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## Cognitive Science Program: Candidate Learning Outcome #11 (DEI) - Status Report

This short text is intended to serve as a status report on efforts within the cognitive science program to craft a Diversity, Equity, and Inclusion (DEI) learning outcome that is grounded in ideas associated with the field of cognitive science, yet has broad societal significance with respect to diversity, equity, and inclusion.

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### A Bit of Context and a Half Dozen Premises

Work on a DEI learning outcome for the cognitive science program is taking place at more or less the same time that college governance is hashing out ideas pertaining to the conceptualization and implementation of general education learning outcomes pertaining to DEI. In view of this, and in order to preclude confusion based on unfounded assumptions, a few words of emphasis with respect to the **separation** of these two efforts appear to be in order.

1. Our work on a DEI learning outcome for cognitive science does not depend on college governance efforts to craft DEI general education learning outcomes any more than their efforts depend on our work.
2. The college governance effort to craft and administer broad based DEI learning outcomes has merit grounded in the top-down approach.
3. The efforts of individual programs to craft their own DEI learning outcomes, grounding them in local relevance, albeit with an eye towards powerful societal implications, has merit grounded in the bottom-up approach.
4. There may be interesting serendipitous coalescences emerging from the program level initiatives, points of convergence which may well be worth noting and discussing.
5. There may be interesting serendipitous coalescences resulting from the intersection of the top-down process associated with campus governance and the bottom-up process associated with programs, points of convergence which may well be worth noting and discussing.
6. The unplanned points of convergence mentioned in the previous two items will imbue this bidirectional process with more authenticity, with more life, than a completely determined process might provide, however well conceived.

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### Candidate Learning Outcome #11 (DEI)

The manifestation of a DEI learning outcome for cognitive science presented below reflects the current trend in AI towards deep learning systems grounded in data gathered from society. These systems are increasingly being incorporated into legal, political, social, economic, and many other aspects of our lives, without being sufficiently vetted, if they are vetted at all. Since these systems are based on data which tend to reflect our flawed, biased, divisive society, and have nearly no ability to explain their reasoning, a learning outcome that pertains to these systems with respect to DEI considerations might be worthy of adoption.

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#### The Candidate

**Diversity, Equity, and Inclusion (DEI)** Demonstrate an awareness of the nature of bias in our history, and the degree to which bias plagues our present society. Articulate the ways in which societal bias might inadvertently or intentionally infect AI systems. Discuss the implications of being *unable* to probe deep neural networks, due to their inherent mechanisms of construction and operation, for clear or potential bias in their reasoning. Discuss the vast potential that these systems (e.g, robojudges, social media monitors) hold with respect to shaping our world, for better (e.g., fairness) or for worse (e.g., dehumanization, disenfranchisement).

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## Why this Particular DEI Learning Outcome for Cognitive Science at Oswego?

These few notes are intended to address the question: “Why this particular DEI learning outcome for Cognitive Science at Oswego?”

1. This outcome does not seem like it might be appropriate to many, if any, other programs in CLAS or programs in the other schools of the college, i.e., CMA, SOE, or SOB. This is important, since the charge that we have accepted is to craft a learning outcome for our *cognitive science* program, one that spurs questioning, thought, and action from ideas that deeply resonate, in one way or another, with our *cognitive science program*, rather than something more general, which might be an appropriate learning outcome to any number of other programs, or even general education. This candidate learning outcome seems to meet this criteria of local relevance.
2. Although the outcome should be grounded in ideas that cognitive scientists think about (most generally, integrative interdisciplinarity, and phenomena surrounding knowledge representation), it should have widespread implications with respect to diversity, equity, and inclusion. It is hard to imagine anything with broader application for society than the phenomenon of dubious autonomous information systems being incorporated into the infrastructure (the generally invisible part) of our world.
3. The DEI outcome should be one that resonates with the students and faculty of the program in a compelling way in order to assure lively discussion of issues surrounding the topic and ample investment in representation of the topic throughout the curriculum. This learning outcome has already passed the resonance test with the cognitive science students (Capstone students, 2020) and faculty (Vampola, Lindstedt, Graci) who were asked to consider it.
4. This particular learning outcome would lend itself nicely to incorporation into the (oral) Cognitive Science Capstone Exam, which is where we perform learning outcome assessment for the cognitive science program at Oswego. Moreover, DEI considerations are consistent with the broad capstone goals of knowledge consolidation and individual transition from school to society.
5. This particular learning outcome affords practicability with respect to incorporation into the curriculum, due to the nature of the two introductory courses (i.e., Cog166 “Introduction to Cognitive Science” and Cog266 “Brains, Minds, and Consciousness”), flexibility in a number of the intermediate/advanced Cog labelled courses (e.g. Cog444 “Cognitive Semiotics”, Cog416/Psy416 “Neural Networking”, Cog376 “Cognitive Linguistics”, Cog366/Csc366 “Computational Cognitive Modeling”), and the content of the artificial intelligence courses (Csc416 and Csc466).

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## Next Steps

1. The cognitive science program advisory board will meet in a couple of days to discuss this proposal. (A list of board members is presented as an “appendix” to this status report.)
2. Should this proposal, or an identity preserving modification of it, be well-received by the board, I will charge those teaching the courses mentioned in item #5 of the “Why this Particular DEI Learning Outcome For Cognitive Science at Oswego?” section of this report with:
  - (a) identifying components of the courses that afford opportunities for incorporation of DEI discussion and activities, and
  - (b) articulating ideas for how DEI lessons might manifest in the aforementioned course components.

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**Appendix: Cognitive Science Program Advisory Board - December, 2020**

**Giovanni Anistasio** (Student Representative)

**Jean Ann** (Linguistics Program Representative)

**Leigh Bacher** (Psychology Department Representative)

**Craig DeLancey** (Philosophy Department Representative)

**Kate Gordon** (Student Representative)

**Craig Graci** (Director of Cognitive Science)

**Jing Lei** (Anthropology Department Representative)

**John Lindstedt** (Special Cognitive Science Program Representative)

**Kristen Munger** (At Large Representative, School of Education)

**Theo Rhodes** (Special Cognitive Science Program Representative)

**Damian Schofield** (Human-Computer Interaction Program Representative)

**David Vampola** (Computer Science Department Representative)