



## Naturalism, non-factualism, and normative situated behaviour

Manuel Heras-Escribano & Manuel de Pinedo-García

To cite this article: Manuel Heras-Escribano & Manuel de Pinedo-García (2018) Naturalism, non-factualism, and normative situated behaviour, South African Journal of Philosophy, 37:1, 80-98, DOI: [10.1080/02580136.2017.1422633](https://doi.org/10.1080/02580136.2017.1422633)

To link to this article: <https://doi.org/10.1080/02580136.2017.1422633>



Published online: 14 Mar 2018.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)

## Naturalism, non-factualism, and normative situated behaviour

Manuel Heras-Escribano<sup>1\*</sup> and Manuel de Pinedo-García<sup>2</sup>

<sup>1</sup>Departamento de Filosofía, Universidad Alberto Hurtado, Santiago, Chile

<sup>2</sup>Departamento de Filosofía I, Universidad de Granada, Granada, Spain

\*Corresponding author email: [herasescribano@gmail.com](mailto:herasescribano@gmail.com)

This paper argues that the normative character of our unreflective situated behaviour is not factual. We highlight a problematic assumption shared by the two most influential trends in contemporary philosophy of cognitive science, reductionism and enactivism. Our intentional, normative explanations are referential, descriptive or factual. Underneath this assumption lies the idea that only *facts* can make true or false our attributions of cognitive, mental and agential abilities. We will argue against this view by describing the main features and problems of reductionism and enactivism and then we will offer two arguments against this shared factualist assumption: (1) normative vocabulary is ineliminable if we want a complete explanation of our situated practices; and (2) the factualist assumption is a species of the is-ought fallacy. Finally, we will claim that a folk psychological explanation of our normative practices is fully compatible with ontological naturalism when such descriptivist or factualist assumption is rejected.

### Introduction

Placing normativity within a naturalistic worldview has been a major challenge for philosophy for the last 100 years. In fact, it would be possible to trace this project going back to the theories of the so-called natural philosophers of the Enlightenment and, of course, to Kant's. Although the term "naturalism" is widely used in philosophy, both as a self-description and as a term of abuse, there is no specific, well-defined perspective, programme, set of theses or theory that either naturalists or non-naturalists would accept as defining naturalism. Quite the opposite: naturalism, at the very least, can be understood in three seemingly independent ways: ontologically, methodologically and epistemologically.

Ontological naturalism is committed, roughly, to the idea that everything that exists in the world, every object, property or event, is a scientifically measurable entity, that is, that science supplies our ontology (Dieveney 2011). An important point of ontological naturalism, if it is defined as the view that our best construal of what there is, is what science says there is (Raley 2005), has to do with ontological commitment. This ontological commitment relies both on taking as truth a given regimented scientific discourse (*ibid.*), and understanding that such an acceptance commits us to existence of ontological correlates of the concepts used by that scientific discourse (Raley 2005, 285–286). However, this is controversial as it would force us to accept as natural objects of our world not only particles and physical forces, but also all numbers, quantifiers or even fundamental laws (see Mumford 2002). This problem may be solved by paying attention to the ontological commitment that derives from accepting scientific discourses as true. But sadly, the problem is that this ontological commitment is often expressed in vague ways. For example, as Raley (2005, 289) points out, the traditional formula "there is..." can be followed by a plethora of propositions, from "atoms and vacuum" to "a hole in a piece of cheese" or "many virtues to learn from X". This poses a problem that has been pointed out by Quine (1951), who proposed a predicative approach to solve this (Raley 2005, 290–291): one could take a predicate (for example, "...is causally efficacious" or "...is mind-independent") and take a theory to be committed to those entities that fall under

that predicate. The problem with this view is that, “taking one or other criterion for ontological commitment as the correct one implies that we ‘already have a pretty good idea’ about what sorts of entities we think exist, or don’t exist” (Raley 2005, 291).

Could this be a critical problem for ontological naturalism? We do not think so. As Raley shows, it seems that we must have a previous idea of which kinds of entities exist, so the ontological commitment goes from this previous idea to science, and not the other way around. On these grounds, Raley concludes that “[w]hile its simple and straightforward appeal to scientific practice is very attractive, one cannot simply read off ontology from science” (Raley 2005, 292). However, it seems that Raley deliberately leaves aside the power of science for clarifying our ontological explanations. For example, this “already having a pretty good idea” (whatever this vague phrase means) of what exists is always put to the test by scientific standards that prove the legitimacy of those “pretty good ideas”. The main contribution of scientific explanations to our ontological commitments is that one can have a pretty good idea that ether or phlogiston exist, or that dinosaurs never did, and it is science what proves if those beliefs are true or not, and not the other way round. The intricacy of the issue is that Raley could be right in saying that we already have *an idea* of what exists, but the main contribution of science is not to offer those ideas, but to test if those ideas that we have in mind are really about worldly items. Science is the best guarantor for this, since it is understood as a self-correcting endeavour whose practices are publicly shared and its methods are critically observed and revised. And this means that it is our scientific practice that provides us the ontological commitment, since it is by applying that strict methodology that the existence of a certain entity is proven. In this sense, it is also subject to doubt whether we accept that some entities exist and some others do not at different times, given that science is a self-correcting endeavour (just like the cases of particles and numbers mentioned before, or what happened to ether when it was discarded by relativity theory, or to Higgs boson until it was proven to exist, but the point is that we can fully agree that something exists or not thanks to scientific, publicly shared, and critically applied arguments and methods. The ontological commitment to the truth of scientific theories relies on this, and this is what motivates and guides ontological naturalism.

This is why ontological naturalism is taken as a basic assumption or as a default position by many authors. This assumption can seem very intuitive and useful and, indeed, it arguably lies at the heart of modern science. It allows us, for instance, to get rid of any appeal to mysterious, supernatural entities that would obstruct and obscure our ontology. It may not be the only way to achieve that, but it is certainly an effective strategy. Thus, naturalist philosophers of mind reject dualism and try to explain our cognitive abilities in terms of biological (Pinker 1997; 2002), biochemical (Bickle 2003), or even physical (Lewis 1999, 33–34) processes. This may not be the only way to avoid dualism, but it is a powerful and highly influential one.

Epistemological naturalism is, as Feldman (2001) puts it, a cluster of approaches that consider epistemology as closely connected to natural science. This connection is understood to different degrees. He distinguishes at least two kinds of naturalised epistemologies: first, the weakest approach, by which epistemology should use scientific data for solving epistemological problems (cooperative naturalism); and second, that we should replace traditional epistemology with a scientific study of how we reason (replacement naturalism).

According to the defenders of the former view, scientific evidence regarding how we reason is taken as essential in order to make progress in epistemology, because “the results from the sciences of cognition may be relevant to, and may be legitimately used in the resolution of traditional epistemological problems” (Haack 1993, 118). An area of research that may count as supporting this cooperative naturalism is experimental philosophy. Take, for example, Weinberg, Nichols and Stich’s (2001) experiment in which they compared philosophical intuitions of Western students and East Asia students, and found out that, when presented with some standard epistemological cases (for example, Gettier-like cases) in which they had to claim if a person knew a fact or merely believed it, there is substantive difference if we compare the answers of both groups of students (East Asia students massively attributed knowledge states to those persons). These data offer interesting results regarding the role of intuitions in our epistemic analyses. As such, this is an example of how cooperative epistemic naturalism works if it is understood that the evidence regarding how we

reason is essential in order to refine our epistemic approaches. In this view, scientific methods and conceptual analysis cooperate in order to enrich and refine our epistemic views. Thus, empirical data reinforce or undermine our epistemic claims. This implies that there is still a distinction between the empirical vocabulary (one that describes facts) and the normative vocabulary (one that includes terms like “justification” or “warrant” that introduce an evaluative dimension). Thus, even when both areas cooperate, epistemology is still a conceptual or normative endeavour.

Replacement epistemic naturalism claims that attributions of knowledge or belief, despite their normative appearance, should be understood in terms of the causal processes of belief or knowledge acquisition, processes that are not only constrained but exhausted by happenings in our nervous systems in its causal connections with the environment. In this sense, some authors defend that the previously mentioned normative vocabulary must be reduced to a causal or scientific one that perspicuously characterises which facts are being described. A well-known approach to this view was that of Quine’s, who claimed the following:

Epistemology, or something like it, simply falls into place as a chapter of psychology and hence of natural science. It studies a natural phenomenon, viz., a physical human subject. This human subject is accorded a certain experimentally controlled input – certain patterns of irradiation in assorted frequencies, for instance – and in the fullness of time the subject delivers as output a description of the three-dimensional external world and its history. The relation between the meagre input and the torrential output is a relation that we are prompted to study for somewhat the same reasons that always prompted epistemology: namely, in order to see how evidence relates to theory, and in what ways one’s theory of nature transcends any available evidence...But a conspicuous difference between old epistemology and the epistemological enterprise in this new psychological setting is that we can now make free use of empirical psychology (Quine 1969, 82–83).

Kim explains this Quinean difference between “old epistemology” and “new epistemology” as the difference between the aim of explaining the justificatory relation between certain evidence and our beliefs, while Quine proposes a new goal for epistemology. This new epistemology ceases to be an independent subfield of philosophy and becomes a branch of psychology that explains how different inputs cause particular outputs (Quine 1969; Kim 1988, 390). In this view, traditional epistemological questions are simply of no interest at all, since when we accept that the only interesting phenomena to study are scientific phenomena, we are prone to replace justificatory explanations with scientific explanations.

Thus, there are differences between ontological and epistemological naturalism. The difference between the two could be seen in parallel to the *explanandum/explanans* distinction. While one shows which are the entities that factually constitute our world, the other one shows how we obtain (or should obtain) knowledge from them. In this sense, there is a tight connection between ontological and epistemic naturalism. Take, for example, the case of replacement epistemic naturalism. Since all facts are natural facts, and natural facts are known and explained scientifically, our scientific practices should be enough for explaining how we know things, so natural science exhausts both epistemology and ontology. However, the link between ontological naturalism and cooperative epistemic naturalism could be considered as tight as the previously mentioned one. All natural facts are explained by the natural sciences, and there is empirical support from scientific data for reaffirming or revising our epistemic claims. If those claims are understood as not describing natural facts, there is no intromission of non-natural entities in our ontology, so ontological naturalism and epistemic naturalism are not threatened. Thus, as we can see, ontological naturalism defines which entities are facts of nature, and epistemic naturalism, in its weaker and stronger versions, defines how our knowledge of those entities is established.

Methodological naturalism claims that there is a *continuum* between the methods of philosophy and those of the natural sciences. There are as many ways of understanding this continuity as the ones that we can find in ontological and epistemic naturalism. There is no consensus regarding what such continuity involves. Some naturalist philosophers claim that philosophy should take into account the discoveries of science inasmuch as philosophy and science share a common target

(namely to understand and define reality, like Russell 1912), while other naturalist philosophers claim that the relation is stronger (philosophy is a part of the sciences) and consequently they propose blurring the boundaries between both camps (Quine 1969). At the very least, methodological naturalism is committed to the idea that nothing that philosophy claims about reality can contradict the best-established discoveries of science. Denying this last, weakest sense, of methodological naturalism certainly places you in the anti-naturalist sphere.

Endorsing just one of the previously mentioned species of naturalism does not lead necessarily to the endorsement of the other two species of it (at least in principle). One can endorse, let us say, ontological naturalism without endorsing epistemological naturalism or the Quinean version of methodological naturalism (Lewis' philosophy seems to be an example of that).

What we are going to analyse here is the compatibility of the normative, common-sense vocabulary that we use to speak about normative unreflective situated behaviour (Rietveld 2008) with an equally intuitive naturalist ontology. By "normative situated behaviour" we understand the kind of unreflective embodied and situated actions and practices that are exerted by us in normal, everyday situations, like when "we turn the pages of a book, maintain an appropriate distance from the other people in an elevator, and without deliberation we stop the pedestrian next to us, who, while about to cross the street, does not notice an oncoming car" (Rietveld 2008, 973).

We have explained elsewhere what the main features of this situated, normative, unreflective behaviour are (Heras-Escribano and De Pinedo 2016, 566–573). It is located at an agential level of analysis, and includes conditions of satisfaction and correctness criteria, context-sensitivity, pertinence, and is a non-intellectualised activity. All these features are taken from the explanation of situated normative behaviour made by philosophers such as Ryle ([1949] 2009), Wittgenstein (1953), or McDowell (1994).

Regarding the first feature, the main idea is that normative unreflective behaviour is a feature of the organism or agent taken as a whole, and not of any part or subsystem of the agent. In this sense, agents are the ones that perform certain actions, in the sense that they are the ones that perceive, feel, or think, and any attribution of a psychological predicate to a part of these agents would be a category error called mereological fallacy (Bennett and Hacker 2003). Thus, just like lungs alone do not smoke or stomachs alone do not eat, brains do not think or perceive. It is a matter of the agent as a whole, so the normative aspect of the normative behaviour should be attributed to the agent as a whole.

The second aspect is the difference between conditions of satisfaction and correctness criteria. While the former explain how we succeed in achieving certain goal, the latter show the right way to do it. In this sense, one can succeed in doing something, but doing it in an incorrect way. Thus, "success" and "failure" is an explanatory pair different from "right" and "wrong", or "correct" and "incorrect". One can succeed without acting correctly, but also act correctly and not succeed. With this distinction, one can offer a fine-grained evaluation of a variety of situated behaviours.

The third aspect is the anti-intellectualist commitment. Normative situated behaviour implies intelligence or rationality because, as Ryle puts it,

[t]he well-regulated clock keeps good time and the well-drilled circus seal performs its tricks flawlessly, yet we do not call them "intelligent". We reserve this title for the persons responsible for their performances. To be intelligent is not merely to satisfy criteria, but to apply them; to regulate one's actions and not merely to be well-regulated (Ryle [1949] 2009, 17).

However, being rational or intelligent should not be confused with endorsing intellectualism. An intellectualist account of normative situated behaviour claims that norms are explicit general propositions in one's own mind without taking into account the particularities of the environment. But our understanding of being intelligent, based on Ryle's approach, rejects intellectualism. The idea of rationality or intelligence offered here is tightly related to our skilful abilities; it is a practical rationality, not a detached or disembedded one. The practical or skilful aspect allows us to offer a continuity between our rationality and our embodied and situated abilities, being aware of what we do and of what we want to do. This is why Ryle claimed that "understanding is a part



of knowing how” (Ryle [1949] 2009, 41). And this helps us to go to the following aspects: context-sensitivity and pertinence. If our normative situated behaviour is not disembedded, this means that it implies context-sensitivity, because skilful behaviour should be deployed taking into account the particularities of the changing situations and scenarios that the agent is going through. Thus, the idea of pertinence makes sense, since a behaviour is categorised as pertinent when it takes into account the correctness criteria and applies them having in view the particularities of the environment at the same time. It is a combination of the application of the criteria and context-sensitivity, something that, according to Ryle, makes one responsible for one’s actions. Finally, we claim that a necessary aspect that is not always highlighted is that normative unreflective behaviour is mainly social, because one’s actions are always performed in a social context and they are subject to evaluation by one’s community (via sanctions and reinforcements). Taking Wittgenstein’s (1953, §§185–202) contributions on following a rule as a starting point, we claim that this social evaluative background of sanctions, training, and reinforcements implies the introduction of a new epistemic dimension for the agent, since the agent could not be aware of the difference between properly following a rule and merely thinking that she is following a rule if this social background is not present. Thus, we claim that all normative situated behaviour must be social, because this is the feature that properly allows for the demarcation between following a rule properly and being in a state of error (this is, merely thinking that one is following a rule). These are the main features that, according to our view, define the normative aspect of our unreflective situated behaviour.

We will side with those philosophers who claim that there is no tension between using the normative vocabulary for making sense of these kinds of behaviour and endorsing ontological naturalism, and distance ourselves from those who see the normative and the scientific vocabularies as pulling us in opposite ontological directions, such as Churchland (1979). We will claim that the tension emerges from the insistence to find a *place* for the normativity of cognition within the stuff postulated by a scientific account of reality (as it happens in Barandiaran and Egbert 2014, or in Barandiaran, Di Paolo and Rhode 2009). Not everything that can be truly said about the world can be said in the vocabulary of the natural sciences because not everything that can be truly said about the world has a descriptive and predicative character. More precisely, we claim that the natural sciences are not in the business of accounting for the particularities of the aforementioned situated behaviours. For this, we will discuss the main ideas of Ryle, Wittgenstein and McDowell regarding normativity and we will adapt them to this phenomenon. The aim of certain philosophers of science and scientists to locate normativity as a scientifically describable phenomenon has been called the “placement problem”, to use Huw Price’s (2011) apt phrase, and we believe that this is the most lasting Cartesian heritage, far more widespread than dualism, representationalism or infallibility.

If we equate “natural” with the subject matter of the natural sciences, we seem to face a trilemma regarding values and norms: either they resonate with non-natural, spooky properties or entities (normative facts, aesthetic or ethical properties), or we reduce such properties and entities to bona fide natural stuff (reductionism), or we cease to have any entitlement to justify and ground our normative judgments (eliminativism).

Leaving aside eliminativism and the resonance with spooky entities, we are going to discuss the two most influential contemporary ways of naturalising the normative aspect of our situated behaviour: reductionism and emergentism (understood in its most recent version, enactivism). After this, we will show that these two strategies share a common factualist assumption, and we will argue that this assumption is the main obstacle to seeing the normativity of our situated behaviour and naturalism as compatible.

Adapting Yalcin (2011) to our purposes, we suggest that to endorse a factualist approach to the explanation of our normative situated behaviour amounts to claiming that there is some factual, entity-like, scientifically describable element in the world that exhausts the normative aspect of that behaviour. Descriptivism is tightly related to factualism. Descriptivism would be nothing but the idea that the vocabulary through which we make sense of a certain normative situated behaviour serves to describe some feature or property of reality (the normative aspect of our situated behaviour, in this case). Thus, we will propose that a non-descriptivist approach to normative situated behaviour is the best way to understand what we do when we explain normative situated behaviour within a

naturalistic account of reality (following our work regarding enactivism: Heras-Escibano, Noble and De Pinedo. 2013; 2015). Hence, ontological naturalism and the normative aspects of our common-sense jargon regarding situated behaviour will be compatible inasmuch as we consider the latter within a non-factualist and non-descriptive framework. This non-factualist, non-descriptivist framework, increasingly influential in the literature, can be traced back to Ryle ([1949] 2009), Wittgenstein (1953), or Sellars (1956),<sup>1</sup> and can also be found in contemporary philosophers such as Field (2009), Price (2011), Gibbard (2012) or Brandom (2015).

We follow the previously mentioned authors in their non-factualist ideas on the normative aspects of our cognition. We are aware that there are positive accounts against this non-factualist view of epistemology and philosophy of mind (expressivism, evaluativism, etc.) that also include certain theoretical proposals. It is not our intention to analyse those positive proposals, but simply to stress the common aspects and main, shared motivations of some historically influential philosophers in order to show a certain anti-factualist approach regarding normative situated behaviour that would be common to all of them.

In sum, what we are going to argue is the following: reductionism and emergentism share a factualist assumption regarding the mental, which in this case is restricted to the normative aspect of our unreflective situated behaviour. This normative aspect is a factual property. Thus, the normative aspect of our situated behaviour could be described in an empirical or scientific way. On the contrary, we claim that this normative aspect of our situated behaviour is not a factual property, and for this we collect and systematised Ryle's ([1949] 2009), Wittgenstein's (1953) and Sellars' (1956) insights on how to understand the normative aspect of situated cognition. Finally, we end by claiming that there can be a clear reconciliation between this non-factualist approach to the normative aspect of situated behaviour and ontological naturalism. If that normative aspect is not an entity-like property or fact, but an essential way of making sense of this behaviour, then it retains the explanatory power of the same normative terms without inflating our ontology with entities, such as descriptivism does.

### Reductionism and emergentism

In recent years, the two most influential strategies in cognitive science for naturalising the normative aspect of cognition (including situated behaviour), besides the plain elimination of intentional idioms, have been reductionism and enactivism.

Here, we are going to stress the main features of reductionism. According to reductionism, the properties talked about in higher-level scientific domains can be reduced to properties of lower-level domains via some specific bridge laws or correspondence rules, although there are some classic authors in reductionism that do not include those bridge laws, such as Churchland (1979) or Bickle (1998). This rejection of the bridge laws initiated a new movement in reductionism called "New wave reductionists". However, here we are going to stress the main features or commitments shared by all kinds of reductionism. "Reduced" in this context means that the concepts used to refer to properties of a theory correspond to concepts of another, more basic, theory (such as physics, neuroscience, etc.). The conclusion is that there is only one property "which is most perspicuously characterized in terms of reducing vocabulary" (Lennon and Charles 1992, 2). By "perspicuously characterized" they mean that the reducing vocabulary works better in explaining or capturing the *nature* or ontological status of certain phenomena (this is, the lower-level theory locates the property at the corresponding level or layer of nature to which the property belongs). A typical example of applied reductionism is the attempted reduction of our psychological states to our neural connections (see Churchland 1986). Thus, for the reductionist philosopher, the normative properties of our common-sense expressions ("believes that", "wants that", etc.) that govern our mental states are properly understood at the level of the causal, physicochemical interactions among our neurons

<sup>1</sup> Even when Sellars has been mentioned in the literature as an author that accepted the clash between our scientific explanations and our common sense vocabularies, some authors have suggested that two interpretations can be derived from his work: one interpretation, known as left-wing Sellarsianism (following Sellars 1956, §36) would be committed to the ineliminable character of our normative and common sense expressions, while right-wing Sellarsianism (following Sellars 1956, §41) would be committed to a version of scientific naturalism (Brandom 2014, 30–32). Here we accept the difference and we emphasise passages of Sellars (1956) that support the left-wing interpretation of his work.

(Bickle 2003). This strategy has been really popular in the philosophy of mind, and supporters and critics of reductionism have always emphasised these previously mentioned features (Neurath 1931; Carnap [1934] 2002; Smart 1959; Nagel 1961; Feyerabend 1962; Hempel 1969; Churchland 1986; Bickle 2003; etc.) Thus, here we are going to focus solely on already-mentioned features of the main commitments of all varieties of reductionism.

Emergentism, in contrast, claims that there are certain properties that cannot be understood if we reduce them to the parts that constitute them (see the pioneering work by Lloyd Morgan 1923, and Broad 1925). Unlike reductionism, emergentism claims that the properties postulated by a higher-level explanation cannot be fully understood if we reduce them to lower-level explanations. Some properties of water (like crystallisation, for example) cannot be understood (or even found) if we look for them within the chemical structures of hydrogen and oxygen.

Enactivism<sup>2</sup> (the most recent version of emergentism) presents itself as a full-blown alternative to reductionism, by claiming that the direct interaction of the agent with its environment, unmediated by representational processes, is to be explained in terms of its capacity for self-stability and self-production (Varela, Thompson and Rosch 1991; Maturana and Varela [1980] 1992; Di Paolo 2005; Thompson 2007; Barandiaran, Di Paolo and Rhode 2009; Stewart, Gapenne and Di Paolo 2010; Barandiaran and Egbert 2014; Di Paolo 2014). Being alive and being subject to normative considerations is one and the same thing, because the norm of the living is to keep its stability going (this is clearly emphasised in Maturana and Varela [1980] 1992, and in Varela, Thompson and Rosch 1991). While reductionism typically equates mental properties with physical and chemical properties of the agent's nervous system, enactivist emergentism demarcates the cognitive from the non-cognitive inasmuch as the cognitive is norm-governed. Cognition is continuous with life because cognitive processes also allow for the stability of the system. To be alive and to be cognitive are one and the same thing (Maturana and Varela [1980] 1992; Varela, Thompson and Rosch 1992; Stewart 1996). While self-stability is a sort of all-or-nothing normativity, Di Paolo (2005, 438) developed the notion of adaptivity as the capacity that agents possess to regulate their own states in relation to environmental changes (see also Barandiaran, Di Paolo and Rhode 2009, and Di Paolo 2014, for further theoretical developments, and Barandiaran and Egbert 2014 for empirical developments). This gives rise to the notion of sense-making, the relational and valuable aspect that comes from the interaction between agents and their environments (Thompson and Stapleton 2008). The "edibility" of sugar exists only in virtue of the dispositional properties of the agent capable of eating sugar. Thus, sugar is only valuable *in relation to the agent* that takes advantage of it. This is because this relational aspect of sense-making is the ultimate normative aspect of action and perception within the enactivist framework. All biological phenomena (and this includes the cognitive ones) are normative and such normativity is the essence of the difference between biology and physics. There is an intrinsic normative character of biological systems (that allows for the persistence of the living) that contrasts with the causal-mechanistic character of physical systems (Barandiaran, Di Paolo and Rhode 2009). This is also, for the enactivist, the difference between action and movement. Movements are mere random causal triggerings of parts of our body, while actions are coordinated movements of the agent that follows the norm of keeping the self-stability of the system (Barandiaran, Di Paolo and Rhode 2009). Thus, for them, cognitive phenomena are *perspicuously characterised* as biological processes.

### **The common factualist assumption and three arguments against it**

Despite the differences between these two approaches, they both share what we take to be a highly problematic assumption, namely the factualist commitment explicated in the idea that cognition is an empirically describable process. Cognitive capacities are either neural physicochemical processes (in the case of reductionism) or properties that emerge from natural processes and are themselves

2 In this paper we will focus solely on the biologically oriented version of enactivism. There is a variety of enactivism that solely focuses on action and perception, that of Kevin O'Regan and Alva Nöe, among others. The biologically oriented version of enactivism includes this sensorimotor approach to perception and action, but is combined with an autopoietic analysis of agency. This version starts with the work of Maturana and Varela, and is followed by the work of Di Paolo, Barandiaran, Stewart, Thompson, Froese, etc.



natural (like normativity in the case of enactivism). In both cases, our explanations of cognition are taken to be descriptive and factual, on a par with the explanations of the natural sciences. For factualism and descriptivism as applied to the analysis of normative situated behaviour, to describe the behaviour of an agent in normative terms is to do the same kind of thing as (let us say) attributing a certain weight to a subatomic particle or as describing the mechanics of the sodium-potassium pump. We consider that a factualist approach for understanding this phenomenon, which is the common assumption of reductionism and emergentism, is highly problematic.

Factualism, as presented in the introduction, is a thesis on the philosophy of mind and language, but also on epistemology, by which beliefs are, or include, mental states that are factual or possess factual properties.<sup>3</sup> Descriptivism is defined as including factualism, as we have seen above. Accounting for a normative situated behaviour from a descriptive approach is nothing but to describe that behaviour as a mental state that holds at least one factual property.

However, Austin (1962/1979), Ryle ([1949] 2009), Wittgenstein (1953), and Sellars (1956) argued against the so-called “descriptivist fallacy”. We aim to apply the main lines of their arguments against this fallacy to normative situated behaviour. The descriptivist fallacy started as a semantic one. This fallacy is identical to “the dogma of descriptivism in philosophical semantics, whereby it’s assumed that since semantic content of indicative sentences is standardly given in terms of their truth-conditions, the characteristic function of all indicative sentences is *to describe worldly objects, properties, and relations*” (Chrisman 2007, 227; emphasis added).

So, semantic descriptivism states that our language is merely fact-stating; this is, its sole function is to describe how the world is, where this is understood as describing facts (Brandom 2015, 35). Inasmuch as the description offered is of facts, this descriptivist approach is clearly compatible with naturalism. Factualism, descriptivism and naturalism are sometimes the three sufficient elements of an approach based on the following idea: if our vocabulary is fact-stating, then the function of our language is purely descriptive and these two ideas suffice for guaranteeing ontological and/or epistemological naturalism. This descriptivist fallacy is still present in contemporary philosophy, especially in epistemology. As Chrisman (2007, 243) puts it, “metaepistemologists have succumbed to the dogma of descriptivism and thus [have] taken it for granted that knowledge claims express a descriptive mental state and thus have to be understood in terms of the attribution of some constellation of factual properties”. This dogma of descriptivism is identical to the descriptive fallacy as applied to epistemology, which states that “[epistemic descriptivism] construe[s] knowledge claims as the attribution or denial of some (robust) epistemological relation.” (Chrisman 2007, 227).

This idea applied to normative situated behaviour means that the attribution of a normative aspect to a certain situated behaviour is based on a description of that normative aspect as if it were a factual, scientifically describable property. We claim, against defenders of factualist approaches, that the normativity of our situated behaviour should not be understood as being factual or descriptive.

For reductionism and enactivism, normativity is considered to be a fact, or a process, that is scientifically describable, and our natural language expressions should be part of a theory whose statements directly refer to certain scientific facts (see again especially Barandiaran and Egbert 2014, and Barandiaran, Di Paolo and Rhode 2009). Even when emergentism locates the normativity of cognition as a property that is better explained biologically and, in contrast, reductionism tries to account for it at the more basic physicochemical level, both share the premise that the normative aspect of situated behaviour is a scientific fact that should be part of the ontology of our reality.

We will offer three reasons or arguments why this common factualist premise should be rejected. On the one hand, that there are natural properties (having such and such nervous reactions on your nervous system) that enable behaviour does not imply the need to introduce certain properties, objects or facts in our ontology. On the other hand, there are perfectly valid and, indeed, ineliminable, explanatory practices that appeal to abilities or normative situated behaviour, to the relevance of features of the environment for the agent as a whole, and that make essential use of intentional idioms that make salient normative patterns. The key point consists in not mixing both levels of

3 In this sense, a fact or a factual property is understood as a sui generis kind of entity that is part of the inventory of our world (Mulligan and Correia [2007] 2013).

understanding. The following arguments are systematised explanations of key insights of Ryle ([1949] 2009), Wittgenstein (1953) and Sellars (1956) regarding our normative situated behaviour.

***Explaining an ability is not describing a fact: a reconciliation with ontological naturalism***

If we assume that we can describe certain abilities or situated behaviours (with their intrinsic normative character) as if they (or some of their aspects) were identical with certain facts of nature, we are committed to a problematic thesis. To begin with, we cannot capture the normative aspects of our abilities or situated behaviours by just pointing at scientifically describable facts. The mere description of a movement is not enough. Let us rescue a typical example of normative linguistic behaviour: a parrot and a human animal can produce the same sounds, but we would not say (based solely on those movements) that a parrot is committed to the consequences of its utterances the way a human being is (see the same example in Brandom 2001). The problem of the descriptivist approach is the same when we apply it to our situated behaviour. This strategy does not suffice to explain our normative, unreflecting, situated behaviour. Then, the task is to clarify what do we mean when we claim that, for example, a certain action has been performed following a norm (and here we do not mean just a linguistic norm, but a situated one, like the above examples taken from Rietveld 2008). One typical conclusion that comes to mind when we claim that the normative aspects of our abilities or normative behaviours are not scientific facts is the intuition that this idea could entail that abilities and skills are spooky entities or processes. But abilities are not spooky or reduced to movements or facts. To put it in Gilbert Ryle's words ([1949] 2009, 22):

Now a skill is not an act. It is therefore neither a witnessable nor an unwitnessable act. To recognise that a performance is an exercise of a skill is indeed to appreciate it in the light of a factor which could not be separately recorded by a camera. But the reason why the skill exercised in a performance cannot be separately recorded by a camera is not that it is an occult or ghostly happening, but that it is not a happening at all.

In Ryle's view, behaviours, skills or abilities are not identical to the actions or exercises that actualise them. The point that Ryle highlights is that not every explanatorily relevant discourse is referential (this is, related to a particular set of facts). The idea that not every kind of our discourse is referential (this is, that it does not refer to a worldly entity) is a key idea for explaining our normative situated behaviour. In the case of Ryle ([1949] 2009), he makes sense of this situated behaviour through a dispositional vocabulary.

Dispositions explain tendencies and propensities not only to make sense of the situated behaviour of human animals, but also the behaviour of other non-rational animals and even objects. This dispositional vocabulary is useful not because it postulates the existence of certain properties, as occult forces,<sup>4</sup> that exert their power as an intrinsic feature of the agent or object that bears them. Rather, dispositions are a kind of vocabulary that is useful to understand certain behaviours within a certain range of explanations. Those explanations, once again, are not descriptions of hidden properties. This vocabulary allows us to explain how to infer certain statements that explain specific situated behaviours from others. These expressions work as inference tickets that allow us to move from one statement to others (Ryle [1949] 2009, 105), which is not the same as postulating the existence of a special factual force or property to which these terms refer that is responsible for this change. Thus, dispositional terms, far from being an expression of occult but existing properties or forces, are something like discursive "tickets" that are useful to move from one explanation to another. Take, for example, elasticity. This is a disposition that has different manifestations, but elasticity per se is not something that can be found in a body or object in the same sense as we can see its atoms or its size. It is just a term to explain different behaviours of that object. We understand these behaviours of the same object in a better way if we appeal to the notion of elasticity, which

4 One could understand dispositions as being occult forces since for a realist they are intrinsic properties of their bearers (Molnar 2003), but at the same time they are not usually seen in plain sight (for example, I do not see in plain sight someone's disposition for speaking French, to offer an example provided by Ryle ([1949] 2009), unless I see that person speaking French). Thanks to an anonymous referee for inviting us to clarify this point.

is the capacity of certain entities to respond in different ways under different conditions. By using the term, we just say that this entity is disposed to behave in such and such a way under specific circumstances. This is not predicating something of an object, in the sense that it does not mean that the entity already includes an entity-like property that causes this change (an occult force that can be found in the body, to use Ryle's expression). What we mean is that the dispositional terms are useful for explaining the explanatory transition between one explanation of the status of an entity to another one. This is the meaning of a dispositional term for Ryle: an inference ticket that allows us to make such explanatory developments. The term does not stand for an entity or a property; it is just a way of explaining behaviours, tendencies or capacities in a more detailed and richer way.<sup>5</sup>

Another illuminating example is how Ryle understood migration in birds (Ryle [1949] 2009, 124–125; emphases added). This could be more revealing and persuasive for understanding his non-factualist approach to dispositions.

The description of a bird as migrating has a greater complexity than the description of it as flying in the direction of Africa, but *this greater complexity does not consist in its narrating a larger number of incidents*. Only one thing needs be going on, namely that the bird be at a particular moment flying south. "It is migrating" *tells not more stories, but a more pregnant story* than that told by "It is flying south"...the process of migrating *is not a different process* from that of flying south; so it is not the cause of the bird's flying south...We must say that "it is migrating" describes a flying process in terms which are partly anecdotal, but are also partly predictive and explanatory. It does not state a law, but it describes an event in terms which are law-impregnated. The verb "migrate" *carries a biological message*, as the verb "dissolve" carries a message from chemistry. "It is migrating" *warrants the inference* "it is a migrant", as "it is dissolving" warrants the inference "it is soluble".

This has a clear advantage if we apply it to situated behaviours. The key point is that the disposition for migrating (the migrating behaviour, which is always situated) is not an ability of the bird of the same kind as flying. That is, for explaining flying and migrating, we do not postulate the existence of an occult force or a series of occult incidents (little entity-like facts, let us say) behind those behaviours of flying and migrating. There is no need to postulate the existence of different facts or processes hidden behind every dispositional expression by which we describe a particular situated behaviour. If we do not explain the tendency to sleep that some agents possess under certain circumstances with the postulation of a hidden, occult force called "*virtus dormitiva*", there is no need to appeal to any "*virtus migrativa*" for explaining migration. Rylean dispositions are not entity-like properties, but expressions that allow or warrant us to make some inferences that are useful inasmuch as they are explanatory, in the sense that they carry certain messages that make us understand the way we behave in a richer way (because we can infer more things than using other expressions, for example in the case of flying and migrating). Solubility, elasticity, migration, and the rest of tendencies and skills that conform our dispositional vocabulary, applicable to objects and (or) agents, are useful in our vocabulary not because we are enumerating different entity-like

5 An anonymous referee urges us to introduce a footnote in which we discuss the relation between dispositions and predication of dispositions. We are aware of the recent ontological interest in dispositions, powers or tendencies. We find some of the proposals, in particular Molnar (2003), very attractive both as an alternative to the account of causation in terms of general laws, and as a contribution to debates on the philosophy of mind (see Shoemaker 1980; Mumford 2004; Bird 2007; Vetter 2015). Molnar argues that intentionality is not the mark of the mental, because dispositional properties display what he calls "physical intentionality". We find this a very inspiring move in the right direction, as we hold that normativity, rather than intentionality, is the true mark of the mental. However, we also see serious shortcomings in this family of proposals. Dispositionalism is presented as an alternative to a Humean metaphysics for science, where the only relations between things are contingent. Everything that exists may not have existed without anything else. But the cure against "Humean distinctness" may be worse than the disease. Dispositional properties cannot be individuated in terms of their manifesting, because the very idea is that they exist even when they are not manifesting themselves. The most popular alternative is to claim that they are individuated in terms of the *type* of manifestation that they would display, given the right circumstances. But this move seems to introduce very dubious entities within the metaphysics of science. Some form of universals is needed in order to individuate dispositions and, if Tugby's argument is correct, it is Platonic, transcendent, rather than Aristotelian, immanent, universals that are needed (because the realist will want to say that an object has, say, the disposition to explode even if no other object has ever exploded). See Tugby (2013). For this reason, we want to argue that a Rylean take on dispositional discourse is ontologically more parsimonious than realism about dispositions (see also Heras-Escribano 2017 for a detailed analysis on this issue from a purely metaphysical perspective).

properties that are different from the factual elements that already constitute objects, but because they are terms that work as inference tickets that allow us to make better explanations of the behaviour of objects and agents.

This is the best way to reconcile our naturalistic, common-sense view of the world put forward at the beginning of this paper with our dispositional vocabulary: *if dispositions are inference tickets and they are not considered as entity-like properties* (that is, if they are considered just as ways of explaining certain behaviours that do not stand for specific factual elements in our ontology), *then we do not inflate our natural ontology with extra elements*. We keep the explanatory power of our vocabulary without adding extra items to our ontology, contrary to the factulist approach. This is the main benefit of the Rylean, non-factulist view. It retains the explanatory power without inflating our ontology with entities. In the case of agents whose behaviour can be aptly labelled correct or incorrect with regard to a norm, our dispositional vocabulary places the agent within an evaluative framework that involves social practices, training, techniques, agreement or shared expectations. Ryle is not the only philosopher that emphasises some of these aspects of human action; in the next section we will discuss them under the light of Sellars' and Wittgenstein's ideas. In summary, we believe that we do not need to assume that dispositional vocabulary plays a referential role in our discourse. Besides our general misgivings about dispositional realism (see previous footnote), we have been arguing that, when such a vocabulary is used to explain behaviour, a position such as Ryle's avoids some of the more recurrent problems in the philosophy of mind. In particular, the Cartesian substantialist assumption that the mind is an entity that has long outlived Descartes' dualism (see below). Let us illustrate this point with an example from the field of ecological psychology. Gibson (1979) introduced the idea of "affordance" as an alternative to cognitivists explanations of perception. What we perceive are the affordances or possibilities for action, rather than objects and categorical properties. In fact, what Gibson claimed is that our skilful embodied abilities in action, combined with the physical forces of the environment, gave rise to ecological information, information that emerges not as a new entity, but as a new explanatory level. This is a new way of looking at the combination of organism and environment that shows us what the environment affords to the agent (cups afford graspability, for example). Thus, affordances are aspects of the environment (the shape of the cup) which are *related to* the agent's capabilities (grasping) at the same time, and this combination of environmental and agential aspects is what allows for the formulation of this new concept. Affordances, then, have a dispositional character (they are specifically related to the possible actions of kinds of agents) and, even when this could invite an ontological approach (see, for instance, Turvey 1992) that sees affordances as properties of the environment alone or as emergent properties of the organism-environment system as a whole (Stoffregen 2003), affordances are better understood as ways to give intelligibility to the interaction between organism and environment. Thus, we do not need to add an ontological commitment to affordances side-by-side with environmental information. Affordances are not an extra element added to the organism-environment system (organism + environment + affordance), but a new way of understanding how organism and environment relate via ecological information, information that is co-constituted by an organism's capacities and an environment's physical forces, since affordances are *related to* the agent and the environment at the same time. Our explanation of the behaviour of an agent by appealing to its capacity to directly perceive opportunities for action is more powerful and promising than alternatives that take perception to have an indirect, inferential character in part because we do not add extra elements (such as mental representations inside the agent's head) for explaining how it is possible for a connection of agency and environment. We do not need to populate reality with entities besides ecological information, because affordances are not a new kind of entity. Rather, as we have explained, they are a new way to understand how organism and environment are already related.

### ***The is-ought fallacy and the difference between the nomological and the normative***

Our second main reason to reject the premise shared by reductionism and emergentism is this: when we move to the sphere of normative concepts, those that involve a distinction between correct and incorrect performances, the naturalistic enterprises under criticism feel forced to ground the

justification of our evaluative judgments on statistical patterns or on dispositions to behave. For them, claiming that an agent possesses a certain ability is analogous to describing certain particular movement(s) of the agent. But to do so is not to explain what it means for an agent to possess certain ability. Rather, to do so is to embrace a variety of the is-ought fallacy. This also applies to situated normative behaviour. As Sellars (1956, §5) claimed:

[T]he idea that epistemic facts can be analyzed without remainder – even in principle – into non-epistemic facts, whether phenomenal or behavioral, public or private, with no matter how lavish a sprinkling of subjunctives and hypotheticals, is, I believe, a radical mistake – a mistake of a piece with the so-called “naturalistic fallacy” in ethics.

The is-ought fallacy amounts to the claim that a normative statement that makes sense of a situated behaviour can be directly derived or inferred from mere causal statements. This means that normativity is a scientifically observable property and can be derived from mere scientific facts. Enactive emergentism claims that normativity is a biological property and also that it can be inferred and measured in scientific models (see the one of Barandiaran and Egbert 2014). The problem with this idea is of a conceptual, categorical character. Statistical patterns just show that the same causal response is triggered under similar conditions, but we cannot infer that the agent is following a norm when it responds in that way just because it shows a statistical tendency to answer in that way. It is necessary to include other conditions to talk about the normative character of an action (the possibility of error, the possibility to distinguish “it is right” from “it seems right to me” as has been stressed in our Heras-Escribano, Noble and De Pinedo 2015). If a statistical tendency were the only condition, we would live in a world in which universal gravitation and natural selection would be as normative as the rules of chess. The former are scientific laws and the latter is a norm-governed game. One can be wrong or make a mistake when playing Evans gambit, but planets cannot calculate incorrectly the orbits that they should follow and, likewise (and more important for the enactive view), bacteria cannot be trained not to malfunction.

Scientific (physical, biological) laws or statements can express the causal, nomological connections and reactions between entities or forces, but this is not the same as justifying a certain action or commitment. Justifying is what we do when we claim that we know how to do something. Sellars (1956) showed that there was a difference between explaining natural phenomena in terms of laws and in terms of norms.<sup>6</sup> Both marks of intelligibility imply different kinds of relations among entities, and both frameworks cannot be mixed for the sake of offering a consistent explanation (McDowell 1994; Lindgaard 2008). If they are mixed, we commit this is-ought fallacy, as Sellars claimed (1956). The realm of law (the nomological) would explain how entities interact in terms of scientific laws; the logical space of reasons (the normative) would explain our interactions with the world in terms of justification and answerability. And situated normative behaviour (our abilities), precisely because it is normative (subjected to justification, reasons, etc.) falls under the logical space of reasons, not under a lawful or nomological explanation. Again, as it was expressed by Sellars (1956, §36; emphasis added), “in characterizing an episode or a state as that of knowing, we are *not giving an empirical description of that episode or state*; we are placing it in the logical space of reasons, of justifying and *being able to justify* what one says [or does]”.

The difference between the realm of law and the space of reasons in Sellars as two different vocabularies for making sense of different aspects of our actions parallels the Rylean distinction between the dispositional language for explaining behaviour and other (scientific) languages that possess a referential function. Dispositional language, like the vocabulary of the space of reasons, does not need to point to entity-like properties in our world because it is based on expressions or terms that serve as inference ticket and do not have a referential character. The normative aspect of our situated behaviour is one example of this. Explaining our unreflective situated behaviour in normative terms implies explaining our actions appealing to norms, reasons and justifications, but those norms are not natural entities; those terms do not refer to different entity-like properties, just

6 This Sellarsian distinction has been very influential and well-established in philosophy, as seen in Rorty (1979), Brandom (1994; 2015), McDowell (1994; 2009), Church (2006) Lindgaard (2008), de Vries (2008), Bakhurst (2011), etc.



like migrating and flying south do not point to different entity-like properties (they are just two different ways of making sense of the same process). Making sense of our unreflective behaviour in normative terms is not describing anything in a scientific way, like Sellars claimed. It is not (in terms of Ryle) a happening. It is not a witnessable act.

***Normativity is not an entity-like property, but a socially mediated practice***

Besides Ryle ([1949] 2009) and Sellars (1956), another post-positivistic analytic philosopher that endorsed a non-factualist account regarding behaviour was Wittgenstein (1953). According to this author, our behaviour (be it our linguistic or our situated unreflective behaviour) is explained in terms of rules or norms. Of course, due to his interest in the philosophy of language, he constantly refers to rule-following examples that involve linguistic behaviour. We claim, following his own work, that this explanation of behaviour in terms of norms is not exclusively linguistic, but that it can also be applied to situated unreflective behaviour. The main idea behind Wittgenstein's explanation of rule-following behaviour is that it is not something understood in factualist terms, and also that normative behaviours or practices are essentially social.

Wittgenstein claims explicitly that following a norm is not manifesting a brute inclination or offering a personal interpretation of a norm. Both candidates are unsuitable for the same reasons, but it is especially clear in the second case. When discussing whether acting according to a norm can be understood as offering an interpretation such that the action becomes subsumable by the rule, Wittgenstein offers the example of the pupil learning mathematics (1953, §§198–202). After some successful tests that seemed to show that he had mastered the use of the “+” sign (all involving numbers smaller than 1 000), the teacher asks him “how much is 1 000 + 2?” The student answers “1 004”. When the teacher tells him that this is not the right answer, he defends himself claiming that he is doing exactly what he was told: “I did as before. Wasn't the rule: add 2 up to 1 000, 4 up to 2 000, 6 up to 3 000 and so on?” (1953, §185). The student provided an interpretation of the rule on how to use the “+” sign that covers all possible uses of the sign and is consistent with all the examples he was exposed to during his training. It is therefore tempting to accept that the pupil can act in accordance with his own criterion. But this cannot be a proper account of rule following.

Wittgenstein understands that acting according to a rule is not interpreting the rule in such a way that the action falls under it (in linguistic or behavioural terms). If so, if for every agent every action can accord with some interpretation of the rule, then every action can also be made to conflict with an interpretation of the rule. Then there would be neither accord nor conflict here. There would not be a distinction between “it seems correct” and “it is correct”. If acting according to a rule was no more than subsuming the action under an idiosyncratic interpretation of the rule, there would be no distinction between right and wrong and, hence, no proper normativity. “Right” or “wrong”, which are concepts tightly connected to the concept of “norm”, would be of no use here. As Wittgenstein claims (1953, §201): “What this shows is that there is a way of grasping a rule which is not an interpretation, but which is exhibited in what we call ‘obeying the rule’ and ‘going against it’ in actual cases”.

Enactivists claim that it is possible to establish and follow a norm privately. They believe that every agent does this, and that every agent establishes and follows the norms that it created through its own distinctive behaviour (see Barandiaran, Di Paolo and Rhode 2009 for a theoretical approach to this idea, and Barandiaran and Egbert 2014 for a computational model of how a bacterium supposedly does this). We claimed against this view in Heras-Escribano, Noble and De Pinedo (2015). Our main point was that, if it were possible for every agent to establish and follow its own norms, there would be no difference between a personal interpretation, a brute inclination or a proper rule-following practice. The idea of a private norm-following private practice blurs the distinction between following a norm and thinking that one is doing so. “Hence it is not possible to obey a rule ‘privately’: otherwise thinking one was obeying a rule would be the same thing as obeying it” (Wittgenstein 1953, §202). This points to understanding normativity as socially constituted. We will go back to this feature in the next sections, before arriving at the main conclusions.

There is a clear idea that is tightly related to this view. Pointing to a fact does not exhaust the normative aspect of a norm-following practice. Descriptivism concerning normativity claims that

when we attribute normative behaviour to some agent, we are asserting a matter of fact. In contrast, from a non-descriptivist point of view, when we claim that an agent follows a norm, we express an evaluation of that behaviour as acting under certain correctness criteria. The way we explain rule-following situated behaviour does not need to describe or stand for certain entity-like properties in the world, nor do they represent them. Instead, these expressions evaluate whether the agent that performs an action acts under certain correctness criteria. This is not something empirical, as a descriptivist could claim, in contrast, it is a way to relate the actions that conform such behaviour to some (socially-mediated) standards. It is an internal or a grammatical relation, not a description of an empirical process (Baker and Hacker 1985).

After giving some reasons for claiming that the normative aspect of our situated behaviour cannot be a scientifically describable property, we will finish this paper by offering a non-descriptivist account of the role and nature of the normative character of our abilities and situated behaviour.

### **The Cartesian heritage and a non-descriptivist proposal**

The rejection of the premise shared by both strategies (enactivism and reductionism) opens the door to thinking of our agent-level explanations in terms of commitments to the truth of certain conditional and counterfactual statements regarding the situated behaviour of the agent. The cunning of the fox is in no way like the brown colour of her fur. If the fox had two options, she would systematically choose the one that is more deceitful for the rabbit; if such and such were the case, she would display her skill so and so, etc. No spooky or physical property makes our judgments about her cleverness true. Against reductionism, explaining situated behaviour intentionally is to engage in explanatory practices at a different, agential level, rather than describing something in the vocabulary of, say, physiology. To look for the property of being cunning among physical or chemical properties is the result of a category mistake, influentially made by Descartes and almost as famously criticised by Gilbert Ryle ([1949] 2009) and Wittgenstein (1921; 1953). In the case of endorsing a descriptive approach to dispositions, it could be possible either to reduce those dispositional properties to a set of more fundamental properties (such as Armstrong 2012), or remain realistic with respect to the irreducible character of dispositions. We do not believe that either case is a plausible one, since we do not endorse a descriptive view on dispositions. For us, dispositions are non-referential terms that work as inference tickets in order to offer fruitful explanations of the behaviour of organisms and objects. Being cunning is an ability expressed by a disposition, not an entity-like property possessed by the fox. Hence the appeal to a Rylean category mistake: one cannot reduce what is not a “witnessable or unwitnessable” fact.

Descartes’ error ([1641] 1996) was not just to claim that there must be a vaporous, non-extended substance different from the physical. Neither was, as enactivist approaches within cognitive science take it to be, its characterisation of the mind as a representational device infallible regarding its own contents. We can give up dualism, representationalism and infallibilism and still be on the grip of Descartes’ picture, because what is central to it is to think of the mind as an entity, as an organ, as a *res*. This is still possible if one endorses descriptivism and factualism, as enactivism does. Even when enactivism is considered by many authors as a non-reductive, non-representational, and non-cognitivist approach, it still accepts the idea that the normative aspect of cognition should be understood as a fact and analysed by the natural sciences. In the enactive view, the mind is not the operation of the brain, but it is still a *res* that comprises more operations (those of the whole agent interacting with its environment), so the descriptive and factual commitment is still running. Thus, the last Cartesian feature, the factual-descriptive approach to the mind, is still at play in the non-representational, non-dualist approaches to the mind. This is why we can divest such an organ of the features that Descartes associated with it and still retain the analogy of the physically describable via descriptivism and factualism. However, we claim that the mind is not a ghost, nor is it a machine. The main problem is, as we have seen, the descriptivist and factualist spirit that inspired the idea that we possess mental properties (in this case, the normative aspects of our situated behaviour) that are as describable as the properties postulated by the natural sciences. If reductionism (based on property identity) identifies mental with physical properties and hence tends to commit category mistakes (such as “your eyes see”, “your brain decides”, etc., but also

“your mind decides” or “your mind wants”<sup>7</sup>), enactivism (rejecting property identity) claims that the normativity of the mental is of the same kind as the normativity of the biological, and the normative aspects of our thoughts and actions are as describable as the biophysics of our processes (see Di Paolo 2005; Barandiaran, Di Paolo and Rhode 2009; Barandiaran and Egbert 2014).

On the contrary, when we claim that situated behaviour is normative, we claim that there is a norm or criteria of correctness that allows us to appraise the way the agent performed her actions (see again; Heras-Escribano and De Pinedo 2015, Heras-Escribano, Noble and De Pinedo 2016). We *evaluate* her action in terms of certain standards, and those standards are not properties like her weight or her speed, but conditions or criteria that we need in order to make sense of her performances as right or wrong. Coming back to the analogy with linguistic behaviour, we do not attribute a linguistic ability to a parrot because the parrot cannot be committed to the consequences of its utterances in different contexts the way that humans can. This is so because the parrot is not aware of the standards of correction that guide our linguistic performances and the inferential role of the concepts that he would use. Thus, the same applies to our practical rationality, to the ways in which we justify and make sense of our situated behaviour. This has nothing to do with some measurable, scientifically describable property. Rather, the normative character of situated behaviour comes from a socially established process, inasmuch as normativity implies the possibility of error, the distinction between “it is correct” and “it seems correct to me”, training, sanctions, iterability and the like. And we believe that those requirements can be only fulfilled within a society (because you have to learn how to follow rules via the training, the social reinforcement and the sanctions of a community that guides you, see Heras-Escribano and De Pinedo 2015, Heras-Escribano, Noble and De Pinedo 2016). Thus, we think that it is more plausible to consider this general aspect of the normativity of cognition as something whose sources are social rather than individual (Wittgenstein emphasises the social character of rule-following in multiple passages of his work, such as 1953, §202).

Highlighting the social aspect of the normativity of cognition is also a critique of the very notion of normativity as it is understood by enactivism (Heras-Escribano, Noble and De Pinedo 2015). Besides their factualist assumption, enactivists (and possibly some of the phenomenologists from which they draw their inspiration) consider that there is a normative relation between the stimuli of the environment and the agent that perceives them (Jonas 1968; Dreyfus 2007; Barandiaran and Egbert 2014). The problem is that their account cannot face the Wittgensteinian objection on the paradoxical consequences of following a norm privately (1953, §185–202), as we have pointed out above. The problem with following a norm privately comes in the form of a paradox. If something is right just for an individual, what is right for that individual can be wrong for another, and vice versa (rules could be followed privately and following a rule would be no more than having an idiosyncratic interpretation of it). So, the notions of “right” and “wrong” would cease to be meaningful. Thus, contrary to the claim of enactivists (such as Barandiaran and Egbert 2014), unicellular agents cannot establish and follow their own norms. Rather, it seems that normativity can only be a phenomenon that appears in animals that share their lives in community with others, because that common form of life would establish the only possible background against which to judge something as right and wrong (hence sanctions, training, and other necessary conditions to talk about normativity). Thus, contra enactivism: (1) normativity does not “emerge” as a new empirically *describable* property or entity; and (2) normative situated behaviour is a socially mediated process.

Once again, from a non-descriptivist point of view, the normativity of situated behaviour would be just a way to evaluate that the agent is following certain correctness criteria and that she is committed to the consequences of doing certain actions in a particular way (what we call “to follow a norm”).

7 This kind of category mistake is called “mereological fallacy”, a label coined by Bennett and Hacker (2003), as presented in the Introduction above. These authors consider a kind of category mistake to attribute agential aspects to parts of agents – brains, mostly. In their work, they find several cases of well-considered philosophers and scientists that commit to this fallacy, for example, Crick, Gregory, Edelman, Blakemore, Damasio, or Marr.

### The reconciliation of ontological naturalism and the normative aspect of situated behaviour

Finally, how can this non-descriptivist stance towards the normative aspect of situated behaviour be compatible with ontological naturalism? In short, and as seen in the first argument of the previous section, because normativity does not stand for properties, entities or processes in the world that can be perspicuously characterised in special (normative or scientific) discourses (be they the neurological, the biological, the physical, etc.) As we have seen previously, our normative, common-sense vocabulary is not ineliminable because it stands for those properties/entities. Rather, it is a way of making sense of our actions in a different way, not a scientific practice that implies the discovering of new entities as we have seen in Sellars' (1956) distinction between the realm of law and the space of reasons, and in Ryle's ([1949] 2009) example of the distinction between migrating and flying south. Thus, the (factualist) problem is just to postulate that the normative aspect of our situated behaviour is the same kind of entity or fact as they are the agents that exhibit that behaviour. On the contrary, the normative aspect of our situated behaviour is not a process or entity itself. It is not a spooky or a natural entity. It does not enhance our ontology. Our normative vocabulary for making sense of situated behaviour is compatible with ontological naturalism because it expresses the commitments and evaluations that agents acquire when they cope with other entities in the world, such as persons and things. Reductionism, eliminativism and emergentism are trapped by the same factualist interpretation of those expressions. The only approach that can solve the well-known question of where we can place the normative among the natural or the causal shows, we think, that the normative is not constituted either by spooky or by natural entities and, hence, that it occupies no space at all. Thus, if normativity is not an entity-like property, the non-factualist explanation of situated behaviour is preferable over the descriptivist or factualist one because it retains the explanatory power of the normative vocabulary without inflating our ontology with entity-like properties.

### Conclusion

In conclusion, and as seen throughout the paper, agential, intentional and general cognitive idioms that emphasise the normative aspect of our situated behaviour are ineliminable, not because there are corresponding properties of the world, but because biological, cognitive and rational phenomena become unintelligible without them. We argued in favour of this through systematising three key arguments that originally belonged to Ryle ([1949] 2009), Wittgenstein (1953) and Sellars (1956) in order to illuminate three key aspects for a non-descriptive, non-factualist understanding of our normative and situated behaviour. Hence, as stressed in the last section, it is possible to be committed to ontological naturalism and a folk-psychological explanation of our situated behaviour inasmuch as we endorse a non-descriptivist stance towards our mental abilities.

### Acknowledgements

This research was partly funded by a Fondecyt Postdoctorado (3170685), two projects granted by the Ministerio de Economía y Competitividad, Gobierno de España (FFI2016-80088-P, FFI2014-57258-P), and the FiloLab Group of Excellence, Vicerrectorado de Investigación, Universidad de Granada (Spain).

### References

- Armstrong, D. M. 2012. *Sketch for a Systematic Metaphysics*. London: Oxford University Press.
- Austin, J. L. 1962/1979. *Philosophical papers*. Oxford: Oxford University Press.
- Baker, G. P., and Hacker, P. M. S. 1985. *Wittgenstein. Rules, Grammar and Necessity*. London: Wiley-Blackwell.
- Bakhurst, D. 2011. *The Formation of Reason*. London: Wiley-Blackwell. doi:10.1002/9781444395600
- Barandiaran, X., Di Paolo, E. and Rohde, M. 2009. "Defining Agency.", *Journal of Adaptive Behavior* 17 (5): 367–386. doi:10.1177/1059712309343819
- Barandiaran, X., and Egbert, M. 2014. "Norm-Establishing and Norm-Following in Autonomous Agency." *Artificial Life* 20 (1): 5–28. doi:10.1162/ARTL\_a\_00094

- Bennett, M. R., and Hacker, P. M. S. 2003. *Philosophical Foundations of Neuroscience*. London: Wiley-Blackwell.
- Bickle, J. 1998. *Psychoneural reduction: the new wave*. Cambridge, Massachusetts: The MIT Press.
- Bickle, J. 2003. *Philosophy and Neuroscience: A Ruthlessly Reductive Account*. Dordrecht: Kluwer Academic.
- Bird, A. 2007. *Nature's metaphysics: Laws and properties*. Oxford: Oxford University Press.
- Brandom, R. 1994. *Making it explicit*. Cambridge, Massachusetts: Harvard University Press.
- Brandom, R. B. 2001. *Articulating Reasons*. Cambridge: Harvard University Press.
- Brandom, R. B. 2015. *From Empiricism to Expressivism. Brandom reads Sellars*. Cambridge: Cambridge University Press.
- Broad, C. D. 1925. *The Mind and its Place in Nature*. London: Kegan Paul.
- Chrisman, M. 2007. "From epistemic contextualism to epistemic expressivism." *Philosophical Studies* 135 (2): 225–254.
- Church, J. 2006. "Locating the Space of Reasons." *Teorema* 25 (1): 85–96.
- Churchland, P. 1979. "Eliminative Materialism and the Propositional Attitudes." *Journal of Philosophy* 78: 67–90.
- Churchland, P. 1981. *A Neurocomputational Perspective*. Cambridge, Massachusetts: The MIT Press.
- Churchland, P. 1986. *Neurophilosophy*. Cambridge, Massachusetts: The MIT Press.
- Descartes, R. (1641) 1996. *Meditations on First Philosophy*. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511805028
- De Vries, W. A. 2008. "In the Space of Reasons." *Review of Metaphysics* 61 (4): 860–862.
- Dieveney, P. 2011. "In Defense of Quinean Ontological Naturalism." *Erkenntnis* 76 (2): 225–242. doi:10.1007/s10670-011-9326-7
- Di Paolo, E. 2005. "Autopoiesis, Adaptivity, Teleology, Agency." *Phenomenology and the Cognitive Sciences* 4 (4): 429–452. doi:10.1007/s11097-005-9002-y
- Di Paolo, E. A. 2014. "Foreword." In: *Enactive Cognition at the Edge of Sense-Making Making Sense of Non-Sense*, edited by M. Cappuccio and T. Froese, xi–xv. New York: Palgrave, Macmillan.
- Dreyfus, H. 2007. "Why Heideggerian AI Failed and how Fixing it would Require to Make it more Heideggerian." *Philosophical Psychology* 20 (2): 247–268. doi:10.1080/09515080701239510
- Feldman, R. 2001. "Naturalism in Epistemology." In: *Stanford Encyclopedia of Philosophy*, edited by E. N. Zalta. <https://plato.stanford.edu/archives/sum2012/entries/epistemology-naturalized/>.
- Feyerabend, P. K. 1962. "Explanation, reduction, and empiricism." *Minnesota Studies in the Philosophy of Science* 3: 28–97
- Gibbard, A. 2012. *Meaning and Normativity*. Oxford: Oxford University Press.
- Gibson, J. J. 1979. *The ecological approach to visual perception*. Boston: Houghton-Mifflin.
- Haack, S. 1993. "Two Faces of Quine's Naturalism." *Synthese* 94 (3): 335–356. doi:10.1007/BF01064484
- Hempel, C. 1969. "Reduction: ontological and linguistic facets." In: *Philosophy, Science and Method: Essays in Honour of Ernest Nagel*, edited by S. Morgenbesser, P. Suppes and M. White, 179–199. New York: St Martin's Press.
- Heras-Escribano, M. 2017. "Non-factualist dispositionalism." *Philosophia* 45 (2): 607–629.
- Heras-Escribano, M. and De Pinedo, M. 2016. "Are affordances normative?" *Phenomenology and the Cognitive Sciences* 15 (4): 565–589.
- Heras-Escribano, M., Noble, J., and De Pinedo, M. 2013. "The only wrong cell is the dead one: On the enactive approach to normativity." In: *Advances in Artificial Life*, edited by P. Liò, O. Miglino, G. Nicosia, S. Nolfi and M. Pavone, 665–670. Cambridge, Massachusetts: MIT Press.
- Heras-Escribano, M., Noble, J., and De Pinedo, M. 2015. "Enactivism, action and normativity: a Wittgensteinian analysis." *Adaptive Behavior* 23 (1): 20–33.
- Jonas, H. 1968. "Biological Foundations of Individuality." *International Philosophical Quarterly* 8 (2): 231–251.



- Kim, J. 1988. "Explanatory Realism, Causal Realism, and Explanatory Exclusion." *Midwest Studies in Philosophy* 12 (1): 225–239. doi:10.1111/j.1475-4975.1988.tb00167.x
- Lennon, K. and Charles, D. 1992. *Reduction, explanation, and realism*. Oxford: Oxford University Press.
- Lewis, D. K. 1999. *Papers in Metaphysics and Epistemology*. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511625343
- Lindgaard, J., ed. 2008. *John McDowell: Experience, Norm and Nature*. London: Wiley-Blackwell.
- Lloyd Morgan, C. 1923. *Emergent Evolution*. London: Williams and Norgate.
- Maturana, H., and Varela, F. (1980) 1992. *The Tree of Knowledge*. Boston: Shambala.
- McDowell, J. 1994. *Mind and World*. Cambridge, Massachusetts: Harvard University Press.
- McDowell, J. 2009. *Having the world in view: Essays on Kant, Hegel, and Sellars*. Cambridge, Massachusetts: Harvard University Press.
- Molnar, G. 2003. *Powers: A study in metaphysics*. Oxford: Oxford University Press.
- Mumford, S. 2002. *Laws in Nature*. London: Routledge.
- Mumford, S. 2004. *Laws in Nature*. London: Routledge.
- Mulligan, K., and Correia, F. (2007) 2013. "Facts." In: *Stanford Encyclopaedia of Philosophy*, edited by E. N. Zalta. <https://plato.stanford.edu/archives/win2017/entries/facts/>
- Nagel, E. 1961. *The structure of science*. New York: Harcourt, Brace & World.
- Neurath, O. 1931. "Physicalism." In: *Philosophical Papers 1913–1946*, edited by R.S. Cohen and M. Neurath, 52–57. Dordrecht: Reidel.
- Pinker, S. 1997. *How the Mind Works*. New York: Norton.
- Pinker, S. 2002. *The Blank Slate: The Modern Denial of Human Nature*, Viking, New York
- Price, H. 2011. *Naturalism without Mirrors*. Oxford: Oxford University Press.
- Quine, W.O. 1953. *From a Logical Point of View*. Cambridge, Massachusetts: Harvard University Press.
- Quine, W. O. 1969. *Ontological Relativity and Other Essays*. New York: Columbia University Press.
- Raley, Y. 2005. "Ontological naturalism." *Pacific Philosophical Quarterly* 86 (2): 284–294. doi:10.1111/j.1468-0114.2005.00227.x
- Rietveld, E. 2008. "Situated Normativity." *Mind* 117 (468): 973–1001. doi:10.1093/mind/fzn050
- Rorty, R. 1979. *Philosophy and the mirror of nature*. Princeton: Princeton University Press.
- Russell, B. 1912. *The Problems of Philosophy*. Oxford: Oxford University Press.
- Ryle, G. (1949) 2009. *The Concept of Mind*. Abingdon: Routledge.
- Sellars, W. 1956. *Science, Perception and Reality*. London: Routledge and Kegan Paul.
- Shoemaker, S. 1980. "Causality and properties." In: *Time and Cause*, edited by P. van Inwagen, 109–135. Dordrecht: Reidel.
- Smart, J. C. C. 1959. "Sensations and Brain Processes." *Philosophical Review* 68: 141–156.
- Stewart, J. 1996. "Cognition = life: Implications for higher-level cognition." *Behavioural Processes* 35(1-3): 311–326.
- Stewart, J. R., Gapenne, O., and Di Paolo, E. A. 2010. *Enaction: Toward a new paradigm for cognitive science*. Cambridge, Massachusetts: The MIT Press.
- Stoffregen, T. A. 2003. "Affordances as Properties of the Animal-Environment System." *Ecological Psychology* 15 (2): 115–134. doi:10.1207/S15326969ECO1502\_2
- Thompson, E. 2007. *Mind in life: Biology, phenomenology, and the sciences of mind*. Cambridge, Massachusetts: Harvard University Press.
- Thompson, E. and Stapleton, M. 2008. "Making sense of sense-making" *Topoi* 28 (1): 23–30.
- Tugby, M. 2013. "Platonic Dispositionalism." *Mind* 122: 451–480.
- Turvey, M. T. 1992. "Affordances and Prospective Control: An Outline of the Ontology." *Ecological Psychology* 4 (3): 173–187. doi:10.1207/s15326969eco0403\_3
- Varela, F., Thompson, E. and Rosch, E. 1992. *The Embodied Mind*. Cambridge, Massachusetts: MIT Press.
- Vetter, B. 2015. *Potentiality: From Dispositions to Modality*. Oxford: Oxford University Press.

- Weinberg, J. M., Nichols, S. and Stich, S. 2001. "Normativity and Epistemic Intuitions." *Philosophical Topics* 29 (1-2): 429–460.
- Wittgenstein, L. 1921. *Tractatus Logico-Philosophicus*. London: Routledge and Kegan Paul.
- Wittgenstein, L. 1953. *Philosophical Investigations*. Oxford: Blackwell.
- Yalcin, S. 2011. "Nonfactualism about Epistemic Modality." In: *Epistemic Modality*, edited by A. Egan and B. Weatherson, 295–332. London: Oxford University Press. doi:10.1093/acprof:oso/9780199591596.003.0011