

THEORY OF MIND

Psychology 456

Queen's University

Fall 2014

TU: 1–2:30, TH: 11:30–1, C508, Mackintosh-Corry

M. Sabbagh

sabbagh@queensu.ca

3-2887

Syllabus

Introduction

Theory of mind is the everyday understanding that people do things because of their mental states such as *intentions*, *beliefs*, and *desires*. We call it a “theory” because we cannot see these mental states -- they are theoretical constructs. These theoretical constructs, though, are powerful and allow us to understand the proximal causes of human behavior. Using our theory of mind, we can both explain what a person has done, and predict what that person will do in the future. Some researchers and theorists use the term “folk psychology” to describe theory of mind. It is our everyday, non-scientific, understanding of the basic psychological mechanisms that cause everyday behavior.

For some time now, developmental psychologists have been studying the developmental timetable and trajectory of young children's theory of mind. Hundreds of studies have been published investigating young children's understanding of psychological states and how they affect behavior. This literature is diverse yet coherent, and arguably we know more about this one particular aspect of human cognitive development than any other. Because of its richness, researchers have used theory of mind as a window on children's cognitive development more generally; as the basic phenomena that constitute theory of mind reasoning are gradually uncovered, so too are fundamental insights into the very mechanisms by which development takes place. Clinicians have also found theory of mind to be useful. Difficulties in theory of mind development have been linked to Autism, conduct disorder, language delays and a host of other developmental difficulties. Thus, theory of mind development is not only an interesting topic of study, it is also of practical importance.

General Structure of the Course

The course will be divided into two modules, each comprising 6 weeks of the class.

Module I: Weeks 1–6

In the first module, we will learn how researchers conceptualize theory of mind, and the developmental trajectory of theory of mind concepts in young children. In each case, we will gain exposure to important general issues that face developmental psychologists, such problems of interpreting children's behaviour in experimental tasks, characterizing theoretical mechanisms of development, and understanding the interplay between biology and experience in shaping development.

For each class during this module, we will have a reading or two that students will be expected to have read in advance and composed a short, informal "reaction" thought for (see attached). I will make a brief presentation on the article, highlighting what I think are key points. After about 20 minutes, we will then turn to a discussion phase. For the first 30 minutes of the discussion phase, students will spend time in groups discussing the questions and "reactions" that each student brought along. For the second 30 minutes, I will ask a spokesperson for the group (a different one each day) to share back with the class something that emerged from the discussion as particularly interesting, puzzling, or noteworthy.

At the end of week 4, I will assign four essay questions related to the material that is covered in the first module. Responses to these essay questions will be due on the first day of week 7.

Assessment for Module 1 will be made as follows:

- 35% — Reading response papers
- 25% — Discussion participation
- 45% — Essay Questions

Module II: Weeks 7–12

In the second module, we will build on the basics acquired in the first module to explore how a theory of mind perspective can help us to understand children's developing abilities to negotiate a host of everyday social challenges.

To achieve these goals, students will work throughout the module in a group. Each group will tackle one of six challenges and be responsible for three main goals — a) conceptualizing through how a theory of mind perspective on the challenge might be useful, b) finding and reviewing the extant literature that may speak to whether theory of mind skills are related

to the challenge, and c) identifying future directions for research on the topic.

The ultimate product for the group will be to co-author a review article like those that are published in a general psychology journal called *Trends in Cognitive Sciences*. There are many examples of what these kinds of papers can look like and I will go over one in detail for the class. Typically, *TiCS* papers comprise approximately a 3000 word organized essay review that is accompanied by figures and “boxes” that provide succinct summaries of research paradigms, a general pattern of research findings, or a specific study’s worth of data from a paper that might be particularly illustrative of a particular phenomenon. The reason for choosing this format in particular it is a flexible one with many options for creatively and clearly communicating important information to a broad population.

In the first two weeks (7 & 8), we will take class time for group work to conceptualize the paper. The goal is that by the end of these first two weeks, groups will submit to me a basic outline for their review papers, and a detailed plan for how the work will be divided evenly among the members of the group.

In the next week (9), I will ask each group to make a 25 minute informal presentation to the class that describes their challenge, why a theory of mind approach might be interesting, and then sketches out the broad topics that they will be researching. In essence, this should be a relatively detailed presentation of the introductory material for the paper, but then only an outline of the “research” that they will be doing for their paper. The purpose of this presentation is twofold. First is to encourage all groups to crystallize the conceptualization of their papers to the extent that they can communicate clearly to the group. Second is to communicate material that a given group is working on to the rest of the students in the course. Of course, I expect that during these weeks students will continue working on their research and writing outside of class hours.

In week 10 and then part of week 11, we will have more time for group work. It is my hope that members of the group will have rough drafts of their contributions to the *TiCS* article and will thus have the opportunity to get constructive feedback on the ideas and writing from their other group members. By the end of this period, the article should have its basic form, even if it’s rough.

At the end of week 11 and for all of week 12, we will have two groups make presentations to communicate the results of their research. This presentation should only remind the class of the introductory material but delve more deeply into the research that they have done. As with the first presentations, the purpose is to encourage groups to make progress toward

their goals while communicating material to the rest of the students in the course. Presentations can be up to 40 minutes long each (inclusive of discussion time), and we will leave some time at the end for the rest of the students in the course to evaluate what they have learned.

Each group's review paper will be due on the Monday Dec 1, which is the first Monday after classes official end. Only one paper will be submitted along with a detailed description of the work that each person in the group did, agreed upon and attested by each member of the group.

Special notes about group work

I realize that group work poses many challenges as students with different motivations, backgrounds, and talents are asked to work together toward a common goal. Some of the challenges are similar to those that are faced in real-world productive environments, academic or otherwise. I expect that each group will have some of these sorts of everyday challenges and will organize themselves to negotiate them successfully. I will do my best facilitate that process, but would like to emphasize some ground rules that may help folks get off on the right foot.

One of the biggest challenges of working in a group is when someone has an idea or a suggestion that another in the group is critical of. These situations inevitably arise and when they do, two things are important.

1. The one who is being critical must phrase their comments in terms of the idea, and not the person.
2. Given that criticisms are not intended as judgments on the person, it is important not to take them as such.
3. Specific criticisms of ideas are clear, constructive and emphasize that everyone is working toward a common goal. Non-specific criticisms feel unprincipled, ad hoc, and are more easily taken personally. For instance, try not to say "This doesn't make sense to me." Instead, try to say "I am not sure I understood what you were getting at here, because..." Specific criticisms invite discussion whereas non-specific ones shut it down.
4. Win some, lose some: As decisions are being made about how the article is shaping up, hard feelings can develop if it seems that there are one or two group members who are most likely to have their suggestions followed. To avoid this, group members should stake out limited sections in which they will have final say, and limit themselves to a generous advisory role on the rest of the sections.

The second biggest challenge of working in a group is ensuring that everyone does equal work to the best of their ability. I hope it does not sound too cynical to say that I doubt that it is possible to meet this challenge to full satisfaction. For this reason I will be putting in place two mechanisms for ensuring that no group members suffer because of a colleague's insufficient efforts.

1. At the end of every class period in which group work is scheduled, I will come around toward the the end and determine that there is a clear, mutually agreed upon plan for all group members in terms of what they are expected to do to facilitate progress in the group. I will write these expectations down and present them at the beginning of the next group session.

2. I will regularly ask students to confidentially rate the extent to which group members are contributing to the progress of the project. These will be done on standardized rating forms that I will hand out at different phases of the group work project.

3. Grades for the group work portion will be based upon the contribution that each person makes, and not on the contributions of the other students. The idea is that students can work together to help one another develop better work, but if someone in the group "bails," the rest of the students in the group **WILL NOT BE PENALIZED**. This will be true even if the extent to which a student bails is extreme.

Assessment for Module II will be made as follows:

- 20% — Quality of contribution to group work as apparent to me and rated by members of the group
- 30% — Quality of contribution to the presentations
- 30% — Quality of *unique* contribution to the review paper
- 20% — Contribution to the overall quality of the review paper as apparent to me and rated by members of the group.

Schedule of Class Topics and Readings

MODULE I

Week 1: What is a theory of mind?

Tuesday, Sept. 9: Introduction to the class, sign ups

Thursday, Sept. 11: “Social” cognition in the wild

Dally, J. M., Emery, N. J. & Clayton, N. S. (2006). Food-caching western scrub-jays keep track of who was watching when. *Science*, 312, 1662-1665.

Week 2: Diagnosing theory of mind in children

Tuesday, Sept. 16: The “false belief” task

Wellman, H. M., Cross, D. & Watson, J. (2001). Meta-analysis of theory-of-mind development: The truth about false belief. *Child Development*, 72, 655-684.

Thursday, Sept 18: False belief in younger children and infants

Onishi, K. H. & Baillargeon, R. (2005). Do 15-month-old infants understand false beliefs? *Science*, 308, 255-258.

Perner, J. & Roessler, J. (2012). From infants’ to children’s appreciation of belief. *Trends in Cognitive Sciences*, 16, 519-525.

Week 3: Domain-general processes and theory of mind

Tuesday, Sept 23: Executive Function

Sabbagh, M. A., Xu, F., Carlson, S. M., Moses, L. J. & Lee, K. (2006). The development of executive functioning and theory of mind: A comparison of Chinese and U.S. preschoolers. *Psychological Science*, 17, 74-81.

Thursday, Sept 25: Language

Milligan, K., Astington, J. W., & Dack, L. A. (2007). Language and theory of mind: Meta-analysis of the relation between language ability and false-belief understanding. *Child Development, 78*, 622–646.

Week 4: Broader conceptualizations of theory of mind

Tuesday, Sept. 30: Understanding desires and ignorance before false belief

Wellman, H. M. & Liu, D. (2004). Scaling theory of mind tasks. *Child Development, 75*, 523–541.

Thursday, Oct. 2: Imitation

Meltzoff, A. N. & Williamson, R. A. (2013). Imitation: Social, cognitive and theoretical perspectives. In P. D. Zelazo (Ed.), *The Oxford Handbook of Developmental Psychology* (pp. 651–682). Oxford: Oxford University Press.

Week 5: Biological bases of Theory of Mind

Tuesday, Oct. 7: Brain development

Sabbagh, M. A., Bowman, L. C., Evraire, L. E., Ito, J. M. B. (2009). Neurodevelopmental correlates of theory of mind in preschool children. *Child Development, 80*, 1147–1162.

Thursday, Oct. 9: Genetic and temperamental effects

Lackner, C. L., Sabbagh, M. A., Hallinan, E., Liu, X., & Holden, J. J. A. (2011). Dopamine receptor D4 gene variation predicts preschoolers' developing theory of mind. *Developmental Science*.

Wellman, H. M., Lane, J. D., LaBounty, J. & Olson, S. L. (2011). Observant, nonaggressive temperament predicts theory of mind development. *Developmental Science, 14*, 319–326.

Week 6: Experiential bases of Theory of Mind

Tuesday, Oct. 14: Language

Pyers, J. E. & Senghas, A. (2009). Language promotes false-belief understanding: Evidence from learners of a new sign language. *Psychological Science*, 20, 805-812.

Thursday, Oct. 16: Siblings and Peers

McAlister, A. & Peterson, C. C. (2006). Mental playmates: Siblings, executive functioning, and theory of mind. *British Journal of Developmental Psychology*, 24, 733-751.

Wang, Y. & Su, Y. (2009). False belief understanding: Children catch it from classmates of different ages. *International Journal of Behavioral Development*, 33, 331-336.

MODULE II

Weeks 7 & 8: In-class group work

Outlines for review papers and detailed plans for dividing work equally are due at the end of class on October 30.

Week 9: Introductory Presentations

Although this week we will have group presentations in class, I am assuming that everyone will be continuing their work on their contributions to the review papers outside of class. This will include doing the research, integrating thoughts, and beginning work on a rough draft of their contribution.

Tuesday Nov 4

Presentations from groups A, B, & C.

Thursday Nov 6

Presentations from groups D, E, & F.

Week 10: In-class group work

Group members should be circulating rough drafts of their unique contributions to the review paper to other group members for feedback, editing, and integration into the whole paper.

Week 11: Final Presentations Begin

Tuesday, Nov. 18: In-class group work
Continuing from the goals of week 10.

Thursday, Nov 20:
Presentations from Groups A & B

Week 12: Final Presentations

Tuesday, Nov 25
Presentations from Groups C & D

Thursday, Nov 27
Presentations from Groups E & F

**FINAL VERSIONS OF TICS ARTICLE DUE ON
MONDAY, DEC 1.**