



Assessing the Association Between Persons' Abstraction Ability and Religious Behavior

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Introduction

- The purpose of this study was to determine whether there is an association between abstract thinking ability and religiousness in people. That is, do Christians think more abstractly than atheists do?
- Adults implicitly anthropomorphize (attribute concrete, human-like qualities to) God which contrasts with their explicit claims that they can differentiate between God's mind and human minds (Heiphetz, Lane, Waytz, et al., 2016).
- The average believer was found to believe in counterintuitive abstract ideas provided by a religious authority figure even if the believer did not fully understand the abstract ideas themselves (Cofnas, 2017).
- Anthropomorphism of God was found to be positively related to the concreteness of a believer's religious beliefs and practices (Shtulman & Rattner, 2018).
- Atheists, who considered religious ideas but abandoned them, were found to express abstract ideas 20% more than Christians were, although this result was found to be non-significant (Shtulman & Rattner, 2018).
- Because there are arguments both for and against why Christians would think more abstractly than atheists do, this is an interesting field to see whether religion affects the cognitive development of abstraction in humans.

Research Question

- Do Christians think more abstractly than atheists do, and how is this related to one's level of religiousness?
- Is this result applicable to various races?

Sample

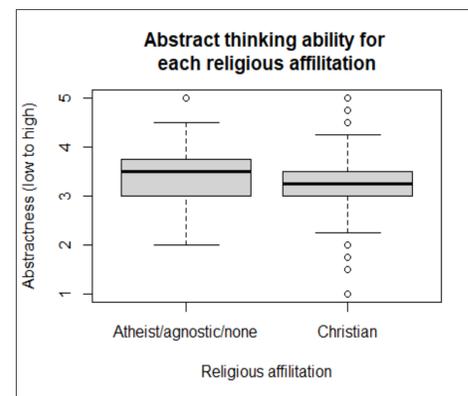
- Participants are from the Wave IV Add Health Database.
- 6098 Participants who identify as atheist/agnostic/nonbeliever or any type of Christian
- 46% Male and 54% Female
- Aged 12 – 21
- Ethnicity: 72.81% White, 23.74% Black/African American, 0.70% American Indian/Alaska Native, 2.75% Asian/Pacific Islander
- Does not include participants from Judaism, Islam, Hinduism, etc.

Measures

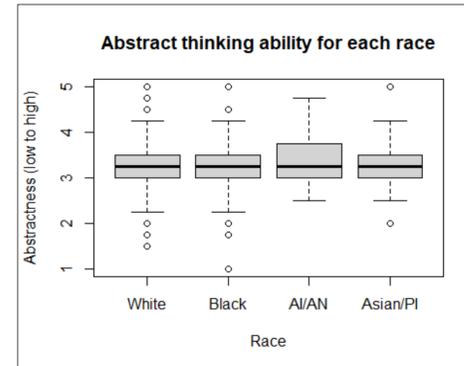
- Questions provided by computer-assisted self interview (CASI) or computer-assisted personal interview (CAPI).
- Questions were asked on the following topics:
 - Biological sex
 - Race
 - Abstract thinking ability - Having a vivid imagination, interest in abstract ideas, difficulty understanding abstract ideas, having a good imagination
 - Religious behaviors and beliefs - Present religion, frequency of attendance to worship in past 12 months, frequency of attendance to place of worship special activities in past 12 months, importance of religious faith, frequency of private prayer, frequency of turning to beliefs when encountering problems in life.
- Those answers which were refused or were marked missing were not included in the data.

Results

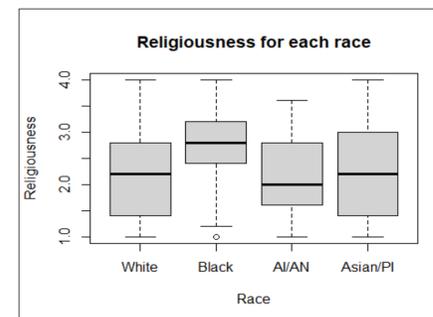
- A one-way analysis of variance (ANOVA) showed that those who are atheist/agnostic/none (Mean=3.38, s.d.=0.44) show a significant greater abstract thinking ability than Christians (Mean = 3.29, s.d.=0.43), $F(1,4618)=31.63$, $p < 0.001$.



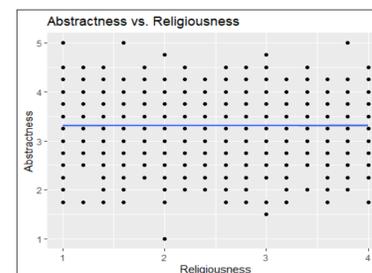
- A one-way ANOVA showed that abstract thinking ability and race are not statistically associated with each other, $F(3,4611)=0.589$, $p = 0.622$.



- A one-way ANOVA revealed that a person's religiousness and race are statistically associated with each other, $F(3,4669)=134.6$, $p < 0.001$.
- Post-hoc analysis of the mean religiousness against participant ethnicity using Tukey's Honestly Significant Differences revealed that Black participants (group 2) were significantly more religious than White, American Indian/Native American, and Asian/Pacific Islander participants (groups 1, 3, and 4). All other comparisons were not statistically significant.



- The Pearson's correlation coefficient between abstract thinking ability and religiousness is 0.001 ($p = 0.9354$) which shows that abstract thinking ability and religiousness are not related to one another.



Discussion

- It is unusual that the ANOVA found that atheists are more abstract than Christians even though no relationship between abstract thinking ability and religiousness was found.
- Abstract thinking not being different among races was expected given that there is no obvious reason why such should occur.
- The ANOVA and post-hoc test of religiousness for different races showed that Blacks/African Americans were more likely to be more religious than other races, supporting the idea that religiousness and abstractness are not necessarily related.
- It is a possibility that the significant result that atheists are more abstract than Christians is due to other factors that were not accounted such as Christians' deference to religious authorities.

Conclusion

- Abstractness and religion do not correlate with one another although it is true that atheists were shown to be more abstract than Christians were.
- Further study should be conducted to see what other variables could cause atheists to be more abstract than Christians.
- This shows that Christians do not understand God in terms of the metaphysical better than atheists would be able to.

References

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2. Gervais, W. M., & Norenzayan, A. (2012). Analytic Thinking Promotes Religious Disbelief. *Science*, 336(6080), 493–496. <https://doi.org/10.1126/science.1215647>
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