

Introduction

Agency: From Embodied Cognition to Free Will

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Traditional theories about experience have always represented the subject as a *passive* recipient of sensory stimuli, which get processed through successive layers of the brain cortex and culminate in a phenomenal experience, omitting any mention of the role of the personal sense of agency. According to this formulation, experience emerges as a combination of biological and phenomenological descriptions, linking mechanical processes to subjective qualitative reports. Conceptual frameworks provided by neuroscience and phenomenological analysis are alternative descriptive systems originally conceived for alternative explanatory purposes. Here is the origin of many of the theoretical tensions in cognitive science. Today, after years in which *dualism* and *reductionism* have been the only games in town, the idea of an embodied dynamicism is emerging in the field of cognitive science with support from substantial empirical evidence. As perceptual experience is shaped by action execution, it seems necessary to assume a theoretical framework within which the interconnection between the perceiving subject's *conscious states*, his *body* and the *environment* is adequately emphasized.

For the phenomenological debate, the notion of embodiment coincides with the rebuttal of what is usually considered the *Cartesian dualism*, that is, the segregation of any bodily influence from the subjective experiential domain. Crossing the history of western thought, this problem acquires a critical dimension in the twentieth century philosophical debate. The way to understand the relationship between body and consciousness finds a new style after the establishment of the phenomenological framework. Following the path originally drawn by Husserl and successively developed by Merleau-Ponty,

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it is possible to figure out how the phenomenological tradition, from its early stages, has originally approached the mind-body problem underlying the opportunity to develop an *interactive* conception based on the assumption of a radical *interweaving* between the *experiential* and the *bodily* domains.

According to this view, perceptive experience can be conceived as a method through which the subject travels in the environment following his motor intentions and exploiting his skillful knowledge of the sensorimotor constraints that link the execution of a goal oriented action to the variation of the phenomenal features.

Working on the clarification of the notion of embodiment we have the opportunity to cease to unreflectively privilege only one possible explanation of our experience. The human mind, observed through the lenses of embodiment, emerges at the interface of the brain, the body, the material and social environment. This is an inextricable mash influencing all aspects of our life. We are agents whose nature is fixed by a complex interaction involving our personal experience, a particular kind of physical embodiment and a certain embedding in the environment. This very combination of *experience*, *flesh* and *environment* is the main character of our being in the world.

The assumption of agency as a critical aspect of our experience motivates the introduction of another classical philosophical problem such as that concerning the notion of free will. We usually consider human beings natural organisms that are morally responsible for their own actions. Yet this assumption represents one of the most intriguing puzzles that, from ancient Greece to the contemporary era, has absorbed philosophers and scientists of every kind. Are we really free agents? What does our subjective experience of agency reveal to us? And how do these questions relate to the fact that we are natural embodied beings?

Except in cases where we are physically constrained, we consider ourselves free beings that think, believe and act autonomously, that is, according to the states of consciousness that characterize our own mental life. We consider ourselves responsible for our own acts because we perceive ourselves as being able to freely project the actions that our body can perform. Accordingly, the possibility of a free choice appears to be strictly related to the possibility of assigning independence to a particular domain such as our subjective consciousness.

The subjective sense of agency, that is, the feeling that we control our own movements and actions, is certainly an essential, constant element of our

everyday experience. It seems obvious to us that the casual chain leading to the execution of an action critically derives from our conscious intention. However, we can try for a moment to imagine we do not have any real power over our actions. We can imagine that we are prisoners of an illusion that gives us the impression that we are the causes of our actions, but that we are actually nothing but automata governed by a sophisticated system of behavioral laws. If we carried through with this imaginative effort, then the very meaning of the word “freedom” would need to be modified according to the idea that those we perceive as our voluntary actions are, in reality, independent of our will. But does this make sense? Or is it only a philosophical trick?

The aim of the present issue of *Humana.Mente* is to frame the debate by introducing original arguments in the fields of theory of agency and free will. With this purpose in mind, we invited authors from different disciplines to submit their contributions. We received enthusiastic replies from some of the most prominent scholars working in these fields. This is certainly evidence that the topic we proposed still arouses steady interest even after over two thousand years of philosophical and scientific discussion. This volume is also evidence that the debate is not frozen and that new conceptions and perspectives have been developed over the last ten years. In order to make the composition of the issue clear, we decided to divide the Papers Section into two parts. The former devoted to introduce arguments concerning the theory of agency, the latter devoted to introduce specific perspectives on the notion of free will. Now, let us briefly illustrate the content of the volume.

The opening paper by Michael Silberstein and Antony Chemero is an introduction to a dynamical account of intentional actions and agency. Silberstein and Chemero contrast the idea that action is caused by disembodied mental representations residing in the head and move from the assumption that cognitive systems are genuinely *extended* structures, which effectively connect the *brain* to the *body* and to the *environment*. Following this line of thought, the body and the environment can be considered a continuous *dynamical system* constituted by variables that change according to mathematical laws. This makes it possible to account for cognitive processes through differential equations that pair animal parameters with environmental parameters. It is important to note that, in light of its radical *anti-representationalism* and *anti-computationalism*, Silberstein and Chemero’s dynamical theory constitutes a special approach to the *extended mind*

paradigm, different from other proposals in this field (e.g., Clark's conception). Indeed, the proposal advocated by the authors is in continuity with Gibson's ecological psychology, according to which cognition and conscious experience are ongoing adaptive activities performed by animals in their natural niche. According to this view, actions and environmental conditions influence each other, such that the agent and the environment can be viewed as two co-dependent sides of the same coin.

As a kind of enactive approach to agency, Torrance and Froese's paper also focuses on the dynamics of agents interacting with the environment. More precisely, the environment is characterized as a system of conditions and constraints imposed by a social situation where agents interact with each other. Accordingly, the authors argue against what they call "methodological solipsism" in cognitive science, emphasizing the role of historical and social norms in shaping our subjective experience of agency. The authors discuss many examples from common experience and artificial intelligence, showing how the (relative) autonomy of an interaction process, which is separate from the autonomy of individual participants, has the power to influence an agent's individual goals. Accordingly, the main challenge of the paper is to show how social interactions actually co-constitute the individual's sense of agency, as well as how the individual's actions are involved in the constitution of social situations.

The role of social interaction in the formation of a sense of agency is also emphasized by Shaun Gallagher. Gallagher's paper criticizes the standard debate in theory of mind, which is characterized by a dispute between theory-theory and simulation theory; Gallagher defends an alternative approach that he calls *interaction theory*. According to Gallagher, interaction theory faces many suppositions associated with the traditional approach in theory of mind, arguing for three basic assumptions. First of all, other minds are not hidden, inaccessible entities, but become manifest through other people's behavior. Second, Gallagher assumes that our everyday stance toward other people is not merely a detached observation; rather, it is almost always the result of embodied interactions and communicative actions. Finally, in Gallagher's view, understanding others doesn't involve a process of mentalizing; it is a direct and spontaneous activity that characterizes our life. In this paper, Gallagher introduces a developmental model according to which adult communicative and narrative practices – such as sensory-motor abilities (primary intersubjectivity), joint attention and pragmatic engagement (secondary

intersubjectivity) – develop from strong embodied interaction with other people. According to Gallagher, autonomy is not an “internal and intra-individual negotiation”, but it is the expression of the way people arrange their lives with others. Following this line, self agency emerges as a characteristic defined by the network of human relationships, instead of a purely individual attribute.

Next, Horgan’s paper argues about the phenomenology of agency and its consequences on the freedom-determinism debate. In the first section of the paper, the author introduces some features of agentic phenomenology as made available by introspective attention. Horgan’s analysis is particularly concerned with what he considers the erroneous presupposition that any genuine phenomenal question can be reliably answered directly through introspection, tempting one to think that introspection alone can solve every dilemma concerning the nature of the subjective experience of agency. On the contrary, Horgan argues, the self is inadequate as an ultimate source to find the answers to questions about the nature of agency and freedom. Accordingly, using an *abductive* argument, Horgan attempts to show why we cannot reliably ascertain the nature of agency based solely on careful introspection, due to our strong natural tendency to judge freedom as an essential and evident component of our experience of acting.

Our subjective experience of agency, like various cognitive processes, is shaped by specific *bodily constraints*. The way in which an organism is embodied determines how a subject interacts with specific aspects of the environment, thus influencing the rise of sensory-motor experiences which serve as the basis for the formation of categories and concepts concerning our phenomenology of action.

Accordingly, Mauro Maldonato highlights the unconscious role of the body in agency dynamics. In the author’s opinion, even if we are normally led to emphasize the role of perception and sensation, assuming that our voluntary movements are essentially dependent on them, our phenomenology of action is rooted in the motor system itself. Maldonato’s analysis focuses on the negative consequences derived from the traditional separation of mental functions from bodily dimension, drawing from many examples in the field of neurobiology to show how the mind is profoundly influenced by the motor sphere. According to Maldonato, motility has not only direct and overt consequences, but also critical effects on other cognitive systems, such as those underlying perception and language understanding. This conception shows that the boundary

between action and perception is not as sharp as it is usually supposed to be, and that a great deal of cognition can be surprisingly related to the functioning of the agent's motor system.

Phenomenology of agency cannot be divorced from the critical question of how we can actually control our voluntary behavior, or from the question concerning the existence of a causal link between our feeling about performing a specific action and the action itself. Accordingly, the second part of the Papers Section includes contributions that introduce new aspects and perspectives concerning the *vexata quaestio* of free will. Today, now that refined techniques of enquiry in the field of neuroscience have been developed, participants in the free will debate are particularly engaged in interpreting the increasing amount of empirical data, which seems to threaten the traditional dichotomy between determinists and libertarians. An example of this tendency is visible in the interest that Libet's experiments still arouse in both the scientific and the philosophical communities. Over the years Libet's experimental paradigm has become a critical topic where the interests of contrasting positions converge.

Given this trend, we decided to encourage contributions on free will concerning the interpretation of empirical findings and the development of theoretical frameworks. In keeping with this intention, for this section we collected papers from prominent scholars in philosophy, psychology and neuroscience. The overall result gives the reader a taste of how many different approaches and styles characterize this fascinating debate. The first paper, by Roberta De Monticelli, begins with an introduction to phenomenology as the method based on "epistemic trust" in the world of experience, having the power to characterize things as irreducible to their psychological, biological and physical constitution. According to the author, the question of free will can be considered as a genuine matter of epistemic trust, that is, of reliability concerning *ordinary* experience. De Monticelli's point is that, in order to become a subject of acts and develop selfhood, one must entertain a relationship of epistemic adequacy with the phenomenal world. Accordingly, distinguishing between two orders of positionality, the author shows how the persistence of the problem of free will depends on a sort of fallacy in the order of explanation.

The paper by Davide Rigoni, Luca Sammiceli and Marcel Brass critically discusses a series of influential experiments in the field of cognitive neuroscience, concerning the relationship between the subjective sense of

agency and the actual execution of intentional actions. The authors' analysis refers to a large amount of data according to which the execution of motor actions is always preceded by unconscious brain processes; the individual's subjective experience of conscious intentions is purportedly inferred from the event occurring after the action is executed. Results of this kind challenge the intuitive view that we are responsible for the actions we execute, as our conscious intention to act appears to be an unessential component. Notwithstanding this empirical evidence, the authors' point is that considering free will as a mere epiphenomenal illusion would be an overstatement. To support this claim, Rigoni, Sammiceli and Brass focus on our natural tendency to perceive free will in others, emphasizing the underestimated pragmatic value of believing in freedom rather than in determinism.

Susan Pockett's paper frames the free will debate by introducing some implications related to the assumption of what she calls *electromagnetic field theory of consciousness*. This is an identity theory according to which consciousness is identical to specific electromagnetic field patterns induced by neural activity. Unlike other materialist identity theories, Susan Pockett's theory doesn't assume a causal link between the electromagnetic fields and the initiation of bodily movements. On the contrary, Pockett defends an electromagnetic field theory of consciousness citing crucial reasons for rejecting the belief that consciousness causes bodily movements and, therefore, for rejecting the claim that electromagnetic patterns are involved in our subjective experience of agency.

In the next paper, Bickhard proposes a radical critique of a computational model of decision-making, where actions are the final elements of a causal chain made of many point-like events through which the causal influence is transmitted. According to this view, a decision to act is a computational process that starts with a reason and ends with a motor execution. In contrast to this view, Bickhard assumes that decision and action are two aspects of the same underlying kind of process. Rejecting a pointillist picture, the author defines a decision to act as a temporally extended and self-organizing process. According to this view, Bickhard's model of acting is determined by global characteristics instead of reducible local causal attributes.

Jing Zhu's paper supports a libertarian approach to the question of free will according to which indeterminism takes place relatively early in the process of deliberation, enabling the agent to perform genuine free actions. Zhu's paper faces the critical question that, even if determinism is false, the assumption that

a radical indeterminacy characterizes a decision-making process cannot secure a condition for rational, responsible free actions. After having introduced and replied to some major objections to libertarianism, Zhu provides an interesting account of how indeterminism can be considered a freedom-enhancing condition, arguing for what he calls a *deliberative libertarianism*. According to Zhu, indeterminacy, instead of being an obstacle to the libertarian's purposes, can be considered a crucial element of creativity that plays a critical role in practical deliberations and problem solving.

Three contributions from our call for papers conclude the Papers Section of the volume. They have been selected through a blind review process from among many other contributions we received. The first of them, by Liz Disley, emphasizes the role of social interactions in self-perception. The author focuses on the phenomenological experience of collective work as a paradigmatic example of intersubjectivity and human interaction. Following suggestions from Hegel, Husserl and Merleau-Ponty, Disley argues that the experience of physical work can improve one's own capacity for intersubjectivity, thus enhancing the role of the agent's embodied nature.

The second paper, by Susi Ferrarello, focuses on the notion of practical intentionality and investigates how it affects a decision-making process. Relying on a phenomenological approach, combining Husserl's theory of knowledge with Husserl's conception of will, the author defines a balance between logical and practical acts, showing how logical reason is necessary to give voice to our knowledge of reality, while practical reason is the starting point for every logical act.

Finally, David Vender's paper focuses on the role of acquired skills as emblematic aspects of action. According to the author, we do not have to be fully aware of our contribution to an action for it to count as a genuine act, nor do we necessitate a rational justification of it, but we must be able to adapt ourselves to the perceived situation. In view of that, Vender points out the critical role of balancing underlying perceptual and bodily orientation in executing complex actions.

As usual, we are also publishing a series of commentaries that provide new takes on well-established texts. They offer new, challenging arguments on the timeless questions concerning theory of agency and free will. Commentaries in this issue include the works of Roberta Lanfredini on Merleau-Ponty, Lorenzo Del Savio on Walter, Roberto Di Letizia on Wegner, Elisabetta Sirgiovanni on Libet, Freeman and Sutherland and, finally, Torrenco on Pereboom.

The volume also includes reviews of more recently published books that we are confident will provide arguments for discussion for many years to come. Among the many volumes published in the fields of theory of agency and free will, we selected the books by Laurence Shapiro, reviewed by Andrea Danielli, Sean Spence, reviewed by Roberto Di Letizia, Robert Rupert, reviewed by Mirko Farina, Alfred Mele, reviewed by Marco Fenici, Alva Noë, reviewed by Marco Spina, De Caro, Lavazza and Sartori, reviewed by Giuseppe Vicari, and Antony Chemero, reviewed by Silvano Zipoli Caiani.

Finally, the issue concludes with interviews of two prominent scholars: Sean Spence (interviewed by Duccio Manetti) and Daniel Dennett (interviewed by Marco Fenici and Stefano Di Piazza).

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