Theory of Decision and Choice
PSYC 707
Fall 2023
Syllabus

Professor: James A. Grand
Course Time: Tuesday 2:00-4:30pm
Location: 1103 Biology-Psychology
Office: 3147A Biology-Psychology
Office Hours: By appointment
Contact: xxxxxxxxxx

Course Description

Judgment, decision-making, and choice are processes which permeate virtually every aspect of human life—and the theoretical perspectives and practical applications of these concepts are equally large and diverse. This course is designed to be a survey of key theories and considerations related to the formal study of human decision and choice. Through reading, discussion, and evaluation, you will participate in developing an integrative view of both historical and contemporary approaches to understanding human decision-making, the methods used to study these phenomena, and applications of research in this area.

This class is a participative seminar; a self-guided learning experience. You should not approach this class as one in which the professor makes all the decisions about what content is most important and how that content should be discussed or interpreted. Instead, you should approach this class as an independent thinker who will contribute and develop their own unique perspectives to the course content. I have provided a structured set of topics and associated readings to stimulate our learning experience. My role will be to facilitate and participate in the learning process by serving as a resource and guide. I expect you to fulfill a similar role: your task is to critically evaluate the readings and actively share your thoughts, questions, and reactions during our meetings. Ultimately, my hope is to improve your understanding and appreciation of how human beings think, reason, and make inferences so that you can apply and integrate that knowledge into your own research and professional careers.

Course Objectives

The overarching goal for this course is to improve your understanding of key topics, theoretical foundations, and important areas of research and application related to human decision and choice.

By the end of this course, you should be able to:

1. Explain and critically evaluate major concepts and theories across a broad array of topics related to human decision-making
2. Constructively critique, integrate, and apply scholarly research to identify and address questions of interest for yourself and other researchers/practitioners in your discipline
3. Effectively develop and communicate—both orally and in writing—a well-reasoned research project and/or application of a formal decision model towards a topic of personal interest in your discipline.

Course Management

I will use Canvas (www.elms.umd.edu) to post all the materials and grades for the course. Unless otherwise instructed, you will upload all documents that you are required to turn into me (discussion questions, final paper, final exam) using Canvas as well. If you have any troubles accessing this space, please let me know ASAP.

Evaluation and Course Requirements

1. *Class Engagement (20%)*
   Active participation is a key component of the learning experience in this course—you need to acquire content, make sense of it, and then be prepared to engage in and contribute to the sense-making of all members in the course. All students are expected to attend each class meeting, read all assigned materials prior to class, and actively discuss and critically decompose the focal topic. We will focus our discussions on identifying the critical concepts and themes from each week and the utility of this content for researchers and practitioners. It is not important that every comment you make or question you raise be a deep insight or ground-breaking revelation; what is more important is that you attempt to make consistent contributions to our collective learning. This evaluation criterion will be used to capture your engagement in active, high-quality participation and critical evaluation of primary topics in the class. If necessary, I will provide a mid-semester review of class participation to give you an idea of how you are doing and identify any areas upon which you could improve.

2. *Points of Interest (20%)*
   For all classes with assigned readings, you will be asked to submit (via Canvas) a brief summary that reflects on points of interest (POIs) from the readings. These are **due the Monday before each class meeting by midnight (11:59pm).** Each summary should include the following items:
   a. A brief (3-5 sentence paragraph) summary that succinctly describes the major theme(s) of the week's readings
   b. A bulleted list of **at least four** POIs related to the readings. Each POI should be written as a complete statement (or set of statements) that could be used to stimulate thought, discussion, and maybe even debate during class. The specific nature of a POI can vary, but could cover aspects like:
      - Applications of findings from the papers to real-life (implications to address/explain real-world phenomena you've observed in the media, your daily life, etc.)
      - Future research ideas or areas for extending one or more of the readings
      - Confusing, unclear, or ambiguous aspects of any of the readings
      - Alternative explanations for findings and/or how a given finding/theory aligns or doesn't align with previous findings/theories
      - Connections to your own research (how it expands your thinking on current projects, supplements/contradicts current views in your area of expertise, etc.)
      - Anything else pertaining to the articles and/or theme of the readings that you would like to discuss in class

   POIs will be incorporated into class discussions and you may be asked to comment on and/or share your POI in class to stimulate our learning. This does not mean that we will address every POI or that these will be the only items discussed. The idea is to use the POIs to help organize your thoughts on the readings as well as aid the flow of class discussions. I will assess the POIs based on the extent to which they demonstrate your effort to critically and thoughtfully reflect on the readings. This evaluation criterion captures your ability to evaluate, integrate, and develop informed opinions on the primary topics in the class. As you start submitting these assignments, I will let you know if I feel there are specific ways I see that would improve POIs.

3. *Research Proposal (30%)*
   The written product for this course will be a research proposal. Details on the structure and requirements for the paper are provided on the next page. The purpose of the assignment is to give you an opportunity to apply the theories and perspectives on judgment and decision-making that we cover in the course to inform a potential research project in an area of interest to you. This evaluation criterion captures your ability to develop independence and expertise as a researcher, as well as demonstrate your capacity to integrate knowledge and theory from the decision sciences into your domain of expertise.

4. *Presentation (15%)*
   In Weeks 14 and 15 of the course, you will present your final research proposal to the class. This

exercise provides an opportunity to share your project idea with the class, educate your colleagues on the specific theories and perspectives upon which you are drawing, and to receive and provide constructive feedback. Unless otherwise instructed, plan on preparing a 30-40 minute presentation plus time for questions. This evaluation criterion reflects the development of your presentation and communication skills—which are central to your growth as an effective scientist and professional.

5. *Final Exam (15%)*
   There will be one exam for the class held during the final exam period of the fall semester (specific date TBD). The exam will consist of short-answer/essay questions and will be administered as a take-home exam. The exam is to be completed individually, but you may use any notes and articles from class to answer the questions. This evaluation criterion reflects your understanding of the knowledge you have learned in the course as well as coherently and competently explain fundamental concepts.

Final course grades will be calculated by weighting the total number of points earned within each of the four assignment categories by their respective percentages:

$$Final\ Grade = .2(Class\ engagement) + .2(POIs) + .3(Proposal) + .15(Presentation) + .15(Final\ exam)$$

The table below will be used to assign grades in the course based on the above computation based on the 100% maximum. If you accumulate the percentage points listed below, you are guaranteed that grade in the course. When required, percentage points get rounded to the nearest whole number.

Final Grade Conversions		
Percentage	**Grade**	**GPA**
97%+	**A+**	**4.0**
94%-96.9%	**A**	**4.0**
90%-93.9%	**A-**	**3.7**
87%-89.9%	**B+**	**3.3**
84%-86.9%	**B**	**3.0**
80%-83.9%	**B-**	**2.7**
77%-79.9%	**C+**	**2.3**
74%-76.9%	**C**	**2.0**
70%-73.9%	**C-**	**1.7**
67%-69.9%	**D+**	**1.3**
64%-66.9%	**D**	**1.0**
60%-63.9%	**D-**	**0.7**
0%-59.9%	**F**	**0.0**

Research Proposal

Theories, perspectives, and frameworks of human decision and choice are broadly applicable to many psychological and behavioral phenomena. For example, how do leaders in organizations make decisions about where and how to allocate resources? Why do romantic partners enter into bad relationships that, in hindsight, were obviously bad choices? How do voters integrate information and form opinions about what political candidates to elect? These—and many other questions—can be usefully considered through the lens of human decision and choice.

The final paper for this class will require you to apply course concepts to develop an independent project on a research question or topic of personal interest relevant to judgment and decision-making. The paper should be written as a research proposal and include the following:

- An introduction that describes the focal topic of the research and its relevance/significance. Additionally, a review of the relevant research literature on the topic that integrates one or more theories/perspectives of human decision and choice should be provided.
- One or more testable hypotheses or research questions that advance predictions supported by the summarized research literature.
- A potential research design for conducting a study to test the proposed hypotheses
- A hypothetical discussion section that summarizes implications from the study if results *were* consistent with the predictions and if the results *were not* consistent with the predictions.

There are no requirements/limitations on the length of the paper, though I anticipate that papers will likely be in the neighborhood of 15-20 pages of text (not including references). The paper should conform to APA guidelines for formatting and construction.

From today, you have 12 weeks to complete the paper. Major deadlines related to the project are listed below; adhering to these should help keep you on track. I am available for consultation throughout the semester, but I *strongly* urge you to take advantage of my advice EARLY in the process, especially if you would like guidance on topic selection.

- **Week 7 (10/10):** One page summary or your paper topic due **by the beginning of class**. The description will be turned in through Canvas. This should give a brief synopsis of the topic and its relevance to the course. Provide enough info to give me a sense that you have thought about your topic and have a good idea how to proceed.
- **Week 14 (11/26):** Final papers due and submitted through Canvas **by Sunday, November 26.** Late papers will have 5% deducted from the final grade each day late.
- **Weeks 14-15 (11/28 & 12/5):** Final presentations for research proposal. Students will sign up for presentation slots during Week 12 of the semester

Reading Assignments

The articles and book chapters listed at the end of this syllabus form the basis for our discussion each class period. You are expected to read all materials in advance so you have time to digest and prepare your POIs for that week's readings. As a survey course, we cover a breadth of material. I don't expect you to memorize or fully comprehend every word of the readings or be able to recall a list of seminal citations on each topic. Furthermore, many of the readings will describe formal computational and mathematical models that may be unfamiliar to you. If you do not have experience with reading and interpreting such theories, that is okay—***what is most critical is that you do your best to make sense of the paper and develop as coherent an understanding of the material as possible***. My expectation is for you to acquire the foundational information from each reading and then contribute to our collective learning during class discussion. Below are some strategies and suggestions for how to read the types of papers you will come across in this class:

- For a review reading, you should (1) have a clear understanding of the review structure, (2) be able to describe and discuss specific topics covered in the review, and (3) identify relevant theory and research issues.
- For a theory paper, you should focus on (1) the premise (background, assumptions, gap in the literature), (2) the proposed theoretical model and mechanisms, and (3) the research directions the theory prompts.
- For a paper containing a formal model, you should (1) have a clear understanding of the purpose and/or key question(s) addressed by the model, (2) be able to recognize the logic, rationale, and basic assumptions of the model, and (3) be able to summarize the insights, findings, and conceptual value generated by the model.
- For research papers, you should know (1) the key contribution, (2) the theoretical framework being examined (model, hypotheses, etc.), (3) the methodology employed, (4) key findings, and (5) future directions inspired by the research.

I **strongly recommend** that you take notes on key points from the readings to help facilitate your understanding. Many of the papers we will read are "classic" pieces in the field and ones that you will likely read and/or wish to refer to again and again throughout your career.

Course Rules and Policies

Class Attendance and Make-up Policy:
Documented attendance records will not be taken for this course; however, all students are expected to attend every class session and failure to attend to class will influence your participation grade.

Policies for missing or late assessments in this class are as follows:

1. *POIs*—Students will not be allowed to make-up missed or late POIs UNLESS prior permission has been obtained. Permission may only be granted for those who contact the instructor PRIOR to the scheduled date.
2. *Research Proposal*—The review paper is considered a "major scheduled grading event" as defined by the University of Maryland. In this case, you may turn in the paper late, but 5% will be deducted from the final grade for each day late UNLESS arrangements have been made PRIOR to the scheduled due date.
3. *Presentation*—Students will not be allowed to make-up a missed presentation. If extenuating circumstances prevent a student from presenting on the selected date, they must contact the instructor IMMEDIATELY to make alternative arrangements.
4. *Final Exam*—The final exam is considered a "major scheduled grading event" as defined by the University of Maryland. In this case, extensions or make-up exams will only be permitted if the student provides documentation of a university approved excuse for absences or an arrangement has been made with the instructor PRIOR to the scheduled due date.

Academic Honesty:
Unless authorized by me, all assessments (including the POIs, final exam, review paper, and presentation) must represent each student's own knowledge and ideas in his/her own words. Students who violate the University of Maryland's rules and policies may receive a penalty to their grade, including but not limited to a failing grade on the assignment or in the course.

Overview of Topics (Subject to change)

Week	Date	Topic	Unit
1.	8/29	Course Overview & Syllabus	
2.	9/5	The Study of Judgment, Decision, and Choice	**Rational/Normative Perspectives**
3.	9/12	Brunswik Lens Model / Expected Utility	
4.	9/19	Bayesian Reasoning	
5.	9/26	Heuristics and Biases	**Naturalistic/Descriptive Perspectives**
6.	10/3	Bounded Rationality and the Adaptive Toolbox	
7.	10/10	Prospect Theory ***DUE: ONE PAGE WRITE-UP OF PROJECT TOPIC***	
8.	10/17	Dual Process Theories / Naturalistic Decision-Making	
9.	10/24	Emotions/Affect in Decision-Making	
10.	10/31	Decisions in Groups and Interpersonal Contexts	
11.	11/7	Information Processing Theories I: Perception, Memory, and Learning Models	**Information Processing Perspectives**
12.	11/14	Information Processing Theories II: Sequential Sampling Models / Cognitive Architectures	
13.	11/21	NO CLASS – Have a Happy Thanksgiving! ***DUE: FINAL RESEARCH PROPOSAL***	
14.	11/28	Project Presentations	
15.	12/5	Project Presentations Course Evaluation & Wrap-up	
16.	Finals Week	***Final take-home exam*** **(TBD)**	

Reading List

1. **Course Overview and Syllabus**

   No Readings

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2. **The Study of Judgment, Decision, and Choice**

   Over, D. (2004). Rationality and the normative/descriptive distinction. In D.J. Koehler & N. Harvey (Eds.), *Blackwell Handbook of Judgment and Decision-Making* (pp. 3-18). Oxford, UK: Blackwell Publishing.

   Anderson, J.R. (1990). *The adaptive character of thought* (pp. 1-38). Hillsdale, NJ: Lawrence Erlbaum Associates.

   Hastie, R. (2001). Problems for judgment and decision-making. *Annual Review of Psychology, 52*, 653-683.

   Phillips, L.D. (1984). A theory of requisite decision models. *Acta Psychologica, 56*, 29-48.

   Moore, D.A., & Flynn, F.J. (2008). The case for behavioral decision research in organizational behavior. *The Academy of Management Annals, 2*, 399-431.

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3. **Brunswik Lens Model**

   Goldstein, W.M. (2004). Social judgment theory: Applying and extending Brunswick's probabilistic functionalism. In D.J. Koehler & N. Harvey (Eds.), *Blackwell Handbook of Judgment and Decision-Making* (pp. 37-57). Oxford, UK: Blackwell Publishing.

   Hartwig, M., & Bond, C.F. (2011). Why do lie-catchers fail? A lens model meta-analysis of human lie judgments. *Psychological Bulletin, 137*, 643-659.

   Aiman-Smith, L., Scullen, S.E., & Barr, S.H. (2002). Conducting studies of decision-making in organizational contexts: A tutorial for policy-capturing and other regression-based techniques. *Organizational Research Methods, 5*, 388-414.

   Expected Utility

   Baron, J. (2004). Normative models of judgment and decision-making. In D.J. Koehler & N. Harvey (Eds.), *Blackwell Handbook of Judgment and Decision-Making* (pp. 19-36). Oxford, UK: Blackwell Publishing.

   Schoemaker, P.J.H. (1982). The expected utility model: Its variants, purposes, evidence, and limitations. *Journal of Economic Literature, 20*, 529-563.

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4. **Bayesian Reasoning**

   *Please download the program Netica (https://www.norsys.com/download.html) and ensure that you can get the program to run on your computer **BEFORE** coming to class.*

   Griffiths, T.L., & Tenenbaum, J.B. (2006). Optimal predictions in everyday cognition. *Psychological Science, 17*, 767-773.

Gigerenzer, G., & Hoffrage, U. (1995). How to improve Bayesian reasoning without instruction: Frequency formats. *Psychological Review, 102*, 684-704.

McKenzie, C.R.M. (2003). Rational models as theories—not standards—of behavior. *Trends in Cognitive Sciences, 7*, 403-406.

Korb, K.B., & Nicholson, A.E. (2004). *Bayesian artificial intelligence*. (Chapters 2 & 4). London, UK: Chapman & Hall.

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5. **Heuristics and Biases**

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science, 185*, 1124-1131.

Kahneman, A., & Tversky, D. (1973). On the psychology of prediction. *Psychological Review, 80*, 237-251.

Kahneman, D., & Tversky, A. (1996). On the reality of cognitive illusions. *Psychological Review, 103*, 582-591.

Gigerenzer, G. (1996). On narrow norms and vague heuristics: A reply to Kahneman and Tversky (1996). *Psychological Review, 103*, 592-596.

Keren, G., & Teigen, K.H. (2004). Yet another look at the heuristics and biases approach. *Blackwell Handbook of Judgment and Decision-Making* (pp. 89-109). Oxford, UK: Blackwell Publishing.

[optional] Wallsten, T.S. (1983). The theoretical status of judgmental heuristics. *Advances in Psychology, 16*, 21-37.

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6. **Bounded Rationality and the Adaptive Toolbox**

Simon, H.A. (1956). Rational choice and the structure of the environment. *Psychological Review, 63*, 129-138.

Gigerenzer, G. (2001). The adaptive toolbox. In G. Gigerenzer & R. Selten (Eds.), *Bounded rationality: The adaptive toolbox* (pp. 37-50). Cambridge, MA: MIT Press.

Gigerenzer, G., & Goldstein, D.G. (1996). Reasoning the fast and frugal way: Models of bounded rationality. *Psychological Review, 103*, 650-669.

Goldstein, D.G., & Gigerenzer, G. (2002). Models of ecological rationality: The recognition heuristic. *Psychological Review, 109*, 75-90.

Dougherty, M.R.P., Franco-Watkins, A.M., & Thomas, R. (2008). Psychological plausibility of the theory of probabilistic mental models and the fast and frugal heuristics. *Psychological Review, 115*, 199-213.

[skim/optional] Gigerenzer, G. (2004). Fast and frugal heuristics: The tools of bounded rationality. In D.J. Koehler & N. Harvey (Eds.), *Blackwell Handbook of Judgment and Decision-Making* (pp. 62-88). Oxford, UK: Blackwell Publishing.

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7. **Prospect Theory**

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*, 263-292.

Kahneman, D., & Tversky, A. (1984). Choices, values, & frames. *American Psychologist, 39*, 341-350.

Tversky, A., & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk and Uncertainty, 5*, 297-323.

Fennema, H., & Wakker, P. (1997). Original and cumulative prospect theory: A discussion of empirical differences. *Journal of Behavioral Decision Making, 10*, 53-64.

Fennell, J., & Baddeley, R. (2012). Uncertainty plus prior equals rational bias: An intuitive Bayesian probability weighting function. *Psychological Review, 119*, 878-887.

[skim/optional] Kahneman, D. (2003). A perspective on judgment and choice: Mapping bounded rationality. *American Psychologist, 58*, 697-720.

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8. **Dual Process Theories**

Evans, J.S.B.T. (2008). Dual-processing accounts of reasoning, judgment, and social cognition. *Annual Review of Psychology, 59*, 255-278.

Sloman, S.A. (1996). The empirical case for two systems of reasoning. *Psychological Bulletin, 119*, 3-22.

Kruglanski, A.W., & Gigerenzer, G. (2011). Intuitive and deliberate judgments are based on common principles. *Psychological Review, 118*, 97-109.

Naturalistic Decision-Making

Phillips, J.K., Klein, G., & Seik, W.R. (2004). Expertise in judgment and decision-making: A case for training intuitive decision skills. In D.J., Koehler & N. Harvey (Eds.), *Blackwell handbook of judgment and decision-making* (pp. 297-315). Oxford, UK: Blackwell Publishing.

Lipshitz, R., Klein, G., Orasanu, J., & Salas, E. (2001). Taking stock of naturalistic decision making. *Journal of Behavioral Decision Making, 14*, 331-352.

Lipshitz, R., & Strauss, O. (1997). Coping with uncertainty: A naturalistic decision-making analysis. *Organizational Behavior and Human Decision Processes, 69*, 149-163.

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9. **Emotions/Affect in Decision-Making**

Lerner, J.S., Li, Y., Valdesolo, P., & Kassam, K.S. (2015). Emotion and decision making. *Annual Review of Psychology, 66*, 799-823.

Rottenstreich, Y., & Shu, S. (2004). The connections between affect and decision making: Nine resulting phenomena. In D.J. Koehler & N. Harvey (Eds.), *Blackwell Handbook of Judgment and Decision-Making* (pp. 444-463). Oxford, UK: Blackwell Publishing.

Lerner, J.S., & Keltner, D. (2000). Beyond valence: Toward a model of emotion-specific influences on judgment and choice. *Cognition and Emotion, 14*, 473-493.

Lowenstein, G.F. (2001). Risk as feelings. *Psychological Bulletin, 127*, 267-286.

Connolly, T., & Zeelenberg, M. (2002). Regret in decision making. *Current Directions in Psychological Science, 11*, 212-216.

10. **Decisions in Groups and Interpersonal Contexts**

Gachter, S. (2004). Behavioral game theory. In D.J. Koehler & N. Harvey (Eds.), *Blackwell Handbook of Judgment and Decision-Making* (pp. 485-503). Oxford, UK: Blackwell Publishing.

Thompson, L. (2010). Negotiation. *Annual Review of Psychology, 61*, 491-515.

Stasser, G. (1999). A primer on social decision scheme theory: Models of group influence, competitive model-testing, and prospective modeling. *Organizational Behavior and Human Decision Processes, 80*, 3-20.

Kerr, N.L., MacCoun, R.J., & Kramer, G.P. (1996). Bias in judgment: Comparing individuals and groups. *Psychological Review, 103*, 687-719.

Larrick, R.P. (2016). The social context of decisions. *Annual Review of Organizational Psychology and Organizational Behavior, 3*, 441-467.

[optional] Grand, J.A., Braun, M.T., Kuljanin, G., Kozlowski, S.W.J., & Chao, G.T. (2016). The dynamics of team cognition: A process-oriented theory of knowledge emergence in teams [Monograph]. *Journal of Applied Psychology, 101*, 1353-1385.

11. **Information Processing Theories I: Perception, Memory, and Learning Models**

Weber, E.U., & Johnson, E.J. (2009). Mindful judgment and decision-making. *Annual Review of Psychology, 60*, 53-85.

Dougherty, M.R.P., Gettys, C.F., & Ogden, E.E. (1999). MINERVA-DM: A memory processes model for judgements of likelihood. *Psychological Review, 106*, 180-209.

Thomas, R.P., Dougherty, M.R.P., Sprenger, A.M., & Harbison, J.I. (2008). Diagnostic hypothesis generation and human judgment. *Psychological Review, 115*, 155-185.

Grand, J.A. (2020). A general response process theory for situational judgment tests. *Journal of Applied Psychology, 105*, 819-862.
(Online supplement: https://grandjam.shinyapps.io/sirj)

12. **Information Processing Theories II: Sequential Sampling / Connectionist Models**

Oppenheimer, D.M., & Kelso, E. (2015). Information processing as a paradigm for decision making. *Annual Review of Psychology, 66*, 277-294.

Busemeyer, J.R., & Johnson, J.G. (2004). Computational models of decision making. In D.J. Koehler & N. Harvey (Eds.), *Blackwell Handbook of Judgment and Decision-Making* (pp. 133-154). Oxford, UK: Blackwell Publishing.

Ballard, T., Yeo, G., Loft, S., Vancouver, J.B., & Neal, A. (2016). An integrative formal model of motivation and decision making: The MGPM*. *Journal of Applied Psychology, 101*, 1240-1265.

Cognitive Architectures

Langley, P., Laird, J.E., & Rogers, S. (2009). Cognitive architectures: Research issues and challenges. *Cognitive Systems Research, 10*, 141-160.

Anderson, J.R., Bothell, D., Byrne, M.D., Douglass, S., Lebiere, C., & Qin, Y. (2004). An integrated theory of the mind. *Psychological Review, 111*, 1036-1060.

13. **NO CLASS**

Have a Happy Thanksgiving!

14. **Project Presentations**

No Readings

15. **Project Presentations**

No Readings

16. **Final Exam**

Date of final exam: _____