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LOCAL SUPERVENIENCE, NAÏVE REALISM AND PERCEPTIONS: NAVIGATING NAÏVE REALISM TO DEFUSE SOLLBERGER'S CAUSAL ARGUMENT

*Superveniência Local, Realismo Ingênuo e Percepções:
navegando pelo realismo ingênuo para desarmar o argumento causal de
Sollberger*

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Resumo: Este artigo teve como objetivo fornecer uma discussão abrangente e uma análise crítica do trabalho de Sollberger, concentrando-se especificamente na premissa da "Superveniência Local" e explorando maneiras plausíveis pelas quais os realistas ingênuos poderiam contestar suas conclusões. Para alcançar esse objetivo, identifiquei e abordei criticamente três justificativas diferentes que Sollberger apresenta para esse princípio. Em primeiro lugar, critiquei o que chamei de "argumento do cirurgião", que apresenta razões para acreditar que alucinações são exclusivamente causadas por processos cerebrais. Argumento que esse argumento falha em reconhecer que a "suficiência" atribuída às alucinações diz respeito a alucinações concebidas em uma tipificação "neutra", não em sua tipificação específica "mental". Além disso, destaco que a possibilidade de alucinações e percepções correspondentes mina a suposta suficiência neurológica atribuída pelo argumento. Em segundo lugar, examino a intuição de Sollberger de que causas intrinsecamente idênticas deveriam resultar em efeitos intrinsecamente idênticos. Desafio essa noção enfatizando os papéis de fatores relacionais e ambientais, afirmando que as alucinações podem ser razoavelmente argumentadas como tendo conteúdos externamente individuados. Por fim, analiso criticamente o raciocínio de Sollberger para a tese de superveniência local, que deriva da ideia de que, em geral, as experiências mentais são exclusivamente causadas neurologicamente. Essa ideia é supostamente baseada na pressuposição metodológica da Ciência Perceptual e em descobertas empíricas sobre a relação entre mente e cérebro. Para contestar isso, forneço contraexemplos das Ciências Perceptuais que se concentram nas amplas interações do organismo com seu ambiente. Além disso, demonstro que observações empíricas possíveis sobre a relação entre cérebro e mente não são capazes de sustentar a ideia de exclusividade causal. Elas são igualmente compatíveis com hipóteses alternativas que permitem que Disjuntivistas expliquem causalmente as experiências.

Palavras-Chave: Realismo Ingênuo; Disjuntivismo; Argumento Causal; Superveniência Local. Sollberger.

Abstract: This paper aimed to provide a comprehensive discussion and critical examination of Sollberger's work, focusing specifically on its premise of "Local Supervenience" and exploring plausible ways in which naïve realists could counter its conclusions. To achieve this goal, I identify and critically address three different justifications that Sollberger presents for this principle. Firstly, I criticized what I term the "argument from the surgeon", which posits reasons for believing that hallucinations are solely caused by brain processes. I argue that this argument fails to recognize that the "sufficiency" it attributes to hallucinations pertains to hallucinations conceived in a "neutral" typing, not their specific "mental typing". Moreover, I highlight that the possibility of neurologically matching perceptions undermines the argument's purported sufficiency. Secondly, I scrutinize Sollberger's intuition that intrinsically identical causes should bring about intrinsically identical effects. I challenge this notion by emphasizing the roles of relational and environmental factors, asserting that hallucinations can reasonably be argued to have externally individuated contents. Finally, I critically analyze Sollberger's reasoning for the local supervenience thesis that stems from the idea that, in general, mental experiences are exclusively neurologically caused. This idea is purportedly based on the methodological presupposition of Perceptual Science and empirical findings about the relation between mind and brain. To counter this, I provide counterexamples from Perceptual Sciences that focus on the broad interactions of the organism with its

environment. Additionally, I highlight those possible empirical observations of the relation between brain and mind are not capable of supporting the idea of causal exclusivity. They are equally compatible with alternative hypotheses, allowing Disjunctivists to causally explain experiences.

Keywords: Naïve Realism; Disjunctivism; Causal Argument; Local Supervenience. Sollberger.

1. Introduction

The philosophical perspective on perception, commonly referred to as “Naïve Realism” is frequently asserted to possess several advantages over its primary counterparts, particularly Sense Data Theory and Representationalism. Firstly, it is argued to align with our everyday conceptions and intuitions about perceptions¹. Secondly, it is purportedly consistent with introspective data regarding perceptions². Thirdly, it is said to provide an account for knowledge of the external world³. Fourthly, it is claimed to explain demonstrative thought⁴. Fifthly, it is suggested to elucidate the conception of mind-independent entities⁵. While this list is not exhaustive, it sufficiently illustrates why delving into Naïve Realism is a meaningful undertaking.

Notwithstanding these benefits, naïve realism has been subject to historical criticism and continues to face various challenges. In particular, what are termed “causal arguments” — wherein unfavorable implications for naïve realism stem from causal considerations, especially by their shared neurological antecedents with hallucinations — have been identified as the most formidable threats to naïve realism in the past two decades⁶.

The “Causal Argument” presented by Michael Martin in “The Limits of Self-Awareness” has indeed attracted significant attention. It continues to be scrutinized, with persistent efforts to discover ways for naïve realists to counter its premises⁷. Yet, there is available another version of the causal argument, by Michael Sollberger’s, which is

¹ MARTIN, M. “The Transparency of Experience”. In: *Mind & Language*, New Jersey: n.1, 2002, pp. 376-425.

MARTIN, M. “The limits of self-awareness”. In: *Philosophical Studies*, New York: n.3, 2004, pp. 37-89.

CRANE, T. “Is There a Perceptual Relation?”. In: GENDLER, S. & HAWTHORNE J. (Eds.). *Perceptual Experiences*. Oxford: Oxford University Press, 2006, pp. 126-146.

FISH, W. *Perception, Hallucination, and Illusion*. Oxford: Oxford University Press, 2009.

² CRANE, T. “What Is the Problem of Perception?”. In: *Synthesis Philosophica* Zagreb: n.2, 2005, pp. 237-264.

NUDDS, M. “Recent Work in Perception: Naïve Realism and its Opponents”. In: Oxford: *Analysis*, n.2, 2009, pp. 334-346.

HILL, C. *Consciousness*. Cambridge: Cambridge University Press, 2009.

³ MCDOWELL, J. “Putnam on Mind and Meaning”. In: *Philosophical Topics*, Fayetteville: n.1, 1992, pp.35-48.

MCDOWELL, J. “The Disjunctive Conception of Experience as Material for a Transcendental Argument”. In: HADDOCK, A., & MACPHERSON, F. (Eds.), *Disjunctivism: Perception, Action, Knowledge*. Oxford: Oxford University Press, 2008, pp. 35-56.

⁴ CAMPBELL, J. *Reference and Consciousness*. Oxford: Oxford University Press, 2002.

CAMPBELL, J. “Consciousness and Reference”. In: MCLAUGHLIN, B, BECKERMANN, A & WALTER, S (Eds.). *The Oxford Handbook of Philosophy of Mind*. Oxford : Oxford University Press, 2009.

CAMPBELL, J. “Visual Attention and the Epistemic Role of Consciousness”. In: MOLE, C, SMITHIES, D & WU, W (Eds.). *Attention: Philosophical and Psychological Essays*. Oxford: Oxford University Press, 2011, p. 323.

⁵ BREWER, B. *Perception and its objects*. Oxford: Oxford University Press, 2011.

⁶ SOTERIOU, M. *Disjunctivism*. New York: Routledge, 2016.

SOTERIOU, M. “The Disjunctive Theory of Perception”. In: ZALTA, E. (Ed.) *The Stanford Encyclopedia of Philosophy*, 2020.

FISH, W (2010). *Philosophy of perception: a contemporary introduction*. New York: Routledge.

⁷ LOGUE, H. “Good News for the Disjunctivist about (one of) the Bad Cases”. In: *Philosophy and Phenomenological Research*: Hoboken, n.1, 2011, pp. 105-133.

MORAN, A. “Naïve Realism, Hallucination, and Causation: A New Response to the Screening Off Problem”. In: *Australasian Journal of Philosophy*, Sydney: n.2, 2019, pp. 363-382.

MORAN, A. Disjunctivism and the Causal Conditions of Hallucination. In: *Erkenntnis*: Dordrecht, n.1, 2022, pp. 1-24.

IVANOV, I. “Bad to the bone: essentially bad perceptual experiences”. In: *Inquiry*, London: 2022, p.1-22.

developed in three articles from, respectively, 2007, 2008 and 2012⁸, although less explored in the academic discussion, deserves closer examination. For, not only it relies on prima facie plausible premises, but also it was thoroughly developed, offering a compelling case and a pertinent discussion of its premises and motivation, as I will discuss. In special, it is mostly supported by a principle – named “Local Supervenience” – which can be seen as highly plausible and whose resistance (by naïve realists) should be, therefore, thoroughly justified.

The present article aims to fill this gap in the specialized academic literature by offering a comprehensive discussion and critical examination of Sollberger’s work, with special regard to the above-mentioned principle. Specifically, I will endeavor to demonstrate several plausible ways in which naïve realists could counter its conclusions.

2. MENTAL TYPES, NAÏVE REALISM AND DISJUNCTIVISM.

To critically evaluate Sollberger’s argument, I will first present essential background information about the particular perspective on Naïve Realism and Disjunctivism employed in the argument. This exposition is vital for understanding the argument’s target and the specific conclusions it seeks to reach, thereby facilitating a comprehensive analysis of its premises⁹. This becomes particularly relevant due to the varied definitions of naïve realism¹⁰ (MACHADO, 2023).

In the first place, it is important to note that Sollberger assumes that the philosophical discussion on sensory experiences involves a special class of properties, namely mental types. In this context, the mental type F being x’s (where x is a sensory experience) necessitates that x’s being F completely determines – and constitutes – x’s phenomenal character¹¹. On this account, theorists of perception (such as Naïve Realists, Sense-Data theorists, to cite the theories that are most relevant in contemporary literature) posit an intrinsic type of mental kind that is responsible for how things seem, from a subjective point of view, for someone having an sensory experience.

Naïve Realism is defined as the theory of perceptual phenomenology that posits that the mental types of veridical perceptions necessitate the subject’s acquaintance with environmental entities. Therefore, if your current experience gives the impression that there is a white rectangle (with small letters) in front of you, it is because you have become acquainted with your laptop and its relevant features. Alternatively, Sense Data Theorists would explain the same phenomenological fact by appealing to your supposed acquaintance with mental images, whereas Representationists would attribute it to a putative representational state (with specific perceptual content) that you are in.

However, this perspective on mental types does not extend to hallucinations, as hallucinations can occur in the absence of the relevant objects. This circumstance “commits them [naïve realists] to endorsing a form of disjunctivism about perceptual experiences”¹², implying the notion that hallucinations possess a mental type essentially

⁸SOLLBERGER, M. “The Causal Argument against Disjunctivism”. In: *Facta Philosophica*, Rome: n.1, 2007, pp.245-267.

SOLLBERGER, M.. “Naïve Realism and the Problem of Causation”. In: *Disputatio*, Lisbon: n.3, 2008 1-19.

SOLLBERGER, M. “Causation in Perception: A Challenge to Naïve Realism”. In: *Review of Philosophy and Psychology*, Dordrecht, n. 3, 2012, pp. 581-595.

⁹ Although it is plausible that the argument can be easily adapted to target other formulations of Naïve Realism.

¹⁰ MACHADO, Í. “What Does it Mean to be an Ontological Naïve Realist?” *Philosophia*, Dordrecht: n. 4, 2023, pp.2035-2063.

¹¹ In the context of mental events, “phenomenal character” refers to the subjective qualities or “what-is-likeness” inherent in mental events, aiming to capture the nuanced and qualitative dimensions of consciousness. This approach focuses on elucidating not only the objective components of mental events but also the unique, first-person perspective, exploring the rich tapestry of feelings, perceptions, and subjective qualities that contribute to the overall character of an experience (CHALMERS, D. “Perception and the fall from Eden”. In: GENDLER, T & HAWTHORN, J (Eds.). *Perceptual Experience*. Oxford: Oxford University Press, 2006, pp. 49–125.).

¹² SOLLBERGER, 2012, p.583

distinct from the one in perceptions¹³. The exact mental type Naïve Realists should attribute to hallucinations remains a matter of intense debate¹⁴.

3. AN OVERVIEW OF SOLLBERGER'S CAUSAL ARGUMENT AND THE PRINCIPLE OF LOCAL SUPERVENIENCE.

With this understanding, we can now explore Sollberger's argument itself. His first premise is the principle that hallucinations are (in his words) "locally supervening" or, for short, the principle of local supervenience. This tenet posits, in essence, that there exists some causal stimulation of someone's brain that is "minimally sufficient" for inducing a hallucination¹⁵.

Certainly, to grasp the meaning of the principle and its underlying motivations, an examination of "...is minimally sufficient for..." is required. In Sollberger's framework, this predicate consists of two distinct notions: "sufficient" and "minimal".

In many places, Sollberger makes it clear that "minimal" only means "alone"¹⁶. So, the relevant stimulus is without anything else sufficient for the hallucinatory event.

Comprehending the relevant concept of "sufficiency" can be challenging due to potential ambiguity in the term "suffices for inducing a hallucination". However, Sollberger provides clarification by specifying that this relationship exists between types of events. He specifically addresses a distinct kind of "sufficiency": type-sufficiency between certain intrinsic types of brain processes and specific mental types (recall the definition of "some event's mental kind" given above), particularly those associated with hallucinations. Formally, he articulates that "if a C-type proximate neural cause is minimally sufficient for a particular M-type mental effect on a given occasion, then, *ceteris paribus*, an M-token occurs whenever a C-token occurs"¹⁷. Thus, while a conventional interpretation of the proposition that neuronal processes are sufficient for inducing a hallucination implies a specific "token" sufficiency, where the stimulus-token in the subject's brain would always be accompanied by the same hallucinatory token, as far as Sollberger's argument is concerned, it pertains to the type of events (a mental type of hallucinations) that consistently arises when a specific kind of neuronal stimulus occurs¹⁸.

The initial premise of the argument contends that these distinct types of neuronal stimuli alone suffice to generate the mental characteristics of a hallucination. This notion encapsulates the concept that hallucinations are causally supervening.

As a second premise, one recognizes that perceptions could arise from the same neurological causes as hallucinations. This stems from the straightforward fact that the process linked to your current perception (the visual experience you are presently having while reading this paper) could be precisely and entirely reproducible even in the absence of a causal chain (for example, if it were artificially induced by a highly skilled surgeon). As a consequence of the sufficiency outlined in the principle of local supervenience, perceptions must, therefore, share the same mental kind as hallucinations.

However, this, on its own, does not logically necessitate that naïve realism is false. Advocates of naïve realism could still assert that, in addition to the mental kind shared with hallucinations, perceptions possess an exclusive mental kind, involving awareness of some mind-independent thing. Nevertheless, this possibility is considered untenable, as this aspect, deemed special and unique to the good case by naïve realists, is

¹³ SOLLBERGER, 2007, p.245-6

¹⁴ MARTIN, 2004, 2006.

JOHNSTON, M. "The obscure object of hallucination". In: *Philosophical Studies*, Dordrecht: n.3, 2004 pp.113-83.

FISH, 2010, 2011.

LOGUE, 2011.

¹⁵ SOLLBERGER, 2007, p.250-3.

SOLLBERGER, 2008, p.4-7.

SOLLBERGER, 2012, p.588.

¹⁶ SOLLBERGER, 2007, p.252.

¹⁷ SOLLBERGER, 2012, p.586

¹⁸ SOLLBERGER, 2007, p.252.

explanatorily ‘screened off’ concerning explaining the conscious aspects of veridical seeing¹⁹. In other words, the mental property attributed by naïve realists to perceptions becomes explanatorily redundant and unnecessary, prompting, from an abductive standpoint, its abandonment.

As the idea that perceptions could share the same neurological processes as hallucinations aligns with abductive observations and seems plausible, the primary target for resistance by naïve realists – and the focus of my critical analysis – is the principle of local supervenience.

Notice that, in the explanation of the local supervenience principle, I did not show the specific reasons offered by the argument to adopt this idea. In fact, there are three distinct reasons that I have identified across Sollberger’s work to do so. In each of the subsequent sections, I will reconstruct each of these justifications and then demonstrate the potential ways naïve realists could challenge them. This exploration, by showing that the local supervenience principle is unmotivated, is where, I submit, lies the adequate ways naïve realists should resist Sollberger’s Causal Argument.

4. THE ARGUMENT FROM THE SURGEON.

One initial rationale presented by Sollberger to advocate for local supervenience, which appears in his three articles about the Causal Argument, is articulated as follows:

Data from neurobiology strongly suggest that a neurosurgeon can possibly evoke multi-modal hallucinations in a subject S which are subjectively indistinguishable from corresponding veridical perceptions (see Bickle & Ellis 2005). The neurosurgeon may achieve this through suitably performed artificial micro-stimulation of S’s brain. If so, appropriate causal stimulation of S’s brain turns out to be a minimal sufficient condition for a particular hallucination (h) to occur. Let us suppose that S hallucinates a red apple in front of her and this adequately characterizes the what-it-is-likeness of S’s hallucination. Importantly, this kind of awareness involved in hallucination narrowly supervenes on S’s total brain state, for it fails to depend on currently present worldly objects. That is to say that the occurrence of h requires no more than S’s brain being in a certain state. In brief, h is an intra-mind affair²⁰.

The most plausible interpretation of the possibility that lies behind the supervenience principle, in this view, is a scenario wherein an exceptionally skilled surgeon induces hallucinations “whenever she wants”, solely through electric stimulation, regardless of external circumstances. Whenever one stimulates the cortex in the right place, a (same type) hallucination would consistently accompany it, independently of how the external world is. These scenarios would imply, according to the present reasoning, that hallucinations do not require anything beyond that stimulation to occur²¹. The reasoning could concurrently extend to the notion that the same surgeon would be unable to execute a similar procedure when attempting to evoke a veridical perception, as it necessitates external conditions like the presence of a specific environmental object – a criterion that the surgeon may not be able to fulfill, despite her exceptional abilities with the electrode.

Therefore, the reasoning would continue, and we can thus conclude the thesis that neuronal factors are indeed sufficient for bringing about hallucinations, which is essentially the local supervenience thesis. However, despite its prima facie plausibility, I submit that naïve realists can relatively easily demonstrate why this reasoning fails.

First and foremost, it’s crucial to recognize that the description of the neurosurgeon scenario relies on the *neutral concept of “hallucination”* (and “veridical

¹⁹ SOLLBERGER, 2012, p.584.

²⁰ SOLLBERGER, 2008, p.4.

²¹ SOLLBERGER, 2012, p.588.

perception”). (This concept is the one ordinarily used by proficient English speakers in their daily discourse when purporting to refer to experiences of hallucination.) For, its observations are explicitly restricted to the free induction of *hallucinations* — not, for example, things of type M, where M is the mental kind disjunctivists attribute to hallucinations (although interpreting the argument from the surgeon in this way will be approached at the end of this section).

Another way to support this observation is to consider that, although the surgeon's case is based on wrong intuition, as I show in the next paragraph, it can be accepted by theorists with varying perspectives on the nature of experiences, even if they hold contradictory conceptions of the mental properties of experiences, as both representationists and naïve realists (genuinely impressed by the argument) might do. In fact, even a doctor or a neuroscientist without knowledge of the Metaphysics of Experiences could, in good faith, arrive at the same conclusion. All one needs to grasp, in order to perform that reasoning, is the possession of the relevant concepts and a broad, empirically-based comprehension of how one can induce hallucinations in the real world. This suggests that if there is an experiential type involved in the evocation of these scenarios, it is not one with specific philosophical import, as “mental types” would entail.

That being said, we can identify the flaw in the Argument from the Surgeon. The aforementioned “neutral” concepts of perception and hallucinations are mutually exclusive. In this context, it is plainly impossible to acknowledge a set of brain types that is truly sufficient (in the relevant sense) for causing hallucinations while also acknowledging that perceptions and hallucinations can share the same set of types of brain processing. Whatever is sufficient for hallucinations must exclude what is necessary only in cases of veridical perceptions (such as having a specific distal kind of causal chain, etc.). Contrary to our initial intuitions, there cannot be an internally cerebral kind of event whose instantiations always cause hallucinations (at least not ones we are willing to posit as also being sufficient for causing perceptions).

The issue with interpreting the argument from the surgeon in this manner is that one cannot assume hallucinations consistently occur in the presence of a certain type of brain process, *irrespective* of the corresponding environmental factors. If a sensory event is caused by a neuronal factor B and B is generated through the traditional non-deviant causation process (which, for example, starts with light emitted from objects in the environment, striking one's retina, etc.), then that event is not a hallucination²². Instead, it would be a perception, and being a perception excludes it from being classified as a hallucination, in the relevant “neutral” sense. This amounts to saying that B is not truly sufficient for causing a hallucination. Therefore, contrary to what the example from the surgeons suggests, the absence of specific external factors, especially certain types of distant causation, is part of what is sufficient for inducing hallucinations. This implies that there is no general regularity between pure brain processes and hallucinations. Consequently, one cannot extract from it the relevant principle of local supervenience.

At this point, someone could argue that I am not providing a charitable interpretation of Sollberger's argument from the surgeon. In this sense, one might contend that the surgeon scenario is not meant to illustrate that hallucinations (i.e., something that has the “neutral” property of being a hallucination) only require neuronal stimulation, but rather, more directly, what the example suggests is the instantiation of the hallucination's mental property (regardless of what it is exactly).

The problem with this suggestion is that, without any additional assumptions, the present argument lacks the evidential resources to derive that something like *the mental property* of a hallucination, regardless of what it is, is sufficiently generated by mere neuronal factors. Suppose, for example, that, for purely philosophical reasons (say,

²² GRICE, H. “The Causal Theory of Perception”. In: *Proceedings of the Aristotelian Society, Supplementary*, Oxford: n.1, 1961, pp.121–168.

BROAD, C. *Lectures on Psychical Research: Incorporating the Perrott Lectures Given in Cambridge University in 1959 and 1960*. London: Routledge, 1962.

based on traditional reasons for adopting Representationalism, along with arguments relying on adaptations of Putnam's twin-earth thought experiment²³⁻²⁴), one thinks that hallucination's mental properties are perceptual contents that are externally individuated, as suggested by Schellenberg²⁵. According to this view, necessarily, there are environmental facts that are dependent on the things being represented in some particular way. In this case, mere brain stimulation would not be enough to generate these contents.

Note that the scenarios with the surgeon, however, are not incompatible with their causal hypothesis. For nothing in the set of possibilities of artificially evoking hallucinations contradicts that these events, for example, vary with regard to their mental properties, e.g., according to differences in past experiences (that explain, for instance, why you hallucinate *your mother*, but why not your envatted twin, who plausibly only hallucinates a woman with such-and-such corresponding physical attributes, does not). In other words, the fact we can induce hallucinations through brain stimulation tells us nothing about their specific properties or the nature of hallucinations, other than, at most, their phenomenology or relevant indiscriminability property. In this case, they are plainly non-directive of multiple theories about mental properties.

This is enough to demonstrate why the local supervenience principle cannot be warranted by the argument from the surgeon. In Section 6, I will show, more generally, why empirical evidence is unable to support this kind of assertion.

That said, Sollberger himself appears to (somewhat) recognize this, as in all of his papers on the causal argument, he delves into additional reasons for embracing the concept of local supervenience. The issue, however, is that across the three relevant articles, he provides essentially different support for this proposition. The first article differs from the others in the supplementary justification for the idea of local supervenience. In the following discussion, I will attempt to analyze and scrutinize all of them.

5. 2007 VERSION OF SOLLBERGER'S SUPPORT FOR LOCAL SUPERVENIENCE: The billiard case.

In the first paper, Sollberger (2007) presents a reason why we should adopt the perspective that hallucinations are locally supervening. According to him, this is based on "[r]esearch in [...] [Physics that] shows that a theory of causation should stick only to local causation and thus exclude the possibility of action at a distance"²⁶. To exemplify and justify this seemingly empirically-motivated constraint, he presents a specific pair of cases, the billiard-cases, which are described as follows:

There are two billiard balls left on the pool table [...]. Ball₄ has been hit by ball₃, meaning that the impact of ball₃ is causally sufficient for the actual position of ball₄. The position of ball₄ can thus be causally explained by its being hit by ball₃. This causal story is about impact, trajectory, impulsion, speed, constitution of the surface etc. All these data figure in the causal description in order to explain the position of ball₄. Hence we describe intrinsic properties of ball₃ and ball₄ [...] [T]he fact that there may be an audience watching the billiard game [...] is irrelevant for the causal description. The key idea is that once the entire description is available, we dispose of a causally sufficient explanation of why ball₄ is located where it is.

²³ PUTNAM, H. "The Meaning of 'Meaning'". *Minnesota Studies in the Philosophy of Science*, Minnesota: n.1, 1975, pp. 131-193.

²⁴ Or Tyler Burge's arthritis thought experiment. BURGE, T. "Individualism and the Mental". In: *Midwest Studies in Philosophy*, Minnesota, n.4, 1979, pp. 73-121.

²⁵ SCHELLENBERG, S. "The particularity and phenomenology of perceptual experience". In: *Philosophical Studies*, Dordrecht: n.1, 2010, pp. 19-48.

SCHELLENBERG, S. "Perceptual Particularity". In: *Philosophy and Phenomenological Research* Dordrecht: n. 1, 2016, pp.25-54.

SCHELLENBERG, S. "The generality and particularity of perception". In: *Mind & Language*, New Jersey: n.2, 2022, pp. 235-247.

²⁶ SOLLBERGER, 2007, p.255.

Now, the player has to drive ball₄ into the right upper pocket of the pool-table to win the game. As illustrated, this task can be done quite easily by the player. At present, consider [...] [that] [b]all₃ and ball₄ are still in the same position, but this time there are two more billiard balls on the pool-table, namely ball₁ and ball₂. Let us assume that ball₁ hit ball₂, ball₂ in turn hit ball₃ and ball₃ hit ball₄ exactly as described in figure 1. Therefore, ball₃ and ball₄ are at the same positions as [...] [in the first situation]. So the two games have a partly overlapping causal history. In particular, the causal description explaining the location of ball₄ is type-identical in both figures. It is crucial to notice that the additional presence of ball₁ and ball₂ does not have to appear in the causal description under the heading of relevant background conditions, for they are not relevant for what happens between ball₃ and ball₄. If our causal protocol starts with ball₃'s moving, thus abstracting from the antecedent events, then we have type-identity of causal processes²⁷.

The first part of this quotation essentially refers to an event (the spatial position of ball₄) that can be explained solely by its proximate cause (ball₄'s being hit by ball₃). As one would anticipate within a causal generalistic framework²⁸, he discusses the properties of the causes (and the entities they involve) that contribute to the explanation of that effect. According to Sollberger, these include intrinsic properties of the particulars involved and the corresponding events.

The second part of that quotation evokes a parallel situation, presenting an event with the same explicatively relevant properties. According to some generalistic framework, this event must generate a cause of that same kind (corresponding to ball₄'s being in the same spatial position). However, in this case, the *causal* event is stipulated as being, in turn, previously caused by some other events involving different things. In this new case, more specifically, the facts corresponding to this previous causation (some other ball hitting ball₃) are, like the facts corresponding to the move being watched, explanatorily irrelevant for ball₄'s spatial position. This does not mean, Sollberger continues, that they are not explanatorily relevant whatsoever, since “[i]n order to do full justice to [‘explain’] the potential of ball₄, one has to describe its situation in relation to the other balls. Otherwise, one lacks the descriptive means for listing all the maneuvers ball₄ can potentially be used for”²⁹.

In Sollberger's discussion, this pair of billiard cases is analogous to the pair of perception and hallucinations with the same neurological antecedents. In this sense, we can infer that they fall under a same higher-order causal principle, which says that given such-and-such type of properties that are the same between two or more causes, we should expect such-and-such type of effects. In this case, Sollberger's strategy would resemble Howard Robinson's principle named “Same Causes, Same effects”³⁰. Therefore, to make the invocation of the billiard case useful for these purposes, one needs a plausible and more general causal principle that allows us to infer that the relevant type of neurological process (one that is compatible with constituting the total causation of perception) is sufficient for some mental type of hallucination.

However, it is not immediately clear which exact kind of types this analogy attempts to reference, such that the types of one member of the pair (whether in the billiard ball pair of cases or in the perception/hallucination pair) are considered analogous. Moreover, it remains unclear what kind of type qualifies for such a transference in the first place. Although not explicitly articulated, Sollberger, throughout his exposition, provides resources that could aid in formulating a corresponding interpretation.

²⁷ Ibid, p.256.

²⁸ In this case, one assume what is known as “the causal view on hallucinations”, Sollberger (2012, p.586) concedes that his position relies on the “generality of causation”, a stance he deems “highly plausible”, positing that causation involves typological patterns in all concrete instances of causation.

²⁹ Ibid, p. 256-7.

³⁰ ROBINSON, H. *Perception*. New York: Routledge, 1994.

This can be achieved by considering, in the first place, the properties that Sollberger thinks need to be common between the billiard balls in the thought experiment shown above. Sollberger claims that, in the first billiard case, “the intrinsic properties of ball₁ which our protocol sufficiently describes in causal terms are still the same as in [...] [the first billiard case]”³¹. However, its relational properties have changed considerably³². So, the outcome of these intrinsically identical events (in this case, the hitting of one ball onto the other) would have to possess equally intrinsic properties, such as impact, trajectory, impulsion, and speed, etc. This allows, however, extrinsic, or relational, properties to vary between these cases, depending on how the environment (which includes distal causation) is.

Similarly, just as the same “action potentials going on [in some specific way] in the fusiform face area”³³ would occur as causes in the second pair of events, we should expect that the corresponding effects would be intrinsically identical, although they could vary with regard to relational properties, such as their cognitive or epistemological aspects. This means that whatever is intrinsic should be identical across experiences caused by intrinsically identical brain processing. Therefore, the intrinsic aspects of brain processing should be sufficient for the intrinsic aspects of hallucinations. As I showed in Section 2, the mental type of some event is deemed one of its intrinsic properties. Consequently, intrinsic aspects of specific mental processing should be sufficient for the instantiation of the hallucination’s mental type, which corresponds to the idea of local supervenience.

Despite the initial plausibility of this argument, naïve realists have ample reason for not accepting the necessity of such a transference. The first objection that disjunctivists will raise is that it is simply incorrect to assume that, in general, two intrinsically identical causes (understood as mere causal events and not necessarily as total causation) will always generate two intrinsically identical effects. The presence or absence of an environmental factor can completely change the outcome in many cases. In other words, the determinative work that causes (conceived as a simple event) do is not necessarily sufficient for a specific kind of effect. The background conditions such as the causal event is in may be equally relevant for generating a specific type of effect. To illustrate using Sollberger’s own example, the mere movement of ball³ can cause it to hit ball⁴ only in the presence of ball⁴. In its absence, it would lead to an intrinsically distinct event, such as a subsequent free movement. Thus, the principle “same intrinsic cause, same intrinsic effect” as a general causal principle is simply incorrect, even when considering real-world examples³⁴.

Another problem is that the present argument assumes that hallucinations’ causation involves exclusively a specific kind of brain activity. This assumption may be a result of the common belief in contemporary philosophy that disjunctivists can only be, when it comes to hallucinations, either Sense-Data theorists (non-externally individuated) or traditional representationists, who think that perceptual contents are internally

³¹ We may consider intrinsically identical events as involving intrinsically identical entities changing in the exact same way.

³² SOLLBERGER, 2007, p.257.

³³ Ibid. p.249.

³⁴ When talking about the consequences of naïve realists considering perceived objects(which, according to naïve realists, must be also constituents objects of the perception) Sollberger (ibid, p.262) thinks that “the problem is that a token of a mental state essentially depends on a physical item that is, at the same time, also the causal initiator of a causal chain that brings about this very token of mental state. Such a kind of constitutive dependence is unavailingly sought for in the rest of the physical realm. So it becomes after all natural to expect that whatever the naïve realists’ theory of causation turns out to be, it must significantly differ from standard theories of causation that focus on the purely physical realm”. Here, Sollberger’s confusion between events and the corresponded involved objects takes a more dangerous step. For, of course, although *causes* cannot compose corresponding *effects*, there is no problem in supposing (as his own original billiard case shows) that the object involved in some cause is also the object involved in the corresponding effect.

individuated³⁵. However, this dilemma is, at least in the current stage of philosophical discussion, fundamentally inaccurate. As I evoke when discussing the surgeon's case, content theorists about hallucination may have plausible reasons (like any content theorist) for adopting an externalist view. In this case, assuming that mental events bear externally individuated content and are caused, the only option is to reject the idea that mere neurological causation can produce these contents.

Additionally, one could contend that the mental properties of hallucinations are not intrinsic. Thus, even if one grants the transmission of intrinsic properties between events of intrinsically identical causes, what is necessitated by the brain processes may not pertain to the relevant mental property. Some examples of this theoretical stance are already present in the literature. For instance, Michael Martin suggests that we can conceive of them as negative and cognitive properties (that which corresponds to the subject's inability to distinguish it from a perception of the same things)³⁶. William Fish, on the other hand, proposes understanding them as properties corresponding to having certain consequences (that a perception of the same things would have)³⁷⁻³⁸.

6. 2008 AND 2012 REASONS FOR ADOPTING THE LOCAL SUPERVENIENCE PRINCIPLE.

At this juncture, it is crucial to observe that in subsequent articles, Sollberger significantly refines the formulation of the earlier causal principle (derived from billiard examples). He presents a more sophisticated rationale for adopting the supervenience thesis, which offers a comprehensive determinative/explanatory framework for mental experiences, encompassing both causal and non-causal factors, that entails this principle. We can encapsulate this framework in a few key principles.

As the initial facet of this determinative framework, it is asserted that “mental typing is [always] at least in part a causal matter”³⁹. This implies that, for all mental events, or at least all phenomenal events *e*, *e*'s cause is responsible for at least some of *e*'s properties' instantiations. According to Sollberger, this is merely a consequence of the general accounts of causation and the fact that mental events are caused. Consequently, for all sensory experiences, at least some of the properties they instantiate are accounted for (or “typed” by) the corresponding causes. Naturally, considering general causation, this presupposes that each of these causes has a kind whose instantiation always results in effects of those same kinds.

In the context of this explanatory framework, such determination allows for the possibility of supplementary forms of generalistic determinations (“mental typing”), at least in certain cases. Therefore, there might be properties in some mental events that can be explained in a non-causal manner. As a result, “there may be non-causal constitutive conditions for the occurrence of certain perceptual types of mental effects”⁴⁰. For instance, as I will elaborate on, Sollberger's current determinative framework is compatible with a specific (non-deviant) kind of causal chain making perceptions involve acquaintance with mind-independent things, even though it cannot negate the concurrent causal determination by neurological processes.

³⁵ Differently from Putnam's (1975) famous slogan, one does not need to accept that contents themselves are (somehow) extra-dermal. Davidson (1987), for example, makes sense of relation that “externalities” hold between contents (according to externalists) as only externally-dependent (i.e., the content have to be in a world/situation, etc. where the relevant environmental aspects exist). See DAVIDSON, D. “Knowing One's Own Mind”. In: *Proceedings and Addresses of the American Philosophical Association*, Washington: n.3, 1987, pp. 441–458.

³⁶ MARTIN, 2004, 2006.

³⁷ Given that these properties can belong to the relevant type, we can also consider functionalist properties as candidates for such a class. For functionalist perspectives on hallucinations, refer to, for instance, VELMANS, M.; SCHNEIDER, S. (Eds.). *The Blackwell Companion to Consciousness*, Maldon: Blackwell Publishing, 2007 or THOMPSON, E.. *Waking, Dreaming, Being* New York: Columbia University Press, 2015.

³⁸ FISH, 2009.

³⁹ SOLLBERGER, 2012, p.586.

⁴⁰ SOLLBERGER, 2012, p.585.

Another tenet within Sollberger's comprehensive causal/determinative framework is a refinement of the earlier notion. It suggests that whatever actually causes (in the aforementioned generalistic sense, while also excluding other forms of determination) mental events is confined to within the organism's skin. The rationale behind adopting such a restrictive perspective on the causation of phenomenal experiences is that it is

in line with the working hypothesis currently applied by the cognitive sciences and the neurosciences, for empirical researchers pay attention to local causation and internal states of the subject and do not seriously pursue the possibility of direct action at a distance in their explanations (see Gazzaniga et al. 2002: ch. 5 & 6). That is, a well established method of current scientific practise is to assume that perceptual states causally depend on proximate stimulations and internal input, such that the causal effects of distal causes are completely accounted for by their proximate causes⁴¹.

Note that the assertion is not merely that action at a distance cannot occur in the causal interaction between the brain and mind but also that "[t]he causal work is exhausted by what happens locally between"⁴² immediate neurological causes and the resultant mental effect. Thus, according to this perspective (total) causes involving environmental elements are deemed unacceptable for the mental realm. In the realm of mental events, only brain causes are considered, with any additional determination relegated to a non-causal nature. Consequently, the fact that one is acquainted with a specific mind-independent entity cannot be *causally* determined.

From these two principles, we deduce that for every mental event *e*, *e* has a purely local cause *b*, such that *e* instantiates a property (or set of properties) *E* and *b* instantiates a property (or set of properties) *B* in such a way that *B*s always cause some *E*. Currently, Sollberger's goal is to assert that some hallucination's *mental property* (or something necessitating it) is solely accountable through (neurological) causation (i.e., there is no additional kind of determination making a contribution here), i.e., the principle of local supervenience⁴³.

Even if we were to accept that science truly provides a reason to believe that, for all phenomenal events, the causal work (understood in the relevant generalistic fashion) is limited to what occurs in the neurological realm, there is still a need to justify that, at least for hallucinations, the mental property (or some property whose instantiation necessitates it) is the specific target of this determination. Otherwise, disjunctivists who accept Sollberger's causal constraints could argue, for example, that the mental properties of hallucinations are explained by an additional kind of determination (leaving for the causal work the determination of other properties of hallucinations, such as those that naïve realists believe are common across all matching experiences)⁴⁴. Thus, even if naïve realists were to accept these determinative ideas (which is not a mandatory stance, as I will show), Sollberger still needs to make further assumptions⁴⁵.

⁴¹ Ibid, p.586-7.

⁴² Ibid, p.587.

⁴³ This is not an observation that Sollberger himself made, but it seems obvious that the sufficient properties in the brain causes should be intrinsic ones. Of course, if we were to admit things like "being in the presence of some environmental thing that is in this specific way," that restriction would become irrelevant.

⁴⁴ Or, perhaps we can acknowledge that they do not have a specific determination, as not all property instantiations (like the "property" of being such that the Earth is round).

⁴⁵ Another reason not to immediately consider hallucinations as necessarily internally individuated is that even contemporary perceptual psychology does not seem to necessarily do so. Gibson (1955, 1968, 2015) regards hallucination in negative terms, as a type of environmental maladjustment where the available information is inadequate, preventing the pickup of environmental invariants. See GIBSON, J., & GIBSON, E. "Perceptual learning: Differentiation or enrichment?". In: *Psychological Review*, Washington: n.1, 1955, pp. 32–41. GIBSON, J. "New reasons for realism". In: *Synthese*, Dordrecht: n.1, 1967, pp.162–172; GIBSON, J. *The ecological approach to visual perception*. New York: Psychology Press, 2015.

Sollberger, however, appears to have a rather restrictive view on (causal and non-causal) determination, especially when it comes to mental or phenomenal events, based on whether they are internally or externally individuated. This makes the conciliatory view idealized in the paragraph above seemingly impossible. Firstly, and quite naturally, Sollberger contends that externally individuated episodes cannot be solely determined by neurological factors. According to this notion, if an episode is externally individuated, then, in addition to the necessary neurological causal determination, it should also be determined by something external. Given that the causal work must be performed only by neurological facts, the supplementary determination must be of a non-causal nature, as per Sollberger's argument.

[t]he externalist framework of naïve realism has it that the perceptual mind is not in the head (cf. McDowell 1992: 36). Perception [according to naïve realists] necessitates the interaction of a broad intricate network that comprises both S and S's environment. If so, then it seems natural to suppose that the artificial stimulation of S's brain state does not have to give rise to exactly the same mental effect h as in genuine perception; after all, brain-activation constitutes just one single piece within this broad, complex network⁴⁶.

Therefore, Sollberger's stance on the overall scenario of externally individuated events would permit naïve-realistic perceptions (which are obviously externally individuated) to be non-causally determined by the environment. Consequently, the argument does not necessarily require a supervenience principle that outright rules out Naïve Realism.

On the other hand, his general determinative picture sees internally individuated events as lacking any kind of non-causal determination. If they are determined at all, then it must be by those exclusively internal factors⁴⁷.

All that being said, Sollberger's reasoning to derive the local supervenience principle in his 2008 and 2012 work unfolds as follows: given that hallucinations are internally dependent events, the only determination available to them is under the person's skin.

Of course, there is an essential typological discussion about what it mean for an event to have the "same immediate cause" as another one and, on the other hand, about what kind of type-sameness such a causal sameness guarantee between the corresponding effects (regardless of supplementary determinations). The first question is easier to answer. For, in the texts from 2008 and 2012, we lack any reason to think that Sollberger

Even from a computational perspective, it is debatable whether hallucinations have externally individuated contents or not. Burge (2005, p.55), for example, believes that "[t]here is no getting back from the fact that basic kinds in perceptual psychology are intentional or representational. Commitment to representations (and representational contents) marking perceptual abilities is deeply embedded in the theory's objectives, methods, and explanations," and his view of "content" is clearly of a partially external nature. Since a consequence of the Proximity Principle is that perceptions and hallucinations can share the same content (where he believes the incompatibility of disjunctivism and perceptual science lies), we can conclude that perceptual psychology considers hallucinations to have externally individuated contents, which can also be argued as their mental properties. See Burge, T. "Disjunctivism and perceptual psychology". In: *Philosophical Topics*, Fayetteville: n. 1, 2005, p.1-78; BURGE, T. *Foundations of Mind*. Oxford: Oxford University Press, 2007; BURGE, T. *Origins of Objectivity*. Oxford: Oxford University Press, 2010; BURGE, T. "Disjunctivism again". In: *Philosophical Explorations*, n. 1, 2011, pp. 43-80.

⁴⁶ SOLLBERGER, 2008, p.7-8

⁴⁷ Exegetical support for the assertion that Sollberger believes internally-individuated episodes are necessarily merely internally caused (not determined otherwise) can be found in certain passages in the papers from 2008 and 2012. For instance, he states that the principle that the same brain process will always bring about "same" mental events (which he attributes to Robinson) "rests on internalist intuitions" (ibid, p.262) (an idea that would not be accepted by naïve realists concerning veridical perception in the first place). This inference allows us to conclude that, among internally-individuated mental episodes, this principle is valid, and thus, "type-identical" causes would always bring about "type-identical" mental events. Given the generalistic presupposition regarding causal determination and the plausible absence of some supplementary internal non-causal determination in those cases, the natural position is that such type-sameness of effects is solely due to the type-sameness of causes.

changed the relevant interpretation in relation to that in the text from 2007. So, again, we are authorized to take two intrinsically identical brain processes (each immediately causing some mental event) as “same immediate causes” (in relation to the respective mental events).

As with virtually every form of causal argument that try to transfer (or “spread”⁴⁸) the philosophically relevant properties of hallucinations to perceptions, the real issue is about the properties that we have to see as being the same across effects of same immediate causes. In order to make Sollberger’s argument sound, we need to find a particular-universal function R, such for every two things (x and y, where x is uniquely determined by its cause, but y can be additionally determined) of same causes (in the above sense), the Fs that relates-R to x are also instantiated by y. Surely, delimiting R for present purposes is not a trivial task. For, there are several kinds for which disjunctivists are happy to attribute commonalities across matching perceptions and hallucinations. Plausibly, they are even required to do so⁴⁹. So the argument needs an R such that there are some properties that relates-R to a hallucination whose instantiation necessitates the instantiation of the mental property of this hallucination.

Unfortunately, Sollberger never provided an explicit account of what to expect when some mental event shares the same neuronal cause (even though they have distinct supplementary determinations). However, there are some “hints” throughout the articles that can guide us in interpreting this aspect. The most decisive one stems from Sollberger’s belief that among internally individuated mental events, the slogan “same proximate causes, same immediate effects” holds true. Consequently, if two hallucinations (which are considered to be internally individuated) have the same proximate causes, then they are also considered “the same”. Given that this type-sameness is entirely accounted for by the relevant causal sameness, and considering the type sufficiency of causes, these causal properties will consistently bring about the instantiation of the properties that categorize the two hallucinations as “the same.” Any possible supplementary determination (or other factors in particular cases) cannot override the corresponding property instantiation. In this context, considering the possibility of perceptions sharing “the same” proximate neurological causes as hallucinations, these properties will also be instantiated by these veridical episodes. The conclusion is that perceptions are at least partially the “same” as hallucinations.

Here, there can be some uncertainty about what it means to be “the same effect” (as in the case of two hallucinations with “the same causes,” according to the principle endorsed by Sollberger). Unfortunately, Sollberger did not feel the need to provide an account in this direction. In such a case, we are once again exegetically justified in interpreting “sameness” (or “type-identical”) in the case of causes to mean the same thing as “sameness” when it comes to effects. Therefore, the universal-particular relation that will define the properties that will be forcibly shared between events with “the same immediate causes” is the one corresponding to “...is an intrinsic property of...”.

If my interpretative work is correct, then the central causal principle present in Sollberger’s argument is that for every internally individuated mental event e, which is neurologically caused by some brain process with intrinsic properties B, then for whatever x whose neurological causes instantiate B, x has e’s intrinsic properties (although not necessarily in an exhaustive fashion).

⁴⁸ Types of arguments that imply the transfer (or ‘spreading’) of a metaphysically (or explanatorily) relevant property from hallucinations to perceptual cases are typically classified, following Snowdon’s definition, as the “Argument from Hallucination.” This type of argument is characterized by such a “spreading step” from the definition of a “base case” of the metaphysically relevant property in hallucinations. See SNOWDON, P. “How to interpret direct perception”. In: CRANE, T. (Ed.) *The Contents of Experience* New York: Cambridge University Press, 1992; SNOWDON, P. Some Reflections on an Argument from Hallucination. *Philosophical Topics*, Fayetteville: n.1, 2005, pp.285-305.

⁴⁹ Considering that one have to account for the “common property” (the one that defines “matching” perceptions and hallucinations) across perceptions and hallucinations.

In fact, this principle, once it entails the Local Supervenience thesis (considering the idea that mental types are, in general, intrinsic), can constitute a valid argument entailing that the mental property of hallucination (at least if it is intrinsic in relation to it, which, as pointed out, is not a mandatory option) has to be instantiated by some veridical perception. Nevertheless, there are at least three other assumptions in this reasoning that are particularly questionable to naïve realist disjunctivists.

Firstly, recall that Sollberger assumes that all causal work concerning phenomenal events is carried out solely by neurological factors, leaving no room for environmental entities to contribute to total causation along with brain processes. In this case, the most readily available response to most forms of causal arguments – appealing to the non-necessary status of complete causes in relation to the relevant mental effects for brain events – would not be applicable in this version of the argument.

For this premise, Sollberger only mentions the current activity (and “focus of”), findings, and presuppositions of perceptual psychology. Surely, as Tyler Burge quite rightly remarks, perceptual psychology is a “serious science” and has “well-established results”⁵⁰. “Thus, any philosophical thesis that conflicts with the findings or foundational assumptions of perceptual psychology may appear poorly informed or arrogantly anti-scientific, and false either way”⁵¹. However, it is not clear how the current – or even the possible – findings of perceptual psychology support it (or at least the causal tenet that partially entails it).

Note, in the first place, that the present proposition is one about the exhaustiveness of a type of thing in fulfilling a particular (causal) function. I will first review what kinds of things science can support by itself (without having to explicitly rely on, for example, any philosophical assumption). Then, I will check whether this kind of methodology can indicate something like that causal exclusiveness.

As Burge acknowledges, the methodology of Perceptual Psychology uses as raw material introspective conscious reports of human individuals⁵². However, according to this view, Perceptual Psychology not only theorizes about the phenomenal life of individuals but also tries to integrate “ordinary, conscious perceivings and misperceivings by individuals into a system including non-perceptual states and processes; and it explains, in systematic, mathematized ways, how these perceptual states are formed and affect other states”⁵³. For example, a hypothesis in computational theories of perception is that unconscious “retinal” representations are computed (according to some lawlike quasi-generalization, which Burge calls “biasing principles”), forming (objectified⁵⁴) ordinary perceptual representations⁵⁵. In a broader sense, encompassing what is now known as “Neurosciences”, we can consider the nervous system, its structures, and the processes in which they are involved, either indirectly through imaging or through direct observation, as possible scientific data.

Now is an opportune moment for someone aiming to challenge Sollberger's internally-restricted claim by incorporating ecological approaches to sensory experiences into the discussion. Recall that Sollberger emphasized the need to adhere to the “working hypothesis currently applied by neurobiologists; they pay attention to local causation and internal states and do not pursue the possibility of action at a distance in their explanations”⁵⁶. The existence of a well-established scientific field, Ecological Psychology, where scientists—contrary to Sollberger's assertion — focus on the broader interaction

⁵⁰ BURGE, 2005, 2011.

⁵¹ GOLDHABER, C. “Does perceptual psychology rule out disjunctivism in the theory of perception?” In: *Synthese*, Dordrecht: n.8, 2021, pp. 7025-7047.

⁵² BURGE, 2011, p.67.

⁵³ *Ibid.*

⁵⁴ *I.e.*, those in which one perceives things as the same as things or properties in other (previous) representations.

⁵⁵ MARR, D. *Vision*. Stuttgart: W. H. Freeman, 1982.

PALMER, S. *Vision Science: Photons to Phenomenology*. MIT Press, 1999.

PYLYSHYN, P.. *Things and Places: how the mind connects with the world*. Cambridge: MIT press, 2007.

⁵⁶ SOLLBERGER, 2008, p. 586-7.

between the organism and its environment⁵⁷. Those perspectives “propose to construe cognition not as something that happens only inside our brains but as involving constitutively the interactions of the organism with its environment and as giving a fundamental role to its body in organizing and structuring the perceptible world”⁵⁸. This suggests that arguing for relevant causal exclusivity, at least based on the reasons Sollberger presented, might be imprudent. The considered data and the corresponding explanations of Perceptual Science are not necessarily restricted to local factors.

Indeed, even computational approaches to sensory perceptions do not unequivocally prioritize neurological factors, as Sollberger suggests. There is a lack of consensus on the nature of the types attributed to sensory experiences in current science. For instance, two primary interpretations of the contents assigned by computationalism to perceptions exist. Fodor⁵⁹ contends that all computation deals with non-semantic (“formal”) properties, which could be viewed as separating intentionality from psychological classification⁶⁰. Conversely, many philosophers assert that computation occurs between intentional states. Disagreements arise concerning whether these states (as understood by science) are/have to be externally-individuated⁶¹ or internally-individuated⁶². Notably, a significant portion of the current philosophical understanding of computational views assumes that they posit externally individuated contents. Therefore, it is challenging to see how scientists positing representational states dependent on environmental entities exclusively focus on “local causation”. Consequently, Sollberger cannot rightfully conclude that the only causes of phenomenal events are local based solely on current scientific practices and postulations.

Nonetheless, challenging Sollberger's actual justification for the relevant causal restriction is not the primary strategy that disjunctivists may want to employ against Sollberger's causal argument. There is a line of thought that maintains that even if science explains everything it does by examining what occurs inside the brain, we would not be entitled to conclude that all causal processes pertaining to phenomenal events are confined to what is under the organism's skin. Here, the resistance is directed toward what empirical research can reveal about the kinds that disjunctivists attribute to sensory experiences and the corresponding (causal and non-causal) determination. If this reasoning is accurate, then disjunctivists may not need to be concerned about Sollberger's causal argument, irrespective of what science may reveal in the future.

By making this point, I do not mean to claim that there is no case at all where empirical methodology cannot indicate causal exhaustion between two kinds of things. For example, imagine that we 1) observe (in the traditional way, where we are unproblematically authorized to inductively infer that one kind of thing causes another) that F-events are always followed by G-events, in such a way that 2) among all these F-events, there is variation of supplementary properties (that are not metaphysically necessitated by F), and without any indication that there is any property in them (other than F) that is causally linked to some other property in Gs. In this case, there seems to be no problem in concluding that Fs are the only causes of Gs.

I do not think that anyone would deny that 1) can be unproblematically achieved by one or more of the methods of science I listed above. The problem is rather how we could have a parallel epistemological situation as 2) when it comes to mental events. In

⁵⁷ MICHAELS, C.; PALATINUS, Z. “A Ten Commandments for Ecological Psychology”. In: SHAPIRO, L. (Ed.). *The Routledge Handbook of Embodied Cognition*. New York: Routledge, pp. 19-28, 2014.

⁵⁸ de CARVALHO, E. M.. “An ecological approach to disjunctivism”. *Synthese* Dordrecht: n. 1, 2021, pp. 285-306.

⁵⁹ FODOR, J. “Methodological Solipsism Considered as a Research Strategy in Cognitive Psychology”. In: *Cambridge: Behavioral and Brain Sciences* n. 3, 1980, pp. 63-73.

⁶⁰ See also, FIELD, H. *Truth and the Absence of Fact*, Oxford: Clarendon Press, 2001.

STICH, S. *From Folk Psychology to Cognitive Science*. Cambridge: MIT Press, 1983.

⁶¹ BURGE, T. Individualism and psychology. In: *Philosophical Review*, Dordrecht: n.1, 1986, pp. 3-45.

HANNAN, B. “Don't Stop Believing: The Case Against Eliminative Materialism”. In: *Mind & Language*, New Jersey, 1993, 165-79.

⁶² AYDEDE, M “Computationalism and Functionalism: Syntactic Theory of Mind Revisited”. In: IRZIK, G and GÜZELDERE, G (Eds). *Turkish Studies in the History and Philosophy of Science*, Dordrecht: Springer, 2005.

other words, science seems to lack resources to check that, across the relevant B-causing-M situations (where B is an intrinsic kind of brain process and M is a mental type that science can identify), there really is no supplementary property in the Ms that is not causally linked to some other property in the Fs – or in other things present in the situations. For, there are possible properties of mental episodes – most notably, those whose postulation is philosophically motivated – whose instantiation or non-instantiation empirical (or introspective) methodology cannot say a word about. In other words, all methodology available for scientific purposes cannot decide whether they are or are not caused because it cannot even identify them in the first place.

This picture seems to nicely apply to conceivable cases of caused sensory experiences, according to some possible disjunctivist. Although science can indicate that perceptions necessarily have as their properties representational aspects (or any other properties that science has indicated so far) and that they are caused by such-and-such brain processes, it cannot say much about things like disjunctivists' "mental properties". In particular, it cannot confirm or deny that these properties do not causally relate to such-and-such environmental property instantiations.

For example, consider the following (naïve realist cum sense-data theorist disjunctivist) hypothesis about the causation of sensory experiences, (CH): such-and-such (intrinsic) kind of brain process is minimally sufficient (in Sollberger's causal and generalistic sense) for the phenomenology of my current experience of my laptop. So this phenomenological instantiation is causally determined in a merely neurological fashion, and every time an intrinsically identical brain process is instantiated, it will look to me as if my laptop is in front of me (etc.). Here, the disjunctivist could also concede that this type of brain process is also minimally sufficient for any property that scientists think is common to both perception and hallucinations, like the property of representing my laptop as being that specific way, the property of corresponding in a relevant (and computational) way to such-and-such subpersonal states, etc. Let us assume that science can really reach a relevantly definite verdict on these matters (as I indeed think it can).

Nonetheless, things are entirely distinct with the property of acquainting with such-and-such (kind of) sense data. Call this feature " Ψ ". As far as scientific methodologies are concerned, one cannot refute the following hypothesis (CH'), which can be seen as a complement to (CH). A consequence of this fact is that scientists are not able to refute the following hypothesis, which can be taken along with (CH) by that kind of disjunctivism. There is a type of environmental element (F) that, along with the relevant brain process kind (B), is capable of causing acquaintance with my laptop (or with such-and-such properties/property instantiation, etc.) (Ω), whereas its absence along with the relevant same kind of brain process causes Ψ s.

In this case, the general disjunctivist hypothesis would be that (B&-F) causes Ψ , B&F causes Ω , and that B causes the phenomenology corresponding to my laptop (or any other property scientists think they can establish as being caused in a purely neurological fashion). A possible complaint about this suggestion departs from the fact that both Ω and Ψ are sufficient for the instantiation of the phenomenology, and so B alone is causally screened off. Since data would support that B causes some phenomenology, one concludes that the disjunctivist is incompatible with science.

In this case, the disjunctivist should insist only that (B&-F) causes Ψ and that (B&F) causes Ω while arguing that this is not incompatible with science. I think the only way of doing so is to claim that the putative causal relation is not specific to the possibly available data. In other words, it is evidentially undetermined because there are other possible theories that are compatible with the same data (e.g., one including the disjunctivist causal hypothesis). Of course, one may suggest that, in the face of relevant data, scientists can simply infer that F causes G instead of F in the absence of H causing I and F in the presence of H causing J, so that both I and J are sufficient for G (and are not empirically/introspectively accessed). However, this is only because of some additional principle (one about conceptual/ontological economy) and not solely because of empirical

reasons, which allows us to abductively choose for such a hypothesis over alternative ones⁶³. Both pictures (the simple and complex one) are equally compatible with scientific data. Assuming that this principle does not apply in the case (for positing Ψ and Ω has to be philosophically motivated in the first place), then the choice for the simple option cannot be straightforwardly made. For, of course, there is nothing wrong with external entities causing internal ones (otherwise, we would not have traditional (caused) internal events at all). Actually, if positing Ψ and Ω is motivated, we have a tie-breaker when it comes to selecting a hypothesis over the other possible ones (as the simple one argued by a philosophically clueless scientist)⁶⁴.

At this point, someone could question the plausibility of the disjunctivist hypothesis by suggesting that it has not taken seriously one of the supplementary premises (other than the causal exhaustiveness one). Recall that Sollberger's argument assumed that 1) externally-individuated episodes are necessarily non-causally determined by external factors and 2) internally-individuated episodes are not additionally non-causally determined by something else (regardless of being an environmental factor or not). Of course, strictly speaking, 2) is not at odds with the current hypothesis, as it does not posit any determination for the alleged internally-individuated events (hallucinations) other than sets composed of a brain process and an environmental absence.

But what about 1)? 1) is certainly at odds with the present disjunctivist suggestion, as it implies that perceptions (which, for any naïve realist, are always externally-individuated) are not additionally non-causally externally determined. Naïve Realists, however, could dismiss 1) on the basis that there is no apparent reason to endorse it. Once we accept that we cannot have any a posteriori reason for assuming that causality between the brain and mind is limited to internal factors, we lack any justification for asserting that externally individuated events are also caused by something external. On the positive side, Naïve Realists could argue that there is nothing mysterious about individual events, with the presence of something as background conditions, causing an event that corresponds to a "mise en relation" (involving that same thing). Things could be similar when it comes to relational mental events.

In light of the discussions in this section, we can now assert that naïve realists can reasonably reject the principle of Local Supervenience for Hallucinations, even considering the reasoning offered by Sollberger in his 2008 and 2012 papers. This is because the underlying idea on which the principle relies, that experiences are solely caused by brain processes, lacks support when examined in terms of empirical and scientific evidence presented by Sollberger. Firstly, I argued that current perceptual science is not methodologically confined to local factors. Secondly, I expanded this argument to show that empirical data cannot exclusively support the notion that experiences are locally caused, as there are alternative causal hypotheses that are equally compatible with this data.

7. SUMMARY.

This paper aimed to provide a comprehensive discussion and critical examination of Sollberger's work, focusing specifically on its premise of "Local Supervenience" and exploring plausible ways in which naïve realists could counter its conclusions. To achieve this goal, I identified and critically addressed three different justifications that Sollberger presents for this principle.

Firstly, I criticized the "argument from the surgeon", which posits reasons for believing that hallucinations are solely caused by brain processes. I argue that this

⁶³ THAGARD, P. "The best explanation: Criteria for theory choice". In: *Journal of Philosophy*, New York: n.(2), 1978, pp.76-92.

MCMULLIN, E. *The Inference that Makes Science*. Milwaukee, WI: Marquette University Press, 1992.

⁶⁴ Note that this suggestion also maintains the idea that brain processes are of causal importance for phenomenal events. What it revises is how exactly the causal work is done.

argument fails to recognize that the “sufficiency” it attributes to hallucinations pertains to hallucinations conceived in a “neutral” typing, not their specific “mental typing”. In this context, I highlight that the possibility of neurologically matching perceptions undermines the argument's purported sufficiency.

Secondly, I scrutinize Sollberger's intuition that intrinsic causes should bring about intrinsic effects. I challenge this notion by emphasizing the roles of relational and environmental factors. I also emphasized that it is implausible because hallucinations mental types can reasonably argued to be externally individuated.

Thirdly, I critically analyze Sollberger's reasoning for the local supervenience thesis, which stems from the idea that, in general, mental experiences are exclusively neurologically caused. This idea is purportedly based on the methodological presupposition of Perceptual Science and empirical findings about the relation between mind and brain. To counter this, I provide counterexamples from Perceptual Sciences that focus on the broad interactions of the organism with its environment. Additionally, I suggested that possible empirical observations of the relation between brain and mind are not capable of supporting the idea of causal exclusivity. They are equally compatible with alternative hypotheses, allowing Disjunctivists to causally explain experiences, and they are entitled to adopt these alternatives.

As a result, I believe I have reasonably argued that the local supervenience principle, upon which Sollberger's causal argument is fundamentally supported, is unmotivated. In this sense, we can hope to have filled the gap in contemporary literature corresponding to a discussion of Sollberger's Causal Argument that, in addition, offers Naïve Realists ways of resisting it.

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