COG401: SEMINAR IN COGNITIVE SCIENCE

Winter 2020
University of Toronto (St. George campus)

1. CONTACT

INSTRUCTOR
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Office Hours: TBD
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LECTURE
Lecture Location: TF101
Lecture Time: Tues. 10 am-1pm

> **E-mail policy**: E-mails must be sent from your UTORmail e-mail address and must include the course code (COG401) in the subject line. E-mails are for administrative purposes only – questions about course material will be addressed during office hours. I try to reply to e-mails within one or two business days.

2. COURSE

OVERVIEW
Skilled practitioners (e.g. an expert musician, athlete, or chess player) often demonstrate considerable agency, intelligence, and knowledge when executing their skills. In these ways, their skilled performances manifest indisputably *mental* features. And yet the character of these features remains poorly understood. In this course, we will examine some theoretical controversies about these matters. We will start by examining a debate within philosophy about 'know-how'. When we say Sally knows how to ride a bike, for example, is the knowledge we ascribe to her reducible to knowledge of a fact or true proposition (as 'intellectualists' maintain), or are we attributing a form of knowledge which is different from factual or propositional knowledge (as 'anti-intellectualists' maintain)? Having examined some of the main moves in this debate, we'll examine the theoretical interconnections between the notions of cognitive control, attention, and automaticity. When we describe aspects of Sally's bike-riding as automatic, for example, what exactly do we mean? In particular, are we denying that these features of her performance are determined without her control and attention? And, as an empirical matter, do skilled practitioners consciously attend to what they are doing when executing a skilled action, or does conscious attention to a skilled action disrupt its execution (perhaps leading agents to 'choke')? Finally, we will inquire how the agent's 'high level' propositional attitudes (e.g., Sally's intention to ride her bike) *interface* with the lower level (e.g., perceptual and sensorimotor) states required to guide an action's fine-grained implementation. The problem of understanding how these two 'levels' of action control are coordinatively integrated has been called the 'interface problem'. We will consider some recent proposals for answering this problem, and whether these proposals can, in turn, help us to grasp the distinctive kind of agency, intelligence, and knowledge agents exercise when acting skillfully. Throughout, we will draw, in truly interdisciplinary spirit, on the combined resources of philosophy, psychology, neuroscience, robotics, and computer science.

LEARNING OBJECTIVES
In addition to learning about skills, we will also be developing some skills in this course. Some of the skills you will be developing in this course include:
- Understanding of cutting-edge controversies within the philosophy and cognitive science of skill and attention.
- The ability to read, analyze, and critically assess a contemporary philosophy paper that draws upon empirical resources;

- The ability to write a well-argued cognitive science paper;
- The ability to defend your views in conversation.

EXPECTATIONS

What I expect from you:
- to attend seminars;
- to come to seminar on time and prepared to discuss assigned readings;
- to complete assignments on time and as per the instructions;
- to treat your peers with respect;
- to ask questions when you feel you don't understand something;
- to take responsibility for your own learning.

What you can expect from me:
- to come prepared for each seminar;
- to create a positive and stimulating learning environment;
- to provide support and constructive feedback throughout the term;
- to treat you with respect;
- to think carefully about your questions and make a serious effort to answer them.

READINGS

All readings will be available either through our course website or electronically through U of T library system. If you don't find a text on our website, then the library has it electronically. Note that if you are having to prioritize which reading or readings to focus on for a given meeting, it is a good idea to focus on the paper or papers that are being presented, since these will probably be the focus of our discussion.

1. ASSESSMENT

1st paper (1,000 words)	(25% of final)	**Due: Friday February 14th**
2nd paper (2500-3000 words)	(35% of final)	**Due: Last day of classes**
Participation	(15% of final)	
Presentation	(25% of final)	

Papers are to be submitted, and will be returned, via Quercus. You should upload your written assignment as an attachment on the submission page using .doc or .docx format.

Presentations should be approximately 15 minutes, give or take 2-3 minutes. A presentation should summarize the key claims and arguments of a paper and should briefly conclude with discussion question, critical observations, or anything else that may help to kick off discussion.

2. POLICIES

COURSE WEBSITE

All announcements and course documents will be posted on Quercus. To access this site, go to q.utoronto.ca and login with your UTORid and password. COG401 will appear under 'Courses' on the left side of the welcome page. Click on the link to access our site. You should check this site regularly for updates.

LATENESS

Assignments will be penalized 1/3 a letter grade for each day that they are late. Extensions may be granted if extraordinary circumstances are documented, but students should contact me to request an extension before the due date. Assignments more than 5 days late will not be accepted.

ACADEMIC INTEGRITY

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's *Code of Behaviour on Academic Matters* (http://www.governingcouncil.utoronto.ca/policies/behaveac.htm) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences […] All suspected cases of academic dishonesty will be investigated following procedures outlined in the *Code of Behaviour on Academic Matters*. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources. (from http://academicintegrity.utoronto.ca)

ACCESSIBILITY NEEDS

The University of Toronto is committed to accessibility. If you require accommodations for a disability or have any accessibility concerns about the course, the classroom, or course materials, do not hesitate to speak to me and please make sure to contact Accessibility Services as soon as possible (at http://accessibility.utoronto.ca).

Some other helpful support resources at St. George campus include:
- Students for Barrier-Free Access (http://www.uoftsba.com)
- Health & Wellness (http://healthandwellness.utoronto.ca)
- The Hart House Accessibility Fund (http://harthouse.ca/accessibility)
- Library Services for People with Disabilities (http://onesearch.library.utoronto.ca/services-for-people-with-disabilities)

3. SUPPORT

It's crucial to keep up with the readings and to attend as many seminars as you can. If you feel you need additional help with any of the course material, please don't wait to contact me.

INTERNET RESOURCES

Here is a link to information about the University of Toronto's many writing resources:
http://www.writing.utoronto.ca/
Here are some links to information about how to write a good philosophy paper:
http://www.jimpryor.net/teaching/guidelines/writing.html
http://www.public.asu.edu/~dportmor/tips.pdf
http://catpages.nwmissouri.edu/m/rfield/guide.html
Here is a link to information about the 'Cornell' note taking system:
http://lifehacker.com/202418/geek-to-live--take-study+worthy-lecture-notes

4. PRESENTATION SCHEDULE AND READINGS

01/07: A traditional understanding of human intelligence and agency
Optional:
Descartes, (1637) selection from *Discourse on Method*
Turing, (1950) "Computing machinery and intelligence"
Block, (1981) "Psychologism and behaviorism"

01/14: The distinction between 'knowledge how' and 'knowledge that'
Ryle, (1949) "Knowing how and knowing that" (Chapter 2 of *The Concept of Mind*)
Stanley, (2011) "Ryle on knowing how" (Chapter 1 of *Know How*)
Dreyfus, Excerpt from *What Computers Can't Do*
Optional:
Fantl, (2008) "Knowing-how and knowing-that" (survey article)

01/21: 'Intellectualism'
Stanley, (2011) "Knowing (how)"
Stanley & Krakauer, (2013) "Motor skill depends on knowledge of facts"
Pavese, (2018) "Know-how, action, and luck"
Pavese, (2015) "Knowing a rule"
Optional:
Stanley & Williamson, (2001) "Knowing how"
Stanley, (2011) "The cognitive science of practical knowledge" (Chapter 7 of *Know How*)

01/28: Replies (and counter-replies)
Fridland (2015) "Knowing how: Problems and considerations"
Levy (2017) "Embodied savoir-faire: Knowledge-how requires motor representations"
Optional:
Noe, "Against intellectualism"

02/04: Skill, control, and automaticity #1: The limits of flexible goal-directedness
Pavese (2019) "The psychological reality of practical representations"
Papineau (2013) "In the zone"
Fridland (2017) "Skill and motor control: intelligence all the way down"
Optional:
Fridland (2014) "They've lost control: Reflections on skill"
Mylopoulos & Pacherie (2019) "Intentions: The dynamical hierarchical model revisited"
Haith & Krakauer, (2013) "Theoretical models of motor control and motor learning" (empirical survey)

02/11: Skill, control, and automaticity #2: The extent of conscious cognition in skill
Schlosser (forthcoming) "Dual-system theory and the role of consciousness in intentional action"
Christensen, Sutton, & McIlwain (2016) "Cognition in skilled action: Meshed control and the varieties of skill experience"
Shepherd, (2015) "Conscious control over action"
Optional:
Christensen (2019) "Skilled action" (survey article)

02/18: Reading week
No readings.

02/25: Skill, control, and automaticity #3: Attention's role in skilled action
Wu, (2011) "Attention as selection for action"
Wu, (2015) "Experts and deviants: The story of agential control"
Blais, "Implicit versus Deliberate Control and Its Implications for Awareness"

03/03: Flow and effortless attention in skilled action
Bruya, "Toward a Theory of Attention That Includes Effortless Attention and Action
Csikszentmihalyi and Nakamura "Effortless Attention in Everyday Life : A Systematic Phenomenology"
Harris et al., "The Neurocognitive Mechanisms of Flow"

03/10: Losing control: distraction and self-focus
Shucker, Hagemann, & Strauss, (2013) "Attentional processes and choking under pressure"
Carr, "Strengths and weaknesses of reflection as a guide to action: Pressure assails performance in multiple ways"
Montero, (2015) "Is monitoring one's action causally relevant to choking under pressure?"

03/17: Losing control: distraction and self-focus #2
Christensen, Sutton, & McIlwain,, (2014) "Putting pressure on theories of choking: Towards an expanded perspective on breakdown in skilled performance"
Bermudez, (2018) "Do we reflect while performing skillful actions? Automaticity, control, and the perils of distraction"
Eysenck and Derakshan, (2011) "New perspectives in attentional control theory"

03/24: The interface problem
Butterfill and Sinigaglia, (2014) "Intention and motor representation in purposive action"
Burnston, (2017) "Interface problems in the explanation of action"
Mylopoulos & Pacherie, (2017) "Intentions and motor representations: The interface challenge"

03/31: Interface Problem continued
Shepherd, (2017) "Skilled action and the double life of intention"
Fridland, (2019) "Intention at the interface"
Shepherd - (2018) "Intelligent action guidance and the use of mixed representational formats"