



Research Seminar

“Believing between Theology and Neuroscience”
*(Towards applied ‘Credition’)**

Pontifical University Antonianum, Rome
6–8 June, 2016

PROGRAM and ABSTRACTS

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* In connection with the *Credition research* project, University of Graz
(<http://credition.uni-graz.at/en/implementation-research/>)

PROGRAM

6 June – 1st Session –

- 3:00 p.m. *Opening address*
- 3.30 p.m. Introduction (L. Oviedo, I. Colagè)
- 4:15 p.m. *In search for the animacy detector in the brain: Biological predispositions to detect animated entities and its implication for believing*
Giorgio VALLORTIGARA
- 5:15 p.m. Coffee Break
- 5:45 p.m. *Discussion*

7 June – 2nd Session –

- 9:00 a.m. *The question of believing: The underestimated relevance of theological tradition for neuroscientific approaches.*
Hans-Ferdinand ANGEL
- 10:00 a.m. *Processes of believing: A systems psychological hypothesis*
Rüdiger J. SEITZ
- 11:00 a.m. Coffee Break
- 11:30 a.m. *Discussion*

– 3rd Session –

- 3:00 p.m. *What can evolved minds know of God?*
Neil SPURWAY
- 4:00 p.m. Coffee Break
- 4:30 p.m. *Discussion*

8 June – 4th Session –

- 9:30 a.m. *General Discussion - 1*
[Attendees may prepare short, **5-minute** presentations to stimulate discussions: these must relate to topics of the four talks.]
- 10:30 a.m. Coffee Break
- 11:00 *General Discussion - 2*
- 12:30 a.m. End of Seminar

ABSTRACTS

In Search of the Animacy Detector in the Brain: Biological Predisposition to Detect Animated Entities and its Implication for Believing

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In the vertebrate brains, mechanisms to distinguish the domain of inanimate objects (for inferring physical causality) and the domain of animate objects (for inferring social causality) are available at birth, in the absence of previous experience. These include early detectors and preferences for biological motion, changes of speed, self-propelled motion and face-like stimuli in animals so different as newly-hatched domestic chicks and human newborns. My recent work aims at clarifying the brain mechanisms used to detect the presence of animate objects, and the possible outcome of early deficits in animacy detection, as in the case of the behaviour of human neonates at high risk of autistic spectrum disorders.

The mechanisms used to detect animacy and the presence of agents have been argued to undergo a hypertrophic development in our species, likely as the response to the demands of human social life. However, there is clearly a long way from the primitive animacy detectors that we see operating even in simple brains to the intricacies of agency attribution and theory of mind observed in human beings. Nonetheless, I shall discuss the possibility that the origins of believing is at least partially rooted in the natural history of animacy detection.

References

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The Question of Believing:

The Underestimated Relevance of Theological Tradition for Neuroscientific Approaches

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In the last years could be observed increasing neuroscientific interest in the question of belief. The interest was nourished from different sources like pathology and esp. delusion (Halligan), formation of belief (Langdon), meaningful meditation (Walach), or religious experience (Seitz). By this kind of research a tendency was installed to understand “believing” as “normal” mental process which is consequence of brain function. There is also a long tradition in theological thinking which understands

belief as “normal”. But, in consequence of an early (and not unproblematic) vigorous position which follows Biblical understanding of belief the question of “normal” belief was mainly discussed in relation to God. Nevertheless – or just in consequence this approach - many aspects of the notion of belief were detected and made aware which might inspire neuroscientific research if the trap of the so called “neurotheology” is avoided.

But, any kind of relation needs preliminary hermeneutic studies. They may include a double step of translation - first from a theological language into a (philosophical based) anthropological language and then into a language which can be connected with cognitive neuroscience. After this double translational step there might be opened new insights which may stimulate cultural dialogue in changing societies as well as interdisciplinary openness. I will present a few positions of some theological thinkers like for instance St. Paul, St. John, Anselm of Canterbury, Thomas Aquinas, Duns Scotus, or Martin Luther and will translate them into the *language of credition theory*. The main intention is to open the floor for reflections about the possible relevance of credition theory as a tool of interdisciplinary exchange.

References

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Processes of Believing: A Systems Physiological Hypothesis

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Despite the long scientific discourse in Western theology and philosophy on religion and the high prevalence of personal beliefs in contemporary societies, there is a lack of a scientifically acceptable definition of “belief”. Recently, the hypothesis was generated in cognitive neuroscience that “believing” is an expression of normal human brain function. Central to the hypothesized processes of believing is the notion of probabilistic mental representations in the human brain. Neurophysiological research has shown that the physical properties of objects, events and individuals in the outside world are represented in the human brain in association with personal attributes of meaning and value. These rapidly formed probabilistic representations constitute beliefs with anticipatory implications for the individual’s actions and may even gain transcendent connotation. The cerebral processes underlying believing have been described tentatively by models of fundamental

brain functions applying to the physical, interpersonal and societal dimensions. Evidence from neuroimaging has shown that the intricately interwoven mental operations affording believing are processed in extensive neural networks involving the dorsal medial and dorsolateral frontal cortex. This systems physiology model of believing will be translated to narratives and rituals that operate on the social level and constitute belief systems. In consequence, the putative mental operations underlying secular and non-secular belief formation are implemented according to a heuristic model, operationally called credition, and, thereby, can become the object of empirical research.

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What can Evolved Minds Know of God?

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“Darwin’s theory of natural selection has profound epistemological implications. [Yet] mainstream epistemology, arguably the backbone of the academic discipline of philosophy, continues to do business as if Darwin never happened.”
[Churchland, 2002]

“... it would be a serious mistake to think that ... one could conceive of an epistemology independently of biology.”
Yet *“evolutionary epistemology has been almost totally neglected by contemporary theology”*.
[van Huysteen, 2006]

The neurophysiology of sensory mechanisms is complex, and their information-transmission massively indirect. Sceptically-disposed researchers may therefore question whether the conclusions we draw have any relevance to underlying physical reality. However, evolutionary considerations indicate that, where survival is at stake, the percepts we derive must fit very closely with external reality.

“The monkey which did not have a realistic perception of the tree branch he jumped for was soon a dead monkey – and therefore did not become one of our ancestors. Our perceptions do give true, even though not complete, representations of the outer world because that was and is a biological necessity, built into us by natural selection.” (Simpson, 1963).

This recognition is the basis of what has been termed “Philosophical Darwinism” (Munz, 1993) or, more commonly, “Evolutionary Epistemology” (EE: Wuketits, 1984). According to this perspective

our valid concepts are utterly this-worldly, earth-bound, so in the ultimate ineradicably circular, self-referential, inwardly-directed. They can never meaningfully address any extra-physical reality.

The extraordinary edifices of our sophisticated and abstract thought are built with these survival-tested bricks, and derive their validity from that fact. But metaphysical concepts purporting to look beyond the physical world cannot pass the earth-bound test. The behaviours to which they lead may have adaptive value (c.f. below), but their purported truth-content has infinitesimal probability of being correct – indeed their very meaningfulness is questionable. Religious teaching which implies such other-worldly metaphysics should therefore defer to “The Cloud of Unknowing”.

By contrast, the intuition that every event has a cause has fundamental adaptive value – it is a mortar to the edifices of our understanding. Thus to deduce that, prior to knowable physics, there must have been a First Cause – a Ground of Being – *is* surely meaningful? What we should not claim is knowledge *of* that Cause or Ground, its nature, purposes or mode of existence – or even any certainty that such concepts can be validly applied to it. From the standpoint of EE, theology may uphold the concept of Creator, but beyond this must become radically apophatic. It may aspire to psychological truth, mystical truth, but not to factual truth (Spurway, 2009).

Of course also EE-compatible are the moral and social aspects of religion, the choice of following a spiritual leader and adhering to his/her ethical precepts and worship-practices, provided these are accepted existentially and not claimed to be the will of an unknowable Creator. It is strictly against the metaphysical assertions of religions that the critique of EE is directed.

References

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