THE POSSIBILITY OF A UNIVERSAL MORAL GRAMMAR

PI:
Marc Hauser, PI   Evolutionary Biology, Cognitive Science

Associated Researchers:
Walter Sinnott-Armstrong   Philosophy
Antonio Damasio   Neuroscience
Kieran Healy   Sociology
Ray Jackendoff   Linguistics
John Mikhail   Law
Richard Shweder   Anthropology
Elizabeth Spelke   Developmental Psychology
Mel Slater   Computer Scientist, VR

The scientific study of moral beliefs, emotions, deliberation, and decision was born only recently, but it is growing fast and has the potential to play a pivotal role in not only basic scientific discoveries of mind and brain, but in policy, education and law. So far this new field consists largely of disjointed studies of disparate moral phenomena using different methods. The history of scientific endeavors suggests that progress in the science of moral judgment would be greatly facilitated by developing and testing a detailed general model that provides a coherent picture of various aspects of our moral faculty or faculties. Even if this initial model turns out not to be completely adequate, it would still promote the development of contrasting models and thereby stimulate successful science in the long run.

One prominent candidate for a model of moral judgment is the linguistic analogy. Taking its cue from Chomsky, this hypothesis claims that a set of unconscious and inaccessible principles or rules govern how we judge what is morally forbidden, permissible, or obligatory and possibly also what is morally good or bad. The underlying principles are abstract (i.e., no specific content) with cross-cultural variation entering at the level of parametric variation so that local culture determines a particular setting out of a limited set of options, as with languages.

Little is known about the nature of these moral principles and parameters, but the general picture provided by the linguistic analogy raises a series of fascinating questions and predictions that are readily tested with current empirical tools. Specifically, if our capacity for moral judgment is guided by a set of abstract principles and parameters, then:

- What is the content of these moral principles and parameters? How many principles are there? How many parameters? How are they related to each other?
- To what extent do these principles and parameters provide a descriptively adequate account of mature moral judgment? Does it handle all areas of morality equally well or are there areas of morality (such as sexual morality) that are not covered by this model?
- How are these principles and parameters related to motivation and behavior? How do they affect emotions or the way individuals feel about their own actions and the actions of others inside or outside their society?
- To what extent are individuals aware of these principles? When they are not conscious, to what extent can they be made accessible to conscious awareness and then be used to guide explicit moral reasoning or reflection?
- Which, if any, of these principles are innate? To what extent, and how, do children acquire these principles and parameters? Is there a critical period for setting the parameters, and if so, does subsequent acquisition of different moral distinctions take on a different pattern from early acquisition?
- To what extent are the principles that underpin our moral judgments immune to contextual pressures? For example, although we are more likely to judge a short line as long if three confederates call it long (as in the classic Asch studies), we are not likely to change our minds on the answer to 2+2 even if three confederates say the answer is 5,

10, or 22. Is morality more like perception or arithmetic in this regard? When do we stick with our moral judgments regardless of whether everyone else disagrees?
• How and to what extent can society and culture affect the settings of parameters in an individual? How do religion, gender, and socio-economic status affect how people can and do fill out abstract principles and apply them to dilemmas that they face in everyday life?
• Once moral parameters are set, how much can individuals or cultures change them? When are people willing to see alternative perspectives based on different parameter settings (or possibly novel principles) as morally permissible?
• If certain aspects of our moral capacity operate like language, then could anyone be bimoral in the same way that people can be bilingual? That is, could a person acquire and endorse distinct moral systems (such as one in which bribing is permissible and another in which bribing is not permissible)?
• To what extent are there neurobiological mechanisms dedicated to moral judgment and to what extent do our moral judgments rely on domain-general neural mechanisms? If there are dedicated mechanisms (as in language), then when these areas are injured or suppressed (e.g., by transcranial magnetic stimulation), we should find selective breakdown of moral processes, but not other aspects of cognition. Do we find this?

Many more questions will arise as we develop the linguistic analogy in more detail. That is one of the benefits of a general model: it raises questions that we could not ask without it. And as these questions are raised, and addressed with experimental tools, we will refine the model to enable more specific predictions.

Here we propose a multi-year project, involving collaborators in seven distinctive disciplines (cognitive science, philosophy, neuroscience, sociology, linguistics, anthropology, and developmental psychology) to investigate these questions and explore the linguistic analogy model in depth. The members of our assembled team have contributed in important ways to understanding our moral psychology, but critically, not all have endorsed the linguistic analogy. We consider this *tension* important, as it will enable us to critically evaluate the assumptions and predictions of the linguistic analogy, while remaining open to alternative possibilities.

The first year will be devoted to a combination of theory development and pilot testing. In particular, we will refine the theoretical details of the linguistic analogy, including formalization of principles and parameters, together with the creation of a rich set of scenarios designed to test the significance of such factors. Candidate principles and parameters will be drawn from legal, philosophical, and psychological proposals, so we will start with a literature search and mutual education in order to enable us to draw on each others' fields of expertise. We will also hire key personnel, which will include international collaborators contributing to cross-cultural understanding, as well as programmers who can help manage and analyze large data sets that come in from web-based investigations. The group of researchers will meet in person at Harvard at the beginning of each term and at Duke at the end of each term, but they will also engage in regular telephone conferences at least bi-weekly throughout each term. Graduate students and post-docs will be expected to spend time in the different departments represented in our core group in order to enhance cross-disciplinary education as well as the exchange of ideas. During this period we will consult with a wide variety of supporters and critics of the linguistic analogy in order to ensure that our experimental designs really will help to resolve the crucial issues or at least move the discussion forward. In addition, we plan to organize a major international interdisciplinary conference on the linguistic analogy in order to advertise our work and to obtain input of fresh ideas. This conference will produce an edited volume of original papers that will promote interest in the model.

In Years 2-3, with post-docs in residence, we will start to carry out more formal experiments, beginning with normal populations. We expect to use web-based and paper-and-pencil surveys as well as various manipulations to test causal hypotheses, and to do so in a variety of cultures; we are well poised to advance this part of the project as the PI has already developed a web based program that has been translated into five languages. Some of our research will involve brain scanning as well as suppression of neural activity and, later, studies of patients with selective neural deficits. We will also continue our discussions and design new developmental and cross-cultural experiments to be carried out in later years.

Years 4-5 will be used to test our refined model in new populations. One important group is children and adolescents, because we want to understand when and how principles and parameters are modified in development. This issue could have important implications not only for theory but also for educational practice — if parameters are set early in life, and if the developing brain effectively loses its plasticity, opportunities for moral change may be severely constrained. In addition, to determine whether our "moral grammar" is universal, we will test cultures around the world, including a set of small-scale societies, such as hunter-gather populations. We already have some contacts at potential sites, but significant travel will be required by a new set of trained graduate students and post-doctoral fellows, in addition to training students in some of these countries. Finally, it will be illuminating to test our model on patient populations, including individuals with brain damage or mental illness (especially people with psychopathy, scrupulosity OCD, and autism).

This project involves a wide range of methods and theoretical perspectives as well as subject populations. This diversity reflects the complexity of the issues surrounding morality. Hence, to make this project work, we will need constant input from a variety of leaders in all of the relevant fields. We will also need adequate funding for a variety of methods including brain scanning and extensive travel to new populations of subjects. This is a large project with potentially large payoff not only in theory but also in practice in areas (such as law and education) that depend on moral judgment.

Although many details remain to be worked out, a tentative rough budget might look something like this:

Summer salary for PI and Co-PI:
    2 people X 5 years X one quarter salary = about $500,000
Honoraria for other lead researchers:
    5 years X 12 researchers X $10,000 honorarium = $600,000
Post-docs in Years 2-3 and 4-5 (2 at Harvard and 2 at Duke):
    4 years X 4 post-docs X $80,000 (including benefits) = $1,280,000
Meetings of all personnel:
    5 years X 4 meetings per year X 15 researchers X $1000/person = $300,000
Conferences in years 1 and 5:
    2 conferences x $50,000 = $100,000
Programming for web surveys:
    5 years X $20,000 per year = $100,000
Brain imaging, VR lab costs:
    3 years (3-5) X $300,000 per year = $900,000
Patient studies:
    2 years (4-5) X $100,000 per year = $200,000
Travel for cross-cultural studies:
    2 years (4-5) X $100,000 per year = $200,000
Administration:
    5 years X $60,000 per year (including benefits) = $300,000
Miscellaneous (for overruns and opportunities):
    5 years X $100,000 per year = $500,000
Total: $4,980,000

Of course, these figures are only rough estimates at this point. There are also some possibilities for reductions in some areas. We could, for example, provide only 2 months summer salary to the PI and Co-PI and honoraria of only $5000 to other lead researchers, reduce the number of lead researchers from 12 to 8 and the number of post-docs from 4 to 2, cut the brain scanning as well as patient studies and travel by half, and include less for opportunities in the miscellaneous fund. These savings would reduce the overall budget to about $3,000,000 for five years.

We are, of course, more than happy to discuss any of these plans and expenses in more detail. Indeed, we look forward to many discussions about this project and about the feasibility of funding a large scale investigation into the nature of our moral sense.