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The given and the hard problem of content

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Abstract

Wilfrid Sellars' denunciation of the Myth of the Given was meant to clarify, against empiricism, that perceptual episodes alone are insufficient to ground and justify perceptual knowledge. Sellars showed that in order to accomplish such epistemic tasks, more resources and capacities, such as those involved in using concepts, are needed. Perceptual knowledge belongs to the space of reasons and not to an independent realm of experience.

Dan Hutto and Eric Myin have recently presented the Hard Problem of Content as an ensemble of reasons against naturalistic accounts of content. In a nutshell, it states that covariance relations—even though they are naturalistically acceptable explanatory resources—do not constitute content. The authors exploit this move in order to promote their preferred radical enactivist and anti-representationalist option, according to which, basic minds—the lower stratum of cognition—do not involve content.

Although it is controversial to argue that the Hard Problem of Content effectively dismisses naturalistic theories of representation, a central aspect of it—the idea that information as covariance does not suffice to explain content—finds support among the defenders of classical cognitive representationalism, such as Marcin Miłkowski. This support—together with the acknowledgment this remark about covariance is a point already made by Sellars in his criticism of the Myth of the Given—has a number of interesting implications. Not only is it of interest for the debates about representationalism in cognitive science, where it can be understood as an anticipatory move, but it also offers some clues and insights for reconsidering some issues along Sellarsian lines—a conflation between two concepts of representation that is often assumed in cognitive science, a distinction between two types of relevant normativities, and a reconsideration of the naturalism involved in such explanations.

Keywords Cognition · Covariance · Hutto and Myin · Information · Naturalism · Representation · Sellars · The hard problem of content · The myth of the given

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1 Introduction

The Myth of the Given (Sellars 1997 [1956]) is one of the main insights responsible of the decline of sense data theories of perception and of the epistemological apparatus of logical empiricism in the twentieth century. However, putting aside these contingencies of Wilfrid Sellars' anti-empiricist stance, his criticism was meant to have a wider scope, concerning the whole framework of givenness (Sellars 1997 [1956], I, § 1). One of the main implications of this criticism concerned the epistemology of perception and of perceptual experience. This criticism is also a central strand of thought for different approaches to meaning and intentionality, since denouncing the Given as a myth imposed constraints on such accounts as well. Roughly, according to Sellars, perceptual episodes alone are insufficient to ground and justify perceptual knowledge. To think about givenness as a kind of perceptual foundation of empirical knowledge turns out to be just a myth and the source of much philosophical confusion.

Recently, in the context of 4E cognition,[1] Dan Hutto and Erik Myin (H&M) have developed a principled criticism of naturalistic accounts of content, which they call

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[1] 4E cognition promotes an idea of cognition that is embodied, embedded, enactive, and extended. See Newen et al., (2018) for a recent collective overview on this turn in cognitive science.

"the Hard Problem of Content" (hereafter HPC) in order to defend their own understanding of enactivism's impact on the mind and cognition (Hutto & Myin, 2013). According to them, the explanatory resources used in naturalistic accounts of mental representation cannot maintain their main promises. In a nutshell, H&M claim that information as covariance[2] is insufficient to account for semantic properties, and, hence, these resources fail to yield a successful account of representation. Therefore, naturalistic treatments of representation have problems cooking an intentional soup with non-intentional ingredients. The main benefit of their analysis is that if a theorist wants to maintain an explanatory naturalistic perspective and given that naturalistic accounts fail to explain representation, then they must embrace a radical anti-representationalism about basic cognition.[3] This option means that basic cognition does not involve representational content, a viewpoint called radical enactive cognition (REC for short).

In this paper, I analyze the argumentative structure of H&M's criticism and emphasize a surprising noteworthy feature of their discussion: it shares, without mentioning it, a relevant aspect of Sellars' criticism of the Myth of the Given. Even though these discussions were originally developed with different aims in view—with H&M focusing on the tenability of the representational theory of mind and Sellars mostly interested in the implications of an anti-foundationalist understanding of perception—a shared aspect of their criticisms can be isolated. The common aspect of their criticisms lies in the idea that covariance relations are not enough to explain contentful states; that is, correlation alone does not yield content. According to this perspective, information as covariance, a notion exploited in many naturalistic accounts, does not suffice in explaining semantic properties and high-level cognition. As a matter of fact, one can read this statement in Sellarsian terms: our sensory dispositions to respond reliably to perceptual stimuli are not sufficient to determine contentful states, since we need further resources and capacities for this (such as being capable to say that things are thus and so and to justify what we say). To put it in other terms, contentful states require moving in, and inhabiting, the space of reasons, which.

situates [them] in an ambience of social practices, and […] [those] episode[s are] simply impossible without those practices. These practices are normatively constituted […]. The social practices within which a cognition is located are not arbitrary nor merely conventional: as practices of justification, they are ultimately responsible to the ideals of logical consistency and explanatory coherence (deVries, 2005, p. 127).

H&M's criticism of naturalistic accounts of representation is, however, debatable and controversial. Despite this aspect, the goodness of their point about covariance relations and content is accepted also by "friends of cognitivism," such as Marcin Miłkowski, who are however rather reluctant to see this as a turning point in favor

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[2] Their definition is the following: "s's being F 'carries information about' t's being H if the occurrence of these states of affairs covary lawfully, or reliably enough" (Hutto and Myin 2013, p. 66).

[3] They, however, recognize that we need content in order to explain high-level cognitive activities, such as those concerned with language use.

of views like REC.[4] Miłkowski, in fact—although he accepts that information as covariance does not constitute content—denies that we can characterize naturalistic accounts of content just in terms of information as covariance. If content were to be explained just in terms of such correlations, H&M would be certainly right, but such accounts are not just based on covariance-based mechanisms; hence, this means that naturalistic accounts are not yet theoretically bankrupt. So, all parties agree that information as covariance does not suffice for content, but they are divided about what follows from it in terms of the debate between cognitive representationalism and radical enactivism. H&M see this as the demise of naturalistic accounts of representation, whereas cognitivists deny that such covariance relations are the unique explanatory resource used by naturalistic accounts. Thus, nothing really follows for the general viability of these accounts. But, for my present purposes, it is their agreement I am interested in, as it can be read as providing new evidence for the relevance of an old but crucial point of Sellars' perspective. In fact, I will claim that the covariance relations do not constitute content perspective—the idea on which the parties agree—can be seen as an example of Sellars denying the possibility of achieving epistemic states (such as perceptual knowledge) just on the basis of non-epistemic episodes (causal transitions). This acknowledgment, furthermore, can be the basis to widen the perspective on the understanding of naturalism in cognitive explanation.

In what follows, I first (2) try to recapitulate Sellars' criticism of the Myth of the Given, and its main implications. Then, I present (3) H&M's HPC. At this point, (3.1) I explore the implications of such criticism and show that the main point—the fact that covariance relations do not constitute content—is also accepted by REC's cognitivist rivals. Finally, with all these premises in place, I try to show (4) how such dialectics reveal, though in a new territory, the everlasting strength and current relevance of Sellars' lesson. Furthermore, this can be the basis to reconsider some issues about the explanatory adequacy of naturalism in cognitive science's current situation, where the debate is polarized by the divide between cognitive representationalism and 4E cognition, also shedding some lights on representation and normativity.

2 The myth of the given

The Myth of the Given[5] is generally the idea that perceptual episodes alone—those that we can trivially characterize as "seeing a red apple on the desk"—are insufficient to ground perceptual knowledge and to justify perceptual beliefs or claims (e.g. my perceptual knowledge or belief that a red apple is on the desk). From a cognitive point

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[4] See Miłkowski (2015). The phrase "friend of cognitivism" is used by H&M to describe, among many, Miłkowski's view. See Hutto & Myin (2018, p. 101).

[5] Sellars (1997 [1956]). All the issues revolving around "the Given" began with Clarence Irving Lewis' *Mind and the World Order*, which was an attempt to regain certain lessons of Kantianism and American pragmatism in the debates dominated by the logical empiricism of Rudolf Carnap and of the Vienna Circle. In particular, Lewis tried to articulate in a renewed perspective Kant's distinction between concepts and intuitions, which in his framework became a difference between a conceptual component of knowledge ("conceptual interpretation") and an empirical component ("the Given"). See Lewis (1929). See also Sachs (2014, pp. 21–41).

of view, the perceptual input alone is ineffective and insufficient in yielding informative classifications and significant responses (e.g. structured "contentful" states, such as perceptual knowledge or belief), unless I already possess other resources. This putative transition from perceptual stimuli alone to perceptual knowledge is here critiqued as empiricist dogma "for what has very often been taken to be 'directly given' in conscious experience is precisely the nature and character of our own thoughts and sensations" (O'Shea, 2007, p. 277). According to the subscribers of the Myth: "the knowledge of sense-data and their properties is taken to be independent of any assumptions as to how matters stand – and perhaps even of how we take or judge them to stand – in the physical world" (O'Shea, 2007, p. 286).[6]

This way of characterizing things raises further difficulties, according to Sellars, especially if we are careful in spelling out what is going on in such a transition. In fact, admitting the legitimacy of the direct passage from a perceptual stimulus (e.g. being visually presented with a red triangle) to a state of knowledge (e.g. knowing that we are in front of a red triangle) amounts to saying we have transitioned from a non-epistemic state/episode to an epistemic one—a leap from non-epistemically 'seeing' something to 'knowing' that things are thus and so.[7] Moreover, this transition does not work since the given is taken to be epistemically independent, that is, its epistemic status does not depend on the status of any other state/episode, on the one hand, and epistemically efficacious, that is, it is allowed to transmit positive epistemic status to other cognitive states, on the other.[8] This would be the transition from something that is epistemically independent, hence presuppositionless, to something that counts as knowledge. According to Sellars' criteria for knowledge, this would be mythical. In fact, Sellars endorses what he calls "psychological nominalism:" "the ability to recognize, notice, observe, or see that an object is red, for example, requires linguistic classificatory abilities."[9] So the given presupposes a putative transmission of epistemic status without the other presuppositions that an epistemic state would normally involve, i.e. prior processes of learning or concept formation. Naturally, this qualification raises a problem, as perceptual episodes per se are insufficient to determine the availability of epistemic states in the absence of such linguistically enforced abilities. Furthermore, the problematic transition from non-epistemic to epistemic states, since epistemic states require the ability to provide justifications, also involves the distinction between normatively and non-normatively (e.g. causally) characterized states and episodes. Epistemic states belong to the space of reasons and can be characterized in terms of the justifications that we can provide for them; in contrast, perceptual episodes (i.e. taken in isolation from discursive practice and linguistic capacities) belong to the order of the phenomena governed by natural laws. This distinction contrasts epistemic states, as normatively constrained, with non-epistemic

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[6] O'Shea is here commenting on some famous quotations from Henry H. Price. For the role of Price's views in Sellars' criticism see Hicks (2020).

[7] "Now the idea that epistemic facts can be analyzed without remainder – even "in principle" – into non-epistemic facts, whether phenomenological 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" (Sellars 1997 [1956], I, § 5).

[8] deVries (2005, pp. 98–99).

[9] O'Shea (2007, p. 329). See also Sellars (1997 [1956], VI, § 29).

states, as nomologically constrained. This further distinction spells out much of the reasons why the putative transition from non-epistemic to epistemic states is troublesome. This ensemble of issues is the source of what is called the epistemic dimension of the Myth of the Given.

According to Sellars' criticism, to achieve these high-level cognitive tasks—that is, to entertain proper epistemic states—the reliable dispositions to differentially respond to perceptual stimuli are insufficient: in fact, as a crucial enabling condition, a subject must be a user of a conceptual system (i.e. a thinker) and a user of a natural language (i.e. a speaker). In Sellarsian terms, such cognitive tasks and high-level states require perceptual and epistemic subjects who inhabit the space of reasons. To be epistemically efficacious, a perceptual episode must belong to a practice where conceptual capacities are already possessed and displayed by cognitive subjects. These further capacities and resources become the fundamental background that cognitive subjects need in order to make an effective cognitive use of perceptual inputs. A proper level of epistemic usage of perceptual states and episodes is possible only if there is a capacity, already in place, to encode them within a series of conceptual responses: epistemic states are propositionally contentful.[10] This means that a social system of rules and coordinate abilities is an unavoidable requirement, and the cognitive subject must have at least some grasp of it.[11] Therefore, without concepts and conceptual capacities, perceptual episodes and states do not yield proper epistemic and doxastic uses—they are not epistemically efficacious. We obtain only perceptual states and responses without propositional contents and, hence, without the possibility for these states to be meaningful and expressed within a shared system—states that do not belong to the space of reasons. We could think about the exercise of these dispositions as mere 'indication relations,' which consist of reliable responses to environmental stimuli but without the capacity of entertaining contentful states and making a conceptual use of such responses. This ensemble of issues highlights the semantic dimension of the Myth of the Given.[12]

The considerations revolving around the Myth of the Given help us understand the connection between perceptual dispositions and cognition. Particularly, denouncing the Myth of the Given does not mean that there is no cognition at all in such preconceptual perceptual responses. In fact, such perceptual states and episodes are sufficient to yield certain forms of basic responses and classifications. For example, a cognitive system showing these responsive dispositions can differentially respond reliably to features of its environment: a piece of iron can classify certain environments by rusting in some but not in others, by increasing or decreasing its temperature, or by remaining intact or by shattering (Brandom, 2009, p. 200). However, these

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[10] This aspect renews Kant's point about intuitions being blind without concepts. See for example McDowell (1996, pp. 3–24).

[11] Robert Brandom describes this point in terms of "collaboration of capacities characterizable [in a Kantian fashion] in terms of receptivity and spontaneity." See Brandom (2015, p. 103).

[12] Both the epistemic and the semantic dimensions of the Myth of the Given, according to Sellars' later reconstruction, presuppose the more general dimension of the categorial given: "If a person is directly aware of an item which has categorial status C, then the person is aware of it as having categorial status C" (Sellars, 1981, I, § 44). All the phenomena related to the Myth of the Given presuppose this categorial dimension. See deVries (2005, pp. 114–117), O'Shea (2007, pp. 296–303; 2021), and Christias (2018).

responses do not (and cannot) count as conceptual. These dispositions, at the very least, can be helpful in low-level classification tasks, for example those that we can understand as types of labeling, which respond to the right stimulus with the proper linguistic label. A different cognitive system, a parrot for example, which responds to the presence of red spots by squawking sequences of sounds indistinguishable from "that's red," should not be seen as a master of the "red" concept. The best ability that we can attribute here is a type of labeling: applying a word in the right perceptual circumstances but without consequences for it—that is without anything significant following the classification. The parrot does not (and cannot) know what follows from its utterance of the word "red." Therefore, from a cognitive point of view, its response does not (and cannot) count as conceptual, and the level of cognition enacted by this utterance remains low. At the very least, again, the only cognitive task that can be attributed to the parrot is the ability to label certain items as "red;" the parrots can only respond to red spots with the utterance of the appropriate sequence of sounds. If this can somehow count as a classification, it is not a conceptual one.[13]

The issues around the Given also have a number of implications concerning the understanding of the intentionality of thought and talk. For example, perceptual states and episodes are not per se provided with intentionality, as they only track perceptual responsive dispositions; as we know, this is a lesson depending directly on the rejection of the Given. This view radically changes the requirements to attribute intentionality to generic mental states and episodes. The role of experience is seriously reconsidered in the understanding of these states and episodes, and their role in reasoning becomes the new explanatory key.[14] It seems, however, that we face intuitive cases that go against this turn concerning intentionality.

Undeniably, when presented with a pineapple, a prelinguistic baby or a chimp entertains states and episodes that are about something. The issues about this situation are as follows. Are these states also intentional in a full sense, such as the contentful perceptual judgment "right now I see a pineapple in front of me"? Is this mere directional intentionality enough to get contentful intentional states? The answer is in the negative, for the very reason that this would amount to a semantic version of the Myth of the Given. It would be a transition from a non-contentful responsive episode to a contentful intentional state.[15] Basic intentionality depends on participating in certain social practices and exercising certain coordinate capacities that both enable and confer conceptual and public uses onto perceptual states and episodes. Hence, according to this Sellarsian perspective, you cannot have content without there being

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[13] For the distinction between conceptual and non-conceptual classifications, see Brandom (2009, pp. 202–206).

[14] Sellars' psychological nominalism was the idea of using overt speech as a 'model' for thought. One could read Sellars' "Myth of Jones"—in which he develops the idea of adopting a 'theoretical vocabulary' to account for private mental episodes—as making a move of this kind—that is, trying to explore the idea of 'interior episodes' as something that has a role in reasoning (just like theoretical concepts) rather than as having a direct origin in experience (like the putative 'given'). See Sellars (1997 [1956], XII-XIV).

[15] This consideration is often taken to imply a contrast between Sellars and the phenomenological tradition as a whole. This is not mandatory, however, as recently Carl Sachs tried to defend the view that Merleau-Ponty's phenomenological approach does not fall prey to the Myth. He also tried to develop a kind of interesting view about intentionality, embodiment, and perception that comprises both Sellarsian and phenomenological elements. See Sachs (2014, chpts. 4–5 and Appendix).

a language in place. Proper intentionality, according to this account, cannot be found outside social practices comprising the exercise of conceptual capacities.

Therefore, according to this view, original intentionality—which, in agreement with John Haugeland's definition, is the non-derivative stratum of intentional phenomena[16]—is social, shared, and linguistic. In contrast, pre-discursive types of intentionality are, in a sense, exhausted by dispositions to reliably respond to perceptual stimuli. However, as this stratum is not—as Sellars would have put it—a logically autonomous one, it is only second-rate intentionality: a capacity is autonomous if its enaction does not presuppose other capacities; vice versa, a capacity enacted on the bases of other capacities is not autonomous (Brandom, 1994, p. 293). Pre-discursive responsive abilities, in fact, concur to contentful states and episodes only in the space of reasons (and only for its inhabitants). To understand this, we should specify how Sellars thought about the connections of the space of reasons with perception and action.

Sellars, in order to give a more detailed account of the role that linguistic abilities play in these epistemological views, developed, as part of his inferentialist semantics,[17] a functional characterization of the main inferential transitions: language-entry transitions—speakers respond with the proper linguistic moves to certain perceptual inputs; intra-linguistic moves—speakers respond with the proper linguistic moves to other linguistic moves; and language-exit transitions—speakers respond with the proper course of action to certain linguistic activity (Sellars, 1974, pp. 423–424). These transitions characterize not only inferential roles generally but also the way in which perception and action depend, in an important way, on the space of reasons. Language-entry-transitions are the ways in which we react to perceptual inputs with the proper linguistic moves; the inferential moves that are correct also on the basis of certain non-inferential inputs. This is the idea that the non-inferential (perceptual) inputs, without the richer context of the practice of asserting and inferring (viz. outside the space of reasons), do not count as genuine perceptual episodes. Proper (i.e. epistemologically significant) perception happens when we (can) make an inferential use of non-inferential inputs—that is, when non-inferential inputs gain a role in the space of reasons. By the way, this means to say that even if we can gain non-inferential knowledge of something based on perception, this does not mean that this counts as a "direct apprehension" of something unmediated by concepts: non-inferential knowledge, as such, requires participation in practices involving inferential capacities.[18] In fact, if we could make a proper use of non-inferential inputs

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[16] Haugeland (1990). Haugeland insists on original intentionality in order to stop a potential regress in the explanation of intentionality due to its relational structure. See Satne (2019) for a detailed discussion of many of the issues raised by Haugeland.

[17] This is the idea that the conceptual content of a thought/statement is understood by its functional role in reasoning.

[18] Justification is never atomistic and non-inferential knowledge is not atomistically independent of other knowledge. As deVries put it: "[I]n cases of non-inferential knowledge, such inferential relations must be cases of infer*ability*, not actual inference. But the uninferred, immediately known items that form the *de facto* epistemically efficacious basis of our empirical knowledge would have no epistemic status at all if they did not bear inferential relations to other items of our knowledge" (deVries, 2005, p. 119, see also pp. 108-09, 138).

without the need of being capable of making inferential uses of them, then the stratum of perceptual inputs would count as an autonomous one. But we cannot, according to Sellars, make such a use, and, hence, perceptual non-inferential inputs do not count as an autonomous game. On the contrary, the game of giving and asking for reasons is an autonomous practice, i.e. "a game one could play, though one played no other" (Brandom, 1994, p. 293). This autonomy entails an epistemological reading. Perception can play a justificatory role for perceptual beliefs and claims only in a context where subjects are capable to make assertions and draw inferences. In an impoverished context, deprived of the resources and capacities needed to give and assess reasons, a subject could not make any epistemological use of its responsive dispositions to perceptual stimuli.

This conception is clear in ruling out the possibility of entertaining contentful states based only on our responsive dispositions. We can characterize these dispositions in many ways, for example, as permitting causal transitions between environment and organism, as relations of covariance between an input and an output, or as simple indication relations between phenomena. The important thing is that such responsive mechanisms are insufficient to determine states that are equipped with semantic properties—that is, states that as such can be true or false, states that can be truly about something, states that can play the role of premises for further states, states that can be embedded in conditional claims, and, more in general, states that we can consider as having a genuine representational dimension. According to the criticism of the Myth of the Given, to conceive of such responsive mechanisms as alone determining contentful states would be just a mythological view of content (and of experience), which heavily underestimates the role of concepts and language in the formation/acquisition of such states. Such mechanisms, ultimately, cannot count as a foundational ground for empirical knowledge, perceptual beliefs, and, in general, contentful states concerning empirical matters. Representing empirical environmental features requires more resources and capacities, especially those involved in using a language and a conceptual system, and, especially, minimal moves that can count as saying that things are thus and so. Hence, according to the criticism of the Myth of the Given, the cognitive role put in place by these responsive mechanisms—even though it is one involving an undeniably necessary component for knowing and representing empirical features—is alone insufficient to determine the relevant epistemic and representational states.[19] We could characterize this aspect as the principle that responsive dispositions alone do not constitute epistemic, conceptual, and representational states. To think otherwise, according to this perspective, would amount to falling prey to the Myth.

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[19] However, Sellars admitted other types of representation by drawing a distinction between "signifying" (i.e. discursive contentful representations) and "picturing" (i.e. non-contentful representations involved in an organism's capacity to map/track relevant features of the environment); see Sellars (1963). This distinction will be helpful in clarifying certain issues concerning representation in cognitive science that I discuss in what follows.

3 The hard problem of content

Enactivism is the idea that mind and cognition should be investigated in the context of an embodied coping with the natural environment giving pride of place to the role of the body and its sensorimotor interactions, while classical cognitive science tried to approach cognition in terms of representations. "Influenced by phenomenology, dynamical systems theory, and developments in robotics," Enactive/Embodied approaches reject the framework of classical cognitive science, and deny that the best explanation of cognition is based upon internal representations "built on the basis of retrieved informational content" (Hutto & Myin, 2013, pp. 1–2). H&M promoted a radical turn in the understanding of enactivism by endorsing the idea that low-level cognition, and more in general what they call "basic minds," work without content: it is a radical type of anti-representationalism. They see (what they present as) the failure of naturalistic programs devoted to explaining mental representation as evidence of the necessity of such a radical theoretical shift. According to H&M's presentation, their criticism of naturalistic accounts of content is aimed at three main targets: informational accounts of content; naturalistic accounts of content; and a defense for the idea that basic mentality does not require content/representation. All naturalistic accounts of cognition, according to them, in fact, "must face up the Hard Problem of Content" (Hutto & Myin, 2013, p. 58). The focus of their analysis concerns systems that enable basic cognition, and they characterize such systems as equipped with the following features: (1) these systems are "reliably merely caused" by the occurrence of external features; (2) they are disposed to "produce certain effects;" and (3) they have been "selected because of their propensities for properties 1 and 2" (Hutto & Myin, 2013, p. 62). According to H&M, such systems—characterized in terms of the three properties—are not truly contentful and, hence, are not representational. Therefore, such systems enable low-level cognitive functions. The very idea of cognitive systems not performing representational functions is the solid evidence for their main claim, according to which basic minds do not need representational content.[20] The properties of such systems may only have the function to guide the system's responses to certain environmental stimuli (Hutto & Myin, 2013, p. 62). But this capacity is not enough for them to serve as a representational function. At the very least, such systems can just carry information. What does this mean? Is information sufficient for having contents and cognition?

H&M go on to argue that if we take a closer look at what information is, then the answer is in the negative. According to them, information talk is safe only when used metaphorically: "[i]nformation is said to be extracted, retrieved, picked up, fused, bounded up, integrated, brought together, stored, used for later processing, and so on and so forth. How seriously should we take this talk?" (Hutto & Myin, 2013, p. 63). Information, according to H&M, would be a valuable candidate to explain content only if it would possess certain properties and could satisfy certain conditions (see

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[20] However, the concept of "basic minds" is a bit controversial, and their examples concern low-level abilities, for example cricket phonotaxis ("Female crickets locate and move toward mates by attending to the acoustic signals of male songs"), overall lowering the bar for cognition. See Hutto & Myin (2013, pp. 42–43).

below). But let us first ask: which properties actually characterize information? After scrutinizing a number of unsatisfying candidates (Hutto & Myin, 2013, pp. 62–64) they end up focusing on the best candidate in the debate: Fred Dretske's account (Dretske, 1981, 1988, 1995).

Dretske's definition is the following: "the what-it-is-we-can-learn from a signal or message in contrast to how-much-we-can-learn" (Dretske, 1981, p. 47). This definition must be understood with the proviso that a signal's informational content is propositional (i.e. it bears semantic properties), and that such propositional content is *de re* (i.e. its identity depends on the particular item one is thinking about). Furthermore, the main feature of propositional contents is that these can be true or false. The assumption that informational content is propositional in this sense can be used to understand why Dretske claims that when signals convey information to the sensory system, this tells us "truly about another state of affairs" (Dretske, 1981, p. 44). This does not oblige us, however, to think that such propositional contents have robust representational features. A problem here is that since such (informational) contents are provided by the senses, they are not suitable to make room for errors, while errors are allowed by representational contents.

According to H&M, this situation presents a dilemma to all views committed to explanatory naturalism. Before introducing the dilemma, they try to clarify what they mean by explanatory naturalism, and they are happy to pick out the view highlighted by Michael Wheeler's *Muggle Constraint* (MC for short): "One's explanation of some phenomenon meets the Muggle constraint just when it appeals only to entities, states and processes that are wholly nonmagical in character. In other words, no spooky stuff."[21] This principle may be contested, for instance, by more reductive naturalists, as very liberal, since it just denies an explanatory role to mysterious entities/processes; thus, it is a bit vague on positive reductive prescriptions. Nonetheless, according to H&M, MC is a good pick, as it is compatible with informational theories of content. They then refine the definition of informational content to show that it fits with MC, by exploiting a quotation from Pierre Jacob. According to this definition, informational content "is the notion involved in many areas of scientific investigation," and examples of it concern "a footprint or a fingerprint carries information about the individual whose footprint or fingerprint it is," or how "[t]he number of tree rings in a tree trunk carries information about the age of the tree" (Jacob, 1997, p. 45). H&M claim that such examples define informational content in terms of covariance—they use the label "information-as-covariance."[22] According to this idea, it is safe to hold that the fact that the state p is an F carries information about p's being a G if, and only if, F's and G's reliably covary. But this, they go on, is bad news for informational theories, as content is something that bears semantic properties, such as "reference," "truth," and "entailment," and, more importantly, these properties make content distinct from mere covariance between states of affairs or, in general, physical states. In other words, covariance is not adequate to explain content. For example:

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[21] Wheeler (2005, p. 5). For those who do not know, "muggle" is a term of fiction taken from J. Rowling's Harry Potter's saga and means non-magical.

[22] This understanding of the informational account is, however, controversial. See below.

[t]he number of a tree's rings can covary with the age of the tree; however, this doesn't entail that the first state of affairs says or conveys anything true about the second, or vice versa. The same goes for states that happen to be inside agents and which reliably correspond with external states of affairs—these too, in and of themselves, don't "say" or "mean" anything just in virtue of instantiating covariance relations (Hutto & Myin, 2013, p. 67).

According to H&M's discussion, this means that we can sharply distinguish between information as covariance and intentional (i.e. contentful) information. And this is bad news for naturalistic accounts of content, as such theories "cannot simply help themselves to the notion of information-as-content" as these just presuppose, rather than explain, semantic properties/contentfulness (Hutto & Myin, 2013, p. 67). Information-as-covariance, even though it is naturalistically respectable, is not an admitted explanatory concept, at least taken in isolation, for representational content. This point can be summarized with what H&M call the "Covariance Doesn't Constitute Content principle" (CDCC for short). According to this, the assumption that covariance suffices for content is undermined. If the principle is true, and surely it is a hard challenge to prove it wrong, then there is an explanatory problem for informational theories of content—at least if H&M are right in understanding these accounts as based just on covariance relations.[23]

This problem would also affect the naturalistic credentials of such an account: if covariance does not suffice to explain content, then the theorist is at risk of violating MC, as the naturalistically admissible resources are insufficient for the task. This is the first horn of their dilemma. Either theorists give up explanatory naturalism or they give up the idea of explaining content in terms of information. They notoriously pursue the second option. However, they recognize that one "might opt to be impaled on the dilemma's second horn" and accept "that contentful properties exist even if they don't reduce to, or cannot be wholly explained in terms of, covariance relations" (Hutto & Myin, 2013, p. 68). For example, the naturalist theorist may insist that, even though information and semantic content are distinct and mutually irreducible, there can be some systematic relation between them. This route would depend perhaps on future physics or on new metaphysical insights. But according to H&M's diagnosis, we lack cogent grounds to be optimistic about this and are stuck with HPC. So according to this analysis, we can conclude with them that "we have reason to think that on-line sensory signals "carry information" in the covariance sense," but if this is true, we should deny that "[covariance relations] 'pass on' meaningful or contentful messages" (Hutto & Myin, 2013, p. 70).[24]

A similar trajectory is diagnosed for the main alternative within the context of naturalistic accounts of mental representation, which is teleosemantics.[25] The notion of biological function, usually exploited by teleosemantics to explain representa-

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[23] This view, in fact, even if one accepts CDCC as correct, has been interpreted as a misreading of both informational and teleosemantic accounts. See Miłkowski (2015).

[24] They also explore the possibility of understanding information as "indication" by exploiting (with Dretske) Grice's natural meaning relations, such as "smoke means fire." However, as "indication implies the presence of a user," this alone does not suffice for contentfulness.

[25] The most prominent teleosemantic account comes from the pioneering work of Ruth Millikan. See Millikan (1984, 2000, 2005).

tion, undergoes a treatment which is in many respects similar to that reserved to information. Exploiting an argument provided by Tyler Burge, H&M conclude that biological functions (and natural selection) do not care about truth and veridicality (and, hence, cannot determine semantic properties) (Hutto & Myin, 2013, p. 113).[26] Biological functions work in terms of causal mechanisms—to be specified in terms of dispositions, responsiveness, and, ultimately, again, in terms of covariance relations. This time the account varies, as the correlations are teleologically selected by natural evolution. But, again, these resources are alone insufficient to explain semantic properties. Thus, biological functions cannot provide an explanation of representation either.

Therefore, the main point of this criticism, independently from its being sufficient to undermine naturalistic accounts of content, is that covariance relations are not enough to provide a tenable, let alone naturalistically acceptable, account of content. This account would require the resources needed to explain semantic properties, and covariant correlations are simply not enough for this.

3.1 Covariance and naturalistic accounts: a plea for caution

However, even though HPC is undeniably effective in highlighting how covariance relations are insufficient to determine contentful states, if we are careful enough, its endorsement requires further qualifications. While I agree with the effectiveness of this criticism, I also agree with the discussion that Marcin Miłkowski recently presented about the actual implications of HPC, or at least with the fact that it highlights some controversial issues. According to this discussion, while it is true that covariance relations do not determine content, it remains to be seen whether informational and teleosemantic accounts can only employ information as covariance in explaining content—and Miłkowski provides some evidence of the problematic character of this attribution. Furthermore, and in more general terms, there are also problems with the anti-representationalism involved in REC. H&M set double standards for mental and linguistic representation, which ultimately oblige them to choose between representationalism and semantic nihilism—that is, between an option they want to avoid and an option that is untenable (Miłkowski, 2015, pp. 73–76).

Putting aside Miłkowski's concerns about reading H&M as endorsing a kind of semantic nihilism, which according to him follows from their anti-representationalism, my interest lies in highlighting how his diagnosis entails the goodness of CDCC principle. In fact, according to him, if we clarify that the naturalistic accounts, which are the targets of the radical enactivist attack, are not only based on covariance relations, then the CDCC principle cannot count as a dismissive point against these accounts.[27] Therefore, a wide part of his discussion concerns showing why it is false that such accounts are based solely on covariance relations while granting, at the

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[26] They also endorse Fodor's criticism concerning the fact that biological accounts are not adequate to explain the intensionality of intentional content. See Hutto & Myin (2013, pp. 79–80).

[27] "I show that even if the Hard Problem of Content is important, Hutto and Myin are confused to think that all its solutions rely on the notion of information as covariance. There is more to the notion of natural information than covariance, and teleosemantic accounts of representation do not rely merely on covariance" (Miłkowski, 2015, p. 74).

same time, that the CDCC principle rightly shows that covariance does not suffice to explain content.

But let us see first Miłkowski's independent defense of the CDCC principle. First of all, a relevant difference between covariance and representation concerns the fact that covariance is "necessarily symmetrical and reflexive, while representing need not be" (Miłkowski, 2015, p. 78). This difference indicates how the latter does not reduce to the former. Then Miłkowski explores the possibilities concerning the exploitation of other types of information to be distinguished from information-as-covariance. The main candidates are information "as-control" and "as-structured-similarity" (Miłkowski also denounces H&M's discussion of information as incomplete).[28] Information as-structured-similarity is that exploited in modelling, and especially the idea that "[t]o model reality, thought needs to parallel reality mechanically in the brain" (*Ibid*.). Control information "remains the core of contemporary action-oriented accounts of representation" and is that exploited in analyzing "the way information controls the behavior of machines and people" (Miłkowski, 2015, p. 80). But the main point of this discussion is another: "[…] [H&M] are wrong in thinking that most theorists of naturalized semantics believe that covariance constitutes content. They do not" (Miłkowski, 2015, p. 78). In fact, naturalistic accounts do not claim "that content is constituted merely by a tracking (causation or covariation), similarity, or control relation" (Miłkowski, 2015, p. 82). If we take a closer look at these theories, this fact surfaces easily.

For example, Miłkowski introduces William Ramsey's view concerning the insufficiency of covariance for representation. According to this account, representation requires "an additional relationship between structured properties" (Miłkowski, 2015, p. 79). Then, even though structured-similarity implies covariance between shared features of some entities, these relations are formally distinct:

So while it is true that structured similarity implies covariance, and covariance implies structured similarity, it does not follow that vehicles that are in a structured similarity relationship with their reference have the same amount of structural information as vehicles that merely covary. The additional logical depth of contrast-based structured similarity stems from its antisymmetric nature. But most importantly, structured similarity is at the core of the capacity to model the referents of structured representations. This feature of representation has been acknowledged by virtually all proponents of naturalized semantics […], and it remains a blind spot in Hutto and Myin's analysis (Miłkowski, 2015, p. 80).

Information could constitute the basis of content only by acknowledging the structure of the system where it can play such a role (i.e. by explicitly taking into account the variety of possible responses available to receivers) (Miłkowski, 2015, p. 81). So, from this point of view, it is clear that informational accounts could not be based solely on covariance. But there is another difficulty here—the relation of content-constitution. Depending on how we conceive of this relation, we could face well-known complications: "If a relation (in a strict logical sense) between the vehicle and

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[28] The upshot of his discussion is that information as-control and as-structured-similarity differ from information-as-covariance and that even these further types of information are insufficient to explain content. See Miłkowski (2015, p. 78).

the representation's target constituted content, then false content would have been impossible" (Miłkowski, 2015, p. 82). This point provides further evidence to the claim that such accounts cannot be based only on covariance. When we shape a content-constitutive relation, we should be able to distinguish between "representing" and "represented" things, and covariance is insufficient for this task. The main problem is that H&M read naturalized semantics as treating intentionality like a logical relation (e.g. between a covariance relation and a contentful representation). But this reading is flawed for two reasons: first, if intentionality is understood as information, it would entail the problems concerning the "impossibility of falsehoods;" second, while all the kinds of information (covariance, control, and structured-similarity) are necessary for representing, they are insufficient for this (even jointly considered). In fact, teleosemantic views such as Dretske's and Millikan's add "teleological function" to the explanation.[29] This addition is crucial in fixing the referents of representations in the problematic cases, i.e. falsehoods/misrepresentations. Thanks to this addition, in fact, indication relations are enriched, and are in this sense truth-functional: "a property F is ascribed to w, and this can be spelled out […] as ascribing a predicate to a subject. Hence, indication has satisfaction conditions. At the same time, indication cannot be false; it cannot fail to indicate that w is F" (Miłkowski, 2015, p. 83). In order to explain misrepresentation, Dretske makes it asymmetrically dependent on true cases by exploiting the concept of function:

The entity d has the function of indicating that w is F, but as soon as it malfunctions, the indication is false. Yet the content is not lost; if it were an indicator, it would truly indicate that w is F. But it only has a function of indication, and it fails to perform the function; hence it is not the case that it indicates that w is F. Any user […] of d that would take it to be an indicator would be in error by taking its property or state G to indicate that w is F (Miłkowski, 2015, p. 83).

Thanks to this enrichment, indication relations can also be safely exploited in explaining representation in cases of misrepresentation. Adding the notion of teleological function to indication relations is enough to get satisfaction conditions, and this recipe solves HPC maintaining fully respectable naturalistic credentials. Miłkowski recognizes that these naturalistic accounts certainly raise many problems, but also that they basically solve HPC.[30]

There is a relevant aspect implicit in naturalistic accounts that permits a fruitful exploitation of the asymmetry between true and false cases, which depends on the fact that functionalist views, qua functionalist, possess the resources to treat the normative aspects of content driven systems. The very idea of a "proper function" does the trick and is not reduced to mere covariance (Raleigh, 2018, p. 236).

This clarifies that informational and teleosemantic accounts of representation, independent of all the other problems they may have, are not only based on informa-

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[29] Jerry Fodor, in a different way, added what he called "asymmetric dependence." See Miłkowski (2015, p. 82). See also Fodor (1990).

[30] This also finds an analogue solution for teleosemantic views, but again the account exploits the asymmetry between true and false cases: "What is particularly interesting, the solution does not treat truth and falsehood symmetrically; falsehood is dependent on truth but not vice versa. And for Millikan […], information-as-covariance is *not* the starting point; it appears because the cognitive system uses its representations systematically in its environment, not vice versa" (Miłkowski, 2015, p. 84).

tion as covariance; thus, they are not dismissed as such in the name of HPC.[31] Despite this disagreement with H&M about the reading of such accounts, there is also an interesting agreement in the background that brings together friends of enactivism and of cognitivism: they both endorse the CDCC principle. Therefore, there is a relevant point of convergence in this discussion (at least from my perspective): covariance relations are inadequate as reductive explanatory resources in any account of representational content and contentful representational states.[32] In fact, this agreement is the premise for a number of different implications.

4 Acknowledging Sellars' credits

If we analyze the argumentative structure of H&M's criticism (independently of the effectiveness the authors assign to it), we can uncover a noteworthy feature: it *de facto* shares, even though without mentioning or acknowledging it, an important aspect of Sellars' criticism of the Myth of the Given. The common core of their criticisms lies in the idea that covariance relations are insufficient to explain content and contentful states.[33] In fact, one can easily read this idea in Sellarsian terms: our sensory differential dispositions to respond reliably to perceptual stimuli are insufficient to determine contentful states (e.g. genuine perceptual "knowledge" concerning those stimuli), since we need further resources and capacities for this cognitive achievement. In this fashion, we could say that the fact that a piece of iron rusts in wet environments can be specified in terms of covariance relations with environmental conditions. Furthermore, and this explains the agreement with Sellars' point, this responsive behavior of the piece of iron can be specified "modally" in terms of its "disposition" to rust in wet environments. The CDCC principle explicitly denies the possibility of such transitions from causal phenomena to contentful states. The passage from covariance relations to contentful states would be just like the illegitimate transitions from non-epistemic to epistemic states, from non-semantic states and relations to contentful states, from non-normative states and relations to normatively characterized states, and from the space of lawful relations to the space of reasons. These transitions would all fall prey to the Myth. We need, according to Sellars, the capacity to put perceptual stimuli in the right qualified context: "[…] 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

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[31] "The Hard Problem of Content […] has been solved repeatedly. Even if […] [H&M] are right that information-as-covariance does not constitute content, this does not mean that there is no role for information in theories of representation. I insist that the account of satisfaction conditions naturally relies on control information, which, in turn, is not reducible to information-as-covariance. Richly structured vehicles of information that are produced by reliable processes selected for tracking some properties may have both causal influence on the operation of information-processing systems and satisfaction conditions, as long as they function as control information and are appropriately evaluated" (Miłkowski, 2015, p. 84).

[32] H&M, in their reply to Miłkowski (Hutto & Myin, 2017, pp. 42–45), mostly argued against the tenability of teleosemantics, which is not directly relevant to the points I am raising in this paper.

[33] Put this way, the idea that perceptual dispositions (which operate by means of covariance relations) can alone explain contentful states, such as perceptual knowledge, is analogous to what Sellars, together with Henry H. Price, disqualified as a "thermometer view" of perception. See Sellars (1997 [1956], VII, § 31).

what one says" (Sellars 1997 [1956], VIII, § 36). This consideration points to the normative character of epistemological qualifications, such as justifying and knowing. Such states and doings require participating in normative practices and being able to make assertions and draw inferences (i.e. the ability to say that things are thus and so). This is an ability that responsive dispositions/information as covariance as such do not presuppose, for it is doing something that stands in need of reasons (i.e. asserting something) and involves being able to do what is required to offer such reasons (i.e. being able to infer something from what is observed, said, or done). Contentful states properly require moving in and inhabiting the space of reasons.

Therefore, the CDCC principle turns out to be a renewed version, in a more recent context, of a central point in Sellars' criticism of givenness. It means that Sellars' lesson, even in disguise, is still at work in all the topics in which issues about causation and explanations of cognition are somehow connected or intertwined. To say that information-as-covariance alone is an inadequate explanatory resource for content (viz. the CDCC principle) is a way of repeating that Sellars was right—that is, (1) we cannot explain epistemic states/episodes solely in terms of non-epistemic states/episodes since "the epistemic given has both epistemic efficacy […] and epistemic independence […]" and as we know this connection is mythical (Sachs, 2014, p. 22), and (2) we cannot explain contentful states/episodes solely in terms of causal stimuli, as if we could get "intrinsic semantic content independent of all other semantic contents" (Sachs, 2014, p. 7).[34] Furthermore, the original and up to date discussion provided by H&M—regardless of whether one sees their attack on naturalistic accounts of representation as successful or not—can be seen as lending new strength to Sellars' point, highlighting its argumentative effectiveness in new debates.

It could be argued that this reading of Sellars is based indirectly on Sellars' "space of reasons" view of perception, and so it does not directly follow from the criticism of the Myth. Such a view on perception and on the criticism of the Myth can be isolated from each other, and they are not to be understood as belonging to a single option. For example, regarding perception, a non-conceptualist could argue that the criticism of the Myth is irrelevant for such a view, and arguably certain interpretations of information-as-covariance would claim to be safe from this criticism (as non-conceptually thin). The above remarks about the epistemic independence and the epistemic efficacy of the Given are perhaps insufficient to rule out this alternative. This possibility *prima facie* poses a challenge to the reading presented so far about the Given and the HPC; even though they both agree with the idea that semantic content needs more than perceptual responsiveness, we would perhaps need a more explicit reason to understand the criticism of the Myth of the Given as targeting the connection between information-as-covariance and semantic content.

However, by following a recent article by O'Shea (2021) I think we can get the outline of a Sellarsian argument to the effect that a certain understanding of the Myth actually entails that information-as-covariance is insufficient to determine content-

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[34] A nicer semantics/epistemology distinction is provided by Sachs (2014, p. 22): "[…] the semantic given is both efficacious and independent with regard to cognitive semantics, which differs from epistemology by being concerned with having the right form and content to be playable in that game, whereas epistemology deals with assessment of warrant, evidence, justification, and so on."

ful representations. This is the myth of the categorial Given, which Sellars lately deemed the core of the Myth, defined as follows: "If a person is directly aware of an item which has categorial status C, then the person is aware of it as having categorial status C" (Sellars, 1981, I, § 44). To say that we can immediately be aware of an item as having a certain categorial status means that such an item is not open to alternative re-categorizations (O'Shea, 2021, pp. 10,553, 10,556). This is a myth, according to Sellars, as every attempt to characterize such an item just via direct awareness turns out to be revisable and not definitive, and categorial claims are hardly established in terms of a kind of (pre-conceptual) direct awareness. Exploiting the myth of the categorial Given, we can say that information-as-covariance as such cannot ground contentfulness, as this would unavoidably be framework-dependent; the kind of response such an account seeks is never neutral from a categorial point of view. Again, this means that covariant relations implicitly exploit some categorization and are not as such immune from revision. Hence, going from covariance to content via direct awareness would cause some *mis*categorization. It would take something to be categorially so even before acknowledging possible alternatives; it would be as if information-as-covariance will systematically involve an unrevisable unique categorization. That is mythical. To say that a covariance relation determines a certain contentful state would involve what O'Shea calls "unwittingly blocking" further categorial inquiries (O'Shea, 2021, p. 10,562). Taking a covariance relation as the determinant of content would be like taking a natural mechanism to automatically select a unique, given, categorial choice/option of which subjects can be directly aware. Thus, the very idea of information-as-covariance as determining semantic content falls prey to the categorial Myth of the Given. Therefore, it is in this sense out of the question that this criticism also targets this connection.[35]

Let us go back to the main implication of the relation between the given and the HPC. What does it mean to counter representationalism on the basis of HPC? H&M use HPC, first, to indicate a failure of the naturalistic attempts to explain mental representation (but we know this is controversial) and, second, more generally, to show that we can give up all of our talk of representations in our accounts of basic cognition. But arguably, if the first point does not succeed, then the latter option also appears slightly compromised. Let us, however, recall their main consideration here. According to them, the notion of representation may have, after all, some utility in dealing with high-level cognitive tasks—as those involved in the mastery of a language/conceptual system—but since cognition is supposed to start at a lower level of embodied relations between organisms and their environments, we could safely give up on invoking representations here. This view counts as a special type of anti-representationalist stance in cognitive science. However, this criticism of representationalism can be approached, gaining an overview on some of the more relevant issues, by comparing it with other relevant approaches to content and representation. For example, it can be coupled with accounts devoted to explaining the representational dimension of mind and language in agreement with the same point highlighted

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[35] O'Shea claims that the myth of the categorial given is the core basic form of Sellars's view, one that also certifies that other conceptions of perception, thin like non-conceptualism and thick like phenomenology, which are often taken to escape the myth, fall prey to it as well. See O'Shea (2021, pp. 10559-64).

by HPC (i.e. with the CDCC principle). And if this is a point already made by Sellars in his criticism of the Given, why not take it as a reason to explore more Sellarsian views? In fact, according to Sellars, the CDCC principle does not dismiss content.

This openness concerning the possibilities of admitting some talk of representations also raises the issue of naturalism (as highlighted by H&M). Remember their dilemma: either you drop explanatory naturalism or you drop representationalism, as naturalistic accounts of representation fail, according to them. If dropping representationalism is not as mandatory as they suggest (for example, if one finds Miłkowski's remarks compelling), our focus switches to the attractiveness of explanatory naturalism. H&M take for granted that theorists want to keep endorsing explanatory naturalism in view of their criticism of naturalistic accounts of content. These two premises lend support for their preferred conclusion, viz. the endorsement of REC, where basic minds are involved in forms of contentless cognition. But this route, despite their presentation, is not mandatory and not only because HPC is maybe not resolute in rejecting naturalistic accounts. For example, a different route that is compatible with HPC is to maintain the ambition to account for representation thanks also to a wider reconsideration of naturalism (in view of HPC). This alternative option, opened up by their dialectics, has the possibility to explain conceptual content and its representational dimension while questioning/weakening reductive explanatory naturalism. For example, as highlighted by the role that explanatory concepts like "proper function" play in these naturalistic accounts, and the explanatory role of social norms for semantic content in more liberal accounts, we can open a space for some kind of normativity as taking part in the explanations. This would render, depending on how this normativity is understood, such naturalism more liberal/less reductive. Furthermore, the way H&M define explanatory naturalism makes this naturalism rather weak; it mainly dictates that explanations eschew mysterious entities/processes. If we are careful enough, this type of naturalism is not so far from certain liberal naturalist or even anti-reductionist accounts of content. For example, accounts that explain semantic content in terms of social normative practices would not be considered spooky by means of this criterion, as avoiding any appeal to anything mysterious (as Wittgenstein would say, our practices and rules are in a sense always under our noses). So, for example, MC is not only compatible with scientific naturalism, which is the claim that science is authoritative both for explanation and ontology, but also with liberal options where norms/normative practices are not explained in reductive terms (see below). This is a context in which Sellars has much to offer.

To recap, we now face related issues concerning representation and the understanding of naturalism, and we also began focusing on the role of normativity. To highlight such issues, I think we need to put on the table three Sellarsian distinctions that I deem of fundamental importance in this specific context. In view of H&M's and Miłkowski's point on the CDCC principle and together with my reading of it as reviving a Sellarsian move, these distinctions can help in further developing the discussions concerning naturalism and cognition, especially as they are capable to

signal, and this is my hypothesis, a major conflation in the debate, one that can help in better understanding the discussions surrounding cognitivism and enactivism.[36]

We can start with the distinction between "signifying," "our correct and incorrect use of semantic and epistemic concepts in explicating what we are doing in natural language" (Sachs, 2019, p. 671), and "picturing," that is, "a theory of non-linguistic or non-linguaformal mental representations" (Sachs, 2019, p. 670; see also Sellars 1963, p. 50). Although controversial for some scholars,[37] this distinction has been endorsed by Huw Price as the basis for his own distinction between *i*-representation, that is, a "notion that gives priority to the internal functional role of the representation: something counts as a representation in virtue of its position or role in some cognitive or inferential architecture" (Price, 2013, p. 36), and *e*-representation, that is, "the environment-tracking paradigm of representation, dependent on such notions as covariation and 'indication relations'" (Price, 2013, p. 36), which are deemed mutually independent. Price exploited this distinction to denounce a conflation of these two concepts into a single notion in epistemology and semantics, diagnosing this as the source of current problems of representationalism in both fields. This conflation generates "placement problems" concerning the representationalist interpretation of nonfactual vocabularies, such as ethical or mathematical ones (and many others), which would lead to the postulation of ethical or mathematical facts (and many others) corresponding to the uses of such idioms (see Price 2011, p. 187). I think we can make an analogue suggestion about cognitive science. Here, we face two types of representations being conflated. One type comprises representations bearing semantic properties, typical of language and thought, that can be understood in terms of socio-linguistic norms (see below). The other type comprises representations of animal cognitive systems causally tracking/mapping the environment to be explained in terms of natural norms (see below), functions, and covariance relations.[38] The first concept is of interest for philosophers of mind and language, while the latter is a specific target of cognitive neuroscience. Hence, naturalistic accounts of representation should be understood as devoted to explaining representation in terms of picturing/*e*-representation and not the contentful kind of representation characteristic of discursive intentionality. Is it possible that this insight lies behind the idea of "basic minds" on the part of REC concerning the legitimacy of such low-level tracking/contentless cognition? This is a relevant open question, one that can in principle permit an entire rereading of REC.

To proceed along this path, we need a second Sellarsian distinction about normativity concerning a social type of norms, that is, those involved in making assertions/drawing inferences in the game of giving and asking for reasons (what Sellars called

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[36] This would be, in principle, a move similar to that made by Sachs (2019) about the discussion between cognitivism and predictive processing.

[37] Richard Rorty had reservations about it; see his introduction to Sellars (1997[1956]). Other reservations can be found in Brandom (2015, p. 13).

[38] Sachs (2019, pp. 678−81) makes a similar suggestion by talking of the "myth of the discursive given," that is, the idea that all representations are contentful.

"rule-governed behavior")[39] and a natural type of normativity (what Sellars called "pattern-governed behavior"): "[t]o learn pattern-governed behavior is to become conditioned to arrange perceptible elements into patterns and to form these, in turn, into more complex patterns and sequences of patterns" (Sellars, 1963, p. 327). If we admit this distinction as relevant for the kind of explanation that we may need in order to account for the two kinds of representation distinguished above, an intuitive option emerges. In principle, one could plan to functionally treat *i*-representation/signifying in terms of social norms, along (left-wing)Sellars[40]-Brandom-Price lines, while also admitting functional explanations of *e*-representations/picturing in terms of natural normativity (and covariance and tracking relations) along (right-wing) Sellars-Millikan-Dretske lines[41] but consciously renouncing to understand the latter as an explanation of "semantic" representations, as this would be *the* hypothetical conflation denounced above.

At this point, we need a third Sellarsian distinction concerning naturalism between the manifest image (MI) of man in the world as the conception in which we inhabit a life-world which comprises people, norms, institutions, etc. and the scientific image (SI) as the conception of reality revealed by current sciences together with a commitment to scientific realism (Sellars, 1963, Chap. 1). This distinction becomes crucial in the understanding of naturalism once we take on board the previous distinctions about representation and normativity. An account that proceeds along these lines was recently presented by Dionysis Christias, so I will sketch its main rationale to highlight the pivotal role this option can in principle play in these dialectics. Let us first go back to Sellars' images. Distinguishing the images was congenial to Sellars' naturalism, as he could say that, concerning description and explanation, science is authoritative (Sellars 1997 [1956], § 41). Outside description and explanation, we find other vocabularies and tasks characteristic of the MI in which our understanding proceeds in terms of social norms. Although this context, outside description/explanation, is often understood in anti-naturalistic terms, this is not mandatory. Price's (2011) "subject" naturalism can be understood as a liberal type of naturalism, as it defends the autonomy of the vocabularies and practices displayed by the MI. Because people are natural beings, we may consider their practices and rules as natural, approaching them from an anthropological perspective. Price opposes this liberalized form of naturalism to more reductive programs that he understands as belonging to what he calls "object" naturalism. Price rules out this bolder naturalism by rejecting its representationalist credentials. However, Price endorses subject naturalism and drops object naturalism, abandoning Sellars' attempt at fusing the images in a stereoscopic vision (see also Christias 2019, pp. 513−21). Therefore, Price's distinction is helpful only up to a certain point; it matters because it allows understanding the MI in somehow

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[39] Social normativity comprises "ought-to-do's" (rules of action), meaning deliberative norms about personal conduct, and "ought-to-be's" (rules of criticism) meaning firstly norms to assess other people's behavior: more generally ought-to-be's concern what ought to be in the actual world, e.g. "Clock chimes ought to strike on the quarter hour" or even in the behavior of animals, e.g. "These rats ought-to-be in state φ, whenever C". See Sellars (1969, pp. 508-09).

[40] Rorty distinguished between "leftwing" and "rightwing" Sellarsians to indicate the divide between normativist and naturalistic programs inspired by Sellars' work.

[41] Sachs suggests a similar idea (2019, p. 679).

naturalistic terms.[42] By offering many reasons to be unsatisfied with Price's naturalism, Christias reshapes the current issues on liberal naturalism by reading them in light of Sellars' images. This has become the basis of a two-tier naturalism based on Sellarsian grounds that is developed in dialogue with Price's view. I think a view like that can play a pivotal role here, opening interesting possibilities about the two types of representation that we distinguished thanks to Sellars and Price. This two-tier view is one in which liberal and scientific naturalism, with the right adjustments, "need not be seen as mutually exclusive positions" (Christias, 2019, p. 508). Let us first recapitulate the basic issues concerning scientific and liberal naturalism.

According to scientific naturalism "[t]he world consists of nothing but the entities and processes to which successful scientific explanations commit us" (Christias, 2019, p. 509). Christias exploits Price's discussion in order to present the representationalist presuppositions of this program as its Achille's heel; representationalist assumptions about the semantic role of concepts such as truth and reference create "problems about how to 'place' […] various normatively-laden 'objects', facts and properties […] within the natural world as construed by natural science" (Christias, 2019, p. 509). Placement problems push naturalism towards four potential exit strategies: (1) reducing normative facts/properties to non-normative ones; (2) eliminating normative facts; (3) endorsing some error theory for normative talk; and (4) understanding normative talk as expressive (non-descriptive/non-representational). Christias defines liberal naturalism as a reaction to the dissatisfaction with options 1–4. There are normative facts in our everyday experience that are irreducible to non-normative/natural facts, and this acknowledgment is the starting point of a liberal naturalist attitude that entails thinking about nature in ways that can be independent from scientific research.

Christias, who offers some remarks on Price's program understood as a type of liberal naturalism, offers a different way out by defending a robustly Sellarsian option. Rejecting representationalism does not entail abandoning scientific naturalism (as it does for Price). His idea is to look at the two images having already abandoned every commitment to representationalism (i.e. robust word-world relations). Representationalism is untenable because it entails placement problems across the board and because semantic word-world relations are too weak and contingent to appear in any tenable scientific view. As Christias remarks, scientific naturalism should commit us only to entities and facts "yielded via the a posteriori descriptive and explanatory methods of empirical inquiry" (Christias, 2019, p. 521). This means we are not entitled to representationalist word-world relations, which are not grasped by means of empirical inquiry (Price, 2013, pp. 13−4). Hence, we are free to detach a SI-scientific naturalism from its representationalist version to avoid the consequent placement problems and to better line up with empirical inquiry. Abandoning representationalism becomes the basis for another program, where both scientific and liberal naturalism lose old problems, gain new advantages, and become compatible with each other.

According to Christias, scientific naturalism should be liberated from the Sellarsian idea that scientific ontology purports "to be complete" (2019, p. 517). This would allow the irreducibility of normativity, also in a context of scientific naturalism. This depends on another Sellarsian idea, which is the restriction of the SI's ontological completeness

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[42] Christias (2019, pp. 527−29).

as involving "only the domain of empirical, matter-of-factual truths; it need not apply to other, normatively-laden dimensions of human life" (Christias, 2019, p. 517). Therefore, we can opt for a Sellarsian pluralism where there are different discourse domains (ethical, logical, etc.) that are not reducible to the SI, as they are "*not* in the business of describing or explaining the world" (Christias, 2019, p. 517). Therefore, *contra* liberal naturalism, Christias claims we need not restrict the understanding of normativity as a *sui generis* ontological realm; it "can be understood in terms of difference in semantic functional role and need not be ontologically reified" (Christias, 2019, p. 518). Consequently, social normativity is open to recognition "even from the standpoint of a strong scientific naturalism which asserts the ontological completeness and superiority of the scientific image in the dimension of describing and explaining matter-of-factual truths" (Christias, 2019, p. 518). Christias argues that eliminating representationalist commitments from our understanding of liberal and scientific naturalism becomes the basis of his two-tier naturalism:

(a) The (reformed) liberal naturalist view to the effect that every discourse that involves normative facts can legitimately be considered as truth-evaluable, constituting objective knowledge, having propositional content, and even as 'representing the world', in a *broad* sense of the term in which 'representing' is understood in terms of serving a *normatively-laden functional role* in an *inferential* network ('space of reasons' conception of representation). (b) The (reformed) scientific naturalist view to the effect that, in principle, it is only *scientific*-image truths and facts about *non*-normative entities that adequately 'represent the world', in a *narrow* sense of the term in which 'representing' is understood in terms of *environmental-tracking relations* (representation construed as a non-normative 'picturing' relation between an organism and its material and social environment) (Christias, 2019, pp. 524–25).

With all these distinctions in place, a number of accounts can count as live options in the debate, with the basic upshot of overturning H&M's perspective: semantic content is legitimate and belongs to the MI, and should not be conflated with what they call basic minds (i.e. *e*-representation/picturing). In fact, we can now save contentful representations as legitimate explanatory targets for the MI, while giving up reductive naturalism as a necessary methodological premise about genuine explanatory resources. Moreover, if we admit with Christias MI-liberal-naturalism among legitimate explanatory resources for content, we could explain the representational dimension of mind and language in non-representationalist terms, for example in terms of the proprieties of the use of words/concepts in our language games (i.e. in a Sellarsian fashion).[43] If we could do this, then we could save both the representational dimension of mind and language without violating the CDCC principle and avoid the dilemma denounced by Miłkowski as between representationalism and semantic nihilism.

Hence, if we follow Price (and Sachs and Christias) in reviving Sellars' distinction between signifying and picturing, if we distinguish between social and natural normativities, and if we follow Sellars and Christias (via Price) and admit degrees in the understanding of naturalism, we are in a position to appreciate some relevant implications. We

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[43] A prominent example is Brandom's inferentialism in which inference replaces representation in semantic explanation. The representational dimension of thought and talk (at least for ordinary empirical descriptive vocabulary) can be explained in terms of proprieties of inference in the game of giving and asking for reasons; see Brandom (1994).

can see that the fact that both Sellars and H&M established that covariance is not enough for content, in light of the other Sellarsian distinctions that we provided so far, opens the way to acknowledge a major conflation between two concepts of representation in cognitive science where theorists frustratingly attempted to understand two distinct kinds of representation—one semantic and one mapping/tracking—as the same thing. Acknowledging this can be crucial in the debates surrounding cognitivism and enactivism. Furthermore, if we take the discussions on the Given and on the HPC as supporting this view, the other distinctions concerning normativity and naturalism become relevant again, and the options provided by Price's subject naturalism and Christias' two-tier naturalism can play a pivotal role in the debate.

Declarations

Conflict of interest The author declares that he has no conflict of interest.

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