

Decision Architecture

Psych GU4287 (4 points)
Syllabus for Spring 2024

Course Information

Wednesdays, 2:10-4pm
Room: 405 Schermerhorn

Instructor Information

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pronouns: she/her/hers

Course Description

This course reviews current research in the domain of decision architecture: the application of research in cognitive and social psychology to real-world situations with the aim of influencing behavior. For example, designating a certain option as the default choice has been shown to dramatically increase rates of participation in organ-donation programs, retirement savings, vaccination, and many other socially beneficial activities. This seminar will discuss recent and classic studies, both of decision theory and of applied decision research, to explore the effectiveness—as well as the limitations—of a selection of these behavioral “nudges.”

Prerequisites

PSYC UN2235 or an equivalent course on judgment and decision making, and the instructor's permission.

Enrollment limit: 12. If the course is full, senior psychology majors, senior neuroscience and behavior majors, and psychology postbacs in the Certificate Program will have priority, followed by junior majors, followed by non-majors. Other things being equal, students who have the best preparation and strongest motivation will be selected.

Role in the Psychology Curriculum

This course is designed to give advanced undergraduates and graduate students in the Psychology Department a deeper understanding of current topics in the field of judgment and decision making, specifically in ways that decision theory can be wielded to effect behavioral change in applied situations.

Motivating Questions

1. How can researchers/practitioners/marketers/leaders use theories from the judgment and decision-making literature to influence people's choices and behavior?
2. What side effects—positive and negative—might the use of these “decision-architecture tools” bring about, beyond the particular behavior that they target?
3. What are the ethical implications of the use of decision architecture tools, and by extension, of the theory-based research that underlies those tools?

Course Overview

Decades of cognitive science research has left the field with a thorough—though of course never complete—understanding about how humans perceive the world around them, make judgments, and come to decisions. Recently, a subfield within judgment and decision research has gained both prominence and momentum: the study of decision architecture tools. Also called behavioral nudges, decision architecture tools are methods of presenting choices to people such that the structure of the choice itself helps to influence the final decision. One common description of how these nudges work is that they “make the *good* choice also the *easiest* choice to make.”

For example, more people will sign up to be an organ donor if the process is opt-out, rather than opt-in: if we have to check a box in order to indicate our willingness to become a donor, few people end up as donors, but if we instead need to check a box in order to indicate our unwillingness to be a donor, the vast majority of people end up on the donor list. This effect appears to be largely driven by the default bias, under which we tend to stick with an option that is pre-selected for us, and are hesitant to switch to an alternative. Lab studies have shown this effect, but it also appears, in quite dramatic fashion, in the real world: nations with opt-in donor registries tend to have donor rates in the 10-20% range, while countries using the opt-out system typically see more than 90% of their eligible citizens signing up to be donors.

Although there can be a clear public good to nudging people toward one decision over another, the use of these decision architecture tools in real-world settings (as opposed to carefully constructed laboratory situations) carries ethical and moral questions, as well as practical ones. Nudges are supposed to make the good choice the easy choice, but who decides which choice is good? Should the public be more aware of instances where their decisions are being influenced? Is it even possible to construct a decision situation that *doesn't* involve some form of decision architecture? Does knowing about the power of nudges help people to remain unswayed by them? And what side effects might nudges have: does “tricking” a person into recycling produce positive spillover and thus encourage more environmentally friendly behaviors in the future, or might it give that person license to actually waste more in the future? These side effects, sometimes called “dodges,” are the focus of much of the current wave of research on decision architecture.

This course will explore decision architecture tools and methods from several angles: the cognitive theories that explain how, when, and why they work; the ethical implications of their use; and the unintended consequences they might have beyond their central effects.

Course Objectives

1. Students will gain a deeper understanding of the normative and descriptive theories of decision-making and judgment that have been used to develop prescriptive decision tools (decision architecture, or “nudges”).
2. Students will be able to recognize instances of behavioral nudges in research and in the real world, and to discuss both their efficacy and the cognitive mechanisms by which they operate.
3. Students will develop nuanced and likely diverse opinions, backed by empirical results and real-world evidence, about the ethical and moral implications of the use of decision architecture tools in a variety of contexts.
4. Students will leave the course with a deep familiarity with current research on decision making: they will be able to recognize and critique commonly used methodologies, to assess the validity and reliability of experimental designs, and to interpret and judge the inferences and conclusions that other researchers lay out in their papers.

Course Organization

Class

Each two-hour course meeting will consist primarily of student-led presentations of one of the assigned readings, and discussion of the topics of those readings. Whether or not it is your day to present, please come to class prepared to actively participate!

Assignments

Note: more detail on each assignment will be available on our Canvas site once the semester starts.

Response posts. Before each week's class, you will submit a short (300- to 500-word) response to one of the assigned readings. You'll post your response on our Canvas discussion board, which will allow you to preview what your classmates are thinking about the topic of the week.

Your posts will also help me and the week's student presenter get a sense for what everyone is thinking about the week's papers, including any common points of confusion.

Response posts should demonstrate a thorough reading of the week's papers, and should show that you are thinking carefully about the topics at hand. Although they don't need to be perfectly crafted examples of scientific prose, they should be clearly written, with appropriate attention to grammar, spelling, etc. (translation: you'll need to read back through what you've written before posting it). All that said, the content and focus of your posts can vary quite widely. You might identify a connection between a theory or method discussed in the current paper and one used in another reading; you could lay out a theoretical or empirical question that the paper sparked in you; you could offer a substantive critique of a paper's methods or its interpretations of results; you could identify a real-world application for a theory or effect from the paper and discuss its possible implications. You might also choose to write a response to another student's response post, e.g., if someone else asks a question that you feel inspired to try to answer. You are not required to summarize the goals and findings of the paper you are writing about, but it's fine to do so if that helps to ground or inspire your discussion ideas or questions.

Each post is due by 2pm on the day before class (Tuesdays), starting with our second week of class. Posts are graded based on completion: each one submitted on time is worth 2% of your grade. Posts made after 2pm on Tuesday but before class begins on Wednesday are worth 1%. There will be 12 weeks of presentations, but you do not need to submit a response post for the week you are presenting. Since response posts count for no more than 20% of your overall course grade, you may either skip one of the 11 response posts (the weeks other when you're presenting), or submit two late posts, and still end up with the full 20% for response posts.

"Policy" paper. You won't write a response post for the final class meeting; instead, imagine that you're the Behavioral Science Advisor to a future President, and he or she has asked you for a concise statement of your recommendations for a National Decision Architecture Policy. For this assignment, you will write a short (500- to 1000-word) "policy" paper that reflects your personal view of how, when, and under what conditions behavioral nudges should be used. This paper is due in place of the response post for the final class meeting, and can be submitted via Canvas.

Student presentations. Each student will briefly present a chosen paper during one class period. Papers may be selected from a list of options on Canvas, or may be suggested by you. Your job as presenter is to be our "resident expert" on the readings for this week, so while you can assume everyone has read the paper, your presentation should help to clarify any particularly tricky methods or results from the studies, and address any questions that your fellow students have. I'll be there to help you with this both as you prepare your presentation and during class, but it's your show!

Your 10- to 15-minute presentation should briefly cover the paper's important points and scientific value, recap the study's methods and results, and also offer a critical assessment of the work in the context of other course materials. Presentations should also include questions to spark our discussion.

Detailed requirements for the presentation will be discussed during the first class meeting, when we will also go over the list of topics and tentative schedule. Please have your calendars handy during the first class meeting to facilitate our creation of the schedule.

Final paper. The paper is a 10-page assessment of a particular decision architecture tool. The paper should: (1) review the theory or theories that underlie the tool (e.g., a paper on use of defaults would discuss Prospect Theory's reference point, the status quo effect, and possibly also Query Theory or other topics that help us to understand how default effects work); (2) describe the history and scope of the *use* of the tool in real-world situations, and/or the *testing* of the tool in laboratory studies (i.e., in what contexts or domains has the tool been used or tested, and are its effects consistent across all contexts? does it work the same way across different populations? does it interact with any individual difference measures, or with other behavioral nudges?); (3) examine

what the current understanding of how this tool works might tell us about the theories that underlie it; (4) make predictions (hypotheses) about a few additional real-world contexts in which this tool likely would (or wouldn't) work, based on our theoretical understanding of it.

An **outline or abstract** of your final paper is due no later than 2 weeks before the paper itself (by April 17, our class meeting in Week 13 of the semester). The exact format and level of detail in the outline/abstract is up to you and what works best for your writing process; the idea is to make sure you have thought carefully about your topic well before you sit down to write the final paper. I'll give feedback on outlines in the order I receive them, so the earlier you submit yours, the sooner you'll have my comments. It's fine to submit your outline earlier than it's due!

The outline will be worth 5% of the overall paper grade (2 points out of the 40 for the paper). Requiring an outline or abstract prior to the final paper is a course policy requested by previous students in this seminar, with the idea that it would have helped them keep up with their end-of-semester deadlines. If the idea of an interim deadline doesn't seem helpful for your own writing process, *you may opt out of having to submit an outline/abstract by emailing me 2 weeks before the outline due date* (i.e., before our class meeting on April 3). If you do opt out, your final paper grade will be based entirely on your final submission. If you do not opt-out before April 3, you *must* submit an outline by April 17 in order to receive full points for your paper.

Students who are interested in writing a research proposal paper, or any other format of final paper that is around the same length and scope as the assignment described above, are heartily encouraged to do so. If you think you might like to write a different kind of paper, please come talk to me about your ideas as soon as possible, but no less than one week before the outline is due.

Detailed requirements and grading information for the paper will be posted midway through the semester. Final papers are due via Canvas by **11:59pm on Wednesday, May 1**. If the dates of your other end-of-semester papers and exams would make it difficult to submit your paper by this date, please contact me at least two weeks beforehand to discuss an extension.

Grading

Participation:	20%
Response posts:	20%
"Policy" paper:	5%
Class presentation:	15%
Final Paper:	40%

There is no extra credit for this course. For students who are on the border between grades, I will consider their participation in discussions throughout the term to decide whether to bump them up to the next highest grade (e.g., a very high B+ could be bumped to an A-).

Class Policies

Class attendance

Participation is an essential component of this course and of your grade, and you are expected to attend each class. Each student may miss one class meeting, for any reason, without any penalty to their participation grade. After that free miss, excused absences require a note from your doctor or advising dean, and unexcused absences will count against your participation grade.

Late Work

Late papers are generally marked down by 10% per day, unless you have contacted me *before* the due date to discuss an extension. Overall, I would prefer to have you all write quality papers and learn a lot in the process, rather than dashing off some incoherent ideas in order to make the deadline—so if something comes up, please check in with me. But please plan ahead; "I can't finish the paper on time because I started it too late" is not a particularly convincing argument for an

extension, and neither is “I have another paper and an exam on that day (both of which I knew about the entire semester).”

It’s generally not possible to offer extensions on student presentations, for obvious reasons. But if you know *at least* a week in advance that your scheduled day for presenting is going to pose some problems, please get in touch with me ASAP. With enough advance notice, we can usually find another student willing to switch weeks, but we do need to know far enough out for that student to have enough time to prepare, and to warn everyone about the change in readings.

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. 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>).

Course Policy on AI. Generative AI tools like ChatGPT and Bard can do a lot of heavy lifting in academic contexts. Such tools aren’t inherently good or bad—it’s all up to how you use them. To understand our course policy, imagine AI as something like an e-bike: the electric motor removes most of the effort that would have been required by the cyclist in order to get them to their destination. If the goal is to get somewhere with the least exertion (and sweat) possible, then the e-bike is a godsend. But if part of the goal in cycling was for the rider to get some exercise and build physical strength or endurance, then the e-bike works against those purposes.

To move off of this tortured metaphor: the purpose of this seminar is not primarily to teach you content (get you to some destination); the main goals are to give you experience in thinking critically, examining and critiquing past research and theories, and expressing your own ideas both orally and in writing. So: to the extent that AI can help you understand material, it can be useful—e.g., asking it to explain some of the statistical procedures or experimental design details in a paper you’re reading. Another very useful deployment of AI is to help with a literature review by acting as the first filter on a wide range of papers to help you narrow down which ones to read yourself. And if you find AI useful in helping to format or polish your presentations, that’s fine too.

Ultimately, the ideas and words you share in class and in your written work for this course should all be your own. In reading responses, I want to know how each student is thinking about the papers we’re reading that week—reading 12 AI reactions to our papers wastes my time while giving me no guidance for how to direct our next discussion. In presentations, although you’re welcome to seek AI help in the aesthetics of your slides, the words presented in them should be your own. And in your policy paper and final papers, it’s fine to get AI help with editing, but the ideas on the page need to have been produced by you alone.

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 cheating or plagiarism is his or her best (or only) option. So please do come to me if you have any questions about how to properly cite a source or build upon others’ ideas, or if you’re feeling stressed out about the class workload (or about anything else). If you have an issue that you’d rather not talk about with me, you might consider speaking with your academic advisor or dean; with one of the Psych Department’s other Directors of Undergraduate Studies; or with the counselors at Columbia’s Counseling and Psychological Services (<http://health.columbia.edu/services/cps>).

Diversity & Inclusion

Every learning environment should accommodate a wide range of students’ backgrounds, opinions, and identities. For seminars, it is even more crucial that everyone in the room feels able to freely express their thoughts, and is willing to respectfully listen to others’. This doesn’t mean we all need to be perfectly aligned on everything—or even anything! In the area of our course discussions in

particular, disagreement will challenge each of us to hone our own arguments, uncover our misconceptions, and expand our perspectives. But it's equally important to leave space for—and to learn from—non-academic forms of diversity, such as nationality, sex or gender, sexuality, race, class, religion, differences in ability, and many others. In the service of these goals, 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 uncomfortable or unwelcome.
- Your ability to take part in our class is being affected by events or experiences outside of our class. Even if it's something I can't help with 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 teach me as much as, if not more than, I can teach you.

Accommodations

Students with specific needs who may require accommodations should make an appointment to see me as soon as possible, at least by the end of the second week of class. If you have not already done so, stop by the Office of Disability Services (ODS) on the 7th floor of Lerner Hall to register for support services. ODS often requires two weeks to process an application, so please contact them as soon as you can, preferably before the course begins.

Wellness

All of us at some point experience challenges to our mental health and well-being. This is true at any time, and has been even more so in the past couple of years. I urge you to take care of yourselves—and of each other. Please prioritize your mental health and wellbeing and know that there are many resources available to you both within our classroom community and throughout the university:

<https://health.columbia.edu/content/counseling-and-psychological-services>

<http://blogs.cuit.columbia.edu/nightline/>

<https://universitylife.columbia.edu/student-resources-directory#health>

<https://columbiavirtualcampus.com/>

Please reach out for help if you need it, and if you see others who are struggling, please point them toward these or other sources of help, or encourage them to talk to me or one of the other Directors of Undergraduate Studies in the Psychology Department.

Sample List of Topics

Each class period after the first week will be devoted to one topic related to decision architecture. **The topics listed below are not in the order in which we will cover them**, and are not necessarily even the final list of topics we'll touch on—we'll determine the final schedule and list of topics during or soon after the first course meeting.

Based on student interest, we will end up skipping some of these topics and spending more than one week on others. If you are interested in a decision architecture topic that you don't see listed here, let me know! This field is currently very popular among researchers, so there are almost always new and interesting studies that we could add to this list. I'm also happy to spend a couple of weeks on the same topic; there's a great value to exploring how a particular DA tool applies across different domains, or among different populations.

Final reading lists for each week, with links to PDFs of all of the readings and the dates on which we'll cover each topic, will be posted on Canvas. The best way to find them is to use the "Modules" section of our Canvas site. I'll post the topics for the semester as soon as they're set (within a couple of days of our first class meeting), and add the reading assignments for each class after consulting with the student presenter for that week—our goal will always be to have the readings up by the Friday before the class in question.

There are no required textbooks for this course.

Week	Topics	<u>Previous years'</u> reading assignments (bold : were presented by students)
Week 1	Introduction to the course <ul style="list-style-type: none"> • What is decision architecture? • What are different ways of classifying nudges (mindful vs. mindless; aligning vs. encouraging; context vs. presentation)? • In which domains are nudges studied? 	Johnson et al., 2012 Ly, Mazar, Zhao, & Soman, 2013 Thaler & Sunstein, 2009 (introduction, pp. 1-14)
	Exploring the Default Effect: how and why do defaults work, and in what variety of settings do we see results? <ul style="list-style-type: none"> • Action vs. no-action defaults • Type I vs. Type II errors • Arguments for the ethics of using defaults 	Ansher et al., 2014 Smith, Johnson, & Goldstein, 2013 Johnson & Goldstein, 2004
	Revisiting defaults: which DA tools might influence choices for health insurance options? Are there any interactions between domain (e.g., health) and DA tool (e.g., default effects)? <ul style="list-style-type: none"> • Default effects on healthcare decisions • Effectiveness of defaults compared with that of calculation tools, education, & financial incentives 	Johnson, Hassin, Baker Bajger, & Treuer, 2013 Gigerenzer, 2015 Johnson & Goldstein, 2003 Larrick & Soll, 2008

	<p>Social Influence & environmental behavior: how can you manipulate perceptions of the social setting to encourage good behavior?</p> <ul style="list-style-type: none"> • Social norm theory • Use of descriptive norms & injunctive norms and their interactions 	<p>Hamann et al, 2015</p> <p>Jacobson, Mortensen, & Cialdini, 2011</p> <p>Cialdini, Reno, & Kallgren, 1990</p>
	<p>Nudging for academic honesty: how can DA tools be used to reduce cheating, both in undergraduate populations and among researchers themselves?</p> <ul style="list-style-type: none"> • Effectiveness of defaults • Effectiveness of social norms messaging 	<p>Mazar & Hawkins, 2015</p> <p>Anderson & Adam, 2014</p> <p>Smaldino & McElreath, 2016</p>
	<p>How might DA tools be effectively used to alleviate the problem of patient non-compliance in healthcare settings?</p> <ul style="list-style-type: none"> • Shared Decision Making & agency 	<p>Wilson et al. 2010</p> <p>Gold & Lichtenberg, 2012</p> <p>Blumenthal-Barby & Burroughs, 2012</p>
	<p>How can motivation theory (specifically, Regulatory Focus) be wielded to improve pro-environmental behavior?</p> <ul style="list-style-type: none"> • Motivational focus as a DA tool • Framing effects • motivation & framing interactions • How do defaults and motivational theory relate to the Status Quo Bias? 	<p>Baxter & Gram-Hanssen, 2016</p> <p>Boldero & Higgins, 2011</p> <p>Samuelson & Zeckhauser, 1988</p>
	<p>How could removing price tags from consumable items actually encourage higher spending in consumers?</p> <ul style="list-style-type: none"> • Self-signaling and identity as DA tools 	<p>Gneezy, et al. 2012</p> <p>Ariely, Loewenstein, & Prelec 2003</p>
	<p>Choice Overload: what factors might influence whether choice overload is experienced or not, and what implications does this theory have on leadership decisions?</p> <ul style="list-style-type: none"> • Review paper on the theory behind choice overload • Implications of CO theory for various domains, including decisions made on behalf of others 	<p>Chernev et al., 2015</p> <p>Levy & Thompson, Chapter 5</p>

	<p>How might DA tools be implemented in a legal setting?</p> <ul style="list-style-type: none"> • Mindset priming and its effect on jury decisions • Is it fair to consider priming as a DA tool? 	<p>O'Brien & Oyserman, 2008</p> <p>Bargh & Chartrand, 2000</p> <p>Stanchi, 2010</p>
	<p>How might nudges be implemented in the field of UX (user experience)?</p> <ul style="list-style-type: none"> • How could the DA tool of partitioning lead to different choices for users of web pages and phone apps? 	<p>Fox, Ratner, & Lieb, 2005</p> <p>Reichelson et al. 2017</p> <p>Lockton, Harrison, & Stanton, 2009</p>
	<p>What types of positive spillover effects might we see as a consequence of nudging?</p> <ul style="list-style-type: none"> • How and when can use of a DA tool lead indirectly to subsequent good behaviors? • Which DA tools should, in theory, lead to positive spillover, and which would be expected to lead to negative spillover? 	<p>Mochon et al., 2016</p> <p>Thøgersen & Crompton, 2009</p> <p>Truelove et al., 2014</p>
	<p>What types of negative spillover effects might we see as a consequence of nudging?</p> <ul style="list-style-type: none"> • What are “dodges” and what factors may predict when they will occur? • What are the theories behind the different reasons for negative spillover after good behavior? • Spillover in the domains of healthcare decisions, healthy eating, pro-environmental behaviors, and exercise 	<p>Colby, Li, & Chapman, 2014</p> <p>Ibuka, et al., 2014</p> <p>Policastro, Smith, & Chapman, 2015</p> <p>Tiefenbeck, et al., 2013</p> <p>Truelove et al., 2014 (review)</p>
Week 14	<p>Wrap-up discussion:</p> <ul style="list-style-type: none"> • When and where do behavioral nudges work? • How do nudges interact with each other, and with their context? • (How) can nudges be implemented ethically? Transparently? 	<p>Hansen & Jespersen, 2013</p> <p>Sunstein, 2015</p> <p><i>In preparation for our discussion, please also read each of the “Policy” Papers your classmates have posted on Canvas.</i></p>

Partial List of Readings

- Anderson, M. S., & Adam, J. A. (2014). A proposal for considering research integrity from the perspective of behavioral economics. *Journal of microbiology & biology education*, 15(2), 173.
- Ansher, C., Ariely, D., Nagler, A., Rudd, M., Schwartz, J., & Shah, A. (2014). Better medicine by default. *Medical Decision Making*, 34(2), 147-158.
- Ariely, D., Loewenstein, G., & Prelec, D. (2003). "Coherent arbitrariness": Stable demand curves without stable preferences. *The Quarterly Journal of Economics*, 118(1), 73-106.
- Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle. *Handbook of research methods in social and personality psychology*, 253-285.
- Baxter, J., & Gram-Hanssen, I. (2016). Environmental message framing: Enhancing consumer recycling of mobile phones. *Resources, Conservation and Recycling*, 109, 96-101.
- Blumenthal-Barby, J. S., & Burroughs, H. (2012). Seeking better health care outcomes: the ethics of using the "nudge". *The American Journal of Bioethics*, 12(2), 1-10.
- Boldero, J. M., & Higgins, E. T. (2011). Regulatory focus and political decision making: When people favor reform over the status quo. *Political Psychology*, 32(3), 399-418.
- Colby, H., Li, M., & Chapman, G. (2014). Carrots By Default: Are Healthy Defaults a Blessing Or a Curse?. *NA-Advances in Consumer Research Volume 42*.
- Chernev, A., Böckenholt, U., & Goodman, J. (2015). Choice overload: A conceptual review and meta-analysis. *Journal of Consumer Psychology*, 25(2), 333-358.
- Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of personality and social psychology*, 58(6), 1015.
- Gigerenzer, G. (2015). Towards a paradigm shift in cancer screening: informed citizens instead of greater participation. *BMJ: British Medical Journal (Online)*, 350.
- Gneezy, A., Gneezy, U., Riener, G., & Nelson, L. D. (2012). Pay-what-you-want, identity, & self-signaling in markets. *Proceedings of the National Academy of Sciences*, 109(19), 7236-7240.
- Gold, A., & Lichtenberg, P. (2012). Don't Call Me "Nudge": The Ethical Obligation to Use Effective Interventions to Promote Public Health. *American Journal of Bioethics*, 12(2), 18-20.
- Hamann, K. R., Reese, G., Seewald, D., & Loeschinger, D. C. (2015). Affixing the theory of normative conduct (to your mailbox): Injunctive and descriptive norms as predictors of anti-ads sticker use. *Journal of Environmental Psychology*, 44, 1-9.
- Hansen, P.G., & Jespersen, A.M. (2013). Nudge & the manipulation of choice: A framework for responsible use of the nudge approach to behavior change in public policy. *Eur. J. Risk Reg.*, 3.
- Ibuka, Y., Li, M., Vietri, J., Chapman, G. B., & Galvani, A. P. (2014). Free-riding behavior in vaccination decisions: An experimental study. *PloS one*, 9(1), e87164.

- Jacobson, R. P., Mortensen, C. R., & Cialdini, R. B. (2011). Bodies obliged and unbound: differentiated response tendencies for injunctive and descriptive social norms. *Journal of personality and social psychology*, 100(3), 433.
- Johnson, E. J., & Goldstein, D. G. (2004). Defaults and donation decisions. *Transplantation*, 78(12), 1713-1716.
- Johnson, E. J., Hassin, R., Baker, T., Bajger, A. T., & Treuer, G. (2013). Can consumers make affordable care affordable? The value of choice architecture. *PloS one*, 8(12), e81521.
- Johnson, E. J., & Goldstein, D. (2003). Do defaults save lives?. *Science*, 302(5649), 1338-1339.
- Johnson, E. J., Shu, S. B., Dellaert, B. G., Fox, C., Goldstein, D. G., Häubl, G., ... & Wansink, B. (2012). Beyond nudges: Tools of a choice architecture. *Marketing Letters*, 23(2), 487-504.
- Larrick, R. P., & Soll, J. B. (2008). The MPG illusion. *Science*, 320(5883), 1593.
- Levy, J. S., & Thompson, W. R. (2011). *Causes of war*. John Wiley & Sons.
- Ly, K., Mažar, N., Zhao, M., & Soman, D. (2013). Nudging. 1-28.
- Mazar, N., & Hawkins, S. A. (2015). Choice architecture in conflicts of interest: Defaults as physical and psychological barriers to (dis) honesty. *Journal of Experimental Social Psychology*, 59, 113-117.
- Mochon, D., Schwartz, J., Maroba, J., Patel, D., & Ariely, D. (2016). Gain without pain: The extended effects of a behavioral health intervention. *Management Science*.
- O'Brien, B., & Oyserman, D. (2008). It's Not Just What You Think But Also How You Think About it: The Effect of Situationally Primed Mindsets on Legal Judgments and Decision Making.
- Policastro, P., Smith, Z., & Chapman, G. (2015). Put the healthy item first: Order of ingredient listing influences consumer selection. *Journal of health psychology*, 1359105315617328.
- Samuelson, W., & Zeckhauser, R. (1988). Status quo bias in decision making. *Journal of risk and uncertainty*, 1(1), 7-59.
- Smaldino, P. E., & McElreath, R. (2016). The natural selection of bad science. *Royal Society Open Science*, 3(9), 160384.
- Smith, N. C., Goldstein, D. G., & Johnson, E. J. (2013). Choice without awareness: Ethical and policy implications of defaults. *Journal of Public Policy & Marketing*, 32(2), 159-172.
- Stanchi, K. (2010). The Power of Priming in Legal Advocacy: Using the Science of First Impressions to Persuade the Reader.
- Sunstein, C. (2015). What, Exactly, Do You Want? *New York Times* Op-Ed.
- Tiefenbeck, V., Staake, T., Roth, K., & Sachs, O. (2013). For better or for worse? Empirical evidence of moral licensing in a behavioral energy conservation campaign. *Energy Policy*, 57, 160-171.
- Thaler, R. & Sunstein, C. (2009). *Nudge: Improving Decisions about Health, Wealth, and Happiness*. Penguin: New York.

Thøgersen, J., & Crompton, T. (2009). Simple and painless? The limitations of spillover in environmental campaigning. *Journal of Consumer Policy*, 32(2), 141-163.

Truelove, H. B., Carrico, A. R., Weber, E. U., Raimi, K. T., & Vandenberg, M. P. (2014). Positive and negative spillover of pro-environmental behavior: An integrative review and theoretical framework. *Global Environmental Change*, 29, 127-138.

Werle, C. O., Wansink, B., & Payne, C. R. (2015). Is it fun or exercise? The framing of physical activity biases subsequent snacking. *Marketing Letters*, 26(4), 691-702.

Wilson, S. R., Strub, P., Buist, A. S., Knowles, S. B., Lavori, P. W., Lapidus, J., & Vollmer, W. M. (2010). Shared treatment decision making improves adherence and outcomes in poorly controlled asthma. *American journal of respiratory and critical care medicine*, 181(6), 566-577.