HOW TO TRAIN A BETTER SCIENTIST: INTELLECTUAL VIRTUES, EPISTEMIC REASONING AND SCIENCE EDUCATION

Daniel Lapsley, Ph.D.
Dept. of Psychology
University of Notre Dame

Dominic Chaloner, Ph.D.
Dept. of Biological Sciences
University of Notre Dame

It would not take long for any gathering of university professors to lament the incurious or desultory intellectual climate of their classrooms or the absence of genuine intellectual engagement with ideas...
by students. Although no disciplinary major is immune from such concerns, students’ seeming wont of intellectual passion and curiosity is a pressing concern in university science departments, if only because science is widely acknowledged as the premier knowledge-generating enterprise; and “if anything can deliver the epistemic goods, it is science” (Roberts & Wood, 2007, p. 4).

Of course, it is neither fair nor accurate to place the blame solely on students. In many ways, incoming university students are clearly intelligent and motivated, at least as attested by standardized tests, GPA and class rank. They have learned how to strategically navigate the academic regimen of secondary education, often to the disadvantage of high level intellectual engagement with university coursework. Moreover, certain institutional realities constrain active student learning in ways that are not optimal. These include the sheer number of students in classes and labs, limited instructional resources, and traditional (“sage-on-the-stage”) models of university teaching.

...training in intellectual virtues along with science epistemology is not just for scientists anymore. Training better scientists and science literate citizens is an adjunct to forming better persons, which puts science education in the business of developing intellectual character.

Yet, for all the challenges, the Virtuous Scientist Project at the University of Notre Dame is convinced that much more could be done to prepare university students for the practice of science in post-baccalaureate careers. This project, funded by the John Templeton Foundation, is concerned to reform science education in a way that equips students with the intellectual virtues or character strengths that conduce to excellent scientific practice, but also to good citizenship at a time when science denialism and alternative-facts corrupt public discourse about matters of fundamental national interest. We are mindful that not every science major goes on to become a working scientist, but we are also convinced that training in intellectual virtues along with science epistemology is not just for scientists anymore. Training better scientists and science literate citizens is an adjunct to forming better persons, which puts science education in the business of developing intellectual character.
Associate Professor of Philosophy at Delft University of Technology and Professor of Philosophy at Australian Catholic University. His first book, *Character as Moral Fiction*, was published by Cambridge University Press in 2013, and his second book, *Moral Psychology: An Introduction*, was published by Polity in 2016. You can visit his personal website at [www.alfanophilosophy.com](http://www.alfanophilosophy.com).

My work in moral psychology encompasses subfields in both philosophy (ethics, epistemology, philosophy of science, philosophy of mind) and social science (social psychology, personality psychology). I am ecumenical about methods, having used modal logic, questionnaires, tests of implicit cognition, incentivizing techniques borrowed from behavioral economics, neuroimaging, textual interpretation (especially of Nietzsche), digital humanities techniques (text-mining, archive analysis, visualization), and of course good old-fashioned intuition-mongering. My biggest historical influence is Friedrich Nietzsche; I find his thoughts fascinating because he was so far outside the mainstream of philosophy in his own day, yet some of his insights are now finding support in contemporary social science.

I met the other members of my SMV team when I was Assistant Professor of Philosophy at the University of Oregon. Gus Skorburg was a PhD student in a course I taught, as well as a teaching assistant for an intro ethics course. Christina Karns was researching the neuroscience of gratitude (among other things) over in psychology. Because I’m very interested in the possibility of fruitful interactions between disciplines, these two made for terrific interlocutors and collaborators.

Joshua Skorburg, Ph.D. Candidate

**JOSHUA AUGUST SKORBURG** is currently a Ph.D. candidate in Philosophy at the University of Oregon. Starting in December 2017, he will be post-doctoral fellow at Duke University.

My research is in moral psychology and applied ethics. After a brief stint in television news, I started my graduate work in philosophy studying American pragmatism. I became increasingly interested in the relationship between normative ethics and the philosophy of mind and my dissertation reflects this confluence. In a sentence, I argue that virtue theory is often overly individualistic, and that converging evidence from the biological and psychological sciences requires us to re-think operative notions of self, cognition, and affect.

The best part about working on questions of self, identity, character, etc., is that it’s very natural for the research to cross disciplinary boundaries. And it’s in this spirit that Christina, Mark, and I started working together. We were all interested in the many ways that many aspects of the self (e.g., implicit attitudes, explicit attitudes, behavior) can hang together -- or not. We came at these questions from different angles given our background and training, but what we’ve ended up with, I think, are some pretty cool philosophically-informed experimental designs, and empirically-informed theories of self, generosity, and integrity.

In hindsight, one of the things that got me really jazzed about studying philosophy was the research in situated cognition. I remember one of my teachers telling me that situated cognition was like the punk rock of
philosophy of mind. I liked that and it seemed right (though maybe it’s a bit more mainstream and ‘pop’ now?). While I had read quite a lot about embodied theories of mind, meaning, emotion, etc., it never occurred to me (or anyone I was reading) to study the actual, physiological underpinnings of all of these theoretical constructs.

RECENT PUBLICATIONS & NEWS

SMV Core Project Team Member, Dr. Linda Zagzebski, recently published Exemplarist Moral Theory with Oxford University Press (2017). Publisher's Description: "In this book Linda Zagzebski presents an original moral theory based on direct reference to exemplars of goodness, modeled on the Putnam-Kripke theory which revolutionized semantics in the seventies. In Exemplarist Moral Theory, exemplars are identified through the emotion of admiration, which Zagzebski argues is both a motivating emotion and an emotion whose cognitive content permits the mapping of the moral domain around the features of exemplars. Using examples of heroes, saints, and sages, Zagzebski shows how narratives of exemplars and empirical work on the most admirable persons can be incorporated into the theory for both the theoretical purpose of generating a comprehensive theory, and the practical purpose of moral education and self-improvement." Learn more>>

SMV Project co-Director, Dr. Darcia Narvaez, won the Expanded Reason Award for her 2014 book, Neurobiology and the Development of Human Morality (W.W. Norton & Co.).

The international selection committee for this award reviews works that answer the challenge of actively promoting a dialogue between sciences and theology/philosophy. They received 367 works from 170 universities in over 30 countries. Dr. Narvaez was one of two awardees selected in the "Research" category.

The awards ceremony will be held at the Pontifical Academy of Sciences in Vatican City on September 27th. Learn more >>

Journal of Character Education: CALL FOR PAPERS
"The Development of Purpose"
Special Issue Guest Editors: Maurice J. Elias, Danielle Hatchimonji, and Arielle
Linsky, Rutgers University

The *Journal of Character Education* publishes peer-reviewed manuscripts that add to the body of knowledge of research and practical applications in our field. We are soliciting manuscripts for an upcoming issue of the JCE devoted to the best ideas for developing purpose in children and adolescents. As defined by Damon et al. (2003), purpose is, “a stable and generalized intention to accomplish something that is at once meaningful to the self and of consequence to the world beyond the self” (121). Research indicates that students with a stronger sense of purpose are more successful on academic and social outcomes compared to their less-purposeful peers (Bronk, Hill, Lapsley, Talib, & Finch, 2009; Damon, 2008; Hill, Edmonds, Peterson, Luyckx, & Andrews, 2016; Yeager & Bundick, 2009). Yet, little is known about effective methods to cultivate and assess purpose in youth, particularly in communities beset by structural and institutional inequities.

We are seeking manuscripts describing conceptual, theoretical, and practical examples of the development of purpose in children, adolescents, and emerging adults. For example, manuscripts might address all, or some, of the following areas of inquiry:

- Programs or processes that promote the development of purpose and how these interventions have influenced student, teacher, parent, school, and/or district social and academic outcomes.
- Meta-analysis or systematic review of current research on the development of youth purpose—what methods have been proven to be effective and what should future research seek to understand?
- Methodologies for assessing the construct of purpose throughout developmental stages.
- How the study of youth purpose fits into existing paradigms of character and moral development.
- Effective methods and/or relevant experiences relating to development of purpose from the practitioner perspective.
- Preference will be given to manuscripts that focus on underserved populations.

Read more>>

---

**Beacon Project Summer Seminar**

**CALL FOR APPLICATIONS**

“Character and the Morally Exceptional: Empirical Discoveries and Moral Improvement”

*June 18-28, 2018*

Becoming a virtuous person is one of the central goals of the ethical life. But how good of a job are most people doing in becoming virtuous? And are there any plausible strategies for cultivating the virtues and becoming morally exceptional which can help us to do better? This seminar will examine these two questions in detail. In the first half, we will see whether character traits even exist in light of results in psychology. The second half will turn to various strategies for trying to bridge the gap...
between the character we actually have, and the virtuous character we should strive to obtain. Developing and justifying such strategies is one of the most underexplored areas of ethics, although in recent years it has gained increased attention. Here we will look at new work by Nancy Snow, Jonathan Webber, Julia Annas, and Alan Wilson, among others, some of which has not appeared in print yet.

Participants will have their travel, meal, reading materials, and lodging costs covered. They will be housed at the Graylyn Conference Center (www.graylyn.com), one of the nicest facilities in the country. Seminar meetings are expected to last roughly three hours per day, and will conclude on Thursday, June 28 so that all participants can attend the Beacon Project Final Conference on June 28-30.

The application deadline is December 15, 2017. For more details please visit: www.moralbeacons.org/summer-seminar/

---

**SELECTED RECENT PUBS & PRESENTATIONS**

**FROM THE SMV LEADERSHIP TEAM**

**Dr. Owen Flanagan**


**Dr. William Fleeson**

- Fleeson, W. (2017). *Challenging Doris' attack on aggregation: Why we are not left "completely in the dark" about global virtues*. Ethical Theory and Moral Practice, 20(3): 519-536. ([Open access article](https://doi.org/10.1007/s10677-017-9293-3))

**Dr. Douglas Fry**

reduction in diverse cultures and contexts, Current Opinions in Psychology (April 5).


Jennifer Herdt, Ph.D.


Daniel Lapsley, Ph.D.


Dr. Darcia Narvaez

Dr. Howard Nusbaum


Dr. Ross Thompson


Dr. Nancy Snow


Dr. Linda Zagzebski


Dr. Michael Zampelli


If you would like to contribute a news item, publication, or newsletter article, please contact Max Parish at smvproject@ou.edu.