

Statement of Research Interests

My research focuses broadly on individual differences in worldview beliefs and their consequences. In particular, I focus on measuring individual differences. In my current research, I am investigating beliefs in free will and their implications for moral behavior and judgments. I have also developed a new individual difference construct, Need for Mystery, which is related to patterns of religious and supernatural belief and may have implications for general well-being and coping. Finally, I am working on a measure of individual differences in perspective-taking and its implications for child psychopathology.

In addition to my substantive research, I have a strong interest in quantitative methods. In fact, the majority of my research employs advanced statistical techniques. Needless to say, the use of proper statistical technique is crucial to our ability to accurately measure individual differences in any topic or population. Scale construction in multicultural samples, such as those found at UBC, requires multi-group SEM and IRT techniques. In addition to employing advanced statistical techniques in my substantive research, I have recently begun several quantitative research projects. These include research on evaluating the appropriateness of several current techniques in test reliability and validation.

My broad research interests have allowed me to incorporate interdisciplinary approaches in my research. Morality and beliefs are topics studied by social, developmental, and cognitive psychologists. I strive to incorporate knowledge from all of these areas to advance my research program. The following summaries of my research interests will illustrate this multidisciplinary approach.

Free Will and Determinism

For my Master's thesis, I validated a scale to measure individual differences in belief in free will and determinism (Paulhus & Carey, 2011). This scale measures belief in free will, fatalistic determinism, scientific determinism, and unpredictability as independent factors. Belief in the existence of both free will and determinism is known in philosophy as compatibilism. In fact, my research clearly established that most lay people (specifically non-philosophers) hold this compatibilist view.

In a follow up paper, I studied moral and political attitudes as they relate to belief in free will and determinism (Carey & Paulhus, in submission). Generally, I found that stronger free will beliefs were related to more conservative political attitudes. I also tested the relations between free will beliefs and moral judgments and behavior. Free will belief was associated with assigning higher punishment, even after reading a possible "explanation" for the criminal behavior. The belief in fatalistic determinism was associated with a greater decrease in blame, but not punishment.

In future research on this topic, I plan to focus on the developmental trajectory of these beliefs. It is unknown whether children naturally believe in free will. I suspect that children develop these beliefs through observations relevant to both personal free actions and making moral judgments. Examples of these experiences include feeling anger towards a moral transgressor, or guilt at one's own immoral actions. These affective experiences lead to different judgments of responsibility and create variability in individual beliefs. I would like to investigate the ways in which children's understanding of free action and their affective responses to moral transgressions are incorporated into a more general metaphysical worldview.

Need for Mystery

My dissertation research is centered around an original individual differences construct, which I call Need for Mystery. Need for Mystery (nMyst) is defined as a need to have unfalsifiable beliefs that have wide explanatory power. The lack of concrete observable evidence for these beliefs makes them more powerful and useful as part of the believer's worldview. These beliefs are also intuitive in ways that make them easily transmitted culturally. Religion, belief in the supernatural, and belief in paranormal phenomena are all examples of mysterious beliefs.

I have found that nMyst is related to religious affiliation, conversion between different religions, and a number of other life choices and personality traits. I have tested the factor structure and reliability of the nMyst scale in both student and online community samples using CFA. The scale has shown a similar reliability and structure in a sample of East Asian students, suggesting that the construct is valid cross-culturally (Carey, 2011). I am currently testing the primary theory that mysterious beliefs are an important worldview component using a meaning threat paradigm.

In future research on this topic, I plan to test the direction of the causal link between nMyst and religious conversion using longitudinal methods. This is important because religious conversion has many implications for well-being and can impact an individual's social support network. I will also test a possible neurological explanation for the existence of nMyst. Recent work has found that religious belief is associated with reduced distress in response to error (Inzlicht & Tullet, 2010). The proposed explanation is that the strong meaning framework provided by religious belief acts as a buffer against anxiety caused by self-generated errors. I suspect that those who are high in nMyst also have a decreased reaction to self-generated errors and receive these same anxiety buffering benefits.

The Altruism Slope

In further research on moral behavior, I am investigating individual differences in altruism. Evolutionary models of altruism have been based on extension of kinship altruism or reciprocity. Evolutionary theorists have struggled to explain the existence of altruism towards non-kin. Researchers have found that people consistently put forth less effort to help those who are further from them, both genetically and socially; I refer to this decrease as the "Altruism Slope." I propose that the altruism slope should be steeper; that is, the decrease in helping should be more pronounced in individuals who are high in political conservatism.

In an online study, I found that the altruism slope for those high in conservative values, such as right wing authoritarianism, was significantly steeper than the slope for those who were low in these values (Carey & Paulhus, 2011). In a follow-up behavioral study, I asked student participants to hold their hand in cold water (the cold pressor task) as long as they could to earn money for both a charity and a friend. I used priming to manipulate conservatism/liberalism and the results support the findings from the community sample.

In further research, I would like to investigate the mechanism that causes the increase in altruism slope. I hypothesize that liberals view out-group members as socially closer to themselves, while conservatives view the distance as greater and that this mediates the effect.

Childhood Perspective Taking

Perspective taking in children with Autism Spectrum Disorder is often treated as a unidimensional construct. My colleagues (Cassels & Birch, under review) wanted to better tap

affective and cognitive perspective taking as separate constructs. They administered a version of the Reading the Mind in the Eyes Task (Eyes Task; Baron-Cohen, et. al., 2001) that asked for open-ended responses rather than using the standard forced choice options.

As a continuation of this research, I compared the two versions using both confirmatory factor analysis and item response theory methods (Carey & Cassels, under review). I found that the traditional task is unidimensional; but also quite easy, having the most precise measurement at very low levels of perspective taking ability. The open-ended response version, in contrast, had a clear two-factor structure which distinguished between affective and cognitive perspective taking. Unlike the forced choice version, it was most accurate at levels of perspective taking ability found in typically developing children. This result is important for distinguishing between the overall perspective taking deficits found with ASD and the more emotion specific deficits found in Conduct Disorder, such as hostile attribution bias and decreased moral emotion reactions (Cimborra & McIntosh, 2003). In future research with this dataset, I will be looking at the relationship between affective perspective taking and empathy in adolescents with CD.

Scale Construction Methods

My psychometric and statistical research interests are primarily related to issues in scale creation and the use of confirmatory factor analysis to investigate the structure of scales. As an applied psychometrician, I am in a unique position to know what statistical research is most needed to improve measurement accuracy.

In collaboration with Victoria Savalei, I am working on a project to understand the real effects of reverse coded items on scale structure. Writing reverse coded items for scales has been common practice in scale development for decades as a means of correcting for acquiescence bias in responding. Acquiescence bias is the tendency for some participants to answer affirmatively to every item regardless of content. Though acquiescence bias is a concern, reverse coded items can also be problematic in a number of ways. For example, preliminary research has found that, in many datasets, reverse coded items create a method factor, creating difficulties in fit when it is not included in the model.

I am comparing the data models that researchers assume result from reverse coded items to other possible models that would indicate a violation of these assumptions. For this research I will use both psychometric and substantive methods. I will use Monte Carlo or simulation studies to evaluate the effect of failing to model reverse-coded items appropriately, and I will investigate which type of latent variable models best describe the behaviour of the reverse coded items on most psychological scales.

I am generally interested in issues of using appropriate fit indices in CFA. Traditional cut-offs for fit indices have been shown to be too restrictive for certain types of data, especially in personality measurement. Though more research is now being done to address these issues, it is a very large undertaking and many questions are still unanswered. I plan to use simulated data and reanalysis of real data sets to evaluate the behavior of CFA fit indices in a variety of situations. This research will provide better recommendations to researchers about the interpretability of CFA fit indices.

References

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