Mentalizing: How we read people

**Psychology 4241 - Spring 2023**

Time: Tuesdays 2:10-4pm; Location: 200C Schermerhorn

**Instructor:** Prof.Meghan Meyer

Office: TBD

Email: mlm2378@columbia.edu

Office Hours: TBD

**Prerequisites:** Course equivalents of at least two of the following courses: PSYC 1001, PSYC 2210, PSYC 2430, PSYC 2435, PSYC 2450, PSYC 2630 and/or the instructor's permission.

**Course Overview**: Success in a social world requires understanding other people’s thoughts and feelings, a process typically referred to as *mentalizing*. Yet, other people’s mental states are not directly observable: you cannot see a thought or touch a feeling. Nonetheless, humans are quite proficient in inferring these invisible, internal states of mind. How do we accomplish these mentalizing feats? We will try to answer this question from multiple angles, relying heavily on neuroscience and psychology research. We will address questions such as: Do specialized portions of the brain accomplish mentalizing? When do mentalizing skills develop in children and are humans the only species that can interpret minds? Can ‘low level’ biological states—such as inflammation—impact how we mentalize? What leads to biases in mentalizing, such as anthropomorphism (when people attribute mental states to inanimate objects) and dehumanization (when people under attribute mental states to humans)?

**Course Learning Goals and Outcomes:**

* Become an expert in what’s already known about mentalizing
* Hone critical thinking skills to develop new, unanswered questions about mentalizing
* Gain expertise in how scientists secure their livelihood: real-world scientific grant writing

To accomplish these goals, the class is structured like a journal club, and we will be reading seminal and cutting-edge scientific publications on mentalizing. There will also be one “zooming out” reading or other assignment (e.g., listening to a podcast) to help showcase the real-world value of the research outside of the ivory tower. For the final project, each student will write their own grant proposal and present their grant proposal idea to the class (see more information below). The aim of this assignment is to prepare students for the real-world challenge of being an original thinker and clear, organized communicator—skills that are necessary not only for pursuing a scientific career, but success in virtually every profession.

**Assignments and Grading**

*Seed Papers*: The day before each class, turn in a seed paper (500-700 words) by 4pm to Canvas. Seed papers integrate ideas from the assigned papers and pose at least one thoughtful question that plants a seed for conversation in class discussion. **The first seed question will be due XXX**. Each seed question is worth 3 points (1 point for turning it in on time. Good seed questions will get 2 points total and excellent seed questions will be 3 points total). Students will also be provided a grading rubric as a guide for what counts as a good versus excellent seed question.

*Leading a Class Discussion:* Each student will have the opportunity to lead a class discussion. You will have a choice for which day you present. You will present one of the readings marked with an asterisk (\*) for that week. Presentations should be roughly 20 minutes, and will include background, methods, results, and implications.

*Written Grant Proposal*:Your final project for this class is to write a grant proposal, pitching a study idea on mentalizing that you think would be worthy of funding. There are examples of Grant proposals on the class Canvas website. The final copy of your grant proposal is **due by XXX.**

This may be the first time you’ve written a grant—and that’s ok! You will have the opportunity to submit a ‘grant feeler’ in the middle of the semester (by the 8th week of the semester) to Prof. Meyer to get her feedback on your idea. The feeler is an optional, ungraded assignment. It’s simply an opportunity to get feedback prior to putting together your complete grant proposal.

*Grant Proposal Pitch*: The last day of class, students will pitch (present) their grant proposal ideas to the class and students will vote on which one they think would be mostly likely to be funded. The winner gets a tasty treat.

*Grading*
Seed Papers (20%)

Participation in Class Discussions (20%)

Leading a Class Discussion (20%)

Written Grant Proposal (30%)

Grant Proposal Presentation (10%)

Grading is as follows: A = 94-100; A- = 90-93; B+ = 87-89.9; B: 83-86.9; B-: 80-82.9; C+:77- 79.9; C: 73-76.9; C-: 70-72.9; D: 60-69.9, E: 0-59.9. Grades will not be rounded up; for example, a 93.9 is an A-.

**Workload:** Seminar meets 2 hours a week, and readings, presentations, and writing assignments are expected to take an additional 10 hours of work time per week, on average.

**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 cognitive psychology.

For undergraduates pursuing the Psychology major or concentration or the Psychology postbaccalaureate certificate program, the course meets the Group I (Perception & Cognition) distribution requirement. For Psychology majors and Psychology Postbac students, it fulfills the seminar requirement. For Neuroscience & Behavior majors, it fulfills the advanced seminar requirement for the Psychology portion of the major. For graduate students, it counts as one of the required seminars.

**Diversity & Inclusion:** My aim is to foster a learning environment that supports a diversity of perspectives and experiences and honors your identities. Please reach out to me with any concerns or suggestions you may have to better address your learning needs and to improve the effectiveness of this course. I look forward to working together to create a classroom community built on mutual respect and inclusivity.

**Accommodations**: Students with special 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.

**Academic Integrity:** The University now requires that syllabi include discussion of the importance of academic integrity in your studies at Columbia:

The intellectual venture in which we are all engaged requires of faculty and students alike the highest level of personal and academic integrity. As members of an academic community, each one of us bears the responsibility to participate in scholarly discourse and research in a manner characterized by intellectual honesty and scholarly integrity. In practical terms, this means that, as students:

* You must be responsible for the full citations of others’ ideas in all of your research papers and projects
* You must be scrupulously honest when taking your examinations
* You must always submit your own work and not that of another student, scholar, or internet agent.

From the Faculty Statement on Academic Integrity ([www.college.columbia.edu/academics/integrity-statement](https://www.college.columbia.edu/academics/integrity-statement)):

* Students are expected to do their own work on all tests and assignments for this class and act in accordance with the Faculty Statement on Academic Integrity and Honor Code established by the students of Columbia College and the School of General Studies.
* Because any academic integrity violation undermines our intellectual community, students found to have cheated, plagiarized, or committed any other act of academic dishonesty can expect to receive a zero for the work in question and may fail the class.
* Students will also be referred to the Dean’s Disciplinary Process (see: [www.college.columbia.edu/academics/disciplinaryprocess](http://www.college.columbia.edu/academics/disciplinaryprocess)).

It is students’ responsibility to ensure their work maintains expected standards. Should you have any questions or concerns regarding these expectations, please:

* Talk with the instructor
* Refer to the Columbia University Undergraduate Guide to Academic Integrity: [www.college.columbia.edu/academics/academicintegrity](http://www.college.columbia.edu/academics/academicintegrity)

**Class Schedule**

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| --- | --- | --- | --- |
| **Date** | **Class Number** | **Topic** | **Noteworthy Due Dates** |
|  | 1 | Minds Intensify Experience |  |
|  | 2 | Evolution & the Specialness of Social Thinking |  |
|  | 3 | Development | \*first seed paper due X/X |
|  | 4 | Mentalizing Strategies |  |
|  | 5 | Assessing Your Own Mind |  |
|  | 6 | Insights from Mental Health Conditions |  |
|  | 7 | Empathy and Feeling Understood |  |
|  | 8 | Connection vs. Competition | \*optional “grant feeler” due |
|  | 9 | Persuasion & Communication |  |
|  | 10 | Fiction, Creativity, and Theory of Mind |  |
|  | 11 | Intergroup and Intragroup Mindreading |  |
|  | 12 | Social Status |  |
|  | 13 | Social Networks |  |
|  | 14 | Grant Pitches | written grant proposal due X/X |

**Class Readings**

*Note that the readings are listed in the recommended order of reading them. Each week includes 3-4 required reading assignments, as well as 1-2 optional readings that are not required.*

**Module I: Why should we care about mentalizing?**

*Class 1: Minds intensify experience*

Lieberman, M. D. (2010). Social cognitive neuroscience. S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds). Handbook of Social Psychology (5th ed.) (pp. 143-193). New York, NY: McGraw-Hill. *\*Note, this chapter provides a nice road map throughout the course as we talk about brain regions.*

Gray, K. & Wegner, D. M. (2008). The sting of intentional pain. *Psychological Science, 19*(12), 1260-1262

Meyer, M. L., Williams, K. D., & Eisenberger, N. I. (2015). Why social pain can live on: Different neural mechanisms are associated with reliving social and physical pain. *PlosOne, 10(6), e0128294*.

*Zooming Out:* Santiago, P. N., Ursano, R. J., Gray, C. L., Pynoos, R. S., Spiegel, D., Lewis-Fernandez, R., ... & Fullerton, C. S. (2013). A systematic review of PTSD prevalence and trajectories in DSM-5 defined trauma exposed populations: intentional and non-intentional traumatic events. *PloS one, 8*(4), e59236.

*Optional*:

Chen, Z., Williams, K. D., Fitness, J., & Newton, N. C. (2008). When hurt will not heal: Exploring the capacity to relive social and physical pain. *Psychological Science, 19*(8), 789-795.

**Module II: The origins of mentalizing**

*Class 2: Evolution and the Specialness of Social Thinking*

Dunbar, R. I. M. & Shultz, S. Evolution in the social brain. *Science, 317*(5843), 1344-1347.

\*Sallet et al. (2011). Social network size affects neural circuits in macaques. *Science, 334*, 697-701.

\*Krupenye, C., Kuno, F., Hirata, S., Call, J., & Tomasello, M. (2016). Great apes anticipate that other individuals will act according to false beliefs. *Science, 354*(6308), 110-114.

*Zooming Out*: Lieberman, M. D. (2012). Education and the social brain. *Trends in Neuroscience and Education*, *1*(1), 3-9.

 *Optional:*

Meyer, M. L., & Collier, E. (2019). Theory of Mind*s*: Managing mental state inferences in working memory is associated with the dorsomedial subsystem of the default network and social integration. *Social Cognitive & Affective Neuroscience, 15*(1), 63-73.

Spunt, R. P., & Adolphs, R. (2015). Folk explanations of behavior: A specialized use of a domain-general mechanism. *Psychological Science, 26*(6), 724-736.

*Class 3: Development*

\*Richardson, H., Lisandrelli, G., Riobueno-Naylor, A., & Saxe, R. (2018). Development of the social brain from age three to twelve years. *Nature Communications, 9* (1027).

\*Somerville, L. H., Jones, R. M., Ruberry, E. J., Dyke, J. P., Glover, G., & Casey, B. J. (2013). The medial prefrontal cortex and the emergence of self-conscious emotion in adolescence. *Psychological science*, *24*(8), 1554-1562.

*Zooming Out*: Blakemore, S.J. (2010). The developing social brain: Implications for education. *Neuron, 65*, 744-747.

*Optional*:

Pfeifer, J. H., & Allen, N. B. (2021). Puberty initiates cascading relationships between neurodevelopmental, social, and internalizing processes across adolescence. *Biological Psychiatry*, *89*(2), 99-108.

Dumontheil, I., Apperly, I. A., & Blakemore, S.J. (2010). Online usage of theory of mind continues to develop in late adolescence. *Developmental Science, 13*(2), 331-338.

**Module III. How do we read minds?**

*Class 4: Mentalizing Strategies*

\*Mitchell, J. P. (2005). The link between social cognition and self-referential thought in medial prefrontal cortex. *Journal of Cognitive Neuroscience, 17*(8), 1306-1315.

\*Schwyck [Weaverdyck], M. E.\*, Du, M.\*, Li, Y., Chang, L. J., & Parkinson, C. Similarity
among friends serves as a social prior: The assumption that "birds of a feather flock together" shapes social decisions and relationship beliefs. *Preprint.*

Saxe, R. (2005). Against simulation: the argument from error. *Trends in Cognitive Sciences*, 174-179.

Mitchell, J. P. (2005). The false dichotomy between simulation and theory-theory: the argument’s error. *Trends in Cognitive Sciences*.

 *Note: read Saxe’s reply to Mitchell’s reply, too. It’s right below Mitchell’s on the pdf.*

*Zooming Out: Watch Ted Talk “**Your social media “likes” expose more than you think**.”*

*Optional*:

Ross, L., Green, D., & House, P. The “false consensus effect”: An egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology, 13*(3), 279-301.

*Class 5: Assessing your own mind*

Wilson, T. D., & Gilbert, D. T. (2003). Affective forecasting. In M. P. Zanna (Ed.), *Advances in experimental social psychology,*Vol. 35, pp. 345–411). Elsevier Academic Press.

\*Cowan, H. R., Chen, X., Jones, B. K., & McAdams, D. P. (2019). The single greatest life challenge: How late-midlife adults construct narratives of significant personal challenges. *Journal of Research in Personality, 83*, 103867.

\*Ersner-Hershfield, H., Wimmer, E., & Knutson, B. (2009). Saving for the future self: Neural measures of future self-continuity predict temporal discounting. *Social Cognitive and Affective Neuroscience, 4*, 85-92.

Ayduk, Ö., Gyurak, A., Akinola, M., & Mendes, W. B. (2013). Consistency over flattery: Self-verification processes revealed in implicit and behavioral responses to feedback. *Social Psychological and Personality Science, 4*(5), 538–545.

*Zooming Out*: *Watch Mortified Nation Documentary*

*Optional:*

\*Ochsner, K. N. et al. (2004). Reflecting upon feelings: An fMRI study of neural systems supporting the attribution of emotion to self and other. *Journal of Cognitive Neuroscience, 16*(10), 1746-1762.

*Class 6: Insights from Mental Health Conditions*

\*Sippel, L. M., Holzheimer, P. E., Huckins, J. F., Collier, E., Feilong, M., Wheatley, T., & Meyer, M. L. (2021). Neurocognitive mechanisms of poor social connection in PTSD: Evidence for abnormalities in social working memory. *Depression & Anxiety, 38*(6), 615-625.

\*Moieni, M. Irwin, M. R., Jevtic, I., Breen, E. C., & Eisenberger, N. I. (2015). Inflammation impairs social cognitive processing: A randomized controlled trial of endotoxin. *Brain, Behavior, and Immunity, 48*, 132-138.

Finn, E. S., Corlett, P. R., Chen, G., Bandettini, P. R., & Constable, R. T. (2018). Trait paranoia shapes inter-subject synchrony in brain activity during an ambiguous social narrative*. Nature Communications, 9*, 2043.

Zwickel, J., White, S. J., Coniston, D., Senju, A., Frith, U. (2011). Exploring the building blocks of social cognition: spontaneous agency perception and visual perspective taking in autism. *Social Cognitive and Affective Neuroscience, 6*, 564-571.

*Zooming Out*: *Watch ‘*[*The social life of your immune system*](https://www.youtube.com/watch?v=mpCvLXtMqiw)*’*

**Module IV. What are the consequences of mentalizing?**

*Class 7: Empathy & Feeling Understood*

\*Zaki, J., Weber, J., Bolger, N., & Ochsner, K. (2009). The neural basis of empathic accuracy. *PNAS, 106*(27), 11382-11387.

\*Morelli, S., Torre, J. B., & Eisenberger, N. I. (2014). The neural bases of feeling understood and not understood. *Social Cognitive and Affective Neuroscience, 9*, 1890-1896.

Bartal, I. B., Decety, J., & Mason, P. (2011). Empathy and pro-social behavior in rats. *Science, 334*, 1427-1430.

*Zooming Out*: Washington Post Article from December 29, 2020: [*Our divided times are an opportunity for empathy. Really.*](https://www.washingtonpost.com/opinions/2020/12/29/our-divided-times-are-an-opportunity-empathy-really/)

*Optional:*

Lun, J., Kesebir, S., Oishi, S. (2008). On feeling understood and feeling well: The role of interdependence. *Journal of Research in Personality, 42*, 1623-1628.

Cortland, C. I., Craig, M. A., Shapiro, J. R., Richeson, J. A., Neel, R., & Goldstein, N. J. (2017). Solidarity through shared disadvantage: Highlighting shared experiences of discrimination improves relations between stigmatized groups. *Journal of Personality and Social Psychology*, *113*(4), 547.

*Class 8: Connection vs. Competition*

\*Hoekzema et al. (2017). Pregnancy leads to long-lasting changes in human brain structure. *Nature Neuroscience, 20*(2), 287-300.

\*Coricelli, G., & Nagel, R. (2009). Neural correlates of depth of strategic reasoning in medial prefrontal cortex. *Proceedings of the National Academy of Sciences, 106*(23) 9163-9168.

Powers, K. E., Worsham, A. L., Freeman, J. B., Wheatley, T., & Heatherton, T. F. (2014). Social connection modulates perceptions of animacy. *Psychological science*, *25*(10), 1943-1948.

*Zooming Out*: Holt-Lunstad, J., Robles, T. F., & Sbarra, D. A. (2017). Advancing social connection as a public health priority in the United States. *American Psychologist, 72*(6), 517–530.

 *Optional:*

Waytz, A. Zaki, J. & Mitchell, J. P. (2012). Response of dorsomedial prefrontal cortex predicts altruistic behavior. Journal of Neuroscience, 32(22), 7646-7650.

Powell, J. L., Grossi, D., Corcoran, R., Gobet, F., & Garcia-Finana, M. (2017). The neural correlates of theory of mind and their role during empathy and the game of chess: A functional magnetic resonance imaging study. *Neuroscience*, *355*, 149-160.

*Class 9: Persuasion and Communication*

Baek, E. C. & Falk, E. B. (2018). Persuasion and influence: what makes a successful
persuader? *Current Opinion in Psychology, 24*, 53-57.

\*Falk, E. B., Morelli, S. A., Welborn, B. L., Dambacher, K., & Lieberman, M. D. (2013). Creating buzz: The neural correlates of effective message propagation. *Psychological Science, 24*(7), 1234-1242.

\*Zadbood, A., Chen, J., Leong, Y. C., Norman, K. A., & Hasson, U. (2017). How we transmit memories to other brains: Constructing shared neural representations via communication*. Cerebral Cortex, 27*(10), 4988-5000.

*Zooming Out*: *Listen to Hidden Brain Podcast “*[*Stop the Presses! Newspapers affect us, often in ways we don’t realize*](https://www.npr.org/2020/04/30/848404620/stop-the-presses-newspapers-affect-us-often-in-ways-we-dont-realize)*”*

*Optional:*

Slaughter, V., Peterson, C. C., & Moore, C. (2013). I can talk you into it: Theory of mind and persuasion behavior in young children. *Developmental Psychology, 49*(2), 227-231.

*Class 10: Fiction, Creativity, and Theory-of-Mind*

\*Kidd, D. C., & Castano, E. (2013). Reading literary fiction improves theory of mind. *Science, 342*, 6156.

\*Tamir, D., Bricker, A. B., Dodell-Feder, D., & Mitchell, J. P. (2016). Reading fiction and reading minds: the role of simulation in the default network. *Social Cognitive and Affective Neuroscience, 11*(2), 215-224.

Meyer, M. L., Hershfield, H. E., Waytz, A. G., Mildner, J., & Tamir, D. I. (2019). Creative expertise is associated with transcending the here and now. *Journal of Personality and Social Psychology, 116*(4), 483-494.

*Zooming Out*: Wiesner, P. W. (2014). Embers of society: Firelight talk among the Ju/’hoansi Bushmen. *Proceedings of the National Academic of Sciences, 111*(39), 14027-14035.

**Module V. Do macro social structures relate to micro mentalizing?**

*Class 11: Intergroup and Intragroup Mindreading*

Cikara, Bruneau, & Saxe, R. R. (2011). Us and them: Intergroup failures of empathy. *Current Directions in Psychological Science, 20*(3), 149-153.

\*Leong, Y. C., Chen, J., Willer, R., & Zaki, J. (2020). Conservative and liberal attitudes drive polarized neural responses to political content. *Proceedings of the National Academy of Sciences,*117(44): 27731-27739.

\*Harris, L. T., & Fiske, S. T. (2006). Dehumanizing the lowest of the low: Neuroimaging responses to extreme out-groups. *Psychological science*, *17*(10), 847-853.

*Zooming Out*: Eberhardt, J. L. (2005). Imaging race. *American Psychologist*, *60*(2), 181.

*Optional*:

Xu, X., Zuo, X., Wang, X., & Han, S. (2009). Do You Feel My Pain? Racial Group Membership Modulates Empathic Neural Responses. *Journal of Neuroscience, 29*(26), 8525-8529.

Lees, J., & Cikara, M. (2020). Inaccurate group meta-perceptions drive negative out-group attributions in competitive contexts. *Nature Human Behavior, 4*(3), 279-286.

*Class 12: Social Status*

\*Muscatell, K. A. et al. (2016). Neural mechanisms linking social status and inflammatory responses to social stress. *Social Cognitive and Affective Neuroscience*, 1-8.

Akinola, M., & Mendes, W. B. (2014). It's good to be the king: Neurobiological benefits of higher social standing. *Social Psychological and Personality Science, 5*(1), 43-51.

Kraus, M. W., Cote, S., & Keltner, D. (2010). Social class, contextualism,

and empathic accuracy. *Psychological Science, 21*(11), 1716-1723.

*Zooming Out*: *Listen to Hidden Brain Podcast “*[*Why Nobody Feels Rich*](https://www.npr.org/2020/09/14/912749547/why-nobody-feels-rich-the-psychology-of-inequality)*”*

*Class 13: Social Networks*

Basyouni, R. & Parkinson, C. (2022). Mapping the social landscape: Tracking patterns of interpersonal relationships. *Trends in Cognitive Sciences, 26*(2), 204–221.

\*Zerubavel, N., Bearman, P. S., Weber, J., & Ochsner, K. N. (2015). Neural mechanisms tracking popularity in real-world social networks. *Proceedings of the National Academic of Sciences*, *112*(49), 15072-15077.

\*Gagnepain et al., 2019. Collective memory shapes the organization of individual memories in the medial prefrontal cortex.*Nature Human Behavior, 4*, 189-2020.

Zooming Out: Watch [*The Hidden Influence of Social Networks*](https://www.ted.com/talks/nicholas_christakis_the_hidden_influence_of_social_networks?language=en)

*Optional:*

\*Krol, S. A., Meyer, M. L., Lieberman, M. D., & Bartz, J. A. (2018). Social working memory predicts social network size in humans. Adaptive Human Behavior and Physiology. DOI: 10.1007/s40750-018-0100-9.