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THE PROBLEM OF UNCONSCIOUS PERCEPTION IN THE EARLY ENLIGHTENMENT: THE CASE OF DAVID-RENAUD BOULLIER

For early modern readers, Descartes's views on animals were both scandalous and fascinating. His intriguing description of animals in terms of mechanism, coupled with the denial of any immaterial principle operating behind their observable behavior, prompted various critical reactions, which from the second half of the eventeenth century tended to focus on the problem of unconscious perception. On the Cartesian view, human cognition is accompanied by reflective consciousness, and clearly belongs to immaterial beings, whereas bodily interactions rely on mechanical principles. The challenge leveled against this dichotomy attempted to point out that certain mental states are both essential to the animal and irreducible to either bare mechanism or conscious mental operations. What this objection suggests is that between the uncontroversial cases at the two extremes there exists an intermediate realm, a gray zone of cognition as it were where an immaterial agent performs unconscious operations. Such a middle ground is crucial for understanding animal life, for it allows the proponents of the anti-Cartesian case to argue that although animals are incapable of reflexive thought (and for this reason cannot aspire to the highest privilege of immortality) they transcend the limits of pure mechanism. In this manner, unconscious, or not fully conscious, perceptions provide a model for animal cognition.

This area of uncertainty between higher cognition and lower mechanism plays a prominent role in David-Renaud Boullier's (1699–1753) *Essai philosophique sur l'âme des bêtes*. As this book, first published in two volumes in 1728, is the most elaborate early eighteenth-century study of the animal soul, it

lends itself as an ideal starting point for the examination of the issue.[1] Boullier's thought has original aspects,[2] but equally interesting is the way in which he summarized and combined the most important intellectual trends of his age.[3] In this paper I want to contribute to our understanding of Boullier's thought by focusing on his views about unconscious animal perception. Before providing a brief account of his basic insights, I will start out with some of his sources.

From our special point of view one of the most important sources of Boullier's thought is the Cambridge Platonists' attack against the Cartesian concept of mind. Their position can be summarized in two theses taken from Henry More. The first one concerns the Cartesian *res extensa.* More insists that *extended things* are not identical with matter, for spiritual beings are also extended. The difference between spiritual and material extension is that whereas matter is always divisible and impenetrable, spirits are indivisible and penetrable: they

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[1] There is a modern re-edition of the original work by J.-P. Marcos: *Essai philosophique sur l'âme des bêtes* (1728). Paris, Fayard, 1985. I consulted, however, the second eighteenth-century edition, which, after thoroughgoing emendations, was published in an augmented form almost ten years later in 1737 (2 vols. Amsterdam, François Changuion). All references in the text are to volume number followed by the page number of this edition.

[2] Boullier's approach was new and thought-provoking even if the idea of an immaterial, but mortal animal mind had been advanced two years before the first edition of the *Essai* by Jean-Pierre de Crousaz in his *De mente humana* (Groningen 1726). See L. C. Rosenfield, *From Beast-Machine to Man-Machine*, New York, Octagon Books, 1968 (First edition: 1941), 75–76.

[3] Boullier's relation to John Locke has been clarified by John Yolton who in his *Locke and French Materialism* (Oxford: Oxford University Press, 1991) dedicated a whole chapter to Boullier's *Essai*. A pathbreaking introduction as it was, the focal point of Yolton's research has been Locke, and for this reason other interesting facets of Boullier's thought have been relegated to the background. For other important studies regarding different aspects of Boullier's thought see Albert G. A. Balz, *Cartesian doctrine and the animal soul*, in: *Studies in the History of Ideas*, 3, 117–177; L. C. Rosenfield, *op. cit.*; R. H. Popkin, *The High Road to Pyrrhonism: Studies in Hume and Scottish Philosophy*, R. A. Watson, J. E. Force (ed.), San Diego: Austin Hill Press, 1980, Chapter 355–362; A. M. Radier, *Un défenseur de Pascal au XVIIIe siècle: David Renaud Boullier*, 1699–1759, Paris: publisher not identified, 1948; R. H. Popkin, David-Renaud Boullier et l'évêque Berkeley, in: *Revue Philosophique de la France et de l'Étranger*, 148, 1958, 364–370; J. C. O'Neal, L'évolution de la notion d'expérience chez Boullier et Condillac sur la question de l'âme des bêtes, *Recherches sur Diderot et sur l'Encyclopédie*, 29, 2000, 149–175; M. Degenaar, *Molyneux's Problem: Three Centuries of Discussion on the Perception of Forms*, trans. M. J. Collins, Dordrecht: Kluwer, 1996, 46.sqq.; J. Schøsler, *David-Renaud Boullier–disciple de Locke? : quelques remarques sur la question de la matière pensante*, in: *Studies on Voltaire and the eighteenth century*, 323, 1994, 271–277.

can occupy the same place as other extended beings do. The second central claim is that the *res cogitans* does not belong exclusively to human nature. On the Platonist view the whole universe is full of spiritual beings which penetrate matter and exist in bodies. Spirits are vital forces which lend life and activity to the otherwise inert and dull matter. They are responsible not only for human thoughts, but *animal behavior*, *vegetation* and *corporeal sympathies* as well. Spirits work as formative principles moving bodies from inside, and endowing them with physical and biological properties that go beyond the resources of a simple mechanism. A body animated by a spirit is called by Henry More its *vehicular body*. Immaterial agents operating in and through their vehicular bodies are responsible for the regular behavior of the universe. They serve as formative principles and give rise to teleological operations and biological organization at different levels of the nature.

How do these formative principles operate in the body? Glisson, More and Cudworth and other proponents of the tradition, take up a fundamental distinction popularized by Julius Caesar Scaliger (1484–1558) in the 16th century between *reason (logos)* and *reasoning (logismos)*. Scaliger holds that souls that penetrate bodies have some innate power to organize them from inside and in accordance with a teleological plan prescribed to them by the creator. Thus, the *telos* that the formative principles realize in the matter is not their own, and does not depend on their deliberation, it is rather the divine goal engraved into their innermost nature, so that they cannot help accomplishing it when following the instinct of their unconscious desires. Though these internal principles act *with reason*, they lack explicit knowledge of the ways in which they work. In order to act in accordance with reason, lower spirits—which exist embodied in matter—have to entertain perceptions and desires, even if they do not have the awareness of what they are perceiving (or even of the fact *that* they perceive anything).

It is at this point that the Platonist theory comes close to the problem of unconscious perception. Consider some of Cudworth's examples, taken from Plotin's *Enneads,* the dancer who skillfully moves her legs without attending to or the lute player who routinely puts her fingers in the right place on the instrument without paying attention at what she is doing. These examples are of utmost interest, since the latter can be found in Descartes as well who—in sharp contrast with Cudworth—refers with it to the operation of a purely mechanical system. Descartes's point is that certain bodily organizations are flexible enough to receive new physical dispositions and to take up new habits as they undergo different external stimuli. The play of a well trained musician, who ac-

quired knowledge through a long practice, results from the mechanical motion of her muscles disposed to follow a certain routine encoded in her fingers. In Descartes, the musician can play different tunes just because her body serves as a physical memory predisposed to operate in a certain way. In Cudworth, by contrast, this example is meant to shed light on the way in which the *mind* operates. The orderly behavior of the body derives from a special operation of the mind, an operation performed not by attentive thoughts but by unconscious perceptions and blind desires. Thus, the operation of the formative principles can be modelled on the way in which *inhabited mental control* (as it is called nowadays) is realized, unconsciously, unbeknownst to the agent, or on the periphery of his or her consciousness.

This contrasting use of one and the same example, allows us to get more precise on the central issue. It shows that the main question does not simply relate to reflex motions, which can be realized mechanically, or higher cognitive processes, which require reasoning (notice that these problems are located at the two extremes of a scale), rather the main issue concerns the realm in between, the behavior which (as some contemporary cognitive scientists put it) we do better "unconsciously than consciously."[4] The core question is, then, if corpuscular philosophy, taken in isolation from higher (spiritual) resources, can be upgraded so much as to account for the apparently goal oriented animal behavior; or – alternatively – if spiritual operations are to be downgraded to the extent that they explain animal behavior through unconscious mental automatisms.

On the examination of Boullier's references to Cudworth, it is clear that unconscious perceptions have an important role to play in the explanation of animal behavior. In Boullier's view, the animal body is united with and governed by an immaterial soul, and animal behavior cannot be accounted for without explicit reference to the perceptions and desires of an immaterial principle. That said, the animal soul is not a human *res cogitans,* since its cognitive resources are very limited. Although animals are incapable of reflection and reasoning, their mental operations must be reduced to partly *conscious* and partly *unconscious* perceptions and desires. The latter operate instinctively, roughly in the same way as *formative principles* do in Cudworth and his Platonist colleagues. Note, however, that Boullier parts company with them when they extend the role of unconscious desires and perceptions to the whole universe, and sides with the Cartesians in that they reject the notion of 'extended' spirits pervading the

[4] B. J. Baars, *A Cognitive Theory of Consciousness*, Cambridge: Cambridge University Press, 1988, 1995.

whole nature. All he retains from the Platonist movement is just the mechanism of unconscious and semi-conscious operations that explain instincts and animal sensitivity.

With respect to unconscious perception Boullier is also indebted to Leibniz. When explaining the animal mind, he accepts that the soul represents its body, and perceives *everything* that happens in it (II. 107). Furthermore, Boullier makes it clear that the immediate object of the soul's perceptions is not the whole body, but only a tiny part of it, an undetermined parcel of the brain which serves as the organ of thought. This part is called the *sensorium* (II. 75. note; 90). Being attached to it, the mind cannot but perceive all physical motions occurring in the sensorium. Thus, the sensorium is like a magnifying lens collecting the rays from other parts of the body and the external world (II. 128).

This Leibnizian layer of Boullier's thought goes together with the clear rejection of the preestablihed harmony. Taking a characteristic eighteenth-century anti-metaphysician stance, Boullier is prepared to detach Leibniz's theory of perception from its metaphysical underpinnings. He makes use of a Leibnizian epistemology, but attempts to engraft it into a more traditional account of causality. Therefore, in Boullier's view, it is not a monadic principle that expresses all the changes of the body, but an immaterial spirit which, so long as exists, continuously affects the *sensorium* and is affected by it. Thus, for Boullier the soul that one has to attribute to animals is a *res cogitans* endowed with cognitive powers of limited scope. The limitation is reflected in the fact that the greatest part of their perceptions remains under the limit of consciousness. It is like a Cartesian mind inhabited by mostly unconscious thoughts.

As to the question of what makes a perception conscious or unconscious, Boullier's answer is straightforward: conscious thoughts can be perceived separately apart from each other. If too many perceptions are given at the same time, the mind cannot make out the details, and gets just one confused impression about the whole (II. 92 sqq; 101). At this general point Boullier is still indebted to Leibniz. But as regards the particular elaboration of the idea, his insights prove to be original. He holds that two factors are responsible for the phenomenology of the conscious sensation. The first one is the number of motions to be perceived at the same time. The other and more important factor is the time elapsed between two subsequent acts of perception. Put together, Boullier's thesis is that the phenomenology of perception depends on psychological factors that relate to the temporal process of perception. He realizes that in order to fulfill different cognitive operations, the human mind needs different time-slots

(II. 88–90). What he is advancing here is similar to illusions called by later by Gestalt-psychologists *phi-phenomenon* and *beta-movement*. These are optical illusions caused by a series of still images, which viewed in a rapid succession are perceived as a continuous motion. Boullier's point is similar. He finds that the basis of the phenomenology of sensation depends on the time lag between two subsequent stimuli. If sensations come too quickly, they run together because the soul fails to differentiate one from the other. Boullier states as a general principle that the shortest time needed for the discernment of two percepts is the basic unit of our psychological life and time-experience (II. 96). Stimuli that fail to match this pace, blur and do not display distinct conceptual contents. They are like a candle quickly moved around. As the sweeping of the candle causes the illusion of a trail of light, a flow of perceptions, which is too rapid to be grasped in all details, gives rise to confused sensations. Brief exposure does not permit the mind to stop at each perception, but as the content of each singular perception is getting lost, a new quality is engendered. On Boullier's account this is the origin of sensations as opposed to ideas which, due to the number of harmonious percepts coming in the required rhythm, permit the soul to spell out what they contain.

Let me take a last step and sketch the outlines of Boullier's system that emerge from the elements reviewed. What we have so far is this. In sharp contrast with the Cartesian view, Boullier attributes an immaterial soul to animals (II. 73; 134). Nevertheless, animals do not enjoy reflexive thoughts – what occurs in them, is just a series of elementary sensations. They undergo a stream of perceptions the rhythm of which, determined by material processes in the brain, is beyond their control. Although perceptions always represent something to the soul, much of the content remains under the limit of consciousness, and only a small part of the sensations emerge from the current and become conscious in a confused form. Perceptions of both types are accompanied by desires which induce new bodily motions just to make them affect the *sensorium* with new sensations again.

The upshot of this reciprocal process is not the picture of a ghost in the machine. What Boullier attempts to do is to describe the delicate relation between a sensitive principle and a bodily mechanism, which are connected to and affect each other in the animal. Let me elaborate on this point by providing an example the core of which is given in Boullier (II. 172. sqq). Imagine a baroque play of perspective, a peep-box with a stage in it, and with different perspectival decorations in the background. The decorations display a marvelous landscape

with a *jardin à la française*, paths and parterres created in geometric shapes, distant cottages and hamlets. Then imagine a child who, peeping into the box, inadvertently touches a hidden spring on the external surface of the device, causing a dramatic change thereby in the scene. All of a sudden, the garden, and the mountains disappear, and a completely new scene pops up with wild forests, grim rocks and a cascade. Being completely unaware of the reason of the change and the working of the mechanism, all the child did was just to touch one part or another of the box, and receive a set of completely new perceptions. Notice that the subsequent scenes may affect her with different feelings. After the disappearance of the cheerful cottage-scene she may be terrified seeing a wild forest that scares her. But as she goes on to touch and see, she may learn how to control the unknown mechanism. When it provides her with unpleasant scenes she learns step-by-step how to elicit more pleasant ones, and how to stabilize them. Boullier's simile is meant to highlight the way in which animal soul is connected to a corporeal mechanism which has its own physical rules unknown to the soul. Through the successive operations on the body, to which the soul is attached, the *sensorium* affects the soul with ever new sensations and affections which in turn produce new motions in the body.

Another example of Boullier's is a slightly modified version of Descartes's report of the fountains in the royal garden at Saint-Germain-en-Laye (II. 175). Descartes, in his report of the famous grottos and waterworks designed by the Francini bothers compares the visitors who enter the artificial caves to the external objects affecting the sense organs of the "statue of earth" (a kind of *bête machine* or *homme machine*) described in his work.[5] It is clear that through the simily Descartes intends to illustrate the way in which external objects modify the sense organs of the machine and trigger an automatic response thereby. Boullier lays the emphasis on a different point. In his description the visitors walking into the *grotto* do not symbolize external objects that bring about a mechanical response, but represent a soul which, connected to the hidden mechanism of the body, inadvertently causes motions, and receives new perceptions occasioned by the mechanism. As visitors walking here and there cause different monsters to emerge, so the soul acting on the body makes the bodily mechanism produce various scenes to its own surprise, delight or scare. Then these emotions affect the *sensorium* with new motions which in turn

[5] Cf. R. Descartes, *OEuvres*, ed. Ch. Adam, P. Tannery, 12 vols., Paris, 1996, XI. 131. English translation: J. Cottingham, R. Stoothoff, D. Murdoch (eds.), *The Philosophical Writings of Descartes*, 2 vols., 1984–1985, Cambridge: Cambridge UP.I, 100–101.

give rise to other views and so on. The whole process is governed by the joint action of the soul, the body and the environment surrounding the animal. As the soul becomes more and more familiar with the bodily responses which its emotions produce, it gains more and more control over its own affective states that depend on the body.

Note that the whole process occurs partly on the level of conscious sensations and partly on the level of unconscious perceptions and desires. The soul that perceives the totality of motions displayed by the *sensorium,* responds to each of its *petites perceptions* by a corresponding appetite. Thus the task it has to accomplish is to produce and stabilize those advantageous loops that connect its own actions with the required perceptions received. Boullier emphasizes that the establishing of these feedback mechanisms requires a learning process that first operates on the level of consciousness, since what is needed for forming the right dispositions is the joining of the right sort of emotions of the soul with the appropriate motions in the body. A hunting dog has to feel the fear of being beaten since the desire to eat the partridge is something heavily felt. Only if the right sort of response has been strengthened enough can the whole process be transposed to the unconscious level of operation where the *modus operandi* becomes that of the unconscious mental processes described by the Cambridge Platonists.

The key point of the whole scheme is the temporal process of learning: after an initial phase of acquiring new skills – a temptative process that demands much conscious effort from the agent – the newly acquired behavior produces new bodily dispositions, becomes habitualized, and, finally, fades into the unconscious background of the mind. The bedrock of the process is a mutual tuning of joint systems by means of coordination, accommodation, and an economic interplay of partly conscious and partly unconscious mental functions. What Boullier elaborates, then, is an elegant account of sense-perception based on reciprocal interaction. His approach is surprisingly modern inasmuch as it does not rely so much on metaphysical issues (prevalent in both Descartes and Leibniz) as on the dynamic interplay of various sub-systems working together for an harmonious whole. Whereas his initial ambition had been to solve some metaphysical problems regarding the animal soul, his work proved to be more stimulating for the posterity as a step towards a much more down-to-earth psychology of learning.[6]

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