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David Sanchez

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David Sanchez 

University of Granada

ABSTRACT

Originally formulated as a theory of perception, ecological psychology has shown in recent decades an increasing interest in language. However, a comprehensive approach to language by ecological psychology has not yet been developed, as there is neither a naturalist philosophy of language nor one that takes ecological psychology as its scientific background. Our goal here is to argue that a subject naturalist and non-factualist framework can open the possibility of an expressivist analysis of perceptual judgments that is compatible with the ecological understanding of perception, showing that such utterances do not work as descriptions of facts or states-of-affairs, but rather say something about the practical requirements necessary to display a perceptual vocabulary. We will also argue that this approach allows an understanding of perceptual content as clusters of socially-mediated affordances. If our proposal is sound, it would constitute a first and fruitful approximation toward establishing a naturalist link between embodied cognitive science and philosophy of language.

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1. Introduction. The missing link between ecological psychology and philosophy of language

Ecological psychology, originally a theory of perception, focused on studying “basic” cognitive functions like perceiving events and simple affordances (e.g., graspability, walkability) and the organism’s interaction with non-normative environments (E. Gibson & Schmuckler, 1989; Kinsella-Shaw et al., 1992). However, recent years have seen a growing interest in the conceptual requirements for ecological approaches to rule-governed behavior (Brancazio & Segundo-Ortin, 2020; Rietveld & Kiverstein, 2014; Segundo-Ortin & Satne, 2022) and language (Baggs, 2015; Golonka, 2015; Kono, 2009; Reed, 1995). This entails embracing anti-representationalism and direct perception in exploring social and complex cognitive phenomena.

In parallel, non-representationalist philosophies have reshaped our understanding of language. Expressivism, which posits that some vocabularies don't describe the world but serve pragmatic roles, has extended from ethics to logic, modality, representational semantics, and intentionality (Brandom, 2008). Brandom's inferentialism offers an alternative perspective on speech act content without reliance on representational contents.

Despite these developments, the ecological literature has scarcely addressed speech act content (Baggs, 2015, is an exception) and the role of affordances in perceptual judgments. van Dijk and Kiverstein (2020) provide notable insights into linguistic practices taking place within a medium of practices.

Furthermore, while expressivist and pragmatist philosophers like Brandom, Price, Blackburn, and Williams position themselves as naturalists, they seldom draw on cognitive science when discussing perceptual or ordinary vocabularies. This disconnect between cognitive science, particularly ecological psychology, and the philosophy of language poses challenges for a radical embodied cognitive science grounded in nonrepresentationalism. It becomes apparent that even staunchly anti-representationalist philosophers struggle to offer a non-descriptive account of perceptual vocabularies and judgments, thus relying on representational semantics. Expressivism, in particular, faces difficulties in achieving a fully nonrepresentational theory of language (Williams, 2013; Brandom, 2013, in: Price, 2013¹). Ecological psychology, however, should be ideally positioned to embrace anti-representationalism in its study of language, particularly through the examination of perceptual and ordinary vocabularies.

To foster a more cohesive framework for ecological psychology, we aim to bridge the gap between ecological cognitive science and the philosophy of language. We'll start by embracing naturalist aspects of expressivism, considering Price's distinction between object and subject naturalism (Price, 2013) and Frápolli's insights on subject naturalism and "representational realism," the idea that default language positions can lead to excessive semantic complexity. We will propose that non-factualism provides a robust framework for comprehending concepts and explanations in ecological psychology while aligning with expressivism's naturalist stance. Concepts like affordance and intention, we argue, do not describe the world but function as "discursive-tickets" (Ryle, 1949).

Moving forward with this non-factualist naturalist framework, we will explore the role of affordances in perceptual judgments concerning speech acts. Our hypothesis posits that perceptual judgments do not provide world descriptions but serve as nonrepresentational entry transitions into language, enabling speakers to establish themselves as legitimate interlocutors within shared normative and perceptual practices. To support this notion, we will draw upon Frápolli and Villanueva's minimal expressivism (Frápolli

& Villanueva, 2012) and expand it to argue that perceptual vocabularies (those relying on perceptual verbs like seeing and hearing) employ second-order expressions as functions, being truth-conditionally irrelevant and lacking descriptiveness.² Ultimately, considering the pragmatic role of perceptual vocabularies, we propose that the content of perceptual judgments consists not of facts or states of affairs but rather clusters of socially-mediated affordances.³

Our intention is to outline a theoretical approach connecting ecological psychology with a non-representationalist philosophy of language, without delving deeply into technical arguments. We hope this approach sparks productive research on the relationship between ecological psychology and semantics, nonrepresentational interpretations of the world-word connection, and the framework necessary for developing a comprehensive radical embodied cognitive science.

2. A Naturalism ecological enough

As an ecologically-based enterprise, the search for a nonrepresentational understanding of perceptual judgments is naturalist from the start. But it is precisely an unreflective or default naturalism what constitutes a threat to the very possibility of such an understanding. As Price has put it, the most popular kind of naturalism consists in the conjunction of an ontological and an epistemological thesis: that “all there *is* is the world studied by science” and that “all genuine knowledge is scientific knowledge” (Price, 2013, pp. 4–5). This position, which he calls *object naturalism*, commits us to a world of scientific facts as well as to a scientific description of such a world, a scientific corpus that represents those facts. On the other hand, we find what Price labels *subject naturalism*, which he defines as follows: “According to this view, philosophy needs to begin with what science tells us *about ourselves*” (Price, 2013, p. 5), which can be understood as a plea for a philosophy that does not “contradict the background and findings of other scientific disciplines” (Frápolti, 2014, p. 43).

Both Price and Frápolti have defended the latter version of naturalism (and it can also be found implicitly in the work of Brandom) given its non-compulsory relation with representationalism, a semantic view presupposed by object naturalism. This semantic view understands that “meaning is an issue of depicting states-of-affairs” (Frápolti, 2014, p. 46), thus adopting a descriptivist view of language, according to which its main role is to describe the world. The problem arises when we tie together representationalism and naturalism, giving rise to the *placement problem*: how should we understand facts that seem to fall outside the scope of nature? Whether we think of ethical, modal, or semantic facts, it seems intuitively obvious that they cannot be placed in the natural world in the same way that

biological or chemical facts, at least if we do not want to commit ourselves to a metaphysical realism about these things, which thereby fall outside the scope of naturalism. In the face of this problem, expressivism was proposed as an attempt to understand ethical claims not as describing ethical facts but as expressing the evaluative attitudes of the speaker toward a certain behavior. The extension of expressivism from an ethical theory to a full semantic view is driven by this intuition: that at least some of our vocabularies do not describe the world but express something *we do* when using it.

However, the tension between (object) naturalism and representationalism goes deeper, for if we want to study our speech acts in a naturalist vein, the representationalist presupposition of object naturalism seems untenable. A naturalist approach to language should make room for the possibility of coexisting hypotheses, making their validity an empirical matter and thus accepting the possibility of deflationist semantics opposed to representationalism. But as Price (2013, pp. 11–15) has shown, the representationalist semantics of object naturalism is not an empirical hypothesis about language but an *a priori* condition to make sense of object naturalism in the first place, and such *a priori* conditions are incoherent with the naturalist notion of explanations involving multiple empirical hypotheses. If we side with objects, then it seems that we have to give up on naturalism. In this way, although nonrepresentationalism is not compulsory for subject naturalism, the very possibility of representationalist semantics remains an open and empirical question for it, unlike for object naturalism.

It then follows that subject and object naturalism are *incompatible*. But can we spell out the specter of representationalism for subject naturalism? The fact is that the possibility of representationalism for subject naturalism makes perfect sense if we keep in mind that representationalism is our *default position* on language. So in order to spell it out as a semantic/scientific take on language, we would need to show that this default position does not allow an inflationary development. And this is precisely the first place in which ecological psychology can explain away semantic representationalism, thus being not only a philosophical but also a naturalist argument against it.

As Frápolli clearly states, default positions are “spontaneous attitudes”, assumptions by natural beings, and not “toy” or “minimal” versions of full-fledged theories about the world (Frápolli, 2014, p. 50). As a default position, representationalism is the semantic face of default realism (Frápolli, 2014, p. 51), that is, the assumption that the world I can see, smell, touch, or, in one word, perceive is really there. There is no need for debate or inquiry for us to believe this assumption spontaneously; it is a result of our natural engagement with our environment. Because ever since we speak, inquire, or debate, we interact with the world and enact our capacities on it, exploring and changing our surroundings, the belief that the world exists “out there”,

independently of us is a default position later developed through inference, whether into a realist or anti-realist metaphysics. Default representationalism is nothing else than the semantic analogue of default realism, and our default belief that our perceptual speech acts refer to the world comes from the very same direct relationship with the world. As a natural reaction, we cannot choose not to be default representationalists about empirical speech acts.

Frápolti (2014, 2015, 2023) has presented compelling arguments from a deflationary perspective, challenging the shift from default to full-fledged representationalism.⁴ Our goal is to contribute an additional argument, distinct from the philosophy of logic and language, rooted in ecological psychology. If default realism and representationalism are not conscious choices but spontaneous assumptions, the ecological theory of perception can adequately explain them without invoking representations.

Default realism isn't merely a simplistic view of the world but emerges naturally from our direct perception of the environment, a central tenet of ecological psychology. Our perception arises from the dynamic interplay between the organism and its environment, devoid of mental convolution. We engage directly with the world, but this world consists of affordances, not discrete objects. What we perceive directly are action opportunities. Our default realism springs from our active engagement with the environment. We make use of our capacities, respond to environmental events, and adapt to them. We learn through sensitivity to both the world's specifying variables and our bodily conditions. Therefore, our embodiment isn't solely biological but ecological, making default realism a reasonable perspective.

Default realism, or default representationalism, finds an analogous interpretation in a semantic context. Since speaking is an action within the world, treated as an affordance,⁵ assuming that our speech acts relate to the world is as reasonable as our belief in the existence of the world itself. Nevertheless, ecological psychology doesn't commit us to an ontology of objects. As Baggs emphasizes, ecological psychology explores the perception of events and affordances in terms of medium, substances, surfaces, energy arrays, occluding edges, and more (Baggs, 2021, p. 2; also see; J. Gibson, 1979), rather than objects or facts. Fundamental direct perception enables us to make sense of our default positions without resorting to representations.

It might be argued that, although representations aren't required at this level, our perceptual judgments could still represent affordances instead of objects. We will counter this notion in the final section. For now, it's essential to recognize that ecological psychology doesn't necessitate representations to explain our default representationalism, thereby avoiding the temptation to inflate it into full-fledged semantic representationalism.

The Gibsonian theory of perception, characterized by its anti-representational stance, aligns well with subject naturalism and their

preferred semantics, deflationism, and expressivism. In the next section, we'll reverse the perspective: after considering how subject naturalism can function when grounded in ecological psychology as its scientific/naturalistic foundation, we'll explore how ecological psychology is viewed through the lens of subject naturalism and its semantic constraints. To facilitate this, we'll introduce non-factualism as the most suitable framework for understanding ecological psychology's concepts and explanations.

3. Non-factualism. Ecological psychology in the light of subject naturalism

If we adopt ecological psychology as our foundational scientific framework and embrace deflationary, non-representationalist semantics as our tool for interpreting our explanations, we must consider how subject naturalism shapes ecological psychology. In other words, we need to understand what we are doing when we provide scientific explanations from an ecological perspective. This clarification is essential in defining the nature, scope, and limitations of our *naturalist* theory of cognition.

For instance, an object naturalist who favors teleosemantics as the primary scientific backdrop tends to offer explanations rooted in evolutionary and biological *facts*, typically at the subpersonal level. For this object naturalist, such explanations describe states of affairs concerning cognitive capacities. They assume that these cognitive capacities are as empirically observable and describable as taking a cigarette in one's right hand. This approach is characterized by factualism, perceiving its subject matter as a "factual, entity-like, scientifically describable element in the world that exhausts" the subject matter. It also adheres to descriptivism, "the idea that the vocabulary through which we make sense of certain" things "serves to describe some features or property of reality" (De Pinedo & Heras-Escribano, 2018, p. 84).

It should be evident that, for a subject naturalist, not only is the possibility of reintroducing representations into scientific explanations barred, but it's also undesirable. This is because such a reintroduction implies that scientific explanations aim to *represent* the world and that our cognitive abilities are grounded in this representational capacity. As we've discussed earlier, what makes ecological psychology appealing to subject naturalists is its ability to explain cognition without relying on representations. However, this non-representational commitment within the theory must also be upheld as a methodological one if we are truly committed to being subject naturalists.

If this methodological commitment is not upheld, even if our theoretical explanations of cognition don't assume representations as their foundational concepts, we might inadvertently slip into representationalist or descriptive explanations. We've highlighted the potential danger that even

a radical embodied cognitive science could face if its explanations were misconstrued as descriptions of worldly facts. For example, while affordance-perceiving doesn't require representations, explaining perception as the detection of affordances might be misinterpreted as describing how perception occurs, thereby suggesting that affordances fall under the category of facts or states of affairs. To establish a comprehensive non-representationalist account of perceptual judgments, we not only need a non-representationalist theory of cognition but also a non-representationalist methodological approach to the explanations themselves. Failing to do so could inadvertently reintroduce representations through the backdoor of our semantics.

Subject naturalism helps us achieve this goal by constraining the way we understand our scientific explanations of cognition, taking us toward a non-descriptivist and, more fundamentally, *non-factualist* understanding of ecological psychology's concepts and explanations. As we will see, non-factualism about ecological concepts and explanations will have relevant consequences for our conception of what the role of perceptual judgments is, for if what we perceive are not facts, then it will be hardly assumable that the judgments with which we talk about perception describe states-of-affairs. But what does it mean for ecological psychology to assume non-factualism?

First, let us recall that for ecological psychology, cognition in general, and particularly perception, is a matter of abilities or skills enacted by the organism in the environment. There is no perception without exploratory activity and perceptual learning, and affordances, as the primary object of perception, are opportunities for action. Moreover, as De Pinedo and Heras-Escribano (2018) highlight, in the context of normative situated behavior, explanations about abilities work radically differently from those regarding objects, properties, or facts. The problem arises from the fact that some phenomena to be explained are instantiated in such a way that multiple vocabularies are available for the explanation, and the decision for one vocabulary can obscure precisely the relevant phenomena. Ryle's example of bird migration makes this point absolutely clear:

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". (Ryle, 1949, pp. 124–25)

Explaining the bird's behavior as "migrating" highlights the scale at which such behavior makes sense; that is, it works as a "discursive" or "inferential" ticket that allows us not only to explain, but to constrain the phenomena we want to study. In fact, this example is actually telling us why ecological psychology is *ecological* in the first place: because that is the scale on which the phenomena it studies (perception and cognition), and thus its concepts and explanations make sense. The way ecological psychology selects the phenomena to be explained is non-factualist in nature, and its concepts should be understood in the same non-factualist sense. Take behavior for example: from a factualist standpoint, either behavior should be the same thing as a movement or two separate facts. If the first is true, then it would not be possible to make sense of behavior at the psychological scale, for its analysis in terms of mere movements would not offer any clue as to the relevance of such movements in a given context, reducing it to a physical scale. But if the second is true, then it should be shown how two different facts with different implications⁶ can not only coexist but why one of them always coinstantiates with the other (although there is movement which is not behavior, the contrary is never the case). Behavior is then not a fact different from behavior but a way of making sense of movements from a psychological perspective.

Before concluding this section, and relying on the works of Heras-Escribano (2019) and Segundo-Ortin and Kalis (2022), we will see how a non-factualist formulation of affordance and intention would work, for they will be relevant to the later analysis of language and perceptual judgments.⁷

In the case of affordances, Heras-Escribano (2019) has developed a comprehensive account in which the ontology of affordances can be articulated. Until the development of Chemero's relationalist account (Chemero, 2009), Turvey's (1992) dispositionalism was the most common view on affordances. According to dispositionalism, affordances are "aspects of the environment related to agents, although having an independent existence at the same time" (Heras-Escribano, 2019, p. 75). These aspects tend to manifest in the complementarity of organism and environment, thus pertaining to the ecosystem as a whole and not just to an isolated part of it. The "independent existence" of affordances implies that the affordance exists whether an organism perceives it or not, but for the affordance to exist, it always has to relate to a species as a whole, or to what Rietveld and Kiverstein (2014), following Wittgenstein, call "forms of life". This dispositionalist account is factualist, for it takes affordances to be properties of the ecosystem, that is, properties of the relationship between organism and environment. Dispositionalism also offers what appears to be a good metaphysical tool to explain the fact that affordances are *opportunities* for action: as dispositions, affordances are possibilities that can be *actualized*. However,

if the dispositionalist account were true, then the actualization of an affordance after its perception would be as compulsory as the dispositional property of cotton to burn when exposed to fire. As Chemero has also objected, a disposition never fails to actualize (Chemero, 2009, p. 145).

This flaw in dispositionalism led Chemero (2009) to advance a relationalist account of affordances, according to which they are relations between traits or aspects of the environment and the organic capacities of the organism as a whole. In our view, however, there are at least two problems with this proposal. First, as Heras-Escribano (2019) highlights, understanding affordances as relations may seem to dodge the “compulsory affordances” problem, but the price may be too high: in abandoning the dispositionalist account, the relationalist also loses the metaphysical machinery to explain how an affordance changes from a possible action to an actual one (the transition from a power to an action).⁸ Second, relationalism seems to conflate affordances and ecological information, which is already relational and is used to explain how affordances are perceived. If ecological information merges as the relation between a structured energetic array and the organic coordination of the animal, and affordances are relations between traits of the environment and the organism, what would be the difference between the two? Here, the problem is not that we would be explaining a relationship with another, but that it seems that the *relata* of both are exactly the same. For these reasons, we side with Heras-Escribano (2019) in understanding dispositionalism about affordances as non-factualist, retaining the metaphysical resources to explain their actualization without making it compulsory. For a non-factualist dispositionalism, affordances express how the organism and the environment complement systematically; that is, affordances allow to explain in a meaningful way the ecological coupling from the point of view of the organism. Making sense of the ecosystem at the ecological scale, affordances allow scientific explanations, both quantitative and qualitative, to work as Rylean “inference-tickets” that highlight the relevant scale—the ecological scale—in which the phenomena are meaningful. Thus, for affordances to actualize, it is necessary, but not sufficient, to perceive them; the selection and eventual actualization of affordances depends on whether they are relevant for the goals of the organism; that is, it depends on their *intentionality*.

Segundo-Ortin and Kalis recall how, for cognitivist approaches, intentions are usually regarded as “discrete mental states with representational content” (Segundo-Ortin & Satne, 2022) that explain an agent’s actions, leading some ecological theorists to defend that intentions should be eliminated because they threaten the idea of direct perception (Withagen & van der Kamp, 2010). It is clear that if we understand intentions as mental states that explain why an actor behaves in such and such way, they would reintroduce mental gymnastics in the arena, undermining the main thesis

of ecological psychology. However, both Heft (1989) and Reed (1993, 1996) have defended the role of intentions in the perception of affordances. Heft (1989), for instance, has argued that intentions, understood as goals, are what make affordances appear as invitations due to their relevance, guiding the process of perceptual learning. Reed, on the other hand, has stressed that intentions should not be understood as causes of behavior but as patterns of organization (Reed, 1993), leading to what he calls “fields of promoted action”, that is, the sets of relevant affordances toward which the attention of the organism is directed, given some goals.

Following the ideas of Heft and Reed, Segundo-Ortin and Kalis have proposed that we understand intentions in a non-descriptivist, Anscombean vein that parallels Ryle’s non-factualism. In her seminal work *Intention* (Anscombe, 1957), Elizabeth Anscombe argues that intentions are not discrete entities, properties, or mental states, but rather ways to make sense of some behavior: “actions are intentional *under a description*” (Segundo-Ortin & Kalis, 2022), in which the action is a means toward a goal, thus appropriately answering the question “Why?”. The authors recall that, for Anscombe, not only is action intentional but also perception, in the sense of “aiming at something”; and while in a material sense there is no possibility of failure in action and perception (Michaels & Carello, 1981),⁹ there is also an intentional sense in which there is a possibility of failure *in the light of the goals of the agent*. If we see a glass of water and we do not know that it has salt in it, we could think that drinking it would quench our thirst. If that is our goal, we would obviously fail, although we would not be misperceiving an affordance (in this case, drinkability). In this way, perception and action verbs have both material and intentional uses, and the latter are the ones that highlight the first-person meaningfulness of behavior.

Note that saying that actions are intentional *under a description* does not imply that perception and action verbs are inherently descriptive, for they work exactly as Ryle’s inference-tickets. Maybe it would be better to say that actions are intentional *under an explanation*. The intentional idiom, as well as the talk of affordances, constitutes a non-factualist way to make sense of cognitive phenomena without the need for internal states or spooky entities or properties.

Non-factualism offers a subject-naturalist framework to grasp ecological psychology without falling into descriptivism or representationalism. However, when neither affordances nor intentions are treated as facts, the question arises: What do perceptual judgments really convey? We find that they may not describe the world in a representationalist sense. Our suggestion is that an expressivist approach to these speech acts could be fruitful for both ecological psychology and the philosophy of language, provided we embrace subject naturalism and its anti-representational stance. In the next

section, we'll argue that perceptual vocabularies are structured around non-descriptive second-order expressions, their content being socially-regulated affordances.

4. Perceptual judgments and ecological content

Perceptual judgments are commonly viewed as fundamentally descriptive, with utterances like “I see a cigarette” regarded as fact-stating assertions, complete with truth conditions, often expressed as: “‘I see a cigarette’ is true if and only if there is a cigarette.” However, within the framework we've developed, this conventional explanation of perceptual judgments doesn't appear tenable. One might argue that, through language use, we enhance our capacity to identify not only affordances and events but also objects. Consequently, perceptual judgments would serve to describe both objects and affordances that we perceive. However, we won't pursue this path, at least not under the assumption that objects immediately become apparent to us when we engage in language use.¹⁰ In the following section, we will contend that a comprehensive expressivist analysis of perceptual judgments is feasible from an ecological perspective.

In *Between Saying and Doing* (Brandom, 2008), Brandom presents us with his approach to expressivism as a way to make *semantics answer to pragmatics*, showing how meaning is only understandable when grounded in use. His idea is that some vocabularies play the role of making explicit the practices necessary to deploy expressively stronger vocabularies. Modal, logical, or intentional idioms play such an expressive role, for they talk about the kinds of practices that are necessary and sufficient to deploy what he calls an “autonomous discursive practice” or ADP, a language-game that can function on its own without reference to other language-games. When this relation between a vocabulary and an ADP obtains, we have a pragmatic metavocabulary for the ADP, or an LX relation between them.

Although, as we have already seen, Brandom contends that logical, modal, and intentional vocabularies constitute paradigmatic examples of LX relations – in which a pragmatic metavocabulary has less expressive capacity than the object vocabulary – he denies that perceptual or observational vocabularies can play this expressive role:

Not all vocabularies can play *this* particular expressive role. Autonomous discursive practices *must* contain vocabularies playing *other* expressive roles —for instance, observational vocabulary that reports features of the non-linguistic bits of the world. (ones that are not themselves the deployment of vocabularies) (Brandom, 2013, p. 102)

In the same vein, Williams (2013) defends that observational vocabularies are not candidates for playing an expressive role, since they state world –

word relations, thus working as *entry transitions* into language. We do think that perceptual judgments do indeed work as entry transitions. However, we are doubtful about how that world-word relationship should be understood. In fact, we think that some clarification on the deep grammatical structure of perceptual expressions like “I perceive”, “I see”, or “I hear” can show why they are expressive rather than descriptive. To show this, we will introduce Frápolli’s and Villanueva’s idea of minimal expressivism.

Frápolli and Villanueva (2012) present expressivism as a semantic program that accepts the following theses:

- (1) *Higher-order Functions (HOF)*. There are natural-language expressions with the following structural properties: they are non-extensional, non truth-conditional functions of propositions. At least one of the items of the following list can be analyzed along these lines: belief, knowledge, necessity, possibility, good, bad, right, wrong.
- (2) *Non-descriptivism (ND)*. These terms are not used to describe the way the world is.
- (3) *Truth-conditional irrelevance (TCI)*. Second-order predicables do not modify the truth-conditions of expressions within their scope. (Frápolli & Villanueva, 2012, p. 471, 478)

Minimal expressivism is then the thesis that some vocabularies work with second-order expressions whose role is not to describe the world and which do not affect the truth-conditions of their arguments. Let us see how it could be implemented in perceptual vocabularies.

A higher-order function (HOF) can take propositions as arguments. For instance, epistemic expressions often use “that” clauses, like “I believe that tomorrow I will keep smoking,” indicating their second-order nature. This distinction doesn’t mean second-order predicates always involve propositions, but they have the capacity to do so. In contrast, first-order expressions like “to be” lack this capacity. Perceptual notions such as “to perceive” and “to see” are also second-order predicates because they can incorporate propositions as arguments, as seen in sentences like “I see that someone is walking behind me” or “I hear that the train is coming.” Even when these sentences can be rephrased without explicit “that” clauses, like “I hear a coming train,” the underlying argument still holds a propositional structure. First-order expressions in perceptual judgments can similarly be rephrased using “that” clauses.

In the case of the TCI thesis, it is clear that perception verbs work as epistemic or doxastic verbs, for the truth of their contents is not affected by them. Saying (1) “I see a cigarette in front of me” and (2) “There is a cigarette in front of me” under the same circumstances makes no

difference in terms of truth-conditions. It could be argued that this is not the case due to possible cases of illusion or total hallucination.¹¹ Two replies are available for this objection, one of them conceptual, while the other empirical. As for the first, the objection would only be true if there could not be established a difference between truth and justified assertability. I can be entitled to say (1) in cases of hallucination or illusion, being (2) false (as it happens with epistemic or doxastic verbs).¹² However, as Frápolli and Villanueva state (Frápolli & Villanueva, 2012), in order to determine the truth-conditions of these propositions, we must look for the truth-evaluable content, which follows from the question “What would the world be like if what I’m saying/thinking were true?”.¹³ If, as we have defended, perceptual verbs work as HOFs, then the content of “I see that *p*” and “*p*” is the same, for the answer to the truth-conditional evaluable content for the first would just be “*p*”. The addition of the perceptual verb can only alter the justificatory conditions for its assertability. Moreover, in considering truth-conditions, the authors argue that expressivist expressions need to be truth-conditionally irrelevant only when such conditions are understood as explicitly represented content, that is, “the state of affairs [under] evaluation in order to determine the truth-value of what we are saying” (Frápolli & Villanueva, 2012). and not necessarily as a biconditional (“*s*” is true iff), although it could be the case too. It is clear that in (1), such explicitly represented content is “There is a cigarette in front of me”, while “I see that” expresses an attitude toward such a proposition, as “I believe that” would. In fact, the perceptual verb’s function can be analyzed in a Brandomian vein as entry-transitions into language, thus playing an inferential and entitling role. In purely linguistic terms, there is no need to define the semantic content of such vocabulary independently of its function. In fact, this is the case whether we accept a representationalist theory of truth or a deflationary one, like Brandom’s prosententialism (see: Brandom, 1994). It does not matter if we talk about truth conditions or endorsing inferential commitments: adding a perception verb does not alter the truth-evaluation. Such alteration would only be true from a first-person perspective that mistakes truth-conditions and justified assertability. A third person that heard the utterance of (1) would not evaluate if the person is actually perceiving, but if there is in fact a cigarette in front of them.

The second empirical response comes directly from ecological psychology. From an ecological perspective, there is no possibility of misperceiving, for it is a disjunctive theory of perception. As said before, either one is perceiving or not due to a lack of exploratory activity that allows the pick-up of the specifying information of the ecosystem (Michaels & Carello, 1981). And recall that, even in the case of intentional uses of perceptual verbs, the failure falls within the realm of action, not in the perceiving of an affordance, for the intentional use plays a role only in evaluating our actions.

Again, if someone fails in an intentional sense, there is not a misperceiving of an affordance, but no perception at all.

ND may seem more doubtful in the case of perceptual judgments. Frápolli and Villanueva argue that ND obtains when an expressive notion is unavailable to answer the question “What is the world like?”, and this seems to be precisely the role of perceptual judgments. To defend ND for perceptual judgments, we will need a more nuanced approach to perceptual contents – what perceptual judgments are about—.

Recall that we defined intentionality as a non-factual explanation of goal-directed behaviors. Segundo-Ortín and Kalis (2022) have developed a way of understanding rule-governed behavior as a form of perceptual learning involving not only the education of attention —the process by which we learn to differentiate specifying and non-specifying variables, thus learning to perceive affordances—, but the education of intention too. This form of perceptual learning involves a kind of mindshaping¹⁴ by which agents learn which affordances are available and relevant in determinate behavioral settings in order to accomplish a certain goal, thus being a process of *socially organizing behavior*. A normative structure then expresses the set of *appropriate* affordances one can select if one is to reach a goal, this set being a subset of the expedient affordances. By educating our intention, we learn how to engage in complex behaviors like planning or tool-use, but we also become embedded in the same normative webs necessary to develop and partake in discursive practices.¹⁵ Thus, the mechanisms by which we learn to behave in rule-governed environments are intimately related to the way in which we learn to participate in discursive practices. In this sense, perceptual and mindshaping practices – the education of intention – are necessary for discursive practices, since from them emerge the normative structures in which discourse is embedded.

Given this, as entry transitions into language, perceptual judgments set a common ground for the speakers, proving us reliable in responding differentially, not to facts or states-of-affairs, but to the behavioral settings and normative structures in which we all partake. For instance, if, after saying “I see that there is a chair in front of me” someone asks “How do you know that it is a chair?” I will answer by giving a set of actions that the object affords *as a chair*: primarily, it affords sitting on it. Since the world we live in is, from an ecological perspective, a practical world of affordances and events, it is reasonable that we make sense of the entities we find in it in terms of the affordances and the events it offers. And since the ontology of ecological psychology does not include objects, it is also reasonable that our concept of different objects originates in the affordances they offer; that is, a given object is nothing more than a cluster of socially-mediated affordances. A chair is a chair because of what it affords, and in a different behavioral setting, the affordances it offers can drastically change because

our intentionality is educated so as to search or not for specific affordances in the light of our context. Although I would not sit on a table during a lecture, it can afford sitting on it, and in a more relaxed setting, I can perceive the possibility of sitting on it. In the same way, as hungry as I may be, I would not eat an apple in a supermarket before paying for it, and it is the case that we may even not perceive the possibility of eating it if we have not paid for it yet. This socio-normative dimension of perception is fundamental, for it can make an affordance either conspicuous or inexistent given a specific behavioral setting. Thus, our thesis is that those clusters of affordances constitute the content of perceptual judgments, for they specify the object of perception.

When we make a perceptual judgment, we aren't describing a mere fact or a static state-of-affairs. The actions an object affords depend on the normative structures we are immersed in, the specific context we're in, and the perceptual practices we've acquired. What we're doing with such judgments is expressing our participation in certain normative and perceptual practices. These judgments serve as entry transitions, not from an objective or factual world but from a practical world of organized behaviors constructed by humans. This does not negate the fact that they articulate world-word relations; indeed, perceptual judgments are concerned with the world. However, it's our world, our ecological niche, which already encompasses our practices of shaping intentionality through education. In other words, perceptual judgments pertain to "nature," to what exists "out there," but this "nature" is our second nature. "Out there" refers to a structured world of practices that predates our existence. It's a world independent of us in the sense that it existed before our birth. It's noteworthy that while our approach is primarily philosophical and conceptual, some empirical research has started to support this perspective on the content of perceptual judgments.

Wilford et al. (2022) conducted a series of experiments analyzing the categorization of objects using words, images, and real objects. As they say, their findings indicate that "the experimental manipulation using pictures of objects versus real objects created significant differences between the similarity judgments of those stimuli, and likewise between objects and words", while the deviance of judgments was not relevant in picture-word comparisons, which seems to point out that "differences between real objects and representations of them are partly explained by differences in affordances" (Wilford, 2022). The fact that categorizations of real objects seemed to follow an affordance-based judgment (objects with similar affordances were taken to be more similar, as tools vs. non-tools categorizations). Even more, although the classification of pictures seemed to be "shape driven", it could be argued that shape can be indicative of possible affordances. That is, it could be possible that we learned that some shapes drive

the exploratory activity to look for some affordances and not others (elongated shapes are more prone to be graspable than round ones), so the “clusterization” of affordances could not be just a social but also a natural process.

This idea also strengthens our defense of TCI. If the contents of perception are affordances and not factual descriptions, then propositions (1) and (2) are truth-conditionally equivalent, for the truth-conditions of both depend on whether I can act upon a certain cluster of affordances that define for us what a cigarette is. And given that the existence of affordances is independent of our perception of them, the truth-evaluable content is the same in both cases. Frápolli and Villanueva (2012) demonstrate that TCI is a logical consequence of ND, so if ND is true for perceptual verbs, then TCI follows.

If this account of ecological perceptual content is sound, then we can argue that our perceptual and normative practices can be elaborated into discursive practices. Perceptual vocabulary does not only allow entry transitions, but it also allows speakers to acknowledge themselves as reliable when participating in the same normative and perceptual practices. While logical vocabularies make explicit the inferential practices necessary and sufficient to engage in an ADP, perceptual vocabularies make explicit the common practical ground that an ADP needs.

However, Brandom has suggested that the mark of the descriptive for a given vocabulary is that it cannot receive a proper account in terms of a pragmatic metavocabulary, but only in terms of a semantic one. When talking about representational vocabularies, he says:

[. . .] [T]he possibility of an adequate non-representational pragmatic metavocabulary for these varieties of representational vocabulary would not seem to rule out their playing fundamental roles in a semantic metavocabulary for some other vocabulary—quite possibly, empirical descriptive vocabulary [what we labelled “perceptual vocabulary”], (Brandom, 2013, p. 108, emphasis added)

That is, even though some allegedly representational vocabulary, like perceptual/empirical descriptive vocabulary, can be analyzed through a nonrepresentational pragmatic metavocabulary, it could be the case that this same vocabulary played a semantic metavocabulary role for another one. What Brandom is pointing out here is that, although representational vocabularies—like world-tracking vocabularies or practical intentional systems vocabularies—can be understood through pragmatic metavocabularies, it is possible that in order to understand what we do when we employ our empirical/perceptual vocabulary, we may need one of those representational vocabularies.

But it should be clear that if we side with ecological psychology, we have at our disposal a naturalist, non-representationalist scientific basis that

would contradict the idea that perception's function is to represent (and linguistically describe) the world. This should be at least a first hint that perceptual vocabularies cannot receive such a representational analysis. In addition, Sellars (1991) offered a first approximation toward an expressivist analysis of perceptual verbs in his *Empiricism and the Philosophy of Mind*, arguing that they had what could be labeled a "quasi-epistemic" role in entitling us to make observational reports, thus grounding our empirical knowledge through non-inferential assertions, similar to what we just suggested. In this vein, ecological psychology would constitute the scientific background for a nonrepresentational pragmatic analysis of perceptual verbs, equivalent to the role played by sense-data theories for the empiricist conceptions of perceptual judgments criticized by Sellars in his essay.¹⁶

5. Conclusions

Radical Embodied Cognitive Science commits to anti-representationalism in a way that either blocks the possibility of a comprehensive naturalist framework of cognition that includes language as nonrepresentational or forces us to take a different path: subject naturalism and semantic deflationism. We have defended that not only is this branch of naturalism more consistent in its treatment of semantics, since unlike other branches, it does not have an *a priori* and non-empirical commitment to a semantic theory, but it also proves compatible with ecological psychology's main ideas. On the other hand, if such a comprehensive framework is to be achieved, subject naturalism constrains ecological psychology, making non-factualism the necessary standpoint from which to understand both its concepts and explanations: affordances and intentions are neither facts nor states-of-affairs, and using these concepts in our explanations does not render them descriptive. We do not represent the world as being such and such way from an ecological perspective.

Such an understanding of ecological psychology as a naturalist approach to cognition is then apt to serve as the scientific basis from which to begin a semantic analysis of perceptual judgments. As subject naturalism requires, we begin with what ecological psychology tells us about ourselves: that we live in a world of practices, and we do not perceive objects but affordances and events, which, in turn, are not themselves facts to be described. This proved to fit with the fact that perceptual verbs are second-order predicables or functions that do not describe how the world is but rather express a series of practices by which we make entry transitions into language, as well as recognize —and thus reinforce normative practices that enable such language-use. Such recognition relies implicitly on the fact that the contents of our perceptual judgments are clusters of socially-mediated affordances that constrain what a particular object is in the context of a specific behavioral

setting; thus, when asked about the reasons underlying a perceptual judgment, we will refer to the actions it affords in accordance with the behavioral setting under which the perceptual report was made. Thus, we do not see how the world is independently of our existence, at least not in a narrow sense. We see the actions that a social world affords us.

There is much more to be said, but we take this to be a promising approach to language from an ecological and philosophical perspective. Further research is warranted on the possible differences between natural and artificial objects from this perspective, as well as on language as a mindshaping device in the organization of behavioral patterns. As we noted earlier, the word-world relation appears under a different light, as does the very concept of world, which clearly resonates with the pragmatist tradition, although with an ecological twist. From a purely philosophical approach to language, our proposal also has consequences for the expressivist program, since it proves to be a path toward a global expressivism that accounts for descriptive empirical vocabulary. And, following Sellars, a more nuanced account of expressions involving sensations could be made. Our proposal opens new lines of research both for ecological psychology and the philosophy of language, lines in which these disciplines no longer diverge.

Notes

1. Although Brandom (2013) has offered a deflationary reading of representational vocabularies, he has also stated that it is perfectly possible that no nonrepresentational vocabulary could be available to analyze some representational vocabularies, thus making them inherently descriptive. On the other hand, Price's differentiation between i-representations and e-representations seems to render the same conclusion for the latter (Brandom's response to Price points in the same direction), whereas for us, an anti-representationalist analysis of perceptual vocabularies should show how their pragmatic role is non-descriptive, that is, analyzable through nonrepresentational vocabularies.
2. Frápolli and Villanueva's (2012) minimal expressivism is originally applied to modal, semantic, doxastic and ethical vocabularies.
3. By "socially-mediated affordances" we refer to affordances perceived within the frame of normative situated behavior, that is, unreflective actions and practices that take place in our social and normative environment (see: Rietveld, 2008). Although it could be argued that all affordances perceived by humans are socially-mediated, for they are always perceived within a social environment, we will leave this question aside. It is only necessary to keep in mind that these affordances are perceived and make sense to us not only because of the given relation of the individual to some natural properties of the environment but also because of the social relations in which they are embedded.
4. We particularly rely on her prosententialist account of truth as well as her Fregean understanding of the concepts of "object" and "existence".

5. Regardless of the discussions on where we should place affordances in language, it is obvious that “speakability” is an affordance related to our environment: change the medium from air to water (or a vacuum) and the possibility of speaking will vanish. We can understand “speakability” in a really broad sense as the capacity to make utterances.
6. What follows from saying that something is a movement is not equivalent to what follows from a description of something as a behavior. We could not label a planet’s orbit as “behavior,” and it is equally strange to talk about someone eating as just realizing some movements.
7. For now, we only focus on these two concepts as non-factual. On the one hand, the selection of affordances and intentions as non-factual is not arbitrary; our stance is that, at least, the “entry-concepts” of a theory, that is, those that select the scale of analysis, are non-factual. Concepts like affordance, intention, and ecosystem work as entry-concepts in a sense of scale-determining, while other notions like gradients, textures, or some specifying variables are dependent on such scale. This can also be understood as the distinction that Sellars (1991) draws between “correspondence rules” and theoretical concepts. We recognize nevertheless that this is a working hypothesis and that additional argumentation should be offered. At present, we consider our following argumentation about perceptual language to constitute, at least, a hint that such a hypothesis is fruitful. On the other hand, the point could be made that all ecological psychology’s concepts are non-factual, but as we take it, it would require a non-factual theory of science, which falls outside of the scope of this paper. However, if our arguments are sound and it can be argued that language as a whole is non-representational in its pragmatic role, then in principle, such a theory could be developed. For a similar theory, see Dennett’s (1991) real pattern metaphysics as a theory of science as explanatory abstract posits (although Dennett’s theory seems to fall under the fictionalist rubric, while what we defend is an expressivist account).
8. It is true, as an anonymous reviewer pointed out, that there are alternatives to explain how affordances are actualized in a relationalist account, like the idea that intention-in-action plays such a role, as Segundo-Ortín and Kalis defend. However, such a proposal has two problems: as we will see now when discussing the concept of intentions: Segundo-Ortín and Kalis defend an Anscombean interpretation of intentions for which they are not factual properties, so either we would have to explain how a factual relation (an affordance) can be actualized by a non-factual property (intentions), or extend non-factualism to affordances too.
9. We cannot misperceive an affordance, for we either rely on specifying information or we do not. The possibility of misperception would imply it being indirect. As it is pointed out, a failure in perception would only be possible in an intentional sense. Materially, we would not talk about wrongly perceiving something, but about a non-achieved perception. See: Michaels and Carello (1981), for a more developed argument on this.
10. More on this below.
11. Thanks to an anonymous reviewer for pointing this out.
12. I owe this idea to Daniel Martínez.
13. Frápolli and Villanueva (2012) point that, although the inferential potential is relevant in determining the content of a proposition, it does not affect the truth-evaluable content.

14. Mindshaping is an embodied theory of social cognition that takes its main role to be the regulation of behavioral dispositions. For a comprehensive approach, see: Zawidzki (2013).
15. Here we rely on Brandom's account of language as a normative practice of giving and asking for reasons. For a comprehensive development of such an account, see: Brandom (1994), 2000.
16. Although a full elaboration of this Sellarsian idea would require another paper, we think that the argumentation provided is enough to make it appear, at least, reasonable.

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ORCID

David Sanchez  <http://orcid.org/0009-0008-2072-6518>

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