

# Misfiring: Tyler Burge *Contra* Disjunctivism

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**ABSTRACT:** Recently, Charles Goldhaber (2019) has argued that Tyler Burge's (2005, 2010, 2011) arguments against disjunctivism in the philosophy of perception fail when juxtaposed with the literature in perceptual psychology. In addition, Goldhaber traces Burge's motives for dismissing disjunctivism: his underlying theoretical assumptions *vis-à-vis* human rationality virtually force him to maintain that there is a genuine inconsistency between disjunctivism and perceptual psychology. While Goldhaber aims to defend epistemological disjunctivism *à la* John McDowell, my concern will be the other target of Burge's attack, namely John Campbell's (2002a, 2002b, 2011a) relationism. I will reexamine the Burge/Campbell debate concerning the role of perceptual psychology in theorizing about the nature of perception and the status of perceptual beliefs so that I can support Goldhaber's stance that Burge's plan to put the kibosh on disjunctivism backfires in the end. Finally, by using the challenge of cognitive penetrability, I show how Burge's argumentation strategy can be turned against him.

**KEY WORDS:** Cognitive penetrability, disjunctivism, perceptual beliefs, perceptual demonstratives, perceptual psychology, rationality, relationism.

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## Introduction

In a series of papers from 2005 to 2014, as well as in his landmark study *Origins of Objectivity* from 2010, Tyler Burge argues against the views in the philosophy of perception that are empirically uninformed, i.e., these views usually do not integrate experimental results stemming from perceptual psychology. Burge relies on two main argumentative lines. On the one hand, he maintains that views such as *disjunctivism* and *naïve realism* cannot incorporate findings pertaining to the perceptual processes of non-human animals and young children; but, on the other

hand, these views cannot account adequately for adults' sensory experience either since their experience gets overly intellectualized.

It is worth noting, however, that Burge's choice of terminology is rather peculiar for the mainstream philosophy of perception. According to his definition (2005: 2), disjunctivism entails that the process of perceiving two phenomenologically indiscernible objects is not grounded in *one common* perceptual state. Instead, this process is grounded in *different kinds* of perceptual states. He then goes on to define naïve realism as a view according to which veridical perception is explained through a relation between an object of perception, a subject perceiving that object, and nothing else (2005: 2–3). Naïve realism calls for disjunctivism when the task at hand is to explain illusory states such as hallucinations and optical illusions since the argument from illusion has played an important historical role in polishing naïve realism. Therefore, we can say that for a subject to be in an illusory state  $S_i$ , which is in every phenomenological aspect similar to the perceptual state  $S_p$ , amounts to having an odd experience of an object since *relata* in two cases are different, i.e., in the case of  $S_i$  there is no object in the external world to be perceived (Burge 2005: 40–41). It seems, therefore, that Burge considers naïve realism as being encompassed by disjunctivism, i.e., that disjunctivism is an umbrella term for a plethora of views, including naïve realism.

In this way, Burge paves the way for his view in the philosophy of perception, namely *perceptual anti-individualism* as running counter to disjunctivism and difficulties that naïve realism faces. Whereas disjunctivists individuate perceptual states by the objects of perception, perceptual anti-individualism, or externalism regarding perception, holds that perceptual states, endowed with non-propositional *representational content*, are individuated through causal relations between perceptual systems (human and non-human animals alike) and the environment (Burge 2010: 82–83). Representational content of perceptual systems is adjusted when such systems are successful in satisfying their most basic needs—e.g., quenching thirst, appeasing hunger, avoiding predators, etc. (Burge 2005: 6). This allows for the fallibility of perception: due to unfavorable environmental or neurophysiological conditions, it is always possible for a perceptual system to fail in perceiving an object as it really is. Thus, Burge has a *naturalistic* way of dealing with the argument from illusion, while this argument serves as the main challenge for *a priori* views such as naïve realism and disjunctivism.

However, not only that, by adhering to Burge's terminology, one could easily miss subtle distinctions between various versions of dis-

junctivism,<sup>1</sup> but one will also fail to appreciate well-elaborated and empirically entrenched naïve realist views such as Campbell's relationism. Additionally, disjunctivists, such as M. G. F. Martin, claim that disjunctivism is a theory that strives to preserve a naïve-realistic conception of veridical perception by successfully defending it from the argument from illusion and that disjunctivism's primary motivation for the defense of naïve realism reveals in the conviction that naïve realism is, in fact, the best position for describing how sensory experience seems to us before we construct a theory about it (Martin 2006: 354, 404). Thus, it seems that philosophers who accept disjunctivism consider this view as an instance of naïve realism. In other words, they use "naïve realism" as an umbrella term rather than "disjunctivism" as Burge does.

Nevertheless, for the sake of critically analyzing more salient features of Burge's argumentation, I will use Burge's terminology throughout the paper and consider Campbell's relationism as an instance of disjunctivism. In this sense, I will try to defend and evaluate Campbell's arguments running counter to Burge's accusations that disjunctivism is inconsistent with perceptual psychology. Following Goldhaber's recent criticism of Burge, which shall be tackled in Sect. 2, and which amounts to the claim that ultimately Burge's argument fails given that perceptual psychology individuates perceptual states at a different level of grain, so it has no bearing on truth or falsity of disjunctivism, I will turn to the Burge/Campbell debate in Sect. 3. My goal is to support Goldhaber's key claim by extending it to the case of relationism as well. Finally, I will provide an additional counterargument to Burge pertaining to the rationality of perceptual beliefs in Sect. 4. There, I will argue that not even his perceptual anti-individualism is safe from naturalistic counterattacks: not only that it is always permissible to adopt a different approach within perceptual psychology—e.g., Gibson's (1986) ecological or Noë's (2004)

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<sup>1</sup> Soteriou (2014) gives an exhaustive treatment of these versions, viz. *disjunctivism of fundamental kinds*, *disjunctivism of mental properties*, and *intentional disjunctivism* or disjunctivism of intentional, representational content. Goldhaber (2019) provides a brief list of recent works in philosophy of perception that cast the difference in perceptual kind to be either difference in *representational content* of perceptual states, or *phenomenal character*, or even *epistemological warrant*; and he focuses on vindicating McDowell's epistemological disjunctivism. M. G. F. Martin, one of the *maestri* in philosophy of perception, defends a position called *negative disjunctivism*. According to him, sensory experience in the case of a visual hallucination is not characterized by a *positive* type of mental state, but "[t]here are certain mental events, at least those hallucinations brought about through causal conditions matching those of veridical perceptions, whose only positive mental characteristics are *negative epistemological ones*—that they cannot be told apart by the subject from veridical perception" (Martin 2009: 301–302, my emphasis).

enactivist approach<sup>2</sup>—but one can draw on the cognitive penetrability of perception—an empirically investigated perceptual phenomenon that is compatible with such different approaches but incompatible with Burge’s theoretical commitments.

## 2. Goldhaber *Contra* Burge

The main reason why, according to Burge, disjunctivism clashes with perceptual psychology is that it fails to incorporate *the proximity principle*—a tacit principle that is present in causal explanations of perceptual states. Burge (2005: 22) describes this principle in the following way: “Holding constant the antecedent psychological set of the perceiver, a given type of proximal stimulation (over the whole body), together with associated internal afferent and efferent input into the perceptual system, will produce a given type of perceptual state, assuming that there is no malfunctioning in the system and no interference with the system.” In other words, the proximity principle states that perceptual states causally depend upon (I) proximal stimulation, i.e., immediate, direct physical stimulation of one’s sensory receptors; (II) internal input; and (III) antecedent psychological states. If there is a slight alteration in either (I), (II), or (III), the perceptual state will alter as well.

Recall that Burge endorses perceptual anti-individualism or externalism. This means that environment must be included in this causal chain behind perceptual states. The rapidly changing environmental conditions can provoke the same type of (I), which in turn means that the same type of perceptual state will be produced by (I).<sup>3</sup> Whether this

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<sup>2</sup> For instance, Beaton (2016) argues *pro* compatibility between naïve realism and sensorimotor theory of perception (which can be labeled as one of the Gibsonian approaches to perception) in the sense that naïve realism can become a scientifically tractable position in the philosophy of perception thanks to its marriage to sensorimotor theory. More recently, Carvahlo (2021) developed *ecological disjunctivism* to counterattack Burge’s criticism of disjunctivism by showing how disjunctivism can be grounded in Gibson’s ecological approach to perception. I thank the reviewer for pointing out these valuable references.

<sup>3</sup> Burge here admits that this constitutes the textbook example of underdetermination in perceptual psychology. Law-like patterns in perceptual psychology, which aim to establish the link between visual perception and the proximity principle, are underdetermined by a series of possible or actual environmental events that could be causally compatible with a given case of proximal stimulation (Burge 2009: 319, 2014: 368). The underdetermination in perceptual psychology gets solved by distinguishing patterns that are coded by varying, idiosyncratic sensory registration from those that are coded by *perceptual constancies*. For Burge (2009: 318; 2014: 399–400), perceptual constancies are vital for defining perceptual systems: a sensory system is perceiving an object  $x$  if and only if it is endowed with a capacity that enables that  $x$  is represented as one and the same despite variations in registered proximal stimuli. Note that this means that

case of perceiving can be deemed as successful (*viz.* veridical) or not depends on distal stimuli: if one fails to refer to the distal object, then one fails to perceive that object altogether. But, for Burge, this amounts to the empirical fact that one perceptual state can be both successful and unsuccessful given the context—which runs counter to disjunctivists’ intuition that the *kind* of perceptual state *cannot be the same* for the cases of veridical and non-veridical perceiving.

Goldhaber (2019) labels this line of argumentation as *Burge’s inconsistent triad*: from the (1) fallibility assumption, presented as an empirical fact, and (2) the proximality principle, along with (3) Burge’s definition of disjunctivism, the anti-disjunctivist conclusion follows. The disjunctivist now appears to be faced with two choices: either abandon his view in favor of Burge’s perceptual anti-individualism or bite the bullet and admit that disjunctivism is incompatible with perceptual psychology. The second choice would be detrimental for anyone seeking to provide an informative theory of perception since perceptual psychology “has become serious science[,] it has well-established results and successful application of mathematical methods” (Burge 2005: 9).

However, Goldhaber (2019) deems this inconsistency as only apparent: disjunctivism and perceptual psychology rely on different notions of successful perceptual states and, therefore, individuate different kinds, which entails explanations of perceptual states at a different level of grain.<sup>4</sup> In other words, perceptual psychology stays neutral about epistemic kinds, while disjunctivism is committed only to the claim that veridical and non-veridical perceptual states are different epistemic kinds rather than perceptual kinds. In the same vein, disjunctivism stays neutral about perceptual kinds: it can be made compatible with various research programs in vision science since there is no single correct individuation of perceptual states but a myriad of possible ways of individuation coupled with diverse commitments (e.g., with Gibson’s ecological approach to perception as in Carvalho 2021).

To illustrate the point, take, for example, the experiment with a visual cliff (Gibson & Walk 1960), envisaged for investigating depth perception

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Burge considers *representational minds* to be capable of perception constrained by perceptual constancies, and he urges that empirical research in perceptual psychology and zoology proves that perceptual constancies can be found all the way down to the level of *Arthropoda*, *viz.*, bees, spiders, shrimps, lobsters, etc. I will tackle the implications of these assertions in Sect. 4.

<sup>4</sup> Goldhaber’s primary goal is to defend epistemological disjunctivism; hence he makes room for maneuver by arguing that Burge’s definition of disjunctivism is ill-formulated and then proceeds to debunk the inconsistent triad. Nonetheless, I will not dwell on this part of Goldhaber’s argumentation, for the reasons I have already stated in the Sect. 1.

in children and animals. The visual cliff consisted of a transparent acrylic glass surface connected to an opaque checkboard patterned surface, and this construction is placed at least one foot above the floor, which is patterned in the same manner. The visual illusion of a cliff is thus created so that the child placed on the opaque end of such a construction would remain safe. The experiment proceeded in the following way: the caregiver stood on the transparent end of the construction and called over the child or tried to lure the child with a toy. Gibson & Walk hypothesized that children would be hesitant to crawl towards their caregivers if they could perceive depth since, in that case, they had already formed a belief that the transparent end of the construction is a cliff. *Mutatis mutandis*, if children were eager to crawl towards their caregivers, that means they could not perceive the apparent cliff. The results suggested that healthy children who are able to crawl, sit, or walk do perceive depth and therefore avoid the cliff despite reassuring themselves that the transparent end is solid by patting it.<sup>5</sup>

The experiment with visual cliff thus shows that researchers working in perceptual psychology intentionally elicit visual illusions so that they can dig deeper into perceptual phenomena, especially when subjects are not adults but animals and children. Their aim amounts to tracing the developmental path of various aspects of perception, establishing the link between perception and action, etc. Consider now philosophers who are working in the philosophy of perception. They aim to set criteria for distinguishing cases of veridical perceptual states from illusions and hallucinations, or in Burge's terms, to provide us with the analysis of the *epistemological* notion of successful perceptual states. I am not claiming here that philosophy should be or is usually done without regard to experimental results in relevant scientific disciplines – indeed, the more empirically informed analysis, the more applicable theory of perception becomes.

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<sup>5</sup> The subsequent experiments included subjects such as preterm infants, prelocomotor infants, rats, one-day-old chicks, adult chickens, kittens, pigs, dogs, etc., and results consistently showed that most of the species tend to avoid the cliff (for a historical overview, see Adolph & Kretch 2012). A recent study (Adolph, Kretch & LoBue 2014) has shown that infants as young as three months avoid falling-off places such as the cliff. Nevertheless, researchers behind this study doubt the supposed link between the fear of heights and cliff avoidance. They hypothesize instead that young infants respond flexibly to environmental challenges by registering the fit between novel surroundings and their physical abilities (Adolph, Kretch & LoBue 2014: 63). It is worth noting that this study is embedded in Gibson's ecological approach, which serves to show that perceptual psychology should not be regarded as monolithic scientific endeavor as Burge does by relying only on *one of several* research programs in perceptual psychology, namely the representational-informational or the Marrian approach to perception.

Nonetheless, I do think that Goldhaber has a point here—perceptual psychologists and philosophers have different aims, so they aspire to different explanations. Experimental results in perceptual psychology are neutral about the key theoretical commitments of philosophers, although when coupled with such commitments, they can make philosophical views more *nuanced*. At the same time, philosophers should be wary of the fact that every experiment is done within some broader research program, which has its additional commitments. The question then arises whether there are more ways of individuating kinds in philosophy than previously thought. The answer to this question also has a bearing on philosophical debates: how does debate proceed when the opponent’s view is entrenched in findings stemming from the rivalrous research program or backed up by different experiments or phenomena?

### 3. Campbell *Contra* Burge

In the present and subsequent sections, I will show how Burge’s perceptual anti-individualism can be attacked from two fronts. On the one hand, Campbell’s relationism is an equally empirically informed view and resists Burge’s arguments against disjunctivism. On the other hand, one can turn Burge’s arguments against disjunctivism towards his own position, thereby stripping his theoretical commitments from their conclusive argumentative force once when one invokes scientifically investigated perceptual phenomena such as cognitive penetrability of perception.

I will start with a brief sketch of Campbell’s relationism. This view is motivated by epistemological reasons since it aims to explain how sensory experience enables us to grasp the reference of perceptual demonstratives. The knowledge about demonstrative usage involves four distinct phases (Campbell 2010: 195–197): (i) the perceiver’s *awareness* directs her to a surrounding object (e.g., a pink candle), (ii) the perceiver grasps such an object as occupying a specific *position* in space (e.g., a pink candle on the table), (iii) the perceiver forms a *demonstrative statement* (e.g., “this pink candle”), (iv) due to the object identification in (iii), the perceiver’s motor system is thus being informed about the environment, and consequently, perceiver *acts intentionally* (e.g., lights the candle). However, for an intentional action to take place, a series of various information pertaining to the object of reference has to be processed, and visual science indicates that this information is processed in different flows (Campbell 2002b: 18). In other words, the task of our perceptual system

is to help in labeling the object via demonstrative reference, which is being enabled by distinct information processing flows.

This kind of task is also known as *the binding task* in visual science (Campbell 2002b: 29–30). Thus, Campbell backs up stages (ii) and (iii) with findings in visual science, which suggest that every demonstrative statement is grounded in *content* (e.g., “pinkness at the place  $p$ ”). Through the content, it is possible to locate the object on the cognitive map of the object’s properties (Campbell 2010: 196). This means that the *spatial parameter* is the primary *binding parameter* for linking perceptual states to objects, whereas binding parameters generally represent particular properties of an object that are being detected as easily distinguishable by our perceptual apparatus (Campbell 2002b: 31). In addition to the spatial parameter, a psychologically realistic philosophical account of object perception must take into account the *Gestalt organization*, which supports stage (i) of our knowledge about demonstrative reference (Campbell 2002b: 35). Particularly, information processing behind awareness impacts the perception of objects labeled by perceptual demonstratives by allowing the subject to track such objects through time (Campbell 2002b: 38). If the perceiver cannot track the object over time, then she cannot fix the reference of a perceptual demonstrative, i.e., she is unable to understand the meaning of a demonstrative statement in that case.<sup>6</sup>

Nonetheless, what grants the truth of demonstrative statements? Campbell’s “semantic anchoring” of perceptual demonstratives is closely tied to his relationism about perception, which states that the relation between the perceiver and an object is that of a *non-propositional acquaintance* (Campbell 2010: 197). Campbell is inspired by Bertrand Russell’s notion of *knowledge by acquaintance*—the capacity that is presumably more fundamental than propositional knowledge. Furthermore, he be-

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<sup>6</sup> Campbell does not discuss in detail either *Gestalt* principles (of proximity, similarity, figure-ground, continuity, closure, and connection), which supposedly determine how humans form perceptual states in connection with different objects in the environment, or the exact role of such principles in the formation of demonstrative statements. However, given the fact that *Gestalt* psychologists differ with respect to the origin of *Gestalten* (Rock 1975), i.e., they are either assumed to be fundamental properties of perceptual systems or heuristics based on our experience with general properties of the environment, one could argue that Campbell’s account suffers from the proliferation of demonstratives with overly fine-grained meaning. That is to say, if various properties of an object are individuated by tracking it through time, and if we tend to form perceptual patterns—or *Gestalten*—through our dynamic experience with the environment surrounding that object, then it seems that our awareness would chaotically roam over in order to fix reference that is at a more fine-grain level than it is needed for common social situations. In this sense, one’s perceptual system would turn out to be rather inefficient; therefore, the very notion of *Gestalt* organization deserves further elaboration on Campbell’s part.



believes that Burge's principle of proximity cannot put the non-propositional relation of acquaintance in jeopardy since this principle ought not to be considered a sufficient condition for ensuring the existence of perceptual objects in one's visual field. Moreover, what is guaranteed by Burge's principle is only that specific perceptual conditions correlate with specific stimuli (Campbell 2010: 203). It seems that Campbell purports to show that Burge's perceptual anti-individualism cannot provide us with a satisfying answer to George Berkeley's riddle regarding the possibility of mind-independent and unperceived existence. Berkeley's riddle amounts to the following question: if perceptual experience only reveals features of itself, how is it possible for it to ground our understanding and knowledge of mind-independent objects? In other words, nowhere in Burge's writings can we find out how our experience allows perceptual objects to be independent of our mental states (Campbell 2002a: 127–128). The account pertaining to the distinction between our sensations and how things "really" are is muddled if one takes the principle of proximity as the source of "objective" perception. Campbell maintains that relationism does have a straightforward answer to Berkeley's riddle due to the main component of his view, viz., a non-propositional acquaintance that directly connects the perceiver to the object.

This way of argumentation *contra* Burge may seem unconvincing at first glance: Campbell tries to discard the principle of proximity, arguably a tacit assumption of the rigorous science such as perceptual psychology, on the grounds that it clashes with a historically significant thought experiment. His next step is to establish relationism as a *better* account of perception. However, visual science does not incorporate anything similar to notions such as Russell's knowledge by acquaintance. Quite the contrary, the so-called Marrian approach to perceptual psychology on which Burge bases his perceptual anti-individualism takes the *propositional representation* as a primitive explanatory notion. Thus, it is tempting to press Campbell on this point and see whether he acknowledges that relationism is in conflict with visual science despite his attempts to trace cognitive mechanisms behind perceptual demonstratives.

Campbell defends relationism by arguing that as long as visual science does not have authoritarian pretensions to explain *all* perceptual phenomena and describe *all* perceptual mechanisms, Russell's notion of knowledge by acquaintance remains safe. Moreover, visual scientists cannot be justified in having such pretensions at all—virtually every scientific field is loaded with myriads of conceptual problems and experimental ambiguities (Campbell 2010: 205). It is possible to interpret Campbell's

defense along two lines. He could be claiming here that experimental results of visual scientists are good insofar as they suit his preferred theory of perception and account of perceptual demonstratives, but—when backed into the corner with the apparent empirical inadequacy of philosophical notions—he acknowledges conceptual limits of both experimental results and methods. But if this is the case, what is the purpose of invoking visual science in the first place?<sup>7</sup> I suggest a more charitable reading of Campbell—he might be adhering to the same claims as Goldhaber—albeit in a rather implicit manner. What follows from Campbell’s acknowledgment of the conceptual limits of visual science is, in fact, the neutrality of visual science concerning theoretical commitments that would be ready for incorporation into the *philosophical* account of perception. Along this very line of interpretation, Campbell is thus close to both my and Goldhaber’s way of building the case against Burge.

Burge criticizes Campbell’s account of perception on the basis that relationism must contradict common sense due to the rejection of representative content, which would, in turn, entail referential infallibilism. Without representational content, Burge does not see how one could make a much-needed sharp distinction between veridical and nonveridical perception. It is essential for Campbell to reconcile the following two intuitions, albeit without postulating the representative content: (a) the assertion about the perceptual object’s position can be false, and (b) perceptual demonstratives are not susceptible to the mistake of misidentification. Campbell (2002b: 91) henceforth argues that one can be mistaken only in the prediction of the location of the object of reference, not the identification of that very object. In other words, the perceiver who spots the position of, say, a pink candle, might be in an illusory perceptual state concerning the position in question, but what seems impossible is that she may have a *veridical* sensory experience about the position of *another* object, say, Christmas decoration, and then wrongly attribute the position of the latter to the former. Even when hallucinating, we are, according to Campbell, in a specific *perceptual* state, i.e., we do identify the perceptual object as being perceived since we are *acquainted* with it, although we wrongly predict the properties of a *non-existent* object *qua* non-existent object. Campbell thus shows how

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<sup>7</sup> I urge the reader not to be led astray by this metaphilosophical question for the time being and to acknowledge that both Campbell and Burge are naturalistically oriented analytic philosophers (I happen to share such an orientation, too). *Ipso facto*, they see the purpose in invoking relevant experiments in any scientific discipline: this has to do with empirically entrenching one’s arguments or strengthening one’s standpoint about some philosophical issue at hand.

one could solve Berkeley's riddle and maintain the difference between veridical and non-veridical perceptual states without representational content.

Another way of challenging Campbell's relationism has to do with Burge's (2010: 368–369; 2014: 402) doggedness to gather the case around the claim that the process of perceiving does not have to include awareness of attention at all—given the empirical findings of unconscious perception in bees and humans. However, Campbell points out that animals have practical interests and that “there is more to the world than the opportunities for action it provides to the jumping spider, but there is no reason to presuppose that the jumping spider represents any of that ‘more’” (2011: 274). Furthermore, he notes that the verb “see,” as it is used in everyday communication, has been shaped by our visual experience in such a manner that our usage of “see” is closely tied to our ability to imagine other people as having the same experience when similar conditions arise. This, in turn, suggests that our visual experience is inherently subjective, i.e., *qualitative*, and therefore presupposes conscious awareness of oneself and others (Campbell 2011: 277). Campbell offers an empirical entrenchment of his response to Burge, namely the two-stream model of neural processing of vision originally proposed by Milner & Goodale (1992). This model amounts to the distinction between the ventral and dorsal pathways of visual information in the cortex: the ventral pathway is responsible for processing the qualitative character of visual experience and identifying or recognizing perceptual objects, while the dorsal pathway is in charge of detecting the features of the environment (usually those that are essential for survival), as well as guiding action (e.g., avoiding predators, mating, etc.). Campbell (2011: 78) takes this model as a shred of evidence in favor of his claim that humans and non-human animals are endowed with qualitatively distinct perceptual states in the sense that the perception of former species relies on both pathways, whereas the perception of the latter species relies on the dorsal pathway, i.e., *detects* via senses rather than *experiences*. Campbell then argues that as long as Burge does not specify generic causal relations between humans or non-human animals and perceptual objects, one cannot aspire to formulate an adequate philosophical account of perception.

I shall put aside the assessment of Campbell and Burge's empirical *addenda* because, as Birch (2020) convincingly argues, invertebrate consciousness is a matter of stalemated philosophical debate that rests upon the vague methodology of addressing the issue of insects' mental

states. Nonetheless, I do notice that the background of their exchange of arguments amounts to the different views about the nature of mental states broadly conceived. While Burge is inspired by straightforward naturalistic and physicalist ambitions when formulating perceptual anti-individualism, Campbell is more inclined to a *qualia*-endowed mind, where *qualia* understood as intrinsic and non-representational properties of perceptual states. In any case, it is no wonder that Burge and Campbell differ with respect to the endorsed approach in perceptual psychology, as well as with respect to the choice of experimental results for supporting their respective theories of perception since the origin of their differences lies in the *metaphysical* realm of the nature of mind.<sup>8</sup>

#### **4. Other Means to Disarm Burge at High Noon: the Challenge of Cognitive Penetrability**

Goldhaber (2019) rightly points out that Burge's assumptions *vis-à-vis* human rationality virtually force him to argue for the inconsistency between disjunctivism and perceptual psychology since Burge thinks that perceptual warrant extends only to what is available to the organism, while the conditions for knowledgeable belief ascription extends to both physical and psychological laws and regularities that constrain the causal history of such an organism. However, it is worth noting that Burge (2011: 62) does acknowledge that perceptual beliefs may bring about knowledge in the perceiver as long as her psychological processes are triggered by ordinary circumstances, and she is endowed with a neurotypical perceptual and belief-forming system. The question that strikes me is the following: how Burge exactly plans to lay the groundwork for the rationality of perceptual *beliefs*, which are allegedly *propositional*, i.e., inferentially structured?

One could promptly come up with an option that is linked to his conviction that successful representation of perceptual objects amounts to *de facto* exercising of perceptual capacity. In *Origins of Objectivity*, he argues that perceptual attribution of properties takes place at the level

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<sup>8</sup> Note that while Goldhaber (2019) traces the origin of disagreement between Burge and McDowell in their epistemic motives pertaining to the question of whether perceptual capacity can provide sufficient warrant for knowledgeable belief ascription, Burge's disagreement with Campbell seems more substantive. Their disagreement indicates some *metaphilosophical* issues that are worth addressing independently, e.g., how to evaluate opposing philosophical arguments backed by distinctive experiments and fragmented facts about our cognitive or physiological setting, what is the exact role of such "experiment-dropping," etc.

of context-free identification of objects and that such capacity is indeed present in animals—unlike the “pure” attribution of properties, which is essentially the capacity to use properties not only for identification but also within appropriate content. Thus, it seems that rationality of perceptual beliefs comes in all shades: arthropods have it “less” (e.g., when a bee is successful in spotting the “right” flower to feed on its nectar, it forms a perceptual belief about the flower), but humans have it “more” (e.g., when I spot the pink candle I form a belief that it is not a Christmas decoration, since I consider only red candles as suitable for decorating the Christmas table). However, at the same time, Burge claims that “not all epistemologically relevant belief formation falls within a ‘space of reasons’[,] animals, young children, and many adults lack reasons for their perceptual beliefs. But they are often warranted in having them epistemically entitled to them” (2010: 435). In other words, young children, animals, and adults may have epistemic warrants since perceptual capacities are associated with norms of veridicality, which, in turn, grants grasping truth and obtaining knowledge. Furthermore, he claims that the perceptual capacities of arthropods can be explained without propositional elements, i.e., some animals may have propositionally inferentially structured perceptual beliefs, but essentially, these are not necessary to fully explain the functioning of perceptual systems of various animal *taxa*. Nonetheless, setting up veridicality conditions for distinguishing successful from unsuccessful perceptual states must be based on some sort of epistemic criteria, which, in virtue of being epistemic, hitchhike on some notion of rationality. Or, one could say that the epistemic success of accurate perceptual states is a mere product of teleological mechanisms rather than rationality, especially because it would be counterintuitive to attribute rationality to, say, arthropods.

This would, however, lead to confounding descriptive and normative levels of explanation of perceptual beliefs. Besides even if granted as a counterargument, this would not settle the issue that nowhere near is it evident how come that we have inferentially structured perceptual beliefs while arthropods have not, as well as what grounds veridicality conditions to be valid for each species and each epistemic situation. Burge rejects the idea that perception *per se* is propositional given that such a move would “hyper-intellectualize empirical warrant” (2010: 434), and the requirement to attribute perception to invertebrates and vertebrates alike forces him to envisage perception as *encapsulated* from higher cognitive processes (and indeed he does, see 2010: 101–102). However, two things

are not clear: (1) how to account for cases when perception is dependent on propositional states from cases when perception is dependent solely on accuracy conditions *and* to remain consistent in claiming that the warrant must not be hyper-intellectualized, and (2) whether both human and invertebrate perceptual systems are modular. This tacit assumption of visual modularity is in line with Burge's accepting the Marrian approach in perceptual psychology. The idea of visual modularity gained prominence in the 1980s due to Jerry Fodor's seminal book *The Modularity of Mind*, where Fodor incorporates David Marr's (1982) work on visual perception into a broader classical computationalist framework to which Marr himself was more than sympathetic.

The allegedly modular perceptual system—as conceived by Fodor and Marr—transforms registered signals into representations through a series of formal manipulations, which are informationally encapsulated, i.e., impenetrable to external information stemming from other mental processes. To borrow an illustration from Ophelia Deroy (2015), thus introduced modules are similar to tubes since nothing escapes before the output, and nothing gets in except input signals registered by our senses. Deroy (2015) also spells out the usual argument *pro* visual modularity, namely the argument from the speed of computational processing. For example, take the case of members of a particular species who need several minutes to spot a predator. Indeed, that species would become extinct in no time, so in order to survive, some species did, in fact, develop encapsulated and faster perceptual systems. In other words, *our* perceptual system must have evolved to being encapsulated, and this must have been selected as an optimal characteristic of our mind. The classical computational or Marrian approach to investigating perception, which Burge endorses, crucially depends upon the assumption of modularity and commitment to the representational content. Moreover, Burge would need an extra piece of evidence in favor of his account of the rationality of perceptual beliefs in order to avoid circularity coming from the overuse of posits, assumptions, and commitments of the Marrian perceptual psychology.

I will now proceed to offer counterexamples and arguments against the modularity of perception, and consequently, I will show that Burge has no “moral high ground” when trying to discard disjunctivism on the basis of inconsistency with perceptual psychology wrongly conceived as a monolithic discipline to which only his position aligns. If one sticks to his strategy of invoking empirically investigated visual phenomena *ad libitum*, then Burge's perceptual anti-individualism can be the next target

of the inconsistency accusation by pointing out, say, its incompatibility with cognitive penetrability of perception.<sup>9</sup>

Consider a rather popular example coming from the Hollywood hit *The Devil Wears Prada*. Here an eminent fashion magazine editor (played by Meryl Streep) scolds her personal assistant (played by Anne Hathaway), a freshly out-of-college journalist who is mostly clueless about fashion, for giggling during the fierce debate between the editor and her co-workers about the choice of the right shade of a belt for the upcoming fashion show thereby insinuating that the debate between fashion experts is ridiculous. The editor then points out to her assistant's sweater and angrily notices: "You go to your closet, and you select out, oh I don't [sic] know, that lumpy blue sweater, for instance, because you're [sic] trying to tell the world that you take yourself too seriously to care about what you put on your back. But what you don't [sic] know is that sweater is not just blue, it's not turquoise, it's not lapis [lazuli], it's actually cerulean."<sup>10</sup> The moral of this example is that, obviously, fashion experts, as well as other experts for whose competence such a sharpened perceptual capacity plays an important role (e.g., artists, architects, interior designers, etc.), are able to differentiate between many shades and hues of colors, as opposed to the untrained eye of a layperson. The reason for this lies in the fact that their perception is influenced by their semantic background knowledge and years of training.<sup>11</sup> Some authors

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<sup>9</sup> One of the anonymous reviewers was unsure why it would be relevant for Burge's rebuttal of disjunctivism that he makes a similar mistake in "some other part of his theory relatively unconnected with his critique." For my part, I am unsure how it could be irrelevant if one's theory of perception can also be considered inconsistent with at least one empirical phenomenon, while the main argument why one claimed that such a theory is better than a rivalrous one was that a rivalrous one is inconsistent with the whole empirical discipline as opposed to the defended theory which allegedly aligned perfectly with the said discipline. So far, disjunctivism has been defended in two ways: (1) by showing that it is *not incompatible* with Gibson's ecological approach to perception, which is a different research program within perceptual psychology than Marrian approach that Burge adheres to (Carvalho 2021), and (2) by arguing that it rests on a *different level of grain* with respect to the explanation of successful perceptual states than perceptual psychology, which is essentially *neutral* about the kinds of perceptual states (Goldhaber 2019). I offer another way of looking at this debate, namely (3) the whole strategy of deeming disjunctivism incompatible with the "scientific image" based on one's peculiar outlook on one empirical discipline can always be turned against the one who invoked such strategy, which in turn results in misfiring, i.e., missing the point of the debate.

<sup>10</sup> The complete scene is available on YouTube: <https://www.youtube.com/watch?v=Yj8mHwvFxC> (Accessed 10/29/2022).

<sup>11</sup> Historically, this sort of "expertise-based" example was advanced by Paul Churchland (1985, 1988), partially for the purposes of rebutting key ideas in Fodor's *Modularity of Mind*, and partially for vindicating his eliminative materialism from the resurgence of "qualia-based" accounts of the nature of mental states. His underlying motivation is, in fact, inspired by the plasticity of

(e.g., Burnston 2017; Vetter & Newen 2014; Siegel 2012, 2018) trace the reason for the asymmetry between shades and hues of perceptual capacities in the empirical thesis dubbed “the cognitive penetrability of perception” (from now on *CPP*).<sup>12</sup>

Supporters of the *CPP* stress that it is nearly impossible to draw a boundary between (a) perceptual states that are “sullied” by higher cognitive processes (e.g., reasoning) and mental states (e.g., beliefs) and (b) perceptual states that are allegedly free of such top-down influence. Therefore, in their view, cognitive content does shape<sup>13</sup> perceptual experience, and perception is not independent either from cognition or action.<sup>14</sup> Consequently, supporters of the *CPP* proceed to argumentation *contra* modular account of perception. It is worth noting here, however, that one of the founding fathers of cognitive science, Zenon Pylyshyn (1999), sought to reconcile the legacy of Fodorian modularity with the idea of

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the brain thesis, i.e., that neural networks have the ability to adapt, reorganize and transfigure in concordance with one’s experience with the external world. Interestingly enough, Churchland (1988: 168) criticizes Fodor’s idea of modular perception, almost anticipating Goldhaber’s arguments *contra* Burge: “His [Fodor’s] discussion serves more to muddy the waters than to clarify them, for even if the modularity/encapsulation thesis is correct – which almost certainly it is not – it contains no significant message concerning the traditional epistemological issues. It is, in short, a red herring.” Thus, both Churchland and Goldhaber deem their opponents’ empirically entrenched views as irrelevant to the epistemological (viz. philosophical) aspect of perception. Additionally, Churchland (1988) argued that observation is always heavily theory-laden, thereby paving the way for the contemporary philosophical defenses of the cognitive penetrability thesis.

<sup>12</sup> I owe the reader an important *caveat* here: I do not intend to enter the debate surrounding cognitive penetrability, but I suggest checking a recent paper by Cermeño-Aínsa (2020) where he tackles the issue of whether the debate has reached a dead end and provides a charitable account of both camps, as well as an extensive list of references.

<sup>13</sup> Burnston (2017) differentiates between the strong version of the *CPP* (in his terminological apparatus, “the internal effect view”), according to which a cognitive state penetrates a perceptual one if the presence of the former causes a change to the computation performed by the latter, thereby resulting in a distinct output; and between his “the external effect view.” Burnston’s view amounts to claiming that a cognitive state biases perceptual one towards any perceptual outcome without tokening perceptual contents. Furthermore, Siegel (2012) also advocates the causal relation between cognition and perception. I mostly remain neutral with respect to these details.

<sup>14</sup> I am aware that this way of explaining the *CPP* dangerously invokes the notion of action and, with it, the enactivist approach in perceptual psychology. Although I will not be defending nor addressing enactivism in this paper, it is worth noting that it is an almost intuitive step from the key enactivist idea that we “act out” our perceptual experience (see Noë 2004) to endorsing the *CPP* as well since cognition does govern action. However, one can be a proponent of the *CPP* without adhering to the enactivism *à la* Noë. I must also mention that the *CPP* can be incorporated into the predictive coding framework, a recently construed “theory of everything” in cognitive science (see Clark 2016), which is the fact that Siegel (2018) also notices, albeit only briefly in a footnote. This goes to show that any theoretical commitment of philosophers, no matter how empirically confirmed, is part of a richer theoretical nexus which, in turn, entails other ontological commitments.



*CPP* by considering only *early vision* as being impenetrable to cognitive factors, whereas the decision-making process—when the perceiver is in the position to recognize or identify patterns—could be penetrated by cognitive factors. In the case of expertise-laden perception, as in the example above, one could defend modularity-based *CPP à la* Pylyshyn by distinguishing causal from semantic influences and claiming that the development of expertise can causally change the behavior of a module resulting in different (i.e., expert) decision-making without involving the influence of belief content upon perception.<sup>15</sup> Nonetheless, this calls for a quite flexible understanding of modules, which, in turn, suggests that we could drop them from the equation altogether and focus solely on the causal relationship between perception and cognition. Thus, Petra Vetter and Albert Newen contend that “our visual experience is not the product of a bottom-up encapsulated modular process but the product of an embodied perception–expectation–action loop, which is implemented for a cognitive system by highly flexible multiple integrations of bottom-up and top-down processes” (2014: 64). Additionally, Vetter & Newen provide us with a plethora of studies in neuroscience, which seem to be empirically confirming the *CPP*. I will draw on one such study. Bannert & Bartels (2013) have shown that when subjects are shown images of typically colored objects (e.g., a yellow banana) in a gray monochrome, the fMRI codes their neuronal activity patterns, which indicates that the associated original color of the object triggers specific brain regions, i.e., the primary visual cortex. Therefore, it seems that background knowledge crucially molds our perceptual experience in the sense that even on a neuronal level, a specific corpus of beliefs may trigger our visual system to function contrary to the environmental settings (or experimenter’s expectations!).

So, how exactly does the *CPP* bears on Burge’s theoretical commitments, except for the fact that it obviously runs counter to the informationally encapsulated perception to which Burge seems to be adhering? In his most recent *opus magnum*, *Perception: First Form of Mind*, Burge explicitly rejects *CPP* by saying that he “understand[s] cognition to be a generic set of capacities that is *disjoint* from perception and perceptual-level capacities” (2022: 649) and “take[s] propositional representation to be at a different level from perceptual representation” (2022: 663). This is in line with his main point in *Origins of Objectivity*, where he claims that “perceptions are not propositional states[,] they do

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<sup>15</sup> I am grateful to the anonymous reviewer for this remark.

not constitutively involve capacities to engage in propositional inference, and their representational contents do not have propositional structure” (2010: 537). In this sense, perception is not rational in any way. In other words, for Burge, any attempt to give a computational explanation of a visual system (which is, by the way, a Marrian ambition *par excellence*) must “bracket cognitive causal antecedents” (2022: 742) and avoid any talk about rationality.

On the other hand, Siegel (2018: 154) argues that both perceptual experiences and the processes by which they arise can be either rational or irrational because they are to be considered *epistemically appraisable*, i.e., as having an epistemic status with respect to the rational or irrational process of formation. Thus, Siegel writes down that “a [perceptual] belief is ill-founded if it is formed or maintained irrationally, [and it is] well-founded if it is formed and maintained rationally” (2018: 157). The assumption of the *CPP* is evident in Siegel’s account of rationality of perception: perceptual experiences arise from inference; such an inference is a higher cognitive process that is susceptible to epistemic evaluation pertaining to the reasonableness of one’s actions and utterances and has a top-down influence on our ways of seeing other people, their deeds, and the world around us. Thus, the endorsement of the *CPP* allows one to account for the rationality of perceptual beliefs in an empirically entrenched way. This also provides means to differentiate between our perceptual beliefs and animal perceptual beliefs without relying solely on veridicality conditions of unspecified origin. In the case of animal perceptual beliefs, the propositional elements, i.e., the penetration of cognitive capacities, enters the scene only when such elements are present in relevant quality and quantity. In cases when they are lacking, the perception remains cognitively intact. However, *CPP* is well empirically documented for our species, and the burden of proof is left to Burge to argue why *CPP* does not undermine perceptual anti-individualism as being inconsistent with (some) empirical phenomena.

## 5. Conclusion

The main “prejudice” of the 20<sup>th</sup>-century analytic philosophy, which Burge calls *ontogenetic subjectivism*, or in his later works, *individual representationalism* (cf. 2010: 61–73), was that children and non-human animals are to be conceived as the prisoners of their internal subjective, prelinguistic world where differentiated objects and their properties are missing from the picture. Burge notes that those authors who supported such an image

of children and non-human animals' perceptual and cognitive capacities believed that "[...] the representation of the physical environment is intelligible only by reference either to construction in the individual's psychology of such representation from the more basic representation of particulars [such as sense data] or to the individual's having linguistic or conceptual resources that supplement perception by mirroring *general* conditions of objectification" (2009: 289). Contemporary views, such as disjunctivism, are prone to the same prejudice despite getting rid of the anachronistic sense data: these views intellectualize sensory experience in such a way that they ignore findings in perceptual psychology as well as demand that linguistic communication precedes the capacity for forming perceptual beliefs.

Quite the contrary, Burge claims that perceptual states have non-propositional representational content that is being tokened by specific causal relations that arise between the perceiver and the environment, while perceptual beliefs, which are conceived as propositional, may bring about knowledge in the perceiver as long as her psychological processes are triggered by ordinary environmental conditions and promulgate successful blending and survival in the environment. The main virtue of his perceptual anti-individualism is that both non-human animals and non-adult perceivers can be said to perceive the world in a specific way because he builds his view on the basis of experimental findings in perceptual psychology.

However, Charles Goldhaber (2019) has convincingly argued that perceptual psychology *per se* is neutral about the questions that concern philosophers, who aspire to a different level of grain than psychologists when it comes to explaining perceptual phenomena. The additional problem for Burge arises when one realizes that his account of perception heavily relies on one out of many research programs in perceptual psychology, namely the Marrian approach. Theoretical commitments of such an approach are quite costly, to name just a few vital ones: representational-informational conception of mental states, modularity along with the informational encapsulation of lower-level cognitive processes, etc. These commitments limit Burge's room for maneuvering: not only that his background motivation and philosophical standing with respect to the question of rationality dictate the choice of empirically tackled perceptual phenomena that refine his account for perception, but such a choice is always made in the broader context of a particular research program that brings extra commitments, which may clash with the underlying philosophical aspects of one's theory of perception.

My primary aim was to defend disjunctivism in two related ways: (a) I showed that Burge's inconsistency charge failed in the case of Campbell's relationism, and for that purpose, I revisited the Burge/Campbell debate so that I could support Goldhaber's vindication of the disjunctivism *à la* McDowell by expanding it on the alternative version of disjunctivism, and (b) I turned to the offensive strategy and built the case around the claim that his perceptual anti-individualism can also be liable to inconsistency charge from the perspective of empirically tackled phenomena such as the *CPP* thereby showing that Burge's inconsistency charge misfires in the end. My choice of this sort of perceptual phenomenon is motivated by the following important features of that phenomenon. Firstly, the *CPP* can be a part of different research programs within perceptual psychology; thus, I do not create an illusion that perceptual psychology is a monolithic scientific discipline. Secondly, the *CPP* exemplifies the point of convergence between philosophers and psychologists when it comes to the critical stance towards it—although it has been empirically tested, this phenomenon is still a matter of theoretical and methodological dispute between both philosophers and psychologists, especially because of the consequences which arise for the conception of rationality when one endorses the *CPP*. Such consequences run counter to Burge's underlying stance *vis-à-vis* rationality, while the very phenomenon puts the idea of an informationally encapsulated module for perceiving on thin ice.

Throughout this paper, I have not intended to convince the reader to form a belief that my choice of perceptual phenomena investigated within perceptual psychology is more "accurate" or more "scientifically salient"; instead, I wanted to illustrate that it is always possible to combine scientific insights and philosophical arguments in such a way that one's position *seems* more "accurate" or more "scientifically salient." Nonetheless, one should not forget that doing philosophy of perception in the tradition of analytic philosophy is a far more complicated endeavor than that, especially because opponents can always use different strategies for arguing and refining their arguments, thereby deepening conceptual problems pertaining to the perception. Furthermore, it is an open question whether a straightforward solution such a debate can ever have, whereas scientists could, at least in principle, aspire to such a solution thanks to their preferred methodology as well as their inclination towards coarse-grained explanations.<sup>16</sup>

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