

Syllabus:
PSYC G4280 – Core Knowledge
Dr. Koleen McCrink
Fall 2017

Description

PSYC G4280. Core Knowledge (seminar).
4 pts. Wednesday, 12:10 – 2:00, 200C Schermerhorn
Office Hours: 2:00 – 4:00 Milbank 415J (Barnard Campus)
Prerequisites: Courses in introductory psychology, cognitive or developmental psychology, and instructor permission.

Core Knowledge explores the origins and development of knowledge in infants and young children. In this course, we will examine the child's conception of objects, number, language, and the social world. We will look at which aspects of knowledge are uniquely human, and which are shared with other animals.

This course provides an overview of the methods and theories regarding cognitive development, specific to the domain of fundamental properties of the mind. It serves to introduce several well-defined topics in cognitive development that many scientists believe to be foundational to our ability to navigate the world.

PSYC G4280 is an advanced seminar, designed particularly for graduate students, for advanced undergraduates who are majoring in Psychology or in Neuroscience and Behavior, and for students participating in the Postbac Psychology Program. These students will have priority in registration, followed by junior majors followed by non-majors.

It fulfills the following degree requirements:

- For Psychology Graduate Students, PSYC G4280 will apply toward the “two seriously graded seminars” requirement of the Master’s degree.
- For the Psychology major or concentration in the College and in G. S., for the Psychology minor in Engineering, and for the Psychology Postbac, G4280 meets the Group I (Perception and Cognition) distribution requirement.
- For the Neuroscience and Behavior joint major, G4280 will fulfill the 5th Psychology requirement: “one advanced psychology seminar from a list approved by the Psychology Department advisor to the program.”
- For non-majors in the College and GS, G4280 will count as one term of the natural science requirement, provided that students obtain the necessary permission and have taken the prerequisite psychology courses. Graduate students, and students who are majoring in Psychology or in Neuroscience and Behavior, will have priority

over students who are taking the course for the science requirement, and we anticipate the course will rarely be used for the latter.

- For the Psychology Postbac certificate, PSYC G4280 will fulfill the advanced seminar requirement.
- For the Barnard Psychology major, PSYC G4280 will fulfill the senior seminar requirement.

The reading list and weekly syllabus

Below is a list of required readings for each class. All readings can be found on the class's Courseworks site.

Weekly Topics and Readings (in order of recommended reading order for each class):

1. (9/6/16) *Introduction to the course*

2. (9/13/16) *In utero learning*

DeCasper & Fifer (1980) Of human bonding: Newborns prefer their mothers' voices.

Nazzi, Bertoni, & Mehler (1998) Language discrimination by newborns: Towards and understanding of the role of rhythm.

Mennella, Jagnow & Beauchamp (2001) Prenatal and postnatal flavor learning by human infants.

DiPietro, Costigan, & Gurewitch (2003) Fetal response to induced maternal stress.

Partanen, Kujala, Natanen, Litola, Sambeth, & Huotilainen (2013) Learning-induced neural plasticity of speech processing before birth.

3. (9/20/16) *Memory*

Rovee Collier, Sullivan, Enright, Lucas & Fagan (1980) Reactivation of infant memory.

Simcock & Hayne (2002) Breaking the barrier: Children fail to translate their preverbal memories into language.

Hupbach, Gomez, Bootzin, & Nadel (2009) Nap-dependent learning in infants.

Seehagen, Conrad, Herbert, & Schneider (2015) Timely sleep facilitates declarative memory consolidation in infants.

4. (9/27/16) Face Processing

Bushnell (2001) Mother's face recognition in newborn infants.

Pascalis, deHaan, & Nelson (2002) Is face processing species-specific during the first year of life?

Macchi Cassia, Turati, & Simion (2004) Can a non-specific bias towards top-heavy patterns explain newborns' face preferences?

Bar-Haim, Ziv, Lamy, & Hodes (2005) Nature and nurture in own-race face processing.

Kelly, Quinn, Slater, Lee, Ge, & Pascalis (2007) The other-race effect develops during infancy: Evidence of perceptual narrowing.

Farroni, Massaccesi, Menon, & Johnson (2007) Direct gaze modulates face recognition in young infants.

5. (10/4/16) Objects and Number

Kellmann & Spelke (1983) Perception of partly-occluded objects in infancy.

Baillargeon, R. (1987) Object permanence in 3½- and 4½-month-old infants.

Wynn, K. (1992) Addition and subtraction by human infants.

Feigenson & Carey (2005) On the limits of infants' quantification of small object arrays.

McCrink & Wynn (2004) Large-number addition and subtraction by human infants.

Bulf, de Hevia, & Macchi Cassia (2015) Small on the left, large on the right: Numbers orient visual attention onto space in preverbal infants.

6. (10/18/16) Symbolism

Elder & Pederson (1978) Preschool children's use of objects in symbolic play.

Zaitchick (1990) When representations conflict with reality: The preschoolers problem with false beliefs and "false" photographs.

Deloache (1991) Symbolic functioning in very young children: Understanding of pictures and models.

Deloache, Miller, & Rosengren (1997) The credible shrinking room: Very young children's performance with symbolic and non-symbolic relations.

DeLoache, J. S., Uttal, D. H., & Rosengren, K. S. (2004). Scale errors offer evidence for a perception-action dissociation early in life.

Bloom, P., & Markson, L. (1998). Intention and analogy in children's naming of pictorial representations.

8. (10/25/16) Theory of Mind

Baron-Cohen, S., Leslie, A., & Frith, U. (1985) Does the autistic child have a "theory of mind"?

Repacholi & Gopnik (1997) Early reasoning about desires: Evidence from 14- and 18-month-olds.

Onishi, K. & Baillargeon, R. (2005) Do 15-Month-Old Infants Understand False Beliefs?

Schick, De Villiers, De Villiers, & Hofmeister (2007) Language and theory of mind: A study of deaf children.

Pyers, J., & Senghas, A. (2009) Language promotes false-belief understanding: Evidence from learners of a new sign language.

9. (11/1/16) Language 1

Terrace, H., Petitto, L., Sanders, R., & Bever, T. (1979) Can an ape create a sentence?

Dehaene-Lambertz, Dehaene, & Hertz-Pannier (2002) Functional neuroimaging of speech perception in infants.

Newport (1990) Maturation constraints on language learning.

Petitto & Marantette (1991) Babbling in the manual mode: Evidence for the ontogeny of language.

Senghas, A. and Coppola, M. (2001) Children creating language: how Nicaraguan sign language acquired a spatial grammar.

Suggested reading (long but amazing): Chomsky (1958) Review of BF Skinner's Verbal Behavior.

10. (11/8/16) Language 2

Eimas, P., Siqueland, E., Jusczyk, P., & Vigorito, J. (1971) Speech perception in infants.

Werker & Tees (2002) Cross-language speech perception: Evidence for perceptual reorganization during the first year of life.

Berko, J. (1958). The child's learning of English morphology.

Markman & Wachtel (1988) Children's use of mutual exclusivity to constrain the meanings of words.

Tomasello & Farrar (1986) Joint attention and early language.

11. (11/15/16) Animacy

Meltzoff & Borton (1979) Intermodal matching by human neonates.

Gergely, G., Nadasdy, Z., Csibra, G., & Biro, S. (1995) Taking the intentional stance at 12 months of age.

Poulin-Dubois, Lepage, & Ferland (1996) Infants' concept of animacy.

Johnson, S.C., Slaughter, V., & Carey, S. (1998). Whose gaze will infants follow? Features that elicit gaze-following in 12-month-olds.

Woodward, A. (1998) Infants selectively encode the goal object of an actor's reach. *Cognition*, Vol. 69, 1-34.

Newman, Keil, Kuhlmeier, & Wynn (2010). Early understandings of the link between agents and order.

12. (11/23/16) NO CLASS: Thanksgiving holiday

13. (11/29/16) Student presentations on precocious social understanding

Cluster 1: Imitation

Meltzoff (1995) Understanding the intentions of others: Re-enactment of intended acts by 18-month-old children.

Gergely, G., Bekkering, H., & Kiraly, I. (2002) Rational imitation in preverbal infants.

Cluster 2: Pedagogy

Topal, Gergely, Miklosi, & Erdohegyi, & Csibra (2009) Infants' perseverative search errors are induced by pragmatic misinterpretation.

Senju & Csibra (2008) Gaze following in human infants depends on communicative signals.

Bonawitz, Shafto, Goodman, Gweon, Spelke, & Shultz (2010) The double-edged sword of pedagogy.

Begus, Gliga, & Southgate (2014) Infants learn what they want to learn: Responding to infant pointing leads to superior learning.

Cluster 3: Prosociality

Hamlin, Wynn, Bloom, & Mahajan (2011) How infants and toddlers react to antisocial others.

Hamann, Warneken, Greenberg, & Tomasello (2011) Collaboration encourages equal sharing in children but not chimpanzees.

Cluster 4: Accent and Race

Kinzler, Dupoux, & Spelke (2007). The native language of social cognition.

Kinzler & Spelke (2011) Do infants show social preferences for people differing in race?

Cluster 5: Ritual and Culture

Legare, Wen, Hermann, Whitehouse (2015) Imitative flexibility and the development of cultural learning.

Wen, Hermann, & Legare (2016) Ritual increases children's affiliation with in-group members.

14. (12/6/16) Student presentations on unique grant proposals (final paper)

Course assignments, requirements, and grading

Attendance Policy: You may have one unexcused absence. More than one unexcused absence results in a loss of letter grade. To have an absence excused, you must ask your dean to send me an email explaining your absence, or bring a dated doctor's note.

Class presentations: 15% of final grade

On the next to last class, students will present an article from the required readings, along with additional supporting information they have acquired through their own research. Students should prepare a 5- to 10-minute presentation which incorporates thought-provoking questions addressed to the class. The presentation should be comprehensive, but be open enough in format to allow for ongoing discussion.

Class participation: 15% of final grade

Students are required to read all assigned papers before class, and ask relevant questions during each class meeting.

Discussion questions: 25% of final grade

Students will compose questions about the readings and email one question **per reading** to me, no later than 24 hours before class. CC yourself in to ensure that it went through. The grading is binary; any week in which the questions are poor (e.g., suggest that you did not read, or understand the point of, the readings) will be given a 0, resulting in a 2.5% overall grade reduction. No questions are due for the week of student presentations.

Final paper presentation: 15% of final grade

The last class will be devoted to a presentation of the grant experiments proposed in your final paper. Presentations will be brief (~5 minutes), with an additional 5 minutes for questions from your classmates, and will be graded on how well you convey the importance of the topic, the clarity of the discussion of the design and stimuli which address your question of interest, and your responses to the questions asked.

Research proposal: 30% of final grade

The final paper should take the form of a grant proposal. The topic can be of the student's choosing, but it must be on a subject that was discussed in class. The student must submit his/her paper idea by 11/15 and meet with the instructor at least one month prior to the due date, for discussion. The student's proposal on 11/15 should include a 10-reference literature review on the topic, and should be based on the assigned readings as well as original research done in a psychology database such as PsychInfo or Web of Science on the topic. Important criteria for grading will be theoretical motivation and rigor, attention to design and methods,

and inventiveness and value of the proposed studies. The paper should be 12-15 pages (double-spaced). It is recommended that students begin research on a topic fairly early in the semester so that he/she can develop and reflect on the ideas via class, and talk them over with the instructor during the individual meetings.

The research proposal will be due on Wednesday 12/14 @ 5 pm.