# **Mind, Self and 21st Century Technology**

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| Lecturer: Robert Clowes |  |
| ECTS: 6 |  |
| Língua(s) de ensino: English |  |
| Tipo: |  |
| Horas de Contacto: 56.0 |  |
| Teóricas (T): 0.0 |  |
| Teóricas-Práticas (TP): 0.0 |  |
| Laboratório (PL): 0.0 |  |
| Seminario (S): 0.0 |  |
| Trabalho de Campo (TC): 0.0 |  |
| Estágio (E) : 0.0 h |  |
| Orientação Tutorial (OT): 0.0 |  |
| Outras (O): 0.0 |  |
| Horas de Trabalho Total (Horas de Contacto + Trabalho Autónomo): 150.0 |  |

We live our lives against a densely populated artefactual and technological background. Some of the technologies are millennia old, but some that have become central to our lives are newly minted, only a decade or so old. Our cognitive abilities, habits, preferences and perhaps our thoughts are deeply dependent upon the world of artefacts despite the way it often becomes invisible to us (Norman, 1999). We take it for granted while depending upon it. Have you ever considered that the everyday technologies with which you interact: your smartphone, your Fitbit, your web-browser may be subtly changing your cognitive processes and habits, even the way you think? What does this technological embedding mean for you, your life, your identity?

The cognitive environment of human beings is increasingly saturated with 'smart' artefacts. The ubiquitous presence of computer and artificial intelligence technologies (Weiser, 1991) from the smart assistants to the wireless internet amounts to a radically new epistemic and cognitive environment which we already inhabit (Clowes, 2015)(Sparrow, Liu, & Wegner, 2011). At the same time the digital environment is rapidly becoming an *Internet of Things* where autonomous systems communicate, act and shape our lives (Floridi, 2014). The effects of technology may be rapidly reshaping the human cognitive profile, the way we think and even the sorts of beings we are (Pariser, 2011; Smart, Clowes, & Heersmink, 2017). Some see this latest trend as deeply worrying (Carr, 2010; Turkle, 2011). Others point to a deep continuum in human cognitive evolution, where human development and especially the development of complex cognitive abilities is linked to our development of artefacts (Clark, 2003; Gregory, 1981; Malafouris, 2013).

This course explores the history, contemporary context and possible futures of the ever-deepening engagement between mind, human nature, cognition and personal identity and the artefactual background of our lives. It explores how to think about contemporary technological systems such as the smart phone, digital assistant and web-browser and explores possible future advances such as superintelligence, Artificial General Intelligence (AGI), and radical cognitive enhancements, such as brain chips and uploading. It especially explores these topics in the context of cognitive ecology (Smart, Heersmink, & Clowes, 2017): the ways in which human minds and their capacities depend upon environmental resources, artefacts and technologies. A central focus of the course is to study how the new cognitive ecology of smart-artefacts may shape both how our minds work and how we think about our minds, and investigate this relationship in the context of the different epochs of technology and how they have previously reshaped human cognition.

Humanity urgently requires a deeper understanding of the technologies of e.g., artificial intelligence, ubiquitous computing, the ‘smart’ environment in the context of an understanding of the human mind. This course sets out to provide that foundation through offering a consideration of the deep role of technology in human cognition, a thorough and critical understanding of the foundations of technologies currently shaping our world, alongside a consideration of what individual human agents, artefactual design and social institutions can do to shape these developments. This course will equip its students with a series of tools and perspectives to think about this new historical situation from an understanding the deep history of the human relationship with technology.

# **Key Themes**

Mechanistic thinking about minds(Boden, 2006; Floridi, 2014, 2015)*,* The nature of self and personal identity(Baggini, 2011; Clark, 2003; Metzinger, 2009),The role of artefacts in shaping the human mind (Dennett, 1996; Gregory, 1981; Malafouris, 2013; Olsen, 2010; Turkle, 2007), the cultural environment of technology (boyd, 2008; Hutchins, 1995) the current state of the art of artificial intelligence (Brockman, 2020; Brooks, 2002; Russell, 2019), the implications of AI for the future (Bostrom, 2014; Carr, 2010; Lanier, 2010; Russell, 2019; Schneider, 2019; Turkle, 2011)

# **Learning Objectives**

The course aims to equip students with the best available intellectual tools to consider our current technological epoch. To understand 4E – embodied, embedded, extended, enactive – approaches to cognitive science and their relevance to questions of how we relate to artefacts (Clark, 1997; McCullough, 1996). Develop the ability to think critically about humanity´s ongoing relationship with technology. Especially the course aims to equip students to better think about human cognition, mind, and our sense of self in the context of ‘smart’ technologies. We do this by developing an appreciation for the importance of material (and now digital) culture for the human mind. We address what can be learnt from previous major transitions in material culture. We also seek understand some different frames for thinking about the nature of digital media and artificial intelligence and what they might contribute to the design of more adequate future spaces for reflection and thinking. Through this understanding the aim is better consider fundamental problems facing humanity from an informed perspective.

# **Indicative Reading List**

Baggini, J. (2011). *The Ego Trick: What does it mean to be you?* Cornwall, UK: Granta Books.

Boden, M. A. (2006). *Mind As Machine: A History of Cognitive Science Two-Volume Set*. Oxford: Oxford University Press.

Bostrom, N. (2014). *Superintelligence*: Dunod.

boyd, d. m. (2008). *Taken out of Context: American Teen Sociality in Networked Contexts.*

Brockman, J. (2020). *Possible minds: Twenty-five ways of looking at AI*: Penguin Books.

Brooks, R. (2002). *Robot: The Future of Flesh And Machines*. Cambridge, Massachusetts: Allen Lane: The Penguin Press.

Carr, N. (2010). *The Shallows: How the internet is changing the way we think, read and remember*. London: Atlantic Books.

Clark, A. (1997). *Being There: Putting Brain, Body, and World Together Again*. Cambridge, MA: The MIT Press.

Clark, A. (2003). *Natural Born Cyborgs: Minds, Technologies and the Future of Human Intelligence.* New York: Oxford University Press.

Dennett, D. C. (1996). *Kinds of Minds: Towards an Understanding of Consciousness*: Phoenix Books.

Floridi, L. (2014). *The fourth revolution: How the infosphere is reshaping human reality*: OUP Oxford.

Floridi, L. (2015). *The Onlife Manifesto: Being Human in a Hyperconnected Era*: Springer Cham Heidelberg New York Dordrecht London.

Gregory, R. L. (1981). *Mind in science: A history of explanations in psychology.* Cambridge: Cambridge University Press.

Hutchins, E. (1995). *Cognition in the Wild*. Cambridge MA: MIT Press.

Lanier, J. (2010). *You Are Not a Gadget: A Manifesto*. London, England: Allen Lane.

Malafouris, L. (2013). *How Things Shape the Mind: A Theory of Material Engagement*. Cambridge, MA, U.S.A: MIT Press.

McCullough, M. (1996). *Abstracting Craft: The Practiced Digital Hand*. Cambridge, MA: The MIT Press.

Metzinger, T. (2009). *The Ego Tunnel: The Science of the Mind and the Myth of the Self*: Basic Books.

Norman, D. A. (1999). *The invisible computer: why good products can fail, the personal computer is so complex, and information appliances are the solution*: MIT press.

Olsen, B. (2010). *In defense of things: archaeology and the ontology of objects*: Rowman Altamira.

Pariser, E. (2011). *The filter bubble: What the Internet is hiding from you*: Penguin.

Russell, S. J. (2019). *Human compatible: Artificial intelligence and the problem of control*: Penguin Audio.

Schneider, S. (2019). *Artificial You: AI and the Future of Your Mind*: Princeton University Press.

Smart, P. R., Clowes, R. W., & Heersmink, R. (2017). Minds Online: The Interface between Web Science, Cognitive Science and the Philosophy of Mind. *Foundations and Trends in Web Science, 6*(1-2), 1-232. doi:<http://dx.doi.org/10.1561/1800000026>

Smart, P. R., Heersmink, R., & Clowes, R. W. (2017). The Cognitive Ecology of the The Internet. In S. J. Cowley & F. Vallée-Tourangeau (Eds.), *Cognition Beyond the Brain, 2nd Edition* (pp. 251-282): Springer.

Sparrow, B., Liu, J., & Wegner, D. M. (2011). Google effects on memory: Cognitive consequences of having information at our fingertips. *Science, 333*(6043), 776-778.

Turkle, S. (2007). *Evocative objects: Things we think with*: The MIT Press.

Turkle, S. (2011). *Alone Together: Why We Expect More From Technology and Less from Each Other*. New York: Basic Books.

Weiser, M. (1991). The computer for the 21st century. *Scientific American, 265*(3), 94-104.