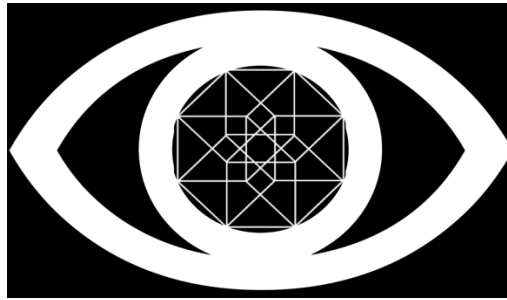


**University of Massachusetts Amherst Oxford Summer Seminar
The Psychology of Illusion**



'I learned a long time ago that reality was much weirder than anyone's imagination.'
– Hunter S. Thompson

Illusions can be defined as perceptions that are departures from reality. And far from being occasional mental glitches – amusing, but readily dismissed or ignored – they have emerged as invaluable tools for psychological researchers. Illusions can help reveal the eccentricities and limitations of human cognition. Our day-to-day visual experiences lead most of us to believe that we can effortlessly generate rich, vivid, uninterrupted mental representations of the world around us. However, a rich body of scientific evidence suggests that this belief is itself an illusion. Pulling together concepts from history of science scholarship, cognitive psychology, and neuroscience, this course will examine the past and present psychological research related to the concepts of illusory perceptions and deception. We will discuss how theories related to deception and illusion were instrumental in the development of experimental psychology as a scientific discipline- with a particular focus on how early psychologists sought to distinguish themselves from what they considered to be pseudo-scientific practices. We will discuss how considerations of illusions have led to developments in researchers' theoretical understandings of human perception, attention, memory, and reasoning. We will examine ways that illusions can lead us to errors and also how they can actually represent adaptive mechanisms. We will also consider recent developments in the 'science of magic,' that have involved researchers adapting the techniques and knowledge of professional magicians to drive novel experimental research. And we will discuss how illusions relate the sub-discipline of anomalistic psychology, which seeks to explore the science behind why people can come to experience seemingly paranormal phenomena, like hauntings and alien encounters.

One of the central focuses of this course will be topic of the 'Science of Magic.' In the past 15 years, the scientific investigation of magic has undergone something of a renaissance. Since the year 2000, the body of experimental scientific literature on the topic of performance magic has more than quadrupled, in comparison to all of the experimental work published prior to the turn of the 21st century. A total of 88 empirical papers have been published on the topic between 2000 and 2018, compared to the 12 that were published in the preceding century, between 1887 and 1999. While the recent level of focus on the topic is arguably relatively novel, records of performance magic can be traced back to some the oldest surviving written records. Additionally, the idea of investigating the psychology of magic actually played a key role in the emergence of experimental psychology itself during the late

1800s. Given the recent rise in interest in the psychology of magic, it is important to look back on previous perspectives on the topic.

During your six weeks at Oxford, our course meetings will consist largely of seminars that will feature a blend of lectures, demonstrations, and class discussions. Outside of class, you will be assigned readings, short answer discussion questions, and essay assignments. The readings will be rather eclectic- including contemporary and historical scientific writings as well as reviews, commentaries, and theoretical papers written by both academics and magicians. Essays will be 1500-2000 words in length and will be due every other week. These assignments are designed to give you the opportunity to demonstrate how you are able to integrate ideas from course meetings and readings.

Before the first class, please read the introduction to Kuhn's *Experiencing the Impossible*.

Also please email me, at matthew.tompkins@psy.ox.ac.uk, with answers to the following questions.

- Please state your name and indicate how you would like to be addressed in class
- What is your psychology background? What specific relevant coursework have you completed in the past? Have you been involved with research?
- Do you have any experience performing magic?
 - (No worries if you have limited experiences in the above areas, there are no pre-requisites for this course, but it is helpful for me to have a bit of an idea where you're all coming from)
- On a sheet of paper, please ***handwrite*** the following phrase 3 times:
 - 'Welcome to The Psychology of Illusion: University of Massachusetts Amherst Oxford Summer Seminar 2019.'
 - Then print and sign your name.
 - Please take a picture/scan of the three lines along with your name and signature and include this in as an attachment in your email to me.

Course Texts:

- Kuhn, G. (2019) *Experiencing the Impossible: The Science of Magic*. London, UK: MIT Press.
- Tompkins, M. L. (2109). *The Spectacle of Illusion*. London, UK: Thames & Hudson.
- Jay, J. (Ed.)(2013). *Magic in Mind*. Vanishing Inc.
 - [This ebook is a collection of essays written by magicians and can be downloaded for free from vanishingincmagic.com/magic-downloads/ebooks/magic-in-mind/]

Additional readings: (the following list includes optional readings that correspond with seminar topics- required readings will be assigned weekly, and will include empirical papers, reviews, opinions, and book sections)

Contemporary Perspectives

- Barnhart, A. S. (2010). The exploitation of gestalt principles by magicians. *Perception, 39*, 1286-1289.
- Chabris, C. F., & Simons, D. H. (2010). *The invisible gorilla, and other ways our intuitions deceive us*. New York: Crown.
- Gregory, R. (1982). Conjuring. *Perception 11*, 631–633.
- Gregory, R. L. (2009). *Seeing through illusions*. Oxford: Oxford University Press.
- Hyman, R. (1989). The psychology of deception. *Annual Review of Psychology, 40*(1), 133-154.
- Johansson, P., Hall, L., Sikstrom, S., & Olsson, A. (2005). Failure to detect mismatches between intention and outcome in a simple decision task. *Science, 310*, 116-119.
- Kuhn, G. & Land, M. F. (2006). There's more to magic than meets the eye! *Current Biology, 16*, R950.
- Kuhn, G., & Rensink, R. A. (2016). The vanishing ball illusion: A new perspective on the perception of dynamic events. *Cognition, 148*, 64-70.
- Lachapelle, S. (2008). From the stage to the laboratory: Magicians, psychologists, and the science of illusion. *Journal of the History of the Behavioral Sciences, 44*(4), 319-334.
- Lamont, P. (2010). The misdirected quest. *The Psychologist, 23*, 978-980.
- Levin, D. T., Momen, N., Drivdahl IV, S. B., & Simons, D. J. (2000). Change blindness blindness: The metacognitive error of overestimating change-detection ability. *Visual Cognition, 7*(1-3), 397-412.
- Loftus, E. F. (2005). Planting misinformation in the human mind: A 30-year investigation of the malleability of memory. *Learning & Memory, 12*(4), 361-366.
- Loftus, E. F., & Palmer, J. C. (1974). Reconstruction of automobile destruction: An example of the interaction between language and memory. *Journal of Verbal Learning and Verbal Behavior, 13*, 585-589.
- Macknik, S. L., King, M., Randi, J., Robbins, A., Thompson, J., & Martinez-Conde, S. (2008). Attention and awareness in stage magic: Turning tricks into research. *Nature Reviews Neuroscience, 9*(11), 871-879.
- Marcuse, F. L., & Bitterman, M. E. (1944). A classroom demonstration of "psychical phenomena." *The Journal of Abnormal and Social Psychology, 39*, 238-243.
- Neisser, U. (1979). The control of information pickup in selective looking. *Perception and its Development: A Tribute to Eleanor J. Gibson*, Psychology Press: UK, 201-219.
- Noë, A. (2002). Is the visual world a grand illusion? *Journal of Consciousness Studies, 9, 5*, 1-12.
- Olson, J. A., Landry, M., Appourchaux, K., & Raz, A. (2016). Simulated thought insertion: Influencing the sense of agency using deception and magic. *Consciousness and Cognition, 43*, 11-26.
- Parris, B. A., Kuhn, G., Mizon, G. A., Benattayallah, A., & Hodgson, T. L. (2009). Imaging the impossible: An fMRI study of impossible causal relationships in magic tricks. *Neuroimage, 45*(3), 1033-1039.
- Rensink, R. A., & Kuhn, G. (2014). A framework for using magic to study the mind. *Frontiers in Psychology, 5*, 1508. doi: 10.3389/fpsyg.2014.01508
- Rensink, R. A., O'Regan, J. K., & Clark, J. J. (1997). To see or not to see: The need for attention to perceive changes in scenes. *Psychological science, 8*(5), 368-373.

- Simons, D. J. (2010). Monkeying around with the gorillas in our midst: Familiarity with an inattentive-blindness task does not improve the detection of unexpected events. *i-Perception*, 1, 3-6.
- Simons, D. J., & Chabris, C. F. (1999). Gorillas in our midst: Sustained inattentive blindness for dynamic events. *Perception-London*, 28, 1059-1074.
- Simons, D. J., & Chabris, C. F. (2011). What people believe about how memory works: A representative survey of the US population. *PLoS One*, 6, e22757.
- Simons, D. J., & Chabris, C. F. (2012). Common (mis) beliefs about memory: A replication and comparison of telephone and Mechanical Turk survey methods. *PloS one*, 7, e51876.
- Simons, D. J., & Rensink, R. A. (2005). Change blindness: Past, present, and future. *Trends in Cognitive Sciences*, 9(1), 16-20.
- Sporer, S. L. (1982). A brief history of the psychology of testimony. *Current Psychological Reviews*, 2(3), 323-339.
- Subbotsky, E. & Quinteros, G. (2002). Do cultural factors affect causal beliefs? Rational and magical thinking in Britain and Mexico. *British Journal of Psychology*, 93, 519-543.
- Teller. (2012). Teller reveals his secrets. *Smithsonian Magazine*. Retrieved: <https://www.smithsonianmag.com/arts-culture/teller-reveals-his-secrets-100744801/>
- Thomas, C., Didierjean, A., Maquestiaux, F., & Gygax, P. (2015). Does Magic Offer a Cryptozoology Ground for Psychology? *Review of General Psychology*, 19, 117-128.
- Tompkins, M. L. (2016, October 24). The Strange Tale of an X-rated Haunting. *BBC Future*. Retrieved from <http://www.bbc.com/future/story/20161024-the-strange-tale-of-an-x-rated-haunting>
- Tompkins, M. L. (2017, June). Blinded by séance: The man who offered scientists an afterlife. *New Scientist*, 3130, pp. 42-43. <https://www.newscientist.com/article/mg23431300-800-blinded-by-séance-the-man-who-offered-scientists-an-afterlife/>
- Tompkins, M. L., Woods, A. T., & Aimola Davies, A. M. (2016). Phantom Vanish magic trick: Investigating the disappearance of a non-existent object in a dynamic scene. *Frontiers in Psychology*, 7, 950.
- Wiseman, R., & Greening, E. (2005). It's still bending: Verbal suggestion and alleged psychokinetic ability. *British Journal of Psychology*, 96, 115-127.
- Wiseman, R., & Greening, E. (2005). It's still bending: Verbal suggestion and alleged psychokinetic ability. *British Journal of Psychology*, 96, 115-127.
- Wiseman, R., & Morris, R. L. (1995). Recalling pseudo-psychic demonstrations. *British Journal of Psychology*, 86, 113-125.
- Wiseman, R., Greening, E., & Smith, M. (2003). Belief in the paranormal and suggestion in the séance room. *British Journal of Psychology*, 94, 285-297.
- Wiseman, R., Greening, E., & Smith, M. (2003). Belief in the paranormal and suggestion in the séance room. *British Journal of Psychology*, 94, 285-297.

Historical Perspectives

- Binet, A., (1896). Psychology of prestidigitation. (M. Nichols Trans.). *Annual Report of the Board of Regents of the Smithsonian Institution*. Washington D.C.: Government Printing Office.
- Dessoir, M. (1893a). The psychology of legerdemain. Part I. (E. S. Boyer, Trans.). *The Open Court*, 7, 3599-3606.

- Dessoir, M. (1893b). The psychology of legerdemain. Part II. (E. S. Boyer, Trans.). *The Open Court*, 7, 3608-3611.
- Dessoir, M. (1893c). The psychology of legerdemain. Part III. (E. S. Boyer, Trans.). *The Open Court*, 7, 3616-3618.
- Dessoir, M. (1893d). The psychology of legerdemain. Part IV. (E. S. Boyer, Trans.). *The Open Court*, 7, 326-3629.
- Dessoir, M. (1893e). The psychology of legerdemain. Part V. (E. S. Boyer, Trans.). *The Open Court*, 7, 3633-3634.
- Faraday, M. (1853, July). Experimental investigation of table moving. *The Athenaeum*, 801-803.
- Hodgson, R. (1892). Mr. Davey's Imitations by Conjuring of Phenomena sometimes attributed to Spirit Agency. *Journal of the Society for Psychical Research*, 8, 252-310.
- Hodgson, R., & Davey, S. (1887). The possibilities of mal-observation and lapse of memory from a practical point of view. *Proceedings of the Society for Psychical Research*, 4, 381-495.
- Jastrow, J. (1888). The psychology of deception. *Popular Science Monthly*, 34, 145-157.
- Münsterberg, H. (1899, January). Psychology and Mysticism. *Atlantic Monthly*, 67-85.
- Münsterberg, H. (1908). *On the Witness Stand: Essays on Psychology and Crime*. New York, NY: Doubleday, Page & Co.
- Triplett, N. (1900). The psychology of conjuring deceptions. *The American Journal of Psychology*, 11, 439-510.
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- Wallace, A. R. (1891). Correspondence: 'Mr S. J. Davey's Experiments'. *Journal of the Society for Psychical Research*, 5, 43.
- Wundt, W. (1879). Spiritualism as a scientific question (Edwin D. Mead, Trans.). *Popular Science Monthly*, 15, 577-593.
- Zöllner, J.K.F. (1878). On space of four dimensions. *Quarterly Journal of Science*, 8, 227-237.