDs had a relatively stable ability to predict Age of Atheism, and remained relevant to the overall model despite the inclusion of demographics, parental warmth variables, family variables, and relational variables. However, with the inclusion of institutional predictors, particularly questions about cessation of religious worship service attendance during one's adolescent years, CREDs were rendered largely irrelevant to the wider prediction of Age of Atheism. Yet, we must note that the distribution of CREDs scores across these categories was not uniform: 50% of persons who reported that they had stopped attending religious worship services prior to the age of 13 scored in the lowest CREDs quintile.

When looking at the lowest two CREDs quintiles this value increased to 75% of all respondents in the category. In other words, respondents who had stopped attending religious worship services prior to the age of 13, tended to have parents who scored near the bottom of the overall CREDs measure. We may also point out that, relative to the *Yes* and *No* categories, those in the "Stopped attending prior to age 13" category reported elevated levels of Religious Choice and diminished levels of Religious Conflict. For these reasons, the performance of the institutional predictors in our analysis does not, in our view, genuinely overturn the robust contribution of CREDs to Age of Atheism.

4.1. Future Research

Hitzeman and Wastell (2017) suggested that future research should consider both context and content biases regarding changing levels of religious belief. We second this suggestion, and further suggest that, if successive generations are becoming less religious (and at younger ages) in post-industrial countries, this should be examined in reference to changing patterns of (non)religious socialization (to include levels to CREDs). We have focused primarily on CREDs, but recent work highlights the role of explicitly *nonreligious* socialization as an explanation for increasing numbers of religious "Nones" (which would include atheists) across birth cohorts. Bengtson, Hayward, Zuckerman, and Silverstein (2018) argued that some amount of the increasing number of Nones is due to increasingly explicit nonreligious socialization across generations, that is, not due only to weak or absent religious socialization. This brings up the question of what kind of CREDs exist in nonreligious families—or if they are needed at all—to sustain whatever positive or substantive worldviews such parents might wish to instill.

Clearly, family and social environments in which religion is highly salient are not wholly incompatible with "religious peace" between family members and peers, or with allowing

offspring to make some Religious Choices for themselves. And yet, this is where a comparative approach might serve well: Do atheists reflect levels of Religious Choice and Religious Conflict that are different from their theistic counterparts? Relatedly, were most formerly believing atheists subject to authoritarian, as opposed to authoritative, parenting styles?

Given weak effects of parental quality items, a more comprehensive measure of parental closeness and overall family quality might be deployed in future research, as such measures have often been found to influence the transmission of religious beliefs. Regarding Bengtson and colleagues' (2018) study, it may be that parental and family quality considerations effectively facilitate both religious beliefs *and* atheism across generations. For example, even high-fidelity religious parents may unknowingly influence the turn to atheism if certain parental qualities and Religious Choice or Religious Conflict are associated.

4.2. Limitations

First, we only collected data from respondents themselves, and not respondents' parents and peers. Second, such data inevitably relies upon retrospective self-reports and human memory. This is of particular concern because as our sample consisted of members of atheist groups, and, just as do "religious" persons, such individuals use narrative and biography to explain to fellow group members and others their transition from believer to atheist. And like their religious counterparts, there may be considerable incentives for atheists to modify, or selectively "re-remember", their narratives in order to fit in with their groups. Studying former atheists who had become Christians, Langston and colleagues (Langston, Albanesi, & Facciani, under review) noted that such conversion narratives might be just as subject to recall error and retroactive identity construction via biographical narrative, as the narratives of those who stop believing in a god or gods. Effectively, then, in any kind of (non)religious transition (e.g., from believer to

nonbeliever, or vice versa), people are likely to "remember" their histories in accordance with creating a positive characterization of their transition, especially when joining a group or social milieu with preexisting narrative elements which are learned by converts during transition (Hefner, 1993). Because people are often not fully aware of the factors that influence their beliefs and behaviors, there is a tendency for rational (or at least *conscious*) reasons to be emphasized, which could probably best be described as "rationalization" of what are otherwise unknown or unrecognized causal influences on behavior (Bargh & Chartrand, 1999). Considered together, such problems underscore the need to very cautiously interpret self-reports and personal narratives.

Third, we do not know what Religious Conflicts were specifically about in these families, and this would be important information for determining how, if at all, such conflicts informed later atheism. A related and critical consideration is whether Religious Conflict is antecedent to or consequent of atheism. Previous research suggests that one might be as likely as the other (cf. Hunsberger, 1983), and our design does not allow us to disentangle the temporal order of these two items. While both orders are logically feasible, our argument rests upon Religious Conflict as an antecedent contribution to becoming an atheist (cf. Pasquale, 2009). Furthermore, even if a person disagrees that there was family conflict about religion, this does not mean that they do not harbor misgivings about parental religious beliefs and practices. It is certainly possible that unspoken qualms of these kinds can manifest in later change and dissent from one's religious upbringing, especially if they are suppressed or nursed silently over time. This may be all the more true during the first several years after a person leaves their parents' home and achieves greater liberation in general, but also from parental supervision and control (Dudley, 1999).

5. Conclusion

Sociological perspectives are often overlooked in modern cognitive science of religion. Yet, families, social relationships, and (religious) institutional contexts have long been understood as primary sites of religious socialization processes which are influential in religious outcomes. As such, work in CSR should be integrated with such perspectives. Because discussing changes in the modern religious landscape also requires a consideration of *where* atheism is increasing (Norris & Inglehart, 2011), it is important to note broad social and intergenerational change in such societies, especially as they impact (and are impacted by) broader changes in family formation patterns and socialization processes. This also fits well regarding considerations of context and content biases, and with considerations of both ultimate and proximate mechanisms that underpin (non)religious phenomena. Our study provides a glimpse into how CREDs work in tandem with other religion variables functioning in family and relational processes, and we envision it as a way forward in linking the cognitive science of religion to more sociologically oriented approaches to (non)religious outcomes.

6. Notes

1. In Pasquale's study of secular group affiliates, of those current secularists who were raised in a Roman Catholic background (n = 128), 37.5% reported conflict with parents over religion. For those with a Protestant background (n = 469), 24.3% reported such conflict, whereas for those raised with a secular background (n = 105), this figure was only 2.9%.
2. A majority of these studies specifically measure parental CREDs, and not CREDs in general (e.g., religious authority figures, relatives, members of the community). See also Turpin, Andersen, and Lanman, 2018; while they found no immediate effects of CRED exposure on measures of explicit and implicit belief using an experimental manipulation,

they did find further correlational evidence linking past CRED exposure to self-reported religious belief.

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Table 1. Descriptive statistics for Model 1 and Model 2.

	Model 1 (n = 5,153)		Model 2 (n = 3,210)	
	M (SD)	%	*M (SD)*	%
Age of Atheism	23.8 (10.8)		24.1 (10.8)	
Sex				
Other		1.5		1.5
Male		43.2		42.3
Female		55.4		56.2
Age	41.3 (14.8)		41.2 (14.9)	
Ethnicity				
White		91.0		91.0
Non-white		9.0		9.0
Education				
High School		6.5		6.6
Some Post-secondary		19.7		19.3
Post-Secondary		42.7		43.0
Graduate School		26.8		26.7
Other		4.2		4.4
Marital Status				
Single		18.7		18.3
Married/Common-Law		67.8		68.0
Widowed/Separated/Div.		10.8		11.1
Other		2.8		2.7
Religious Upbringing				
None		2.4		2.2
Christian		90.0		90.6
Jewish		1.6		1.5
Muslim		0.85		0.84
Other		5.1		5.0
Country				
United States		86.4		86.6
Canada		4.4		4.4
United Kingdom		1.3		1.4
Australia		1.7		1.4
Other		6.3		6.1
Religious Importance	5.2 (2.0)		5.3 (2.0)	
Religious Choice	3.5 (2.4)		3.4 (2.3)	
Religious Conflict	3.5 (2.2)		3.5 (2.2)	

CREDs	26.3 (10.8)	26.8 (10.8)	
Mother Strict		4.4 (1.6)	
Mother Warm		5.0 (1.8)	
Mother Talk		4.1 (1.9)	
Dad Strict		4.6 (1.8)	
Dad Warm		3.9 (1.8)	
Dad Talk		3.4 (1.9)	
Parental Relationship			
Lived with parents			76.2
Did not live with parents			23.8
Parental Religion			
Parents different relig.			17.2
Parents same relig.			82.8
Non-Believing Friends			
Knew other atheists			29.7
Did not know atheists			70.3
Peer Religiosity Index 1		8.9 (6.1)	
Peer Religiosity Index 2		9.2 (5.4)	
Worship service attend			
No			56.3
Yes			37.4
Stopped before age 13			6.3
Years religious school		3.4 (4.9)	

Table 2. Relationship between CREDs and age of atheism moderated by religious importance, choice, and conflict (n = 5,153).

	Coefficients/Robust Standard Error					
	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Constant	-1.31 (.12) ***	-1.07 (.12) ***	-.93 (.12) ***	-1.10 (.13) ***	-.99 (.13) ***	-.92 (.12) ***
Ref = Female						
Other	.08 (.12)	.07 (.11)	.07 (.11)	.07 (.11)	.08 (.11)	.08 (.11)
Male	-.05 (.03)	-.08 (.03) **	-.10 (.03) **	-.10 (.03) **	-.10 (.03) **	-.10 (.03) **
Age	.03 (.001) ***	.02 (.001) ***	.03 (.001) ***	.03 (.001) ***	.03 (.001) ***	.03 (.001) ***
Ethnicity	-.01 (.05)	-.02 (.05)	-.03 (.05)	-.04 (.05)	-.03 (.05)	-.03 (.05)
Ref = High School						
Some post-sec	.05 (.06)	.03 (.06)	.03 (.06)	.02 (.06)	.03 (.06)	.03 (.06)
Post-sec	.16 (.05) **	.13 (.05) *	.11 (.05) *	.11 (.05) *	.11 (.05) *	.11 (.05) *
Grad school	.07 (.06)	.04 (.06)	.02 (.06)	.01 (.06)	.01 (.06)	.01 (.06)
Other	.16 (.10)	.15 (.10)	.13 (.09)	.12 (.09)	.13 (.09)	.13 (.09)
Ref = Single						
Married	.06 (.03)	.07 (.03) *	.05 (.03)	.05 (.03)	.05 (.03)	.05 (.03)
Wid./Sep./Div	.06 (.06)	.07 (.06)	.06 (.06)	.05 (.06)	.06 (.06)	.05 (.06)
Other	.08 (.09)	.10 (.09)	.07 (.09)	.06 (.09)	.07 (.09)	.07 (.09)
Ref = None						
Christian	.14 (.09)	-.08 (.10)	-.13(.10)	-.01 (.11)	-.08 (.10)	-.14 (.10)
Jewish	-.41 (.15) **	-.55 (.15) ***	-.58 (.16) ***	-.46 (.16) **	-.53 (.16) **	-.60 (.16) ***
Muslim	.27 (.13) *	.01 (.13)	-.06(.14)	.06 (.14)	-.02 (.14)	-.07 (.14)
Other	.30 (.11) **	.04 (.11)	.01 (.12)	.11 (.12)	.04 (.12)	-.01 (.12)
Ref = USA						
Canada	.03 (.07)	.03 (.07)	.05 (.07)	.05 (.07)	.04 (.07)	.05 (.07)

United Kingdom	-.51	***	-.44	***	-.43	***	-.47	***	-.44	***	-.41	**
	(.13)		(.12)		(.12)		(.12)		(.12)		(.12)	
Australia	-.15		-.11		-.10		-.11		-.10		-.09	
	(.10)		(.10)		(.10)		(.10)		(.10)		(.10)	
Other	-.08		-.05		-.03		-.03		-.03		-.03	
	(.05)		(.05)		(.05)		(.05)		(.05)		(.05)	
CREDs (ß)			.14	***	.06	**	.04		.06	**	.06	**
			(.02)		(.02)		(.02)		(.02)		(.02)	
Rel. importance (ß)					.11	***	.16	***	.12	***	.11	***
					(.02)		(.03)		(.02)		(.02)	
Rel. choice (ß)					-.06	**	-.06	**	-.06	**	-.06	**
					(.02)		(.02)		(.02)		(.02)	
Rel. conflict (ß)					-.20	***	-.19	***	-.20	***	-.20	***
					(.01)		(.01)		(.01)		(.01)	
Importance*CREDs							.08	***				
							(.02)					
Choice*CREDs									-.03	*		
									(.02)			
Conflict*CREDs											-.03	*
											(.02)	
$R^2/\Delta R^2$	.16	***	.18/.02	***	.22/.04	***	.22/.01	***	.22/.01	*	.22/.01	*

Note: We standardized select coefficients (ß) to aid with the interpretation of the overall model. This did not change the significance or meaning of the underlying model. For variables with ß, the coefficient indicates the change in the DV (in units of SD). For example, moving from 0 to 1 on "CREDs", which is the equivalent of moving 1 SD unit on "CREDs", is associated with a .140 SD increase in Age of Atheism in Block 2. Also note, ΔR^2 values for Block 4, Block 5, and Block 6, are giving an indication of change relative to Block 3.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. Relationship for CREDs predicting age of atheism while controlling for constructs on a rotating basis (n = 3,210).

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7
	CREDs Only	*Demo. Variables*	*Parent Quality*	*Religious Variables*	*Relational Variables*	*Institution Variables*	*Complete Model*
Constant	19.9 (.51)***	7.2 (1.5)***	21.2 (1.1)	24.9 (1.04)***	19.3 (.56)***	24.4 (.69)***	14.2 (1.95)***
CREDs	.16 (.02)***	.15 (.02)***	.18 (.02)***	.09 (.02)***	.15 (.02)***	.07 (.02)**	.04 (.02)
Female (base)							
Other		2.31 (1.5)					2.15 (1.37)
Male		-.71 (.37)					-1.21 (.36)**
Age		.28 (.02)***					.28 (.02)***
Non-White/White		-.40 (.60)					-.79 (.57)
High School (base)							
Some post-sec.		.63 (.70)					.31 (.68)
Post-sec.		1.20 (.66)					.42 (.65)
Grad school		.31 (.72)					-.56 (.7)
Other		1.90 (1.2)					1.1 (1.16)
Single (base)							
Mar./Common-law		1.06 (.42)*					.79 (.4)
Wid./Sep./Div.		1.64 (.77)*					1.34 (.73)
Other		.96 (1.2)					.89 (1.1)
None (base)							
Christian		.36 (1.3)					-.01 (1.3)
Jewish		-4.53 (2.1)*					-4.31 (2.1)*
Muslim		1.75 (1.7)					1.73 (1.8)
Other		1.30 (1.4)					1.12 (1.4)
USA (base)							
Canada		-.32 (.85)					-.4 (.81)
UK		-4.89 (1.5)**					-4.35 (1.5)**
Australia		-.99 (1.3)					-1.61 (1.3)
Other		-.7 (.64)					-.2 (.64)
Mom strict			.03 (.14)				.06 (.12)
Mom warm			-.56 (.15)***				-.14 (.14)

Mom talk			.24 (.14)				-.05 (.12)
Dad strict			.19 (.12)				.05 (.11)
Dad warm			.02 (.15)				-.03 (.13)
Dad talk			-.26 (.15)				-.16 (.13)
Rel. Conflict				-1.15 (.08)***			-.83 (.08)***
Rel. Choice				-.4 (.10)***			-.04 (.10)
Rel. Importance				.31 (.16)*			.26 (.15)
Both parents				1.04 (.41)*			.14 (.39)
Parents diff. rel				-.81 (.49)			-1.05 (.46)*
Knew atheists before					.74 (.39)		1.99 (.35)***
Peer religiosity 1					-.04 (.04)		.12 (.03)***
Peer religiosity 2					.09 (.04)*		0 (.04)
Never stopped att. (base)							
Stopped attending						-3.50 (.44)***	-2.26 (.41)***
Never attended						-8.67 (.69)***	-6.26 (.70)***
Years in rel. school						-.08 (.04)*	-.04 (.04)
$R^2/\Delta R^2$	.03/.03***	.19/.16***	.03/.01***	.09/.06***	.03/.002*	.07/.04***	.26/.23***

Note: ΔR^2 values for each block reflected the difference between the Block 1 (CREDs only) and the current block of interest.

*$p < .05$, **$p < .01$, ***$p < .001$

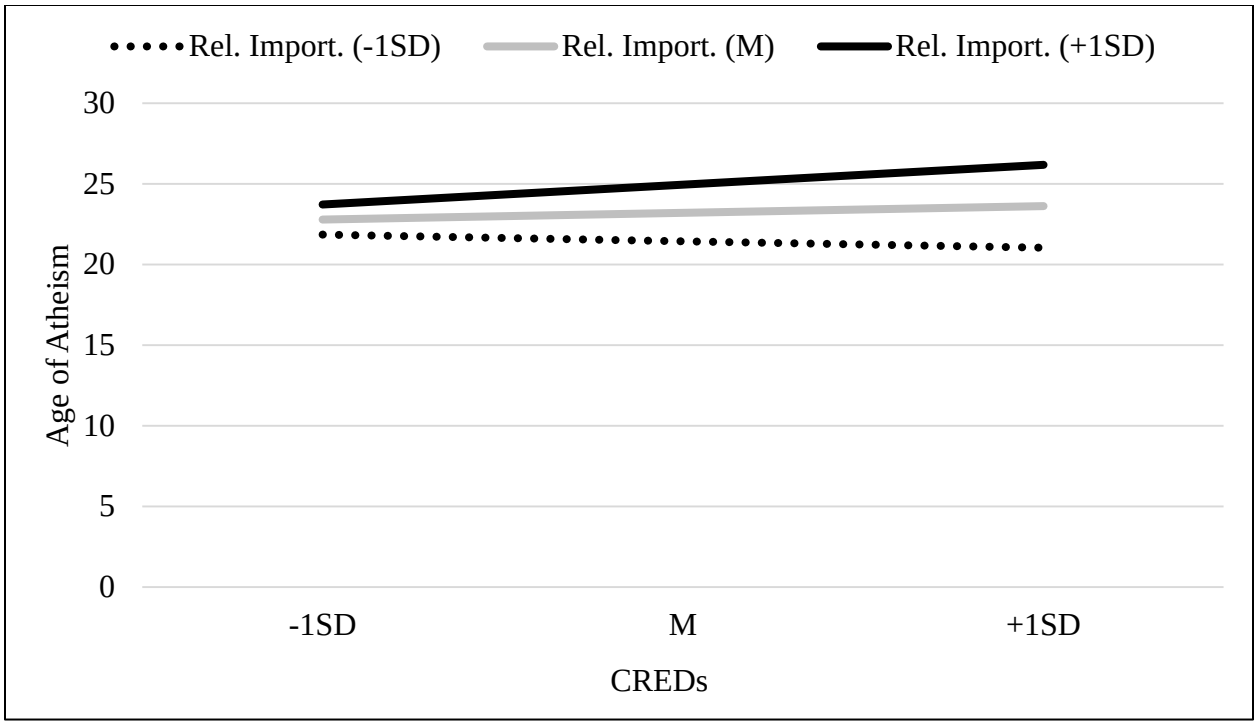
Rel. Import. (-1SD)
Rel. Import. (M)
Rel. Import. (+1SD)
30
25
20
15
10
5
0
Age of Atheism
-1SD
M
+1SD
CREDs

Figure 1.

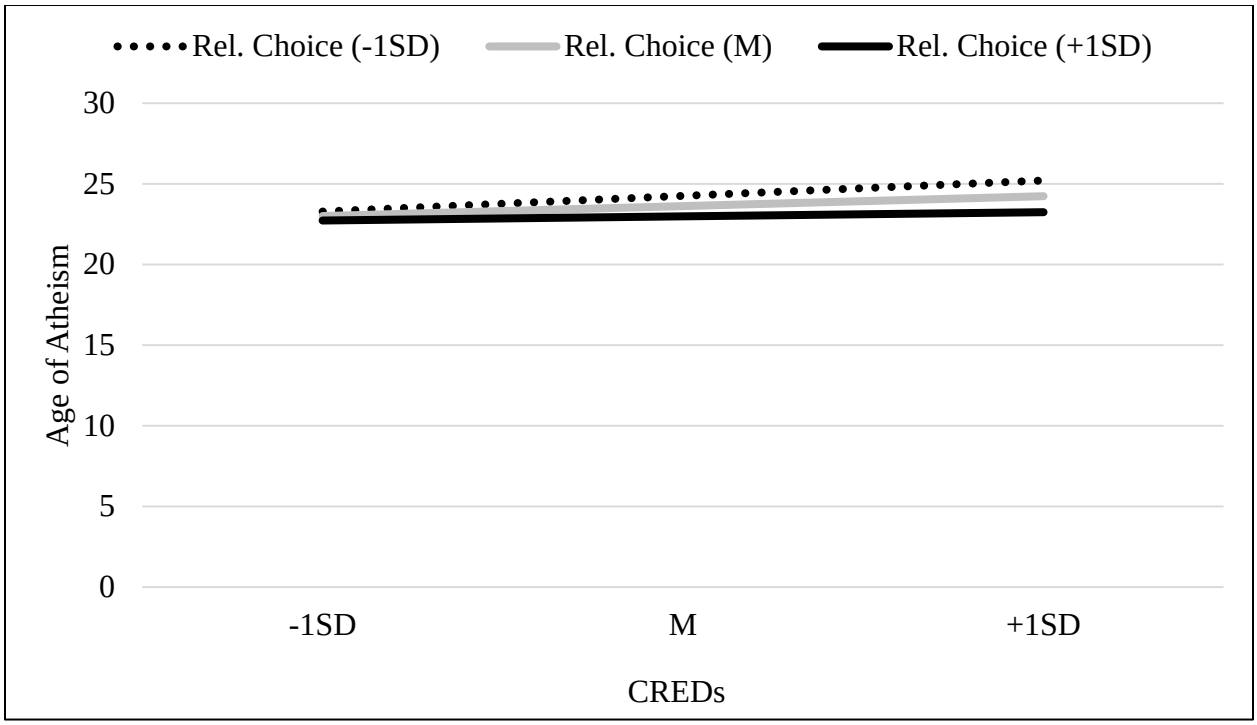
Rel. Choice (-1SD)
Rel. Choice (M)
Rel. Choice (+1SD)
30
25
20
15
10
5
0
Age of Atheism
-1SD
M
+1SD
CREDs

Figure 2.

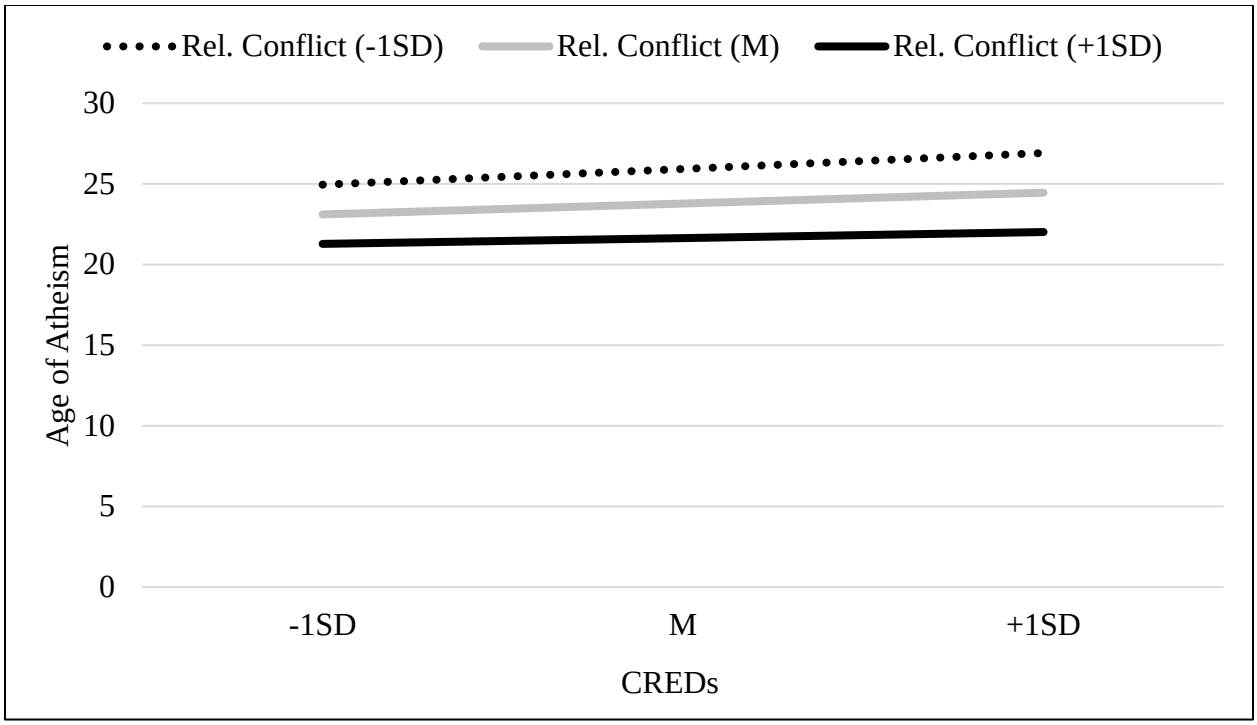
Rel. Conflict (-1SD)
Rel. Conflict (M)
Rel. Conflict (+1SD)
30
25
20
15
10
5
0
Age of Atheism
-1SD
M
+1SD
CREDs

Figure 3.

Figure Caption List

Appendix

CREDs Exposure Scale (see Lanman and Buhrmester, 2016)

Instructions: The following questions ask about experiences during your upbringing that relate to religion. Specifically, the questions ask about your perceptions of your primary caregiver or caregivers (i.e., parents or guardians). Please answer each of the following according to your overall impression of your caregiver(s) on the following scale:

1 2 3 4 5 6 7

To no extent at all To an extreme extent

1 To what extent did your caregiver(s) attend religious services or meetings?
2 To what extent did your caregiver(s) engage in religious volunteer or charity work?
3 Overall, to what extent did your caregiver(s) act as good religious role models?
4 Overall, to what extent did your caregiver(s) make personal sacrifices to religion?
5 To what extent did your caregiver(s) act fairly to others because their religion taught them so?
6 To what extent did your caregiver(s) live a religiously pure life?
7 To what extent did your caregiver(s) avoid harming others because their religion taught them so?