

**Core Seminar in Perceptual Cognition
Psychology 505
Emory University
Fall 2000**

Time and Location

Tuesdays and Thursdays, 1:00—2:15 PM
Psychology 322

Instructors

Instructor:	Lawrence W. Barsalou
Office:	Psychology 322
Office hours:	By appointment
Phone:	(404) 727-4338
Email:	barsalou@emory.edu

Instructor:	Philippe Rochat
Office:	Psychology 318
Office hours:	By appointment
Phone:	(404) 727-4284
Email:	psypr@emory.edu

Overview

This course is required of all graduate students in the Cognition and Development Program. Students from other psychology programs, from other Emory departments, and from other Atlanta universities are welcome as well. The course begins by reviewing the history of important previous work on perceptual cognition. Historical perspectives will be covered later for specific topics as well. For each topic, important issues, theories, findings, and methods will be addressed, using exemplary research as illustrations. In addition, each topic will be addressed from multiple perspectives, to the extent that work reflecting multiple perspectives exists. The perspectives most likely to be addressed include cognitive psychology, developmental psychology, cognitive neuroscience, and computational modeling.

Readings will typically be primary sources that cover theory, findings, and methods on the topics of interest. The specific readings selected will vary yearly to reflect the most current work in the field. In addition, background texts on cognition, development, cognitive neuroscience, and computational modeling are recommended. These texts will not be covered in the course, nor will they be required reading. Instead, they will provide tutorials as needed for students who lack strong background; they will also serve as reference sources for more experienced students who want to increase their background on specific topics.

Evaluation will be based on three sources: participation in the presentation and discussion of readings, weekly essays on assigned questions, and a diary of course notes. The course may be taken Pass/Fail. Students taking the course Pass/Fail do not have to write weekly essays, but must participate regularly in presenting and discussing papers, and they must turn in a diary. All first-year psychology students must take the course for a grade, as must all students in the Cognition and Development program who are using the course to satisfy a course requirement toward a degree.

Topic Cycle

For each of 12 topics to be covered, the topic will proceed as follows:

Prior to the first class meeting

Read and think about the essay question. For each topic, students will receive an integrative question that requires integrating material from the assigned readings and the class discussions. As students study the readings and discuss them in class, they should formulate an answer to the question. Students are free to work together in developing their thoughts and arguments.

Prior to the first class meeting, read the assigned articles and take some notes on them, which should be included in the diary. This material will acquaint students with basic issues, significant theories, relevant methods, and important findings.

Prepare for discussion of the assigned articles. A good strategy is to come up with questions and comments that you may have on them (again, things that could be included in the diary). Part of your grade will reflect in-class contributions to discussion.

Prior to the second class meeting

Prior to the second class meeting on a topic, students should read the assigned articles and prepare for discussion of them. Students should also continue developing their response to the topic's essay question.

Essay

At the start of the first class meeting of the next topic cycle, students must turn in their essay for the previous topic question. The essay must be typed, double-spaced, and contain no more than 1000 words of primary text (excluding references). The essay should show evidence of having read the articles carefully and of having incorporated the discussions on them. Essays may also incorporate material from the background texts and from other sources. A good essay should not only summarize material from these sources, it should go beyond them and show evidence of original analysis, organization, and insight. Rather than being a list of points, a good answer should take a position and provide a well-reasoned argument for it based on scientific evidence. The later section on grading will provide the specific criteria for grading essays. Essays turned in late will receive lower grades, unless extenuating circumstances are discussed ahead of time with the instructors. The essay for the final topic will be due several days after the final class meeting.

Presentations

Students are required to regularly present articles for discussion, and are expected to do so equally often as other students.

Diary

On the day that students turn in their final essay, they must also turn in their diary. The diary should include the following materials, each preceded by a page announcing the respective section:

- (1) All 12 essays (unless taking the course Pass/Fail).
- (2) Notes taken on the readings in preparation for the class discussion.
- (3) Notes taken during class.
- (4) Notes used for presented papers.
- (5) Any other notes that the student has made associated with the course.

The diary serves two purposes. The primary purpose is to organize the student's course materials in a way that will be useful for future reference. The secondary purpose is to allow the instructors to evaluate the student's involvement in the course, as indicated by their course notes.

Grading

For students taking the course for a grade, the various materials that each student develops will be weighted as follows:

Essays	70%
Regular presentation of readings	10%
Participation in discussions	10%
Diary	10%

For students take the course Pass/Fail, satisfactory performance on presentations, discussions, and the diary is required to pass.

Grading Criteria for the Essays

Typically, essays question will be graded on the following 5 criteria:

Completeness. Did the essay address *all parts of the question*? A serious attempt to answer all parts of the question will receive full credit, even if parts of the essay are weak, incorrect, etc. Failure to address part(s) of a question will reduce credit.

Study. Does the essay show clear evidence of *carefully studying* the content of the readings and discussions? Also does the essay attempt to integrate points and findings from most relevant parts of the readings and discussions. To the extent that an essay shows careful study (*correct* description of findings) and broad study (*full utilization* of findings), maximum credit will be given. To the extent that careful and broad study appears lacking, credit will be reduced.

Coherence. Is the essay *coherent*? A serious attempt to integrate *all parts of the argument* coherently will receive full credit. To the extent that an essay is a haphazard list of points, credit will be reduced. Ideally, an essay should make a coherent argument, or be coherent in some other way. It should be clear how the various sections of the essay relate, and the various sections should progress clearly and meaningfully.

Evidence. How well is *specific evidence* from the lectures and text used to support the main points of the coherent argument? To the extent that an essay just makes a set of general points, credit will be reduced. Neglecting to mention important and obvious findings from the readings and discussions will lower credit as well. Also, if the evidence mentioned does not really bear on a point, credit will be reduced. Typically, there will be no particular

evidence that must be mentioned. Of primary importance is mentioning a *sufficient amount* of evidence at a sufficiently specific level to justify the claims made.

Creativity. Does the essay indicate *creative attempts* to develop ideas and insights not present in the course materials? Does the essay indicate an attempt to discover a *thoughtful solution* to the problem posed in the question? To the extent that an essay simply reiterates course material and goes no further, credit will be reduced.

When students receive a graded essay back, the scores on each of the relevant sub-scales will be indicated. During the first few weeks, examples of excellent essays will be distributed to help students learn how to write on the questions effectively. Also, the instructors will be available to help students develop good strategies for preparing answers.

Final Grades

Final grades are not determined strictly by absolute levels of performance, nor strictly by curve. Typically, both factors are taken into account, depending on the particular group of students taking the course. If many students achieve high levels of performance, absolute grading criteria will dominate grading on the curve, such that more students receive higher grades. If few students achieve high levels of performance, absolute criteria may be relaxed, and grading on the curve will dominate to ensure that a reasonable number of students receive high grades. These are only rules of thumb, with the particular grading policy adopted reflecting the attitudes and abilities of the students taking the course, the difficulty of the assignments, the grading standards of the instructors, and so forth.

Background Texts

The following texts are not required reading. However, they may be used as reference sources when students deem necessary or useful. Specifically, these texts provide tutorials for students who lack strong background; they also serve as reference sources for more advanced students who need to increase their background on specific topics. Some of these texts are available at the University bookstore.

Text on Cognition

Eysenck, M.W., & Keane, M.T. (1995). *Cognitive psychology: A student's handbook* (3rd edition). Mahwah, NJ: Erlbaum.

Texts on Development

Bremner, J.G. (1994). *Infancy* (2nd ed.). Cambridge, MA: Blackwell.

Flavell, J.H., Miller, P.H., & Miller, S.A. (1993). *Cognitive development* (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.

Kellman, P. & Arterberry, M.E. (1998). *The cradle of knowledge: Development of perception in infancy*. Cambridge: M.I.T. Press.

Text on Cognitive Neuroscience

Gazzaniga, M.S., Ivry, R.B., & Mangun, G.R. (1998). *Cognitive neuroscience: The biology of the mind*. New York: Norton.

Johnson, M. (1997). *Developmental cognitive neuroscience*. Oxford, U.K.: Blackwell Publishers.

Texts on Computational Modeling

Anderson, J.A. (1997). *An introduction to neural networks*. Cambridge, MA: MIT Press. [a more advanced text]

Bechtel, W., & Abrahamsen, A. (1991). *Connectionism and the mind: An introduction to parallel processing in networks*. Cambridge, MA: Basil Blackwell. [an elementary text]

Elman, J. L., Bates, E. A., Johnson, M. H., Karmiloff-Smith, A., Parisi, D., & Plunkett, K. (1996). *Rethinking innateness: A connectionist perspective on development*. Cambridge, MA, USA: MIT Press

Course Schedule

Topic	Date	Sub-topic / Required Readings [assigned pages]
	Tues. Sept. 5	Course orientation
1. Historical background		
	Thurs. Sept. 7	Pre-twentieth century work in philosophy vs. amodal symbols Long, A.A., & Sedley, D.N. (1987). <i>The Hellenistic philosophers</i> (Vol. 1, pp. 72-78). Cambridge, MA: Cambridge University Press. [read all] Chappell, V. (1994). Locke's theory of ideas. In V. Chappell (Ed.), <i>The Cambridge Companion to Locke</i> (26-55). Cambridge, MA: Cambridge University Press. [read pages 26-28, 35-38, 44-49] Kant, E. (1965). <i>The critique of pure reason</i> (N.K. Smith, Trans). New York: St. Martin's Press. (Original work published in 1787) [read pages 180-187] Lehrer, K. (1989). <i>Thomas Reid</i> . New York: Routledge. [read pages 126-129] Russell, B. (1919). On propositions: What they are and how they mean. <i>Aristotelean Society Supplementary</i> , 2, 1-43. (Reprinted in Slater, J.G. (Ed.) (1986). <i>The collected papers of Bertrand Russell, Volume 8: The philosophy of logical atomism and other essays, 1914-19</i> (276-306). London: George Allen & Unwin.) [read pages 289-304] Palmer, S.E. (1999). <i>Vision science: From photons to phenomenology</i> . Cambridge, MA: MIT Press. [read pages 73-79]
	Tues. Sept. 12	Constructivism vs. the ecological approach Piaget, J. (1963). The mechanisms of perception. New York: Routledge and Kegan Paul. [Chapter 8: The epistemology of perception, pp.356-366]. [read pages 356-360] Bruner, J.S. (1957). Going beyond the information given. In J.S. Bruner, E. Brunswik, L. Festinger, F. Heider, K.F. Muenzinger, C.E. Osgood, & D. Rapaport, (Eds.), <i>Contemporary approaches to cognition</i> (pp. 41-69). Cambridge, MA: Harvard University Press. [Reprinted in Bruner, J.S. (1973). <i>Beyond the information given</i> (pp. 218-238). New York: Norton.]. [read pages 218-222] Gibson, J.J. (1979) <i>The ecological approach to visual perception</i> . Boston: Houghton-Mifflin. [Chapter 9, pp. 147-169]. [read pages 147-150, 156-169] Gibson, E.J. (1977). How perception really develops: A view from outside the network. In Laberge & Samuels, (Eds.). <i>Basic processes in reading: Perception and comprehension</i> (pp. 155-173). Mahwah, NJ: Erlbaum. [read pages 471-478]
2. Sensory-motor systems and their development		
	Thurs Sept. 14*	Behavioral findings Kellman, P. & Arterberry, M.E. (1998). <i>The cradle of knowledge: Development of perception in infancy</i> . Cambridge: M.I.T. Press. [Chap. 1: Views on perception and perceptual development; Chap. 2: Physiological and sensory foundations of perceptual development, pp. 1-77]. [browse all] Palmer, S.E. (1999). <i>Vision science: From photons to phenomenology</i> . Cambridge, MA: MIT Press. [Ch. 3. Color vision: A microcosm of vision science, 94-142] [browse all]
	Tues. Sept. 19	Neural systems

- Gazzaniga, M.S., Ivry, R.B., & Mangun, G.R. (1998). *Cognitive neuroscience: The biology of the mind*. New York: Norton. (Chapters 4, pp. 121-161) [browse all]
- Gazzaniga, M.S., Ivry, R.B., & Mangun, G.R. (1998). *Cognitive neuroscience: The biology of the mind*. New York: Norton. (Chapters 10, pp. 371-421) [browse all]

3. Perceptual organization

Thurs. Sept. 21* **Gestalt processes in vision and audition**

- Gibson, J.J. (1951). What is a form? *Psychological Review*, 58, 403-413. [read pages 403-406]
- Kellman, P. & Arterberry, M.E. (1998). *The cradle of knowledge: Development of perception in infancy*. Cambridge: M.I.T. Press. [Chap. 1: Views on perception and perceptual development; Chap. 5: Object perception, pp. 135-177]. [read pages 150-160]
- Bregman, A. S. (1990). *Auditory scene analysis: The perceptual organization of sound* (Ch. 1, 1-45). Cambridge, MA: MIT Press. [read pages 3-18]

Tues. Sept. 26 **Figure-ground and bio-motion**

- Peterson, M. A., & Gibson, B. S. (1994). Must figure-ground organization precede object recognition? *Psychological Science*, 5, 253-259. [read all]
- Berthenthal, B.I. & Pinto, J. (1993). Complementary processes in the perception and production of human movements. In Thelen & Smith (Eds.) *A dynamic systems approach to development: applications* (pp. 210-239). Cambridge, MA: MIT Press. [read pages 209-213, 221-226]

4. Top-down processes

Thurs. Sept. 28* **Inferences from dynamic mental imagery**

- Warren, R.M. (1970). Restoration of missing speech sounds. *Science*, 167, 392-393. [read all]
- Shiffrar, M., & Freyd, J.J. (1990). Apparent motion of the human body. *Psychological Science*, 4, 257-264. [read all]
- Stevens, J.A., Fonlupt, P., Shiffrar, M., & Decety, J. (2000). New aspects of motion perception: Selective neural encoding of apparent human movements. *NeuroReport*, 11, 109-115. [read all]
- Hespos, S. & Rochat, P. (1997). Dynamic mental representation in infancy. *Cognition*, 64, 153-188. [read pages 153-164]

Tues. Oct. 3 **Phantom limbs and perceived steepness**

- Ramachandran, V.S., & Hirstein, W. (1998). The perception of phantom limbs: The D.O. Hebb lecture. *Brain*, 121, 1603-1630. [read pages 1603-1614]
- Proffitt, D.R., Bhalla, M., Gossweiler, R., & Midgett, J. (1995). Perceiving geographical slant. *Psychonomic Bulletin & Review*, 2, 409-428. [read pages 409-418, 422-427]

5. Perception and action

Thurs. Oct. 5* **Action constraints on perception**

- Jeannerod, M. (1993). A theory of representation-driven actions. In Neisser (Ed.) *The perceived self* (pp. 68-88). Cambridge U. Press. [read pages 79-85]
- Rochat, P. & Wraga M.J. (1997) An account for the systematic error in judging what is reachable. *Journal of Experimental Psychology: Human Perception & Performance*, 23, 1, 199-212. [read pages 199-202]
- Rochat, P., & Senders, S. J. (1991). Active touch in infancy: Action systems in development. In M. J. S. Z. P. R. Weiss (Ed.), *Newborn attention: Biological constraints and the influence of experience* (pp. 412-442). Norwood, NJ, USA: Ablex Publishing Corp. [read pages 412-422]

Tues. Oct. 10 **Inter-modal perception**

- McGurk, H., & MacDonald, J. (1976). Hearing lips and seeing voices. *Nature*, 264, 746-748. [read all]
- Meltzoff, A.N. & Moore, K. (1997). Explaining facial imitation: theoretical model. *Infant Development and Parenting*, 6, 179-192. [read 179-183]
- Rizzolatti et al. (1996). Pre-motor cortex and the recognition of motor actions. *Cognitive Brain Research*, 3: 131-141. [read all]

6. Perceptual learning**Thurs. Oct. 12*** **Learning features and affordances**

- Schyns, P.G., Goldstone, R.L., & Thibaut, J.P. (1998). The development of features in object concepts. *Behavioral and Brain Sciences*, 21, 1-54. [read pages 1-10]
- Gibson, J.J. (1955). Perceptual learning: differentiation or enrichment? *Psychological Review*, 62, 32-41. [read all]
- Gibson, E.J. (1982). The concept of affordances in development: the renaissance of functionalism. In Collins (Ed.), *The concept of development. The Minnesota Symposium on Child Psychology* (Vol. 15, pp. 55-81). Mahwah, NJ: Erlbaum. [read pages 558-569]

Tues. Oct. 17 **No class. Fall break.****Thurs. Oct. 19** **Effects of category learning on perception**

- Goldstone, R. (1994). Influences of categorization on perceptual discrimination. *Journal of Experimental Psychology: General*, 123, 178-200. [read pages 178-191, 197-199]
- Werker, J.F. (1995). Exploring developmental changes in cross-language speech perception. In D. Osherson, (Ed.). *An invitation to cognitive science. Language* (pp. 87-107). Cambridge, MA: MIT Press. [read pages 87-94]

7. Episodic perceptual memory**Tues. Oct. 24*** **Implicit memory**

- Marlier, L., Schaal, B., & Soussignan, R. (1998). Neonatal responsiveness to the odor of amniotic and lacteal fluids: A test of perinatal chemosensory continuity. *Child Development*, 69(3), 611-623. [read all]
- Nygaard, L.C., Sommers, M.S., & Pisoni, D.B. (1994). Speech perception as a talker-contingent process. *Psychological Science*, 5, 42-46.

Thurs. Oct. 26 **Explicit memory**

- Drumme, A.B., & Newcombe, N. (1995). Remembering versus knowing the past: Children's explicit and implicit memories for pictures. *Journal of Experimental Child Psychology*, 59, 549-565. [read pages all]
- Intraub, H., Gottesman, C.V., & Bills, A.J. (1998). Effects of perceiving and imagining scenes on memory for pictures. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 24, 186-201. [read pages 186-192, 194-199]

8. Imagery in working memory**Tues. Oct. 31*** **Behavioral findings**

- Piaget, J. (1956). *The child's conception of space*. London: Routledge and Kegan-Paul. (Chap. 13, Systems of reference and horizontal-vertical coordinates, pp. 375-418) [read pages 375-384]
- Finke, R.A. (1989). *Principles of mental imagery*. Cambridge, MA: MIT Press. (Chapter 1 and 2, pp. 1-58) [browse all, especially 1-7, 21-26, 29-36, 41-44, 50-56]

Thurs. Nov. 2 **Neural findings**

- Farah, M.J. (2000). The neural bases of mental imagery. In M.S. Gazzaniga (Ed), *The cognitive neurosciences* (2nd ed., 965-974). Cambridge, MA: MIT Press. [read all]
 Jeannerod, M. (1995). Mental imagery in the motor context. *Neuropsychologia*, 33, 1419-1432. [read all]

9. Perceptual grounding of knowledge

Tues. Nov. 7* **Perceptual representations of knowledge**

- Mandler, J.M. (1992). How to build a baby: II. Conceptual primitives. *Psychological Review*, 99, 587-604. [read pages 587-597]
 Barsalou, L.W. (1999). Perceptual symbol systems. *Behavioral and Brain Sciences*, 22, 577-609. [read pages 582-603]

Thurs. Nov. 9 **Empirical evidence**

- Eimas, P. D., & Quinn, P. C. (1994). Studies on the formation of perceptually based basic-level categories in young infants. *Child Development*, 65, 903-917. [read pages 903-908]
 Barsalou, L.W., Solomon, K.O., & Wu, L.L. (1999). Perceptual simulation in conceptual tasks. In M.K. Hiraga, C. Sinha, & S. Wilcox (Eds.), *Cultural, typological, and psychological perspectives in cognitive linguistics: The proceedings of the 4th conference of the International Cognitive Linguistics Association, Vol. 3* (209-228). Amsterdam: John Benjamins. [read pages 212-224]

10. Perception and language

Tues. Nov. 14* **Lexical semantics**

- Potter, M.C., Kroll, J.F., Yachzel, B., Carpenter, E., & Sherman, J. (1986). Pictures in sentences: Understanding without words. *Journal of Experimental Psychology: General*, 115, 281-294. [read all]
 Stanfield, R.A., & Zwaan, R.A. (in press). The effect of implied orientation derived from verbal context on picture recognition. *Psychological Science*. [read all]

Thurs. Nov. 16 **Comprehension**

- Bower, G.H., & Morrow, D.G. (1990). Mental models in narrative comprehension. *Science*, 247, 44-48. [read all]
 Intraub, H., & Hoffman, J.E. (1992). Reading and visual memory: Remembering scenes that were never seen. *American Journal of Psychology*, 105, 101-114. [read 101-106]
 Gernsbacher, M.A., Varner, K.R., & Faust, M.E. (1990). Investigating differences in general comprehension skill. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 16, 430-445. [read pages 432-438]
 Gibson, E.J. (1970). The ontogeny of reading. *American Psychologist*, 25, 136-143. [read all]

11. Perception and thought

Tues. Nov. 21* **Object permanence**

- Spelke, E. S. (1991). Physical knowledge in infancy: Reflections on Piaget's theory. In S. G. R. Carey (Ed.), *The epigenesis of mind: Essays on biology and cognition. The Jean Piaget Symposium series* (pp. 133-169). Mahwah, N: Erlbaum. [read all]

Thurs. Nov. 23 **No class. Thanksgiving holidays.**

Tues. Nov. 28 **Number**

- Wynn, K. (1992). Addition and subtraction by human infants. *Nature*, 358(6389), 749-750. [read all]
 Simon, T. J. (1997). Reconceptualizing the origins of number knowledge: A "non-numerical" account. *Cognitive Development*, 12, 349-372. [read pages 349-356]

Simon, T. J., Hespos, S. J., & Rochat, P. (1995). Do infants understand simple arithmetic? A replication of Wynn (1992). *Cognitive Development*, 10, 253-269. [read all]

Thurs. Nov. 30 **Causality**

Michotte, A. (1963). *The perception of causality*. London: Methuen. (Chap. 17, The origins of the idea of causality, pp. 255-286). [read pages 275-286]

Leslie, A. M. (1984). Spatiotemporal continuity and the perception of causality in infants. *Perception*, 13, 287-305. [read all]

Tues. Dec. 5 **Simulation**

Kahneman, D., & Tversky, A. (1982). The simulation heuristic. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases* (pp. 201-210). New York: Cambridge University Press. [read all]

Ahn, W., & Bailenson, J. (1996). Causal attribution as a search for underlying mechanisms: An explanation of the conjunction fallacy and the discounting principle. *Cognitive Psychology*, 31, 82-123. [read pages 82-101]

12. Social perception

Thurs. Dec. 7* **Face and body perception**

Johnson, M. (1997). *Developmental cognitive neuroscience*. Oxford, U.K.:Blackwell Publishers. (Chapter 4, Face recognition and social cognition, pp 98-125). [read pages 98-102, 117-125]

Adolphs, R., Damasio, H., Tranel, D., Cooper, G., & Damasio, A.R. (2000). A role for somatosensory cortices in the visual recognition of emotion as revealed by three-dimensional lesion mapping. *Journal of Neuroscience*, 20, 2683-2690.[read all]

Williamson, D.A., Davis, C.J., Goreczny, A.J., Blouin, D.D. (1989). Body-image disturbances in bulimia nervosa: Influences of actual body size. *Journal of Abnormal Psychology*, 98, 97-99. [read all]

Tues. Dec. 12 **Interaction**

Bigelow, A. E. (1998). Infants' sensitivity to familiar imperfect contingencies in social interaction. *Infant Behavior & Development*, 21, 149-161. [read all]

Rochat, P., Morgan, R., & Carpenter, M. (1997). Young infants' sensitivity to movement information specifying social causality. *Cognitive Development*, 12, 441-465. [read all]

Fri. Dec. 13* **No class.**
Essay on topic 12 due.
Diary due.

* On these days, an essay will be due at the start of class for the previous topic.

Integrative Questions

Topic 1: Historical background

Historically, what have theorists had to say about the relation between cognition and perception? And what have they had to say about the development of this relation?

Topic 2: Sensory-motor systems

In this week's readings, you've encountered the behavioral and neural approaches to the study of sensory-motor systems. To what extent can perception and action be reduced to neural mechanisms? To what extent can they be explained without considering neural mechanisms?

Topic 3: Perceptual organization

What implications does perceptual organization have for classic positions, such as psychophysics, constructivism, and the ecological approach? What advantages might be associated with developing perceptual organization?

Topic 4: Top-down processes

Considering top-down effects in perception, how tenable is the view that perception and cognition are independent systems?

Topic 5: Perception and action

What have researchers discovered about the relation between perception and action, and about its development?

Topic 6: Perceptual learning

How much plasticity is there in perception and action? To what extent do rigid pre-wired systems underlie them?

Topic 7: Episodic perceptual memory

To what extent do perception and memory function as independent modular systems? Can perception and memory be studied independently?

Topic 8: Imagery in working memory

To what extent is imagining the world related to perceiving and acting in it?

Topic 9: Perceptual grounding of knowledge

To what extent is the human conceptual system grounded in sensory-motor mechanisms? On the other hand, why must it be more than a recording system?

Topic 10: Perception and language

What roles do sensory-motor systems play in language comprehension? What are the limitations, if any, of explaining language comprehension in this way?

Topic 11: Perception and thought

To what extent do infants and adults have abstract reasoning schemes that operate independently of sensory-motor experience?

Topic 12: Social perception

What is special about perceiving other people as opposed to perceiving inanimate objects and events?