

SYMPOSIUM

Cognitive penetrability and late vision*

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Abstract In *Cognitive penetrability and the epistemic role of perception* Athanasios Raftopoulos provides a new defense of the thesis that, unlike early vision, late vision is cognitively penetrable, in accordance with a new definition of cognitive penetrability that is centered on the ideas of direct influence of cognition upon perception and of the epistemic role of perception. This new definition allows him to maintain that late vision is a genuinely perceptive stage of the perceptual process. In this paper, I try to discuss not only whether this new definition has plausible consequences that allow only late vision to be cognitively penetrable but also whether the claim that late vision is genuinely perceptual allows it to have the kind of hybrid content, half nonconceptual and half conceptual, that Raftopoulos now wants to ascribe to it.

KEYWORDS: Cognitive Penetrability, weak, strong, and superstrong; Early and Late Vision; Nonconceptual Content

Riassunto *Penetralibità cognitiva e visione secondaria* – In *Cognitive penetrability and the epistemic role of perception* Athanasios Raftopoulos dà una nuova difesa della tesi secondo cui, a differenza della visione primaria, la visione secondaria è penetrabile cognitivamente, secondo una nuova definizione della nozione di penetrabilità cognitiva centrata sulle idee di influenza diretta della cognizione sulla percezione e di ruolo epistemico della percezione. Questa nuova definizione gli consente di sostenere che la visione secondaria è una fase genuinamente percettiva del processo percettivo. Nell'articolo, provo a discutere non solo se la nuova definizione ha conseguenze plausibili che consentono solo alla visione secondaria di essere penetrabile cognitivamente, ma anche se l'idea che la visione secondaria sia genuinamente percettiva consente ad essa di avere il contenuto ibrido, in parte nonconcettuale e in parte concettuale, che Raftopoulos vuole ora ascriverle.

PAROLE CHIAVE: Penetralità cognitiva debole, forte e superforte; Visione primaria e secondaria; Contenuto nonconcettuale

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ATHANASIOS RAFTOPOULOS' NEW BOOK, *Cognitive penetrability and the epistemic role of perception*, is a great, amazing and articulated fresco on the themes Raftopoulos has been working on throughout his philosophical career. The book is very rich, so it is hard to take into account in detail all the claims that Raftopoulos defends in it. I will focus only on two points, which seem to me the most relevant ones: a new definition of cognitive penetrability (CP) and the role that late vision plays in perception.

As regards CP, Raftopoulos wants to sidestep the problems that previous attempts at defining it have raised (e.g. those based on) (a) the causal dependence of perception on concepts, (b) the kind of conceptual perceptual content, (c) the informational resources of the cognitive system, (d) the consequentialist role of the perception. In this vein, he initially offers two new criteria as necessary conditions for CP.¹ Let us suppose, as is standardly the case at least from Pylyshyn onwards,² that ordinary perceptual experience is subtended by a temporal process divided in two parts, which, as far as the modality of sight is concerned, are respectively labeled *early* and *late* vision. This being the case, says Raftopoulos, perceptual episodes, in particular episodes determined by late vision, are cognitively penetrable only if the concepts that are mobilized by certain cognitive states of the system – beliefs, cognitions, expectations: *thoughts*, to give them a traditional label – (i) directly influence such episodes³ and (ii) enable them to play an epistemic role, by allowing them to provide justificatory evidence, both in a positive, or upgrading, and in a negative, or downgrading, sense, for the system's further thoughts (beliefs first of all).⁴ To be sure, sometimes the two criteria are also offered as separate sufficient conditions for CP.⁵ Yet I guess that such criteria are rather meant by Raftopoulos to provide both necessary and *jointly* sufficient conditions for CP, once the second is taken to strengthen the first. In Raftopoulos' words, «the extended directness condition

conjoined with the revised epistemic condition yield a sufficient and necessary condition for CP».⁶ As a result, one may gloss, perceptual episodes are cognitively penetrable iff they are directly influenced by the concepts mobilized by some of the system's thoughts insofar as such concepts enable certain perceptual episodes to play the above epistemic role. The extended definition that Raftopoulos provides in the book complies with the above characterization of CP.⁷

For the present purposes, let me accept this characterization. In actual fact, *pace* Raftopoulos⁸ I prefer Macpherson's account of CP.⁹ According to it, an ordinary perceptual experience is *strongly* cognitively penetrable iff its content is roughly the same as the conceptual content of certain thoughts of the cognitive system, while it is *weakly* cognitively penetrable iff its phenomenal character is determined by such conceptual content. For on the basis of this difference between these two forms of CPs, first, I can provide another notion of CP, *superstrong* CP, defined as strong CP yet affecting not an alleged temporal part of the temporal process underlying a perceptual experience, but that experience in its entirety. Second, I can use that further notion in order to qualify the CP that features, partly at least, a *sui generis* kind of perceptual experience, *pictorial* experience conceived along the lines of Wollheim as a twofold perceptual experience;¹⁰ i.e., a perceptual experience made of a *configurational* fold (CF) addressed to the physical basis of a picture, its *vehicle*, and of a *recognitional* fold (RF) addressed to what the picture presents, its *subject*. Third, armed both with the difference between weak and strong CP and the notion of superstrong CP, I can distinguish the CP of pictorial experience from the two CPs that affect ordinary perceptual experience with respect to the two different episodes of its underlying perceptual process, those of early vision and of late vision. With respect to such episodes, ordinary perceptual experience is respectively weakly and strongly cognitively penetrable. Yet in pictorial experience, while its CF, is weakly (if not

superweakly) cognitively penetrable, its RF is superstrongly cognitively penetrable, as Wollheim himself originally suggested: «whatever role we might give to the role of modularity in perception, there is obviously a level of complexity above which it doesn't apply, and there is reason to think that picture perception lies outside its scope».¹¹

Yet let me put my preferences aside. For, coming back to Raftopoulos' characterization of CP, I understand why he does not want to mobilize in it the notion of phenomenal character, even though he acknowledges that «cognitive effects in late vision modulate the phenomenology of the visual scene».¹² For he is interested in a definition of CP that covers both conscious and unconscious perception; indeed, the definition concerns a perceptual *state* (whether it is conscious or not).¹³ Yet, Raftopoulos goes on saying,¹⁴ his definition entails that, given the same stimulus, it is nomologically possible for two people to entertain in their perceptual processes different late visions with different contents. However, he adds, this entailment does not further imply epistemological relativism (or constructivism, as he sometimes labels it),¹⁵ i.e., the claim that one can perceive an object under a certain concept while another one can perceive that object under another, possibly incompatible, concept, without no chance for this perceptual dispute to be adjudicated in one sense or another. For, he says, the kind of negative evidence that concepts may enable perceptual states to mobilize, by letting one perceive the objects as what they are not, may be alleviated. Thanks to the fact that early vision provides a cognitive-free evidence, the negative evidence that CP mobilizes can be cancelled by a positive one that complies with an attentional refocusing of the scene perceived.¹⁶

However, this sort of cancellation admittedly takes place just in *some* cases of perceptual change; namely, when a perceptual revision occurs once one realizes that one was mistaking an object for something else (I say “admittedly” for in actual fact as regards per-

ceptual revision things are more complicated: see Section 2 below). So, to stick to the original Carneadean example (by following Siegel,¹⁷ Raftopoulos discusses an analogous case¹⁸ in which one mistakes a pair of pliers for a gun), if there are two disagreeing parties, one who says that she is perceiving a rope and another one who says that she is perceiving a snake, the dispute between them may be adjudicated once the second party realizes that she was mistaking a rope for a stake, thereby ruling out the negative evidence that the concept of *being a snake* forced her perception to have.

Yet, as Raftopoulos well knows, there are other cases of perceptual changes. For example, the changes induced by multistable perception, in which one may perceive an object now under a certain aspect, now under another one. Normally, such cases are considered *intrasubjectively*, as switches concerning just one perceiver. But nothing prevents them from also be considered *intersubjectively*, as mobilizing different subjects entertaining different *aspectual* perceptions – let me call them so, since in the intersubjective case no intrasubjective multistability is actually involved). So for example, imagine both a subject perceiving the scene containing a three-dimensional Necker's cube as constituted by the cube's having a certain protruding face and another receding face, and another subject perceiving that scene as instead constituted by the cube's having a different protruding face and another receding face. The two subjects actually face the very same three-dimensional scene, yet no one is right in grasping that scene one way or another: the opposite protruding-receding movements that the two aspectual perceptions respectively mobilize are merely apparent. (As Wittgenstein once famously said with respect to a two-dimensional version of the cube, «to perceive a complex means to perceive that its constituents are related to one another in such and such a way. This no doubt also explains why there are two possible ways of seeing the figure as a cube; and all similar

phenomena. For we really see two different facts»).¹⁹ I make a three-dimensional example of an aspectual perception rather than a standard two-dimensional one, for most two-dimensional examples actually involve *pictorial* (ambiguous) perception – e.g., the perception of a duck-rabbit figure – and pictorial perception actually is, as I hinted at before, a very complicated case of *sui generis* perception.²⁰ In this latter, more standard case, a nice example of this situation would be the following.



So, in the case of an aspectual perception, as regards neither subject the evidence induced by her concept-dependent perception can be dispensed with. Now, as anyone knows from Hanson²¹ and Goodman,²² these are the kind of cases that are standardly pointed out in order to prove that perceptual relativism subsists. *Pace* Raftopoulos,²³ in fact, as I just said, such cases are just intersubjective counterparts of cases of multistable perception rather than cases of perceptual revision. In the famous example from Hanson, did Brahe and Kepler irreducibly disagree in looking at the sky while being informed by their respective astronomical theories?

Granted, Raftopoulos may first of all reply that multistable perception actually involves primarily early vision, not late vision. Multistable perception already occurs just as far as early vision is concerned, by mobilizing, for each aspect, a different non-conceptual content (NCC) for the perceptual episode of early vision involved in it.²⁴

I agree with Raftopoulos that multistable perception primarily involve early vision. Yet this does not *eo ipso* rule out CP from being at stake with them as well, even if CP is characterized as Raftopoulos wishes. First of all, if such cases primarily involve early vision, early vision may also be directly affected by concepts, insofar as they enable it to play an epistemic role as well. Multistable perception subtended by early vision seems indeed to fit what Macpherson²⁵ calls the model of *cognitive penetration lite*. According to such model, in order to entertain the relevant phenomenal change in a perceptual experience that is subtended by early vision, it is not necessary that one appeals to the relevant concepts. For the very same change may be grasped in another similar perceptual experience independently of those concepts' mastery. Now, a Gestalt switch between the two aspects of a multistable perception subtended by early vision may certainly occur both if concepts are mobilized and if concepts are not mobilized, as Raftopoulos himself recognizes.²⁶ Consider the case of the Mach figure. In the perceptual experience subtended by early vision, one can see the figure in two different ways both if one masters the concepts of *being a diamond* and of *being a tilted square* and if one does not master such concepts. This happens if simply alternates in one's experience the two ways as mere *optical*, non-conceptual aspects,²⁷ those that would induce in pre-linguistic children mere primitive different reactions, as Wittgenstein himself glossed.²⁸ If this is the case, then concepts may also directly influence a multistable perception subtended by early vision, so as to make it evidence for further thoughts.

Moreover, *pace* Raftopoulos,²⁹ the kind of

attention that is involved in multistable perception can no longer be conceived as a particular form of spatial attention, which, as Raftopoulos himself stressed,³⁰ may only work pre-perceptually. Instead, as sometimes Raftopoulos himself seems to be near to recognize,³¹ it must be conceived as a *holistic* form of attention that affects what is perceived as a whole.³² Now, this is the sort of CP-based attention that has a perceptual role in late vision, as Raftopoulos himself underlines.³³

Granted, Raftopoulos would further re-assert that, in its admittedly mobilizing early vision, multistable perception differs from perceptual revision. For unlike the latter, in multistable perception different stimuli are involved, hence CP is not involved.³⁴

Let me agree with Raftopoulos that as regards perceptual revision there is stimulus constancy, at least if by “stimulus constancy” one means the sort of images that impinges on the retina. Yet it is disputable that this is not also the case as regards multistable perception. As Wittgenstein originally put it (in an admittedly clumsy way) by talking of such a case, «the colour in the visual impression corresponds to the colour of the object (this blotting paper looks pink to me, and is pink) – the shape in the visual impression to the shape of the object (it looks rectangular to me, and is rectangular) – but what I perceive in the lighting up of an aspect is not a property of the object, but an internal relation between it and other objects».³⁵

At this point, Raftopoulos may put forward a more general reply. Given his *temporal* characterization of early vision, taken as that part of the perceptual process that occurs roughly within 150 ms. from the stimulus onset,³⁶ there is no enough time, he claims, for early vision to be conceptually affected.

I do not dispute this claim, insofar as this is a merely empirical claim. Yet Raftopoulos flanks his temporal characterization of early vision with a functional characterization of it; namely, early vision taken as that episode of the perceptual process that mobilizes in its NCC fine-grained properties that are pre-

cisely not conceptualized.³⁷ If one adopts this second characterization of early vision, in a perceptual process the relevant episode of early vision may still fall under CP defined *à la* Raftopoulos, at least if, as I said before, CP fits Macpherson’s model of cognitive penetration lite: the episode may be directly influenced by concepts, insofar as they enable it to play an epistemic role.

Let me now pass to assess what I take to be the main novelty of the book; namely, Raftopoulos’ treatment of late vision. In a nutshell, this novelty consists in passing from considering late vision to be *late* vision to consider it as late *vision*. In fact in his previous book,³⁸ Raftopoulos took late vision to constitute an *observational* phenomenon that consists in the last conscious episode of the perceptual process conceived computationally in Marr’s terms;³⁹ namely, the conscious perception of a properly 3D object. This episode must be distinguished from the episode of early vision that constitutes the properly *perceptual* component of the perceptual process. According to Marr, this component is determined by the two first unconscious stages of the process, the primal sketch and the 2½D sketch. These two stages enable that component as a whole to grasp a *proto-object*, in Pylyshyn’s terms.⁴⁰ Yet now Raftopoulos takes late vision to constitute a genuinely perceptual phenomenon. In it, attention is still involved, as he said before,⁴¹ yet its role is no longer either pre- or post-perceptual, but, as I hinted at before, it is genuinely perceptual.⁴² As a result, even though, unlike early vision, late vision is still for him conceptually penetrated – in the sense provided by the definition he commits to – it has no longer a mere conceptual content as he was ready to hold before.⁴³ Instead, it has a hybrid content that is partly conceptual and partly non-conceptual.⁴⁴ One may guess that this is the basic reason why he refrains from adopting a definition of CP explicitly based on the idea that perception has a conceptual content conforming to the content of the system’s thoughts. Yet how does all this exactly work? In my reconstruction, according to Raftopoulos, things stand as follows.

First of all, the relevant perceptual episode of early vision possessing a certain NCC causally prompts the system to generate in late vision an individuating hypothesis about what is perceived. This hypothesis is directly influenced by a fullfledged conceptual content of the system's relevant thoughts.⁴⁵ One may take the hypothesis to have a *sui generis* structured nonpropositional both demonstrative and conceptual content:⁴⁶ something like *that F*, where *being F* is a kind of structured concept that may only occur in the content of the perceptual episode that corresponds to early vision.⁴⁷ One may take it as a concept for a merely perceptual property, as paradigmatically are the low-level properties of having a certain color and the property of having a certain shape. At this point, moreover, this content of late vision must be matched with the NCC of the perceptual episode of early vision as is stored now, i.e., at this moment of the perceptual process, in working memory.⁴⁸ If the match is positive, then the system forms a recognitional belief that counts as the output of late vision.⁴⁹ This belief still has a demonstrative and conceptual content, yet of a propositional form: something like *that (thing) is a G*, where *G*, unlike *F*, is a concept for an observational, not merely perceptual, property (e.g., *being a pine tree*, *being an elephant*). This recognitional belief is dispositional, yet it becomes actual, i.e., an occurrent state properly endorsed by the system, only once it is discursively tested by means of a thought.⁵⁰ In fact in its turn, the content of the recognitional belief still differs from the fully descriptive propositional content that is provided by a system's thought: something like *the H is a G* (e.g., the tallest tree over there is a pine).

If this reconstruction is correct, then to my mind this account raises a series of problems. First of all, in what sense can late vision formulate *hypotheses*? This gives late vision a sort of constructivist flavor that assimilates it to a form of theory. Yet hypotheses have a sort of theoretical nature that should make them conceived not in the perceptual part of

the system, but directly in its imaginative part of the system, as a way for guiding attention,⁵¹ if not in its cognitive part. Consider for example the very basic hypotheses that according to Fodor⁵² are needed in order for one to learn a new language. These hypotheses are thoughts of the form ("E' (in language L) means M (in language L)"). Clearly, Raftopoulos may reply that these are unconscious hypotheses affecting the subpersonal perceptual process that subtends to late vision. But this is not the point. The point is that, in affecting the piece of behavior that follows late vision itself, whether it is conscious or not, the relevant mental event involved in late vision at this point of the perceptual process must be something whose mode is not hypothetical, but doxastic. Consider the issue of perceptual revision again. Suppose that at time *t*, in virtue of one's perception in early vision, in late vision one entertains the erroneous idea that that thing over there is a snake. This idea is not a hypothesis. If it were such, one would never run away.

Second, how does the match between the hybrid content of late vision and the NCC of the perceptual episode of early vision yet now stored in working memory really work, in order for that content not to trivially pass alternative yet incompatible hypotheses? For example, how can two alternative hypotheses whose content, as you may remember, in the case of perceptual revision respectively determines a positive and a negative evidence – say, *that rope-like thing* and *that snake-like thing* – be differently tested, if, as we saw before, they face the same stimulus, hence possibly the same NCC of the perceptual episode of early vision now stored in working memory? Appealing to a refocusing attention, as Raftopoulos would certainly do (see before) is not enough. For the revision is not accounted for by claiming that one has missed a detail in the perceived scene that refocusing attention may enable one to capture, as in a sort of *Blow Up*-situation. For once again, attention must play a more active role. Indeed, in order to dispense with the

“bad” hypothesis and preserve the “good” one, one must check them not with one and the same NCC of that episode now stored in working memory, but with a new attention-based episode of early vision endowed with a NCC that differs from the NCC of the episode entertained before. So, to come back to the rope-snake case, one may rule out the “snake” hypothesis once one *notices* that one is facing a ropish Gestalt (as constituting the NCC of a new perceptual episode of early vision) rather than a snakish Gestalt (as constituting the different NCC of a previous episode of late vision).⁵³

Third, how can late vision subsequently mobilize two different contents, a non-propositional one (of the form, *that F*) and a propositional one (of the form, *that is a G*)? *Qua* content of a recognitional belief that works as the output of late vision, is the second content not properly a perceptual content of late vision, but a mere observational post-perceptual content actually arising *outside* late vision, what Raftopoulos originally supposed to be the only content of late vision?⁵⁴

Fourth, how can the output of late vision be a recognitional belief that is not yet endorsed as such, if it originates from the match between the *sui generis* conceptual yet nonpropositional content of late vision and the NCC of the perceptual episode of early vision now stored in working memory? Appealing to the distinction between a dispositional and an occurrent belief, as Raftopoulos does, makes no difference concerning endorsement. I may now consciously come to entertain an occurrent belief that I have been entertaining dispositionally, say the belief that Pluto is round, and yet, by means of having allowed that belief to enter the fore of my consciousness, my overall behavior does not seem to be modified, as it should be if that change affected my endorsement of that belief. Hence, in order for the belief to be endorsed, no further test with the descriptive content of thoughts seems to be needed.

I do not think that the problems I have raised cannot be satisfactorily addressed in

the framework of Raftopoulos’ new theory. Yet they hopefully show that the stimulating debate about cognitive penetrability, the process and the content of perception is still alive, and new paths can be followed in it.

Notes

¹ Cf. A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, Palgrave Macmillan, Basingstoke 2019, p. vii, see also p. 123 and 244.

² Cf. Z.W. PYLYSHYN, *Seeing and visualizing*, MIT Press, Cambridge (MA) 2003.

³ Cf. A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, cit., p. 118.

⁴ Cf. *ibid.*, p. 122.

⁵ Cf. *ibid.*, p. 123 and 159.

⁶ *Ibid.*, p. 123.

⁷ Cf. *ibid.*, p. 118.

⁸ Cf. *ibid.*, p. 100.

⁹ Cf. F. MACPHERSON, *Cognitive penetration of color experience: Rethinking the issue in light of an indirect mechanism*, in: «Philosophy and Phenomenological Research», vol. LXXXIV, n. 1, 2012, pp. 24-62; F. MACPHERSON, *Cognitive penetration and nonconceptual content*, in: J. ZEIMBEKIS, A. RAFTOPOULOS (eds.), *The cognitive penetrability of perception: New philosophical perspectives*, Oxford University Press, Oxford 2015, pp. 331-358.

¹⁰ Cf. R. WOLLHEIM, *Seeing-as, seeing-in, and pictorial representation*, in: R. WOLLHEIM, *Art and its objects*, Cambridge University Press, Cambridge 1980, pp. 205-226; R. WOLLHEIM, *On pictorial representation*, in: «The Journal of Aesthetics and Art Criticism», vol. LVI, n. 3, 1998, pp. 217-226; R. WOLLHEIM, *In defense of seeing-in*, in: H. HECHT, R. SCHWARTZ, M. ATHERTON (eds.), *Looking into pictures*, MIT Press, Cambridge (MA) 2003, pp. 3-15.

¹¹ R. WOLLHEIM, *In defense of seeing-in*, cit., p. 10. On this cf. A. VOLTOLINI, *A syncretistic theory of depiction*, Palgrave Macmillan, Basingstoke 2015; A. VOLTOLINI, *Qua seeing-in, pictorial experience is a superstrongly cognitively penetrated perception*, in: «Studies on Art and Architecture», (forthcoming).

¹² A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, cit., p. 133.

¹³ Cf. *ibid.*, p. 118.

¹⁴ Cf. *ibid.*, p. 89, 118 and 146.

¹⁵ Cf. *ibid.*, respectively p. 224 and 226.

¹⁶ Cf. *ibid.*, p. 226 and 246.

- ¹⁷ Cf. S. SIEGEL, *The epistemic impact of the etiology of experience*, in: «Philosophical Studies», vol. CLXII, n. 3, 2013, pp. 697-722.
- ¹⁸ Cf. A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, cit., p. 233.
- ¹⁹ L. WITTGENSTEIN, *Tractatus Logico-Philosophicus* (1921), translated by C.K. OGDEN, Routledge and Kegan Paul, London 1961, 5.5423.
- ²⁰ See on this A. VOLTOLINI, *Qua seeing-in, pictorial experience is a superstrongly cognitively penetrated perception*, cit.
- ²¹ Cf. N.R. HANSON, *Patterns of discovery*, Cambridge University Press, Cambridge 1958.
- ²² Cf. N. GOODMAN, *Ways of worldmaking*, Hackett, Indianapolis/Cambridge 1978.
- ²³ A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, cit. p. 234.
- ²⁴ Cf. *ibid.*, p. 227.
- ²⁵ Cf. F. MACPHERSON, *Cognitive penetration and nonconceptual content*, cit.
- ²⁶ Cf. A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, cit., p. 242 and 301.
- ²⁷ Cf. L. WITTGENSTEIN, *Remarks on the philosophy of psychology* (1937/1941), vol. I, translated by G.E.M. ANSCOMBE, G.H. VON WRIGHT, Blackwell, Oxford 1980, §970; C. PEACOCKE, *Sense and content*, Clarendon Press, Oxford 1983, p. 25, fn. 27.
- ²⁸ Cf. L. WITTGENSTEIN, *Philosophical investigations* (1953), translated by P.M.S. HACKER, Blackwell, Oxford 2009, II, xi, §215.
- ²⁹ Cf. A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, cit., p. 227, 239, and 241.
- ³⁰ Cf. A. RAFTOPOULOS, *Cognition and perception*, MIT Press, Cambridge (MA) 2009.
- ³¹ Cf. A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, cit., p. 299.
- ³² Cf. R. JAGNOW, *Ambiguous figures and the spatial contents of perceptual experience: A defense of representationalism*, in: «Phenomenology and the Cognitive Sciences», vol. X, n. 3, 2011, pp. 325-346; D. STOKES, *Attention and the cognitive penetrability of perception*, in: «Australasian Journal of Philosophy», vol. XCVI, n. 2, 2018, pp. 303-318; A. VOLTOLINI, *Qua seeing-in, pictorial experience is a superstrongly cognitively penetrated perception*, cit.
- ³³ Cf. A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, cit., p. 88.
- ³⁴ Cf. *ibid.*, p. 228 and 232.
- ³⁵ L. WITTGENSTEIN, *Philosophical investigations*, cit., II, xi, §247.
- ³⁶ Cf. A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, cit., pp. 133-134, 186, 256, and 261-262.
- ³⁷ Cf. *ibid.*, pp. 183-185.
- ³⁸ Cf. A. RAFTOPOULOS, *Cognition and perception*, cit.
- ³⁹ Cf. D. MARR, *Vision*, Freeman, San Francisco 1982.
- ⁴⁰ Cf. Z.W. PYLYSHYN, *Seeing and visualizing*, cit.
- ⁴¹ Cf. A. RAFTOPOULOS, *Cognition and perception*, cit.
- ⁴² Cf. A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, cit., p. 88.
- ⁴³ Cf. A. RAFTOPOULOS, *Cognition and perception*, cit.
- ⁴⁴ Cf. A. RAFTOPOULOS, *Cognitive penetrability and the epistemic role of perception*, cit., pp. 133-134, and 294.
- ⁴⁵ Cf. *ibid.*, p. 314-315, and 316, fn. 7.
- ⁴⁶ Cf. *ibid.*, p. 296, and 311-312.
- ⁴⁷ Cf. *ibid.*, pp. 284-285.
- ⁴⁸ Cf. *ibid.*, p. 258, 282, 309 and 331.
- ⁴⁹ Cf. *ibid.*, p. 255, 312-313, 316, and 329.
- ⁵⁰ Cf. *ibid.*, pp. 319-320.
- ⁵¹ Cf. J. PRINZ, *Beyond appearances: The content of sensation and perception*, in: T. SZABO-GENDLER, J. HAWTHORNE (eds.), *Perceptual experience*, Oxford University Press, Oxford 2006, pp. 434-460, especially p. 455.
- ⁵² Cf. J.A. FODOR, *The language of thought*, Harvester Press, Hassocks 1975.
- ⁵³ Cf. R. JAGNOW, *Can we see natural kind properties?*, in: «Epistemology and the Philosophy of Science», vol. XLIV, n. 2, 2015, pp. 183-205; A. VOLTOLINI, *Qua seeing-in, pictorial experience is a superstrongly cognitively penetrated perception*, cit.
- ⁵⁴ Cf. A. RAFTOPOULOS, *Cognition and perception*, cit.

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