

Project guide: How IQ predicts metacognition and philosophical success

Amanda E House and Luke Muehlhauser

Introduction

This document contains suggestions for how researchers could study one set of questions related to "superintelligence forecasting and strategy." We don't have strong reasons to think these are the best methodological choices. You will probably want to modify some of them.

Project summary

Investigate how strongly IQ predicts metacognition and philosophical success, especially in the far right tail of the IQ distribution. To explore the link between IQ and metacognition, learn about Keith Stanovich's model of the algorithmic and reflective mind, and then test his hypothesis. To survey the connection between high IQ and philosophical success, make some choices about what counts as "philosophical success," and survey leading scientists for their positions.

Who should do this project

A researcher with interest in the far right tail of the IQ distribution, exploring the measures of metacognition, or extending the works of Stanovich or Kahneman and Tversky. The ability to conduct studies with human participants is required for 1 out of 2 subprojects.

How this project is useful for superintelligence strategy

Would substantial human intelligence amplification, e.g. via [iterated embryo selection](#), improve our odds of getting Friendly AI? The intuitive answer may be "yes," but some worry that amplifying IQ without also having a method for amplifying metacognition and philosophical success might accelerate progress toward AGI more than it accelerates progress toward FAI. For example, see Keith Stanovich's comments [here](#). But if amplifying IQ predictably amplifies metacognition and philosophical success, at least in the extreme right tail of IQ, then this worry may be alleviated somewhat.

Questions to answer

IQ and metacognition

One question is: how does IQ correlate with measures of metacognition and rationality? This breaks down into several smaller questions. On which metacognition tests do high IQ individuals perform better? For which types of metacognition tests does IQ not help? Do these match the predictions of Stanovich's algorithmic and reflective minds model? What kind of connection does this indicate between metacognition and IQ?

IQ and philosophical success

What are some "known" philosophically correct positions (atheism?), and how well does IQ predict philosophical success? (Success with Friendly AI appears to require more philosophical success than does e.g. success with nuclear security or climate change.)

Method

IQ and metacognition

1. Read *Rationality and the Reflective Mind*, by Keith Stanovich, to become familiar with the model of algorithmic and reflective minds. For this project, investigating metacognition means investigating the reflective mind.
2. Find ways to test Stanovich's predictions and answer the questions in the previous section. Design the study to give participants tests which high a IQ should help with and tests which a high IQ should not help with. This step will involve searching through *Rationality and the Reflective Mind*, and then directly contacting Stanovich to ask which tests he has not yet conducted.
3. Conduct the study. This step will expand into the bulk of the project, once the study is designed.

IQ and philosophical success

1. See these two studies: "Acceptance of paranormal among two special groups," and "Leading scientists still reject God." Both are listed under the next section.
2. Read the results of the PhilPapers Surveys, again listed in the next section. (Note that atheism, the position surveyed in "Leading scientists still reject God," is a view held by 72.8% of respondents.)
3. Make some assumptions about philosophically correct positions, or philosophical success.
4. Conduct one or more studies looking for correlations (or lack thereof) between measured IQ and philosophical success.

Similar past studies and related reading

- Motivations behind this project: [Intelligence Amplification and Friendly AI](#), by Luke Muehlhauser
- A prediction of intelligence enhancement's effects on rationality: [Keith Stanovich on Intelligence Enhancement](#), by Luke Muehlhauser
- The book describing the model of the mind to test: *Rationality and the Reflective Mind*, by Keith Stanovich
- More sources and ideas for studies: Stanovich's [publications page](#)
- A partial summary of *Rationality and the Reflective Mind*: [Do Rationalists Exist?](#) by Sarah Constantin
- A survey of Mensa members and their beliefs: Chatillon, G. (1989). Acceptance of paranormal among two special groups. *Skeptical Inquirer*, 13(2), 216-217.

- A survey of high achieving scientists religious beliefs: [Leading scientists still reject God](#), by Edward J. Larson and Larry Witham
- A survey of 3226 philosophers on their philosophical views: the [PhilPapers Surveys](#), conducted by David Bourget and David Chalmers

People to talk to

Keith Stanovich, author of *Rationality and the Reflective Mind*, might have guidance on which tests to conduct.

Where to publish

IQ, rationality, and metacognition

The following journals have published Stanovich's work:

- [Thinking & Reasoning](#)
- [Current Directions in Psychological Science](#)
- [Perspectives on Psychological Science](#)
- [Journal of Personality and Social Psychology](#)
- [Memory & Cognition](#)
- [Developmental Review](#)
- [Behavioral and Brain Sciences](#)
- [Cognitive Psychology](#)
- [Journal of Experimental Psychology: General](#)
- [Journal of Educational Psychology](#)

IQ and philosophical success

The 3 studies relevant to the IQ and philosophical success project were published in:

- [Nature](#)
- [Skeptical Inquirer](#)
- [Philosophical Studies](#)

Additional suggestions:

- [Science](#)
- [PLOS ONE](#)
- A journal specific to the philosophical position investigated, e.g. [The Journal of Ethics](#)
- [Popular Science](#)
- [Scientific American](#)

Why would they publish it?

IQ and metacognition

Though psychology journals will not be interested in the impact of IA on FAI, these motivations need not appear in the paper. The topics of IQ and metacognition are routinely discussed in psychology journals.

IQ and philosophical success

Nature, an interdisciplinary journal, published the survey of high achieving scientists. Other interdisciplinary journals, such as Science and PLOS ONE may be interested as well. The survey of religious and supernatural beliefs was of interest to the Skeptical Inquirer, so it is plausible that journals will be interested in surveys of their disciplines. If the philosophical position to investigate is chosen to be the trolley problem, then publishing in the Journal of Ethics is a possibility. Science magazines are also included as a suggestion, since the Skeptical Inquirer is classified as a magazine, rather than a formal journal.