Thinking and Decision Making
PSYC UN2235 (3 points)
Syllabus for Spring 2020

Course Information

Tuesdays & Thursdays, 11:40am-12:55pm
Location: 501 Schermerhorn

Instructor Information

Katherine Fox-Glassman, PhD
Office: 314 Schermerhorn
Spring Office Hours: Mondays, 2-4pm
email: kjt2111@columbia.edu
pronouns: she/her

TA Information

Please check our Canvas page for the current list of TA office hours and their locations. All TA office hours will be held in Schermerhorn Hall or Schermerhorn Extension.

For *general* course inquiries (course content, assignment clarifications, etc.) that are not answered by the syllabus, please post your question to the **Canvas Discussions page** (you're probably not the only one wondering!).

For *personal* inquiries (missed deadlines, absences, issues uploading assignments, personal concerns, etc.) please email our ***TA email:*** **psyc2235ta@gmail.com**.

Grad TAs

Hale Forster
Ben Silver

Undergrad TAs

Canfer Akbulut
Carolina Lacs
Yang Li

Description of the Spring 2020 Course

This course serves as an introduction to the psychology of judgment and decision making. It will cover normative, prescriptive, and descriptive theories of judgment and choice; models of decision processes and the effects of context, experience, memory, and information on decision making; biases and heuristics that influence decision making; and real-world applications of these topics.

Prerequisites

Science of Psychology (1001) or Mind, Brain, & Behavior (1010), or equivalent intro psych course. Students who have not taken one of these courses may register with instructor permission.

Role in the Psychology Curriculum

For the Psychology major and concentration, and for the Psychology Post-Bac certificate program, this course counts toward the Group I Distribution Requirement. For the Neuroscience & Behavior major, this course counts toward the P4 lecture requirement. For the Special Concentration in Business Management, this course counts as an elective.

Motivating Questions

1. How do we make decisions: what are the processes through which we weigh options and make choices, and how might these differ from the "ideal" or "typical" processes suggested by decision theories? When are the "ideal" decision processes not so ideal after all?
2. Can we say that people have *true preferences*, or do most choices in fact show *revealed preferences* that depend on the context of the decision, our ability to remember past experiences when deciding, and even the way the various options are presented to us?
3. How might we make "better" decisions—and, for that matter, how do we even define a "good decision?" Is it one in which we used a sound *decision process*, or one that led to a good *outcome*, or both—or maybe neither?
4. How can an understanding of decision science be applied to understand or influence real-world decisions in domains ranging from marketing and healthcare to public policy and disaster preparedness?

Course Overview

All of us make thousands of decisions every day. Many are simple and almost automatic: how many times to snooze our alarm, what to eat for breakfast, whether to cross the street or not on a blinking "don't-walk" sign. Other decisions, like whether to carry an umbrella on a cloudy day or to put off an assignment in favor of going out for a drink with friends, require a bit more conscious considering of information. Still others require complicated calculations or deliberation: where to travel for spring break; which college or grad school to attend; whether to begin or end a romantic relationship.

Each of these decisions invokes a set of related cognitive processes, and researchers from several fields (psychology, economics, and neuroscience, among others) study these processes. This course will examine the ways we judge situations, probabilities, and decision options, and how we go about making choices. We will consider many different sources of evidence, from behavioral observation to cognitive models to the firings of neurons in the brain.

We will discuss different decision modes and decision strategies. We'll consider normative decision models (ones that identify the "*best"* decision to make), prescriptive decision models (those that indicate what people *ought* to do), and descriptive decision models (those that illustrate the ways that people *actually do* make decisions). We'll discuss the differences between studying questions like: "why *don't* people follow the normative or prescriptive model?" vs. "why *do* people follow the descriptive models that they do?" The first approach tends to identify what we call cognitive biases, fallacies, or paradoxes, while the second question more often leads to the development of decision heuristics—we'll talk in depth about many of these heuristics, biases, fallacies, and paradoxes.

We will connect all of these topics by considering their real-world applications. Many different fields require their practitioners to have an in-depth understanding of decision and judgment theory—notably marketing and advertising, which deploy psychology and behavioral economics findings to maximize earnings. Other fields are beginning to realize the benefits of incorporating decision theory into their efforts—the health and disaster preparedness professions, for example, are right now actively working to better understand the ways that people judge and use health or hazard information. These efforts often draw on the concept of "decision architecture," or the way that the format of the options can be altered to "nudge" and (perhaps) improve people's decision processes.

Course Requirements

Grading

I don't grade on a curve in this class, so your grade will be determined only by your own work, not by how well you do relative to the other students. There is no pre-determined proportion of students who will receive As, Bs, Cs, etc.—if every student does A-level work, then everyone will receive an A in the course. Your grade will be calculated out of a total of 1000 points, as follows:

Class intro survey:	25 points	(due before class on Thursday, January 23)
Clicker participation:	95 points	(during every class)
Written assignments:	180 points	(problem sets & decision diary)
Midterms:	300 points	(held in class Feb. 25 & April 9)
Final:	400 points	(tentatively scheduled for Thursday, May 14)
Total:	1000 points	

The cutoffs for each letter grade are as follows:

990* – 1000 points = A+
930 – 989.9 points = A
900 – 929.9 points = A-
870 – 899.9 points = B+
830 – 869.9 points = B
800 – 829.9 points = B-
770 – 799.9 points = C+
730 – 769.9 points = C
700 – 729.9 points = C-
600 – 699.9 points = D
0 – 599.9 points = F

*In this class, an A+ is a rare distinction indicating exceptional work. If no students score above 990 points, then the cutoff for the grade of A+ will be lowered.

Class intro survey. You will fill out a survey before class starts, and we'll use your (anonymous) responses to illustrate many of the effects we discuss in the course. To receive full points for the intro survey, you must complete it before the beginning of the second class meeting (January 23, 11:40 am).

Clicker participation. You will earn your participation grade (95 points out of 1000 total) by responding with your iClicker to questions during class. These questions will serve several purposes: (1) to give me real-time feedback on what concepts you're understanding and which topics we might want to spend a little more time on; (2) to help you engage with the material and encourage you to be active learners; (3) to help you gauge your own understanding as we go; and (4) to augment the results of the class intro survey with polls and questions that are better asked "live" than in an online survey.

To receive the maximum 95 points for clicker participation, you must respond to all or all but one of the questions posed during at least 19 of the 24 lectures for which we're counting clicker participation (we will use clickers in the first week of class, but we won't start recording participation until the second week). For every lecture for which you responded to all or all but one of the clicker questions, you will receive 5 points; for lectures during which you responded to more than half of the clicker questions but not enough to receive full credit, you will receive 2 points. We will drop your five lowest participation scores out of the 24 when calculating your participation grade.

> You may purchase an iClicker at the Columbia Bookstore or online, or you may use the same clicker you used for past classes. The two models to look for are the 2nd Edition iClicker (ISBN 9780716779391) and the iClicker+ (ISBN 9781464120152). The Gen1 iClicker usually works as well, but I'd advise you to bring it to one of our first two class meetings to confirm that.

For students on a limited budget, we also have a few clickers available to loan out for the semester. Contact the TA email address if you'd like to borrow one. We'll distribute clickers on a first-come, first-served basis, but we won't start responding to clicker requests until the week before classes start.

A handout with instructions on how to register your iClicker is available on Canvas.

Please note: while you will earn participation points for each class by responding to clicker questions, it is possible to lose points for a particular lecture if you are disrupting class or distracting those around you (e.g., by talking with your friends during class time). The majority of students come to class prepared to participate and learn, so it is rare for students to lose participation points in this way, but it occasionally does happen. Also rare but worth warning about: do not ask a friend to use your clicker on your behalf. Asking someone to fake your participation—or doing this for someone else—is a form of academic dishonesty, and will result in a zero for both of your participation scores for the semester.

Written Assignments

Problem Sets. At the end of each week, you will complete a short problem set to apply and test your knowledge of the week's topics before we move on to new concepts. The format of the problem sets will vary, but the purpose will always be to help you to examine and connect key course concepts. You are encouraged to work with your classmates and ask your TAs questions. *Problem sets will be graded for effort, not accuracy.* This means that if you answered every question to the best of your ability, you turned in the problem set on time, and your answers represent your own work, you will receive full points. This also means that **it's up to you to check your answers against the answer keys**, which will be posted on Canvas shortly after each problem set is due.

There will be 11 problem sets, worth up to 10 points each. When calculating your final grade, we will use only your 10 highest scores out of the 11. Problem sets will be available each Thursday after class, and cover material from that week's lectures. Each problem set is due before class starts on the Tuesday after it is assigned. Problem sets will be posted, and should be turned in, via Canvas.

Even though problem sets are not graded for accuracy, spending some time completing each of them to the best of your ability will improve your understanding of the course material and help you prepare for the exams. Plus, doing good work on your problem sets is the *only possible way* to end up with a final letter grade higher than your final point total would earn. (See Class Policies, below.)

Decision Diary. You won't have a problem set to complete over Spring Break; instead, you'll be writing an analysis of a recent decision you've made. This assignment is designed to help you learn about decision goals and modes while at the same time getting some insight into your own decision process. Students generally enjoy writing this assignment, and your TAs and I enjoy reading your analyses. Unlike the problem sets, the Decision Diary *is* graded, based on your ability to clearly and accurately apply course concepts to your analysis of your decision. The Decision Diary is worth 80 points, and is due on the Tuesday after Spring Break.

Exams

Midterms. We will have two in-class midterms, which will each include a mix of short-answer and multiple-choice questions. We will post some sample questions and a review sheet on Canvas before each exam. We will use only the higher of the two midterm grades when calculating your final grade; it will be scaled out of 300 points. The dates for the two midterms are:

Midterm 1: Tuesday, February 25
Midterm 2: Thursday, April 9

Because your lower midterm score will be dropped, there are **no make-up midterms offered**. If you need to miss a midterm for any reason (excused or unexcused), you will receive a zero for that exam, and that will be the score that is dropped. **If you know that you will have a conflict with both midterm dates, you should not take this class.** If you are a student athlete and anticipate that you might be traveling during one or both of these dates, please come talk to me *before the end of the second week of class* to make plans for you to take your midterms on the road.

Because your lower midterm score is dropped, and because some exam questions will be closely related to material that was asked on problem sets (and was therefore answered in the answer keys), the midterms for this course are geared to be slightly more challenging than those in some other Psychology courses. If you don't do as well on the first exam as you would have liked, don't despair—that score will go away entirely if you do better on the second midterm. Plus, research in cognitive psychology has shown that we learn most effectively by making mistakes and then correcting ourselves. The problem sets are your first opportunity to make instructive mistakes, but the midterms are part of your learning process as well. So making sure that you understand why you missed the points you did on the midterms (and also why you earned the points you did!) should be your first step toward doing even better on the final exam.

Final Exam. The final will cover the material from the whole course, with a greater emphasis on topics from after the second midterm. Like the midterms, it will consist of short-answer and multiple-choice questions. The final is worth 400 points. For students whose grades improve from the midterms to the final, I will change the relative weighting of the two exams such that the midterm is worth 280 points and the final is worth 420 points. This alternate weighting can only help your overall grade.

***Tentative* Final Exam Date: Thursday, May 14, 4:10-7pm**

If you have a conflict with this final exam date, you should speak to the instructor before enrolling in this class. Although the Registrar does sometimes shift exams from the originally projected date, it is more likely than not that our final will take place on this date. Columbia University only allows final exams to be taken outside of the scheduled slot in extreme circumstances such as a medical or family emergency. Travel plans are not an appropriate excuse for missing a final, so if you are planning end-of-semester travel before the Registrar posts the final-Final Exam dates, it is wise to make sure you will be on campus during the entire exam period (May 8-14, 2020).

Class Policies

Lecture attendance. Attending lectures and actively participating is a fundamental element of this course. Lectures will cover topics not included in your readings, and we will try to stop frequently for class discussions, group exercises, and other activities. If you miss a class, make sure you go over the lecture slides and audio recordings, and come to our office hours to ask questions about any topics you think you may need help catching up on.

You cannot make up clicker participation credit for classes you missed, even if those absences are excused. I also cannot give individual students credit for participation for days when they forget their iClicker, or when their iClicker ran out of batteries or was malfunctioning. It's your responsibility to make sure that you bring your clicker to class and confirm that your votes are being recorded. But since absences and clicker issues happen to everyone, **every student gets five free passes**—only 19 participation days are counted out of the 24 lectures for which we'll be tracking clicker responses. Use them wisely!

Lecture slides & recordings. We will post slides and an audio recording after each class, so you do not need to copy down everything that's written on each slide. The slides are numbered to help you compare your class notes to the slides.

Late assignments. Problem sets and the decision diary will lose one point for every half-day past their due date. This means that problem sets turned in more than five days after the due date receive no

credit, though I encourage you to still submit them, since (a) completing the problem sets is the first step to effective studying, and (b) even if they received no credit, they can still be used at the end of the semester to determine whether you qualify for a grade bump (see below).

Extra Credit. There are **no extra credit opportunities** in this class, but students who end up on the borderline between grades may be bumped up to the next higher grade based on the quality of their problem set work. At the end of the semester when I calculate grades, I will look back at the problem sets of every student who is very close to the next higher grade range. Students who are in this position and whose problem sets show a higher average score than their course grade will be bumped up to the next higher grade. I grade the problem sets blind to the student's current grade, and the resulting decision of whether to bump up the course grade is final.

For example: a student with 895 points would fall into the B+ range, but is very close to the A- cutoff of 900 points. If his problem sets, when graded, average more than 89.5%, his grade will be bumped up to an A-. If his problem sets average 89.5% or lower, his grade of B+ will stand.

Class Conduct. Please turn your cell phone ringer off during class, and keep it safely stowed in your pocket or bag. Laptops are fine for taking notes, but please respect your classmates and instructor by limiting yourself to class-related activities. Using a laptop for purposes other than taking notes is disruptive to those around you. If you anticipate using your laptop for non-course-related activities, please sit in the back of the classroom to avoid distracting your classmates.

Diversity & Inclusion

Every learning environment should accommodate the wide range of opinions, backgrounds, and identities that students bring into the room. And as psychologists, we know of many specific and important ways in which groups benefit from diversity of all kinds—nationality, sex/gender, sexuality, race, class, religion, ability, and many others. To help me make the course as inclusive as possible, please let me know if any of the following is true:

- You have a name and/or set of pronouns that differ from those that appear in SSOL or on Canvas;
- Something that was said in class made you feel uncomfortable or unwelcome;
- Your ability to take part in our class is being affected by events or experiences outside of our class. Even if I can't help you directly, I can try to connect you with resources or support on or off campus.

Like most people, I am still in the process of learning about diverse perspectives and identities. I'm very open to feedback; on this topic (and many others) you can likely teach me as much as, if not more than, I can teach you.

Academic Integrity

Academic honesty includes presenting only your own work in exams and assignments, and correctly attributing others' ideas where appropriate. Taking credit for work that is not your own is a serious violation within the academic community, and anyone found to be cheating or plagiarizing in this class will be reported to the university. This includes using unauthorized materials during exams, as well as copying another student's (or a previous year's answer key's) wording on your problem sets. **Using another student's clicker on their behalf, or asking another student to use your clicker for you, is also considered a breach of academic honesty.** Detailed definitions and examples of academic dishonesty (and a rundown of the consequences) are available in Columbia's Guide to Academic Integrity (http://www.college.columbia.edu/academics/integrity). It might not be the most riveting bit of text, but you're expected to follow it, so you should know what it says.

I assume you're all here because you're interested in the course topics and enthusiastic to learn as much as you can. But I know that in real life, stuff happens. I always prefer to deal with any issues before they get so bad that they become overwhelming, or so bad that a student feels that depending on someone else's work is his or her best (or only) option. So please do come to me if you're feeling stressed out about the class workload or if there's a concept you're just not getting based on how the readings and lectures explained it. If you have an issue that you'd rather not talk about with me, you

could speak with your academic advisor or dean; with a Psychology Program Advisor (DUS); or with the counselors at Columbia's CPS (http://health.columbia.edu/services/cps).

Students With Disabilities

In order to receive disability-related academic accommodations for this course, students must first be registered with their school Disability Services (DS) office. Detailed information is available online for both the Columbia and Barnard registration processes. The process can take several weeks—don't wait until just before the first exam. Refer to the appropriate website for information regarding deadlines, documentation requirements, and drop-in hours (Columbia) / intake session (Barnard).

For this course, Columbia students are **not** required to have testing forms or accommodation letters signed by faculty. The Instructor section of the form has already been completed and does not need to be signed by the professor. Instead, students should complete the Student section of the form and submit it to DS. Master forms are available in the Disability Services office or online: https://health.columbia.edu/services/testing-accommodations

Readings

The chapters in our textbook are typically around 15-20 pages long. Part of their purpose is to give you some exposure to our topics before we cover them in class, so that it's easier for you to keep up with the pace of lectures. But there is also content in the readings that won't be covered directly in class that is important to your understanding of course concepts. To that end, there will be portions of the readings that we won't discuss directly, but which will be tested on.

The readings listed here are a tentative guide—please **keep an eye on Canvas for the most up to date reading lists**, including a detailed breakdown of which readings will be assigned for each class meeting. **The reading assignments for each class meeting will be posted in the Modules section of our Canvas site.**

Textbook

There is one required textbook for this class. It will be available at Book Culture, 536 West 112th Street.

- Kim, Nancy. (2018) *Judgment and Decision Making: In the lab and in the world*. Palgrave. 1st ed. ISBN-13: 978-1137269553

Other Required Reading

We will also read some empirical papers to get a better idea of how researchers have discovered and tested some of the phenomena and theories we'll be learning about. We'll also occasionally read chapters from other textbooks. These papers and additional chapters will be posted on Canvas.

Supplemental Reading

Supplemental readings are 100% optional. Some are empirical papers, but most come from an older book that is a great resource for basic explanations of our course topics. If you're having trouble with the way Hardman discusses a topic, I recommend seeing how Plous explains it, and then going back to Hardman for a more up-to-date perspective on it.

- Plous, S. (1993). *The Psychology of Judgment and Decision Making.* New York: McGraw-Hill. ISBN: 0070504776

Tentative List of Topics & Readings

All chapters are from Kim (our required text), unless otherwise specified.

The order in which we cover topics may change slightly. At least some readings are likely to change. For the final set of readings for each class/week, and for links to any readings not from our textbook, please always consult our Canvas site.

Lec	Date	Topics	Tentative reading assignments *(optional readings in italics)*	Due
1	1/21	Introduction to the Course	Chapter 1 Chapter 4 Chapter 12 *(Plous, Chapters 1-4)*	Intro Survey
2	1/23	Decision Making in Context		
3	1/28	Normative theories of judgment & choice I	Baguely Box 11.3 (p388) Silver Ch. 8 *(Plous, Ch. 12)*	
4	1/30	Normative theories of judgment & choice II	Chapter 8 Hastie/Dawes Ch. 11 *(Plous, Ch. 7 & 8)*	
5	2/4	Descriptive theories of judgment I	Hastie/Dawes Ch. 7	PS1
6	2/6	Descriptive theories of judgment II	Chapter 11, 2 *(Plous, Ch. 10, 11, 15)*	
7	2/11	Descriptive theories of judgment III	Chapter 3 *(Plous, Ch. 13, 19)*	PS2
8	2/13	Descriptive theories of choice I	Chapter 9 Kahneman et al., 1991 *(Plous, Ch. 9)*	
9	2/18	Descriptive theories of choice II	Chapter 7 *(Plous, Ch. 5 & 6)*	PS3
10	2/20	Decisions under uncertainty	Hardman, Ch. 7 (pp. 65-72) - good review for Midterm 1 Hertwig & Erev, 2009	
	2/25	**Midterm 1** (covering topics from Lectures 1-9)		PS4
11	2/27	Perception of risk	Chapter 5 Slovic, et al., 2004	

Lec	Date	Topics	Tentative reading assignments *(optional readings in italics)*	Due
12	3/3	Time & distance I	Chapter 6 (pp. 112-116) Baron, Ch. 19 (pp. 471-496)	PS5
13	3/5	Process models	Johnson, et al., 2007	
14	3/10	Time & distance II / Intro to decision modes	Trope & Liberman, 2010 "Ways of Arriving at a Decision"	PS6
15	3/12	Decision modes	"Ways of Arriving at a Decision" Plus another reading tbd	
16	3/24	The effects of affect I	Chapter 6 (pp. 110-112) Hastie/Dawes, Chapter 13.2 (pp. 304-310) Wilson & Gilbert, 2005	Dec. Diary
17	3/26	The effects of affect II	Lerner et al., 2004	
18	3/31	Individual differences I	Chapter 6 (pp. 103-110) Heine, Chapter 9, pp. 349-367 Mullainathan & Shafir, Ch. 5	PS7
19	4/2	Individual differences II		
20	4/7	Cognitive neuroscience of decision making	Cassidy, 2006 Hastie/Dawes, Chapter 13.1	PS8
	4/9	**Midterm 2** (covering topics from Lectures 10-19)		
21	4/14	Behavioral Game Theory I	Chapter 14 Baron, Ch. 18	-
22	4/16	Behavioral Game Theory II		
23	4/21	Decisions by groups	Plous, Ch. 17 & 18 *(Rose, 2011)*	PS9
24	4/23	Group decisions & minority influence	*choose either:* Thomas-Hunt & Phillips, 2004 *or* Sommers, 2006	
25	4/28	Decision architecture I	Thaler & Sunstein, 2009 Johnson et al., 2012	PS10
26	4/30	Decision architecture II	*(Plus several fun optional readings - see Canvas for links)*	
	5/7			PS11
	5/14	**Final Exam** (cumulative, with emphasis on Lectures 20-26)		