

Effectual Anticipation: Analytical, Dialectical and Crealectical Moments

Luis de Miranda

Örebro University / CREA (Cross-disciplinary Research on Effectual Anticipation)

Anticipation plays a causal role in the actualization of our models and futures. I summarize nascent research initiated at Örebro University in 2018 (CREA, Cross-disciplinary Research in Effectual Anticipation). I propose an understanding of performative anticipation that distinguishes between “analytical”, “dialectical” and “crealectical” moments, particularly in the context of “anthrobotic” relationships, i.e. sociotechnical assemblages of human life and algorithms (de Miranda et al., 2016).

The project of analytical intelligence — reactivated today in so-called *big data* and *predictive analytics* — was epitomized by Laplace (1902 [1812]): “We may regard the present state of the universe as the effect of its past and the cause of its future. An intellect which at a certain moment would know all forces that set nature in motion, and all positions of all items of which nature is composed, if this intellect were also vast enough to submit these data to analysis, it would embrace in a single formula the movements of the greatest bodies of the universe and those of the tiniest atom; for such an intellect nothing would be uncertain and the future just like the past would be present before its eyes.” Such a view, if made dominant, would dangerously ignore the pluridimensionality and pluridirectionality of living processes.

The universe cannot be said to be merely reading its own program as it unfolds mechanically, such as in a universal simulation hypothesis (Bostrom 2003). As intuited by Rosen (1985), anticipatory behavior becomes an effect among others in the agential factors that influence the future. The performative — hereafter “effectual” — stance claims that anticipation by members, designers or users of a given system cannot be ignored in the analysis and conception of a situation and its outcomes. Effectual designates the action of the anticipator on the protocol she conceives or follows in the sense of Aristotle’s efficient causation.

What is the future when anticipated? Massumi (2007) calls it an “indeterminate potentiality”. In line with the spirit of process philosophies (Bergson, 1911; Whitehead, 1929), we accept that the Real is a process of actualizations, which means that everything real is historical, temporal and that a process itself is more real and encompassing than its actualizations. Moreover, actualizations are not linear nor unidirectional or unidimensional.

A projective idea of futurity, when extended to infinity, suggests that all potentialities could be actualized *ad infinitum*. In other words, given an infinite time, anything could happen. This

idea is sometimes called the Infinite Monkey Theorem (Goodman & Elgin, 1986). Infinity is not only a relative, incremental or additional extension of time; it is also, as absolute infinity, an asymptotic negation of any temporal linearity (cf. Zeno's paradox or contemporary models of emergence). As such, infinity pertains as much to the future as to the present or the past. Because of the ambivalence of infinity, inscribed in the Real, as suggested by Lacan (de Miranda, 2009), absolute possibility is a transcendental horizon with immanent consequences, the "eternal object" *par excellence* which Whitehead called Creativity (1929). By "Creal" (de Miranda, 2017), we mean that the Real is not only a process of infinite possibility, but that this process is pluridimensional and pluridirectional.

In humans, as noted by primatologist Robert Sapolsky (2011), the psychological difference between before and after is so important that entire groups, for example religious ones, are capable of sacrificing their life and secular well-being in anticipation of a worthwhile future. This is an aberration from an analytic point of view, but it is an extreme illustration of how the absolute infinite is effectual in human systems. The paradoxical capacity to pursue a knowledge about something we ignore but we feel or desire suggest the agency of what Einstein after van't Hoff (1878) called creative imagination (Holton, 1978). Unfortunately, imagination is often seen as a non-causal tool in noosystems (Barrett, 2001), id est ecosystems or technosystems in which emotion, cognition and metacognition have an internal differential influence, constantly interacting with formal material protocols of repetition. The necessity of considering effectual anticipation in the conception and study of noosystems goes against the way theorization tends to exclude the imaginative subject — the observer, the practitioner, the designer, the interpreter — in the description of the system. The intentional and cognitive focus, the affective ideation of what is to come, which might or might not be a form of optimization, should not be left out of the explanation if we are to develop a healthy technology and science.

When accounts of the future are seen as performative, they are usually understood as enacting a particular future while also marginalizing alternative futures in order to realize the projected future (Michael, 2017). Can we distinguish different modes that this enacting might take? If we agree that the ultimate teleonomy of an anthrobotic system is to be a healthy one, then any intelligence of it is, I propose, a process that can be divided into at least three moments: anagnosis (reading), diagnosis (interpretation), and prognosis (anticipation). This corresponds to three aspects of understanding: a) an analytical stage, based on a reading of the given as data or syntax; b) a dialectical stage based on discursive interpretation or diagnosis of semantic oppositions (Hegel, 1807; Clément, 1994); c) a crealectical stage, which integrates but

supersedes the analytical and dialectical modes into a practice of prognosis, a meta-anticipation of what is likely to be actualized.

A crealectical intelligence integrates the pluridimensionality and pluridirectionality of processes. It corresponds perhaps to what Spinoza called the third kind of knowledge. It has not yet been clearly realized by humans. Within this framework, artificial intelligence, rather than imposing reductive analytics or enforcing agonistic dialectics, could help us achieve a better understanding of a holistic and healthy crealectics.

Barrett, G. W. (2001), "Closing the Ecological Cycle: The Emergence of Integrative Science", *Ecosystem Health*, 7 (2).

Bergson, H. (1911). *Creative Evolution*, tr. Arthur Mitchell. New York: Henry Holt and Company.

Bostrom, N. "Are We Living in a Computer Simulation?", *Philosophical Quarterly*, 53 (211), pp. 243-255.

Clément, C. (1994). *Syncope: The Philosophy of Rapture*. Minneapolis: University of Minnesota Press.

de Miranda (2009). *Peut-on jouir du capitalisme? Lacan avec Heidegger et Marx*. Paris: Max Milo: 2009.

de Miranda, L., Ramamoorthy, R., Rovatsos, M. (2016), 'We, Anthrobot: Learning From Human Forms of Interaction and Esprit de Corps to Develop More Plural Social Robotics. In J Seibt, M Nørskov, S.S. Andersen (eds.), *What Social Robots Can and Should Do*, Vol. 290, *Frontiers in Artificial Intelligence and Applications*.

de Miranda, L. (2017), "On the Concept of Creal: The Politico-Ethical Horizon of a Creative Absolute", In *The Dark Precursor: Deleuze and Artistic Research*. Leuven University Press. pp. 510-516

Goodman, N. & Elgin, C. Z. (1986). "Interpretation and Identity: Can the Work Survive the World?", *Critical Inquiry* 12 (3), 564–575.

Hoff, J. H. van't, *Imagination in Science*, tr. Springer, G. F.. Springer-Verlag New York Inc., 1967.

Holton, G. (1978). *The Scientific Imagination: Case Studies*. Cambridge: Cambridge University Press.

Laplace, P. S. (1902 [1814]), *A Philosophical Essay on Probabilities*, trans. Truscott, F. W. & Emory, F. L. (New York, NY: Wiley and Sons).

Massumi, B. (2007). "Potential politics and the primacy of preemption", *Theory and Event*, 10(2), <http://muse.jhu.edu/journals/theory-and-event/v010/10.2massumi.html>

Michael, M. (2017), "Enacting Big Futures, Little Futures: Toward an ecology of futures", *The Sociological Review*, Volume: 65 issue: 3, pp. 509-524.

Parent, J-P., Takasu K., Brodeur, J., Boivin G. (2017) 'Time perception-based decision making in a parasitoid wasp', *Behavioral Ecology*, 28 (3), 1, pp 640-677.

Rosen, R. (1985). *Anticipatory Systems*. Oxford: Pergamon Press.

Whitehead, A. N. (1929) *Process and Reality*. New York: The Free Press.

Sapolski, R. (2011). 'Are Humans Just Another Primate', California Academy of Sciences, http://library.fora.tv/2011/02/15/Robert_Sapolsky_Are_Humans_Just_Another_Primate

Seibt, S. Nørskov, M., Andersen, S. S. (eds.), *What Social Robots Can and Should Do*, Vol. 290, *Frontiers in Artificial Intelligence and Applications*.