The cognitive signature of belief: Differing implicit and explicit beliefs among lifetime and convert believers and atheists

Rita McNamara, Ara Norenzayan
Department of Psychology, University of British Columbia

Introduction
Previous experimental work priming religion among atheists has shown mixed results. Variation in priming effects may be the result of different roads to non-belief: one) reject the beliefs one was raised with or 2) never have exposure to these beliefs in the first place. We examine potential cognitive differences across four groups: those raised to believe in God but currently do not believe (Atheist Converts: AC), those raised to believe in God and currently do believe (Lifelong Theists: LT), and not raised to believe in God but now do believe (Theist Converts: TC). Though we predict current atheists and believers will be more similar to each other, we seek to identify differences between lifetimers and converts. These differences may help explain how early exposure to particular sources of cultural information can influence adult cognition, even when those beliefs are explicitly rejected.

Materials & Methods
Participants
201 (133 women) psychology students participated for course credit; 11 dropped due to incomplete answers. Believer groups are defined by combinations of childhood and current belief (see Table 1).
- Atheist Converts (AC) n=46 (26 women)
- Lifetime Atheists (LA) n=50 (31 women)
- Lifelong Theists (LT) n=85 (60 women)
- Theist Converts (TC) n=20 (16 women)

Belief variables: Implicit & Explicit
Single-target Implicit Attitude Test
- Speed to pair synonyms of True with religion-related words subtracted from speed to pair synonyms of False and religion-related words

Cognitive variables:
- Empathy Quotient (EQ; Baron-Cohen & Wheelwright, 2004)
- Individual Differences in Anthropomorphism Questionnaire (IDAQ; Waytz, Cacioppo & Epley, 2010)
- Empathy Quotient (EQ; Baron-Cohen & Wheelwright, 2004)

Belief and cognitive variables were significantly correlated (see Table 2).

Results
We determined if believer groups significantly differ across belief and cognitive variables by using MANOVA. Potential sex and age differences were controlled for by adding sex and age as covariates. Figure 1 shows variables by believer group.

Table 1 Combinations of current and childhood belief to define believer groups.

MANOVA results indicate a significant difference across Believer Groups (F(3,287)=0.96, p=0.001) but not sex (F(1,186)=0.04, p=0.57) or age (F(1,186)=0.06, p=0.79).

Univariate ANOVA tests revealed that believer Groups significantly differ for:
- Intrinsic Religiosity (F(3,287)=0.79, p=0.001)
- Non-Belief Scale (F(3,287)=0.16, p<0.001)
- Dualism (F(3,287)=0.26, p=0.80)

Post-hoc Games-Howell tests used to allow unequal cell sizes (see Figs. 2-4).
- Intrinsic Religiosity: AC>LA, TC>LT (p<0.001)
- Non-Belief Scale: LT<AC, TC<LA (p=0.02)
- Dualism: LT<AC, TC<LA (p<0.001)

Believer groups significantly differed for:
- Dualism: Theists more dualist; tracks materialism/belief in science
- Non-Belief Scale: Atheists>theists, TC marginally lower than LT
- Attitude: AC are more negative about religion, LT are more positive
- Mind-body dualism: LT more likely to think about religion and more likely to see religion in a negative light.

Discussion
Though current belief status predicts a great deal of individuals’ approach to both belief and cognitive processes related to belief, we find evidence of non-trivial differences based on one’s childhood exposure to belief in God. Interestingly, though implicit belief as measured by a single-target IAT correlated with explicit belief, the current sample did not show significant differences in implicit belief across believer groups. This may lend support to the hypothesis that even life-long atheists are at some level “implicit theists.” Alternatively, this may reflect exposure to religious ideas pervasive in North American society. Mind-body dualism significantly distinguished current theists from current atheists, regardless of childhood belief. With mind-body dualism’s relationship to scientific thinking and materialism, an unwillingness to see minds and bodies as separate may be a strong influence in pulling individuals out of religious belief. Conversely, separating minds and brains may pull others into belief. Finally, atheists who were raised to believe in God think about religion significantly more than those raised without belief in God. Further, atheists who have actively rejected religious belief are marginally more negative about religion in general. Atheist converts’ chronic activation of religious ideas, even if only to deny them, suggests they may be more likely to respond to religious priming than atheists who were never actively taught to believe in God as a child.

Future Directions
- Do believer groups differ in what mental criteria they ascribe to God? Do believer groups differ in expectations of God’s knowledge to punish?

References

More Information
Please send any questions or feedback to: Rita McNamara, rnamnams@psych.ubc.ca