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On the Physicalistic Approach to Consciousness

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RESUMEN

El fisicalismo es el enfoque básico de la filosofía analítica contemporánea de la mente y de la conciencia. La pretensión global de este artículo es revisar el aspecto crucial del enfoque fisicalista de la conciencia que cristaliza en la brecha explicativa entre la caracterización fenoménica y la causal: nada se revela sobre la posible realización neuronal y el papel causal de la conciencia en su estructura fenoménica, y nada se indica sobre las propiedades fenoménicas en su dependencia neural y causal. ¿Cómo es posible entonces dar una explicación fisicalista de la conciencia en su doble aspecto sin negar pura y simplemente el componente fenoménico, experiencia e intencional? Este artículo analiza esta última cuestión indicando una serie de dificultades a las que un programa de “fisicalización” de la conciencia tiene que hacer frente cuando toma en serio lo que muestran los mejores análisis fenomenológicos de la conciencia y de la intencionalidad. Parece que no hay un modo claro de salvar la brecha que se produce cuando las propiedades fenoménicas se presentan como intratables desde este punto de vista, y cuando la clausura causal del mundo físico no deja lugar alguno para las características fenoménicas e intencionales.

ABSTRACT

Physicalism is the basic approach of the contemporary analytic philosophy of mind to consciousness. The overall aim of this paper is to revise the crucial aspect of physicalistic approach to consciousness which is crystallized in the explanatory gap between the phenomenal and the causal characterization: nothing about the possible neural realization and causal role of consciousness is revealed in its phenomenal structure, and nothing about the phenomenal properties is indicated in the neural and causal underpinning. How then is it possible to give a physicalistic account of consciousness in its double aspect without simply denying the phenomenal, experiential and intentional component? This paper will address the latter question by indicating a series of difficulties a program of “physicalizing” consciousness has to confront when taking seriously what is shown by the best phenomenological analysis of consciousness and intentionality. There seems to be no clear way of bridging the gap in a physicalistic perspective when the phenomenal properties present themselves as untractable from this point of view, and when the causal closure of the physical world leaves no place for phenomenal and intentional characteristics.

I. THE PHYSICALISTIC APPROACH

Physicalistic approach to consciousness has established itself as a research program in cognitive science and analytical philosophy of mind. For these researchers, physicalizing consciousness isn't just an interesting project, but it is vitally important [Stich (1996)]. Its defenders think that if it does not succeed, we will be trapped in serious troubles. There is the catastrophe of Fodor: if intentional categories cannot be physicalized, then irrealism of the intentional will have won the day. This will pervade the whole of academic life. "If you really can't give an account of the intentional in the physical world [...] — says Fodor — [then] by Christ [...] we should stop spending the taxpayers money" [Fodor (1990), pp. 202-3]. There is the calamity of Kim: if the intentional cannot be physicalized, then intentional states must be causally impotent; they cannot play any role in the causal network producing behaviours and action. In accordance with the slogan "no reality without causality", mental (intentional) states have to be excluded from our ontology. Finally, there is the general calamity: if the program of physicalizing the mental or the intentional does not succeed, then there is no science of mind.

Quandaries entered the scene with the challenge opened by Quine [Quine (1960)] who recognizes the irreducibility of predicates pertaining to intentional experience. But Quine maintains the theses, contra Brentano and Husserl, that it is impossible to develop an autonomous theory of the intentional. He put the problem of Brentano in the following way.

One may accept the Brentano theses either as showing the indispensability of intentional idioms and the importance of an autonomous science of intention, or as showing the baselessness of intentional idioms and the emptiness of a science of intention. My attitude, unlike Brentano's, is the second [Quine (1960, 45, 221)].

Intentionality is either a fiction — which is not Quine's position, and then it has to be left out, or intentionality will be investigated by physical science where physics is for Quine the master discipline: "Physics is the arbiter of what is, that it is, and of what is not, that it is not". But at the outset, it is not clear at all what will count as "physicalizing", and what exactly concerning consciousness and intentionality has to be physicalized. The following demands may be suggested for a physicalistic program. We notice that they never were explicitly stated by the protagonists.

a) *Conceptual homogeneity*: Consciousness, intentionality, that is, the various intentional experiences ranging from sensations, perception, remembering, pictorial representation, desiring and imagining to pure thinking and believing, have to be categorized and conceptualized by

using concepts which are governed by the same constitutive principles as the concepts used by other physical sciences, principles which belong to the same domain of reality, that is, the material world. It is quite possible that the intentional will show too recalcitrant for being subsumed under the same constitutive principles which cover, for instance, length, mass and volume.

b) *Methodological continuity*: Methods used for exploring mental phenomena, intentional experiences and consciousness (from the third-person perspective), must not be in principle different from those employed in the other physical sciences. Methods of observation and experimentation, rigorous experimental control, methods for construction of models, theories of statistics and techniques of measurement have to follow general standards and rules which are required elsewhere for the validity of empirical methods of investigation. It would be difficult to admit that consciousness and the intentional are physical phenomena like temperature and motion, and admit at the same time that they are not open to investigation by usual scientific methods, that one must use methods which have nothing in common with those of other physical sciences. Such a position would be unacceptable for a resolute physicalist. One may expect that consciousness and intentionality require original combinations of standard methods of observation and experimentation (see Baars' method of "triangulation", [Baars (1988), Part I, Introduction]).

c) *Nomological entrenchment*: This demand is much more substantial. It asks for discoveries of nomological regularities about phenomenal and intentional experiences, so called laws of mind, in the first hand. These regularities have then to be connected with the proper laws of other physical sciences in the same way as chemical regularities are entrenched in physical theories or biological regularities in chemical theories. There are apparently nomological regularities for mental phenomena, but they stand in splendid isolation. (A good example is the "law of action" suggested by Churchland.) The kind of entrenchment envisioned here may be accomplished by means of micro-reductive explanations (when the conceptual homogeneity problems are solved) or by yet unknown devices.

If the physicalistic view is the correct one, if consciousness and intentionality have to find a place in nature, a position which few of us would frankly reject, the kind of problems philosophers and scientists would have to confront are generally formulated in the following manner [Chalmers (1966), Introduction]. What causes have contributed to the appearance of mind, con-

consciousness and intentional experiences we confidently attribute to some creatures? How is it that intentional states, consciousness and experience are realized in organisms with a certain complexity? How is it that configurations of physical stuff may result in intentional states when physical states apparently lack intentional properties? How do we explicate what it is for a physical system to be in intentional states such as having beliefs, desires and hopes? What are the conditions under which physical process give raise to (cause) consciousness and intentional experience? How are we to specify at the same time the sorts of experience corresponding to the specific conditions? A physicalistic theory must show not only why and how it arises, but also what it means “to arise from”, a question which is generally not addressed for the cases mentioned. Finally, one has to address the very general problem of how we have to understand consciousness and intentional experience as integral “parts” of the physical world. For many, the question of how physical states of an organism or parts of it (be it the brain) can give raise to conscious experience, seems completely mysterious [Chalmers (1966)] when one has to take consciousness seriously. For others, it seems plain that a physicalistic approach must resort to new concepts in order to be successful and dispel mystery.

In order to confront the problems mentioned and to tackle with specific difficulties, several strategies are normally deployed. A first way is to address and explain something else, or simply deny the existence of intentional experience. According to the eliminativist strategy, some may think that when functionality of intentional states are micro-reductively explained, there are no further facts to be explained, such as “experience of something”, “subjective aspects of experience” or “phenomenal consciousness”.

Another way is to claim that one explains conscious intentional experience when in fact one passes over what has to be explained, leaving obscure how it is that physical process give raise to experience. One may also try to establish a homomorphism between the structure of intentional experience and the structure of the supposed underlying neural process. But this will not do because it does not show why and how experience is generated in the first place. Finally, some try to isolate the neural substratum of experience. But how can they succeed in doing this when experience itself is not found within the neural process, and when one merely has to presuppose that this process is connected with that experience and not with another one, with this aspect of experience.

Chalmers reviewing these strategies comes to the conclusion that there are systematic reasons why the usual approach of cognitive science and neuroscience to the “problem of consciousness” will fail to account for conscious experience. He thinks that the current approach is simply the wrong one, that we must look for an extra ingredient. The question then is, what the extra ingredient could be. It is not new discoveries in neuro-physiology because according to Chalmers, it leaves the experiential aspects of consciousness as

mysterious as it is now. “No phenomenal glow” will appear in newly discovered neural structures.

If the extra ingredient does not come from physical science, we must then ask if the questions raised are questions asking for an empirical or for a conceptual solution. Is the question “could it be possible that all this information processing taking place in the brain or in the respective physiological structure is going on in the dark, free of any inner feel”, an empirical or a conceptual question? Is the question about Mary (Frank Jackson’s imagined physicist who knows everything physical concerning colour vision, brought up in a monochromatic environment), the question being what happens to her when leaving her artificial environment and being exposed for the first time to a red tomato and having, supposedly, for the first time a phenomenal experience of something red, is it an empirical or a conceptual question? Does Mary already know about the phenomenal nature of her new experience, an experience she never could have had before? The answer depends on what you are ready to put in the thought experiment. It could be a conceptual question. But one may also interpret the problem as asking a question of matters of fact.

In Chalmers view, the expected extra ingredient will perhaps come from a phenomenological analysis of conscious intentional experience. This could mean that the key to the hard problem of consciousness and experience is the conceptual point that the explanation of functions that the various states of the brain may fulfil is not enough for the explanation of experience. It seems clear that the conceptual point cannot be found by further empirical investigation of whatever kind. If one thinks that the problem is to see how intentional experience is realized in a neurophysiologic substratum, one has to know in the first place what it is about intentional conscious experience that has to figure, for instance, in the supposed relation of realization. If we think that conscious intentional experience or consciousness is realized by neural structures, we would like to know what about my experience, say “my remembering of yesterday’s remembering of having looked, years ago, at the painting of Monet who painted the cathedral of Rouen, the painting which is exposed in the Quai d’Orsay museum in Paris”, what about the realization of this experience in the neural structures? Is this only an empirical question? Or do we have to know more about the structure of phenomenal experience, to know how we have to conceptualize the complicated way of representing something absent? Or are these questions out of reach for physicalists? What kind of structure do we have here? Is it a structure of higher-order representation? And what exactly are higher-order representations? Does intuitive remembering (when for instance I remember the Parthenon with the white façade contrasting with the blue of the sky) consist in a higher-order representation insofar as remembering implies another representational activity (e.g. having seen the Parthenon)?

II. THE EXPLANATORY GAP REVISED

There are those who think that the explanatory gap [Levine (1983); McGinn (1991); Chalmers (1996)] is mainly a conceptual problem: we lack, they tell, an appropriate conceptualization of the experiential and intentional properties of conscious experience. Perhaps perplexities and mysteries are remaining because folkpsychological views of conscious experience are too simplistic. Velmans (1996) complains about the fact that standard approaches in cognitive science amount to “superficial Aristotelian methodologies” when it comes to characterize conscious experience.

The result is, he says, that while our discussions about the nature of the outer, objective world are embedded in our contemporary scientific knowledge, our discussion about the phenomenological contents of consciousness often remains based on superficial, commonsensical perception, classification and understanding of the content of our inner awareness [Shear (1996), p. 361].

Henceforth the gap between the subjective, first-person and phenomenological aspects, and the objective, third-person and physical aspects of experience and consciousness. Hence the question of how to reconcile what appears in reflection (the first-person perspective) as non spatial and non compound of parts, with what appears from the third-person perspective as having spatial relations. These questions touch upon the explanatory gap between the phenomenal and the causal characterization: nothing about the possible neural realization and causal role (at the micro-level) of consciousness and intentional experience is revealed in its phenomenological (or phenomenal) structures, and nothing about the phenomenal or phenomenological properties is indicated in the neural and causal underpinning.

According to Chalmers [Shear (1996c), p. 413], it is essential to concentrate on phenomenological approaches to the hard problem mentioned above. He thinks that “such an approach must be absolutely central to an adequate science of consciousness: after all, it's our own phenomenology that provides the data that need to be explained”. Chalmers sees the problem in the absence of a proper language, of a formalism, in which phenomenological data can be expressed. It is remarkable that these authors make no reference at all to the extensive literature of phenomenological analysis since Brentano, Husserl, their students (e.g. Merleau-Ponty) and representatives from the forth generation of phenomenologists [Marbach (1993); Hokenstein (1985, 1988)] who are discussing the same problem exactly in the perspective of the cognitivists who are looking for phenomenological input. Either they simply are ignorant, or they think in advance that the conceptualization of the phenomenological as shown in extraordinary details by Husserl's phenomenological analysis of perception, proprioception, picturing (looking at paintings),

remembering, fantasy, etc. will not do. In the last case, they would have to provide an argument, which is still missing.

At the beginning, I stated some central minimal demands a physicalistic program could make. But in fact — that is a first problem —, no articulated consensus and no explicit agreement concerning the restrictive conditions that a successful program of physicalization would have to satisfy seem to be forthcoming. The usual philosophical stance was that a tentative proof that intentionality and consciousness cannot be physicalized must show that if intentional conscious experience can't be physicalized then nothing satisfies intentional properties or intentional properties are causally impotent. Furthermore, one has to argue that such a proof is not utterly implausible. According to Stich (1994), we do not yet have such an “impossibility argument” to the effect that nothing satisfies intentional properties of consciousness and phenomenal experience. An “impossibility argument” cannot yet be forthcoming as long as cognitive scientists, analytical philosophers and people from artificial intelligence don't agree upon the key categories that are to be tested against the chosen conditions a physicalistic program has to satisfy. The reason is the conceptual mess one must disentangle in the first place. This situation constitutes a second difficulty. It is the following:

The eclipse of consciousness created during the domination of behaviourism may be over, but darkness still remains over the conceptual complexities involving the key categories of the intentional idiom. We find today a growing number of clear signs that “consciousness is making a comeback in psychology” as Daniel Dennett [Dennett (1982)] put it in a paper whose topic he extended in his book *Consciousness Explained* [Dennett (1991)]. There is now a proliferation of concepts of consciousness. In a certain sense the eclipse continues in the form of conceptual obscurity, even though the topic of intentionality, consciousness and mental representation were widely promoted to figure in papers and books about mind and cognition. However, a successful program of physicalization cannot get started on the ground of conceptual obscurities. The key concepts involved in the proposed program concerning the physicalization of the intentional idiom are intentionality, consciousness and experience. Contrary to the phenomenological analysis of intentional conscious experience, the central concept of consciousness in the context of cognitive sciences splits itself up in a large spectrum of uses and applications. This is also true of the other related concepts. The spectrum has a certain internal structure organized by two axis. The first one divides consciousness in creature consciousness and state consciousness. The distinction was introduced by Rosenthal [Rosenthal (1986)]; it is intensively discussed by Dretske [Dretske (1996, 1997)] and many others. Creature consciousness generally has the structure of “intentional aboutness”: a creature C is conscious of something, be it a concrete object, or an abstract object (numbers, propositions), a state of affairs, a fact or an event. On the other hand, there is

state consciousness: a certain state (which, according to Dretske, is never conscious of anything) is made conscious by 1) its being an object of a creature consciousness of this state, or by 2) its being an act of creature consciousness. According to the act conception of state consciousness, such states are necessary for a creature to become conscious of something, to make a creature with eyes visually aware of something visible. Without state consciousness, there is no creature consciousness. In sum, there is state consciousness when a certain state is either contributing to creature consciousness, or is the object of creature consciousness. Such a conscious state does not itself have intentionality when it is a state at the first level of reflectivity [Dretske (1997)]. Perhaps there is intentionality at a higher level of reflectivity.

The second axis makes the distinction between phenomenal consciousness (P-consciousness) and access-consciousness (A-consciousness). It was proposed by Block [Block (1990, 1992, 1995)], but the topic is also present in the works of various authors, especially the qualiaphiles. For many philosophers, experience (awareness) and P-consciousness are synonyms. The list of items for P-consciousness varies considerably from sensory states (pains, sensations, feelings, emotions) to thoughts in general. Block [Block (1995)] would include thoughts and desires insofar as we do not consider the intentional structure they have. In contrary, Tye [Tye (1991)], another defender of phenomenal consciousness who devotes a whole chapter in his last book [Tye (1995)] is “denying that there are any intrinsic, non intentional features of which the subjects of the images and the percepts can be aware, and by virtue of which their objects have their contents” [Tye (1991), p. 118], maintaining then that the phenomenal character of experience is determined by aspects of its representation, that is by its intentional content [Tye (1991), p. 118]. Tye would include in P-consciousness intentional experiences at the sensory level, but his list does not explicitly mention other sorts of intentional experiences such as memories, fantasies, desires, etc., which belong certainly to intentional conscious experiences. A-consciousness is poised for its role in reasoning, rational control of behaviour and action, poised for rational control of speech [Block (1995), p. 231]. The last item is not a necessary condition for the attribution of A-consciousness; the three together are sufficient. Furthermore, A-consciousness has representational content in contrast to P-consciousness which, apparently, has not. It is the representational content which is supposed to play the functional role in producing other conscious states and actions. A-consciousness is therefore a functional notion: what an A-conscious state is, consists in its accomplishment in a system, accomplishment in virtue of its representational content. On the other hand, according to Block, functionalism about P-consciousness is false. For this reason, P-consciousness is recalcitrant to a physicalistic treatment. The scientific mystery is in P-consciousness, and the explanatory gap applies to this form of consciousness, because “no one has produced the concepts [I stress] that would allow to explain why [...] [neu-

ral oscillation] might be the physiological bases of P-consciousness" [Block (1995), p. 231]. Why should it be this kind of oscillation and not some other properties or events of the brain that correspond to P-conscious experiences?

The question now is to know if a program of physicalizing the mind, intentionality and consciousness has to cover the whole range of concepts of consciousness or not. The particular difficulties and obstacles may vary from case to case. A-consciousness appears to be the least recalcitrant, insofar as pure forms of A-consciousness, i.e. those forms which are not permeated by P-consciousness, admit functional properties. The explanatory gap concerns P-consciousness, and in this case, the problems vary in respect to the list of experiences one is prepared to include¹.

Those who ask for a phenomenology in order to fill the gap and to get new conceptual input for solutions to the "hard problem of consciousness" — and there are several who are looking, like Chalmers [Shear (1966)], for new formulas describing the phenomenal aspect of consciousness, formulas or a language by which the bridge could be constructed conceptually —, they must know that "intentional conscious experience" was the principal target of phenomenological analysis that Husserl conducted during all his lifetime, from the *Logische Untersuchungen (Logical Investigations)* to the *Krisis (Crisis)*. Large parts of his work are devoted to painstaking analysis of intentional conscious experiences which are representational. Husserlian phenomenology conceives itself as a "science of consciousness". It is very perplexing to notice that the latest contributions to the science of consciousness rarely refer to Husserl.

III. AN ANALYSIS OF 'REMEMBRANCE' AND 'PICTORIAL REPRESENTATION'

The rest of this paper will be devoted to deepen this phenomenological approach to conscious intentional/representational experiences. To this end, I will choose two modalities of intuitive representation: remembrance (remembering) and pictorial representation (picturing). Phenomenological analysis will reveal the underlying structure of these modalities of intentional conscious experience which are accessible to reflection. Both modalities are representations by which I refer to something absent. They are intuitive presentifications. Husserl devoted many studies on this subject until late in the twentieth. They are directly linked with the philosophical problems of the cognitivists. In conclusion I will ask if the results of phenomenological analysis of intentional experience figure in the *explananda* of cognitive science, and if these results reveal something important for the program of physicalization.

1. [1] {REM_x} Remembering is taken as the theme of reflective analysis. Three characteristics are important: a) the structure of intentional implication and reproductive modification of the primal impressions; b) its belief modality, and c) temporality, as constitutive moments of the activity of remembering. The three are understood as components of the structure of intentional implication.

a) As an intentional conscious activity, remembering is representing something absent, hence presentification of something absent: [2] REM = (PRE...)x. When for instance remembering the Parthenon of the Acropolis, I do not have a picture of it as when I am looking at a painting. Remembering something, I do not need to open my eyes. The idea of a mental picture is misleading. In the activity of remembering, the Parthenon appears with a kind of sensory qualities, a white façade in contrast with the blue of the sky, even though I do not have primal impressions as in perception. The impressions are modified to quasi-impressions. The Parthenon appears from a certain point of view, a view of the *façade*, not from behind or from the side. This point of view which was mine does not coincide with the one I occupy here and now. What is modified is the activity which for this reason is intentionally implied in the activity of remembering. What is intentionally implied is a non-independent undetachable moment of a conscious experience. What is implied in the case of remembering is the perception I had and which was performed years ago but which is not performed in the present. What is intentionally implied is a quasi-perception (marked with the square-brackets): [3] REM = (PRE [PER])x. The noetico-noematic structure of remembering indicates that we have at the same time a plurality of mental activities in establishing reference to something represented: that is, we have double intentionality: the Parthenon is the noematic correlate of my remembering, as it is the noematic correlate of my quasi-perception to which it quasi-appears because this perception is actually not performed, and the appearance has only quasi-perceptual characteristics. There is a double intentional aboutness. Remembering is directly about the Parthenon of the Acropolis, and it is indirectly about the perceptual experience, the quasi-perception intentionally implied in the activity of remembering; but the implied quasi-perception is neither performed nor is it the topic of the remembering, that is: (PRE...)PERx. It is that through which I am mentally referring to the Parthenon, a modification by which reference to the Parthenon is intuitively established.

b) Belief-modality. Remembering the Parthenon, the intentional correlate of this activity is believed as having existed at the time I had the perceptual experience which posited the monument as bodily present.

At the same time, the implied quasi-perception is posited, believed or judged as having been performed when the Parthenon was originally presented; I perceived it and was not in a state of hallucination or illusion. Finally, the intentionally implied quasi-perception is possibly posited in a temporal horizon of my consciousness of time. For remembering, it is posited in the past, eventually located at a specific point in time (in contrast to intuitive expectation located in the future or pure imagination located nowhere).

The triple positioning indicates three possibilities of error in remembering (and possibilities of neutralization): the remembering is not of the Parthenon but, say, of the Nikè temple. Or I erroneously posit a perception when it was an illusion. Or the dating in the temporal order of longitudinal time consciousness is not exact.

c) Temporality. The activity of remembering has itself a temporal extension, as the melody I remember has a duration (take the opening of the Schubert symphony with the two englishhorns), in fact the same as the temporal extension of its remembering. But the melody appearing in the remembering has only a modified temporal extension. The melody moves from a quasi-now to quasi-now (because it is not the now in present time), has only quasi-duration, duration in a present time which was. This kind of temporality has to be distinguished from the temporality of the actual experience of remembering which happens in present time in relation to which what appears, that is, the implied quasi-perceptual activity, must be situated as having been in the past.

[4] $REM = i_ (PRE p_ [PER])x$

(PER)h indicates the fact that the activity of intuitive presentification, such as remembering, takes place on the background of my actual conscious perception of the surrounding situation or horizon within which I find myself. I have only a background perception of the situation, a perception which constitutes the ground from which the activity of remembering is detached. More complicated rememberings could be analysed in the same way, such as {REM REMx}, {REM IMAx}, {REM REM PICx}, etc.

2. [1] {PICx} What is pictorial representation or picturing? What is the intentional structure of activities such as looking at figurative paintings, pictures and photographs? As with remembering, picturing is referring to something absent which appears in the picture, but which is not bodily in the picture. Therefore, [2] $PICx = (PRE\dots)x$; the representational activity is a presentification of something absent.

The global characteristic of pictures is the conflict, between perceptual presentation of something and presentification of something else, were pres-

entation is subordinated to presentification because I cannot have in presence before me something which in fact is absent from the picture. The conflict affects all the details of the spatial structure of what is perceived and the spatiality of what appears in the picture. The picture has three-dimensional properties on the one hand, but the picture appears on the surface which is only bi-dimensional (there is no oculomotor space for depth in the picture). There are two spaces in conflict. The space of/in the picture is not in continuity with the space of the rest. Forms and colours of the picture surface (say the grisaille of the photography) do not fit with what appears in the picture and to which picturing refers, to the real person or object for the picture. What appears is a *factum*, contrary to an illusion where the perceptual abnormalities do not appear as long as I am living within the illusion. Something appears as an illusion only when it is revealed, that is, when I no longer live within it. The *factum* is an irreality which appears within a real thing in total interpenetration.

According to the distinctions made by Husserl [Husserl (1980)], a triple objectivity is involved in picturing. a) The picture-thing *y*: it is the object hanging on the wall, the sheet of paper, etc., with their perceptual properties, wooden frame and canvas, imprinted colours, the grisaille of the photography and characteristics of the paper on the table, etc. This thing is not identical with b) the object in/of the picture, or the pictorial object which appears “in” the picture, the landscape on the painting or the person on the photography. The pictorial object is not to be confounded with c) the object of picturing, i.e. the depicted landscape or the person for the photographer, what Husserl called the “sujet” of the picture, the *x* in the notation, which may actually exist (or not), but which really is not in the picture; it is elsewhere.

What is the pictorial object? In so far as the object *x* for the picture is not actually perceived and does not have reality in the picture, the object that is shown in the picture must be neutralized or irrealized (*-x*), motivated by the conflict which affects through and through what appears (conflict of spatiality, form, dimension, internal and external horizon, colours, closure, etc.). The depicted object *x* which is referred to is not believed to be really before me, and the depicted object *x* is referred to exactly in so far as it appears in the picture-thing *y*. The pictorial object [3] (*-x/y*) is not the depicted object *x*. On the noematic side, picturing comes with a twofold intentionality; it makes reference to a double object:

[4] (*-x*) $_$ *x* comprehending the pictorial object (on the left side *y* of the formula) and the depicted object $_$ *x*. This noematic structure indicates that the object of picturing appears only through another object, that we have to find on the noetic side two sorts of activities involved. The intentional activities involved in picturing are: perceptual presentation of *y*, (PER)*y*, and the intentionally implied quasi-perception of *x* which is not believed to exist in the picture, $_$ [PER]*x*. On the ground of my perception of *y*, the Bildding, I

have a neutralized quasi-perception of x interpenetrated with some perceived qualities of y.

$$[5] \text{ PIC} = (\text{PRE} \text{ -}[\text{PER}]x) x$$

$$(\text{PER})y$$

From my actually occupied point of view, I get the picture-thing y within which x quasi-appears, such that reference is made simultaneously to the pictorially appearing object and to the represented depicted object. $\text{-}[\text{PER}]x$ is the intentionally implied activity which is neutralized so that x does not actually appear, unless I were to succumb to an instance of trompe l'oeil art. The Bildding which is perceived is believed as present for me ($_$). The object x of PIC is posited as existing or not (there are pictures of unicorns we don't believe in), therefore $_ / -$.

$$[6] \text{ PIC} = _ / - (\text{PRE} \text{ -}[\text{PER}]x) x$$

$$_ (\text{PER})y$$

All activities of presentification such as picturing and remembering take place on the ground of bodily presentation of my actual surroundings, the external horizon h wherein the picture-thing is located. This horizon is constituted by anonymous functioning intentionality. The complete structure of the intentional activity of picturing is then the following:

$$[7] \text{ PIC} = i _ / - (\text{PRE} \text{ -}[\text{PER}]x) x$$

$$(\text{PER})h _ (\text{PER})y$$

Having presented two examples of phenomenological analysis revealing the hidden structure of mental representations contained in intentional conscious experience, the question is what do these elementary examples show for cognitivists like Chalmers, Shear and Velmans (see the citations above) demanding more phenomenology to solve the "hard problem of consciousness". It is easy to imagine that more complicated forms could have been presented such as $\{\text{REM REM } x\}$, $\{\text{REM IMA } x\}$, $\{\text{PIC PIC } x\}$, $\{\text{REM REM PIC } x\}$, etc., involving much more complicated structures for quite ordinary intentional activities.

IV. FINAL CONSIDERATIONS

If the proposed analysis delivers the appropriate conceptualization of subjective conscious experiences and constitutes an "essential ingredient" for the cognitivist solution (see Chalmers [Shear (1997), p. 413]), if the formulas are the ones cognitivists are looking for, we are entitled to put the following question: How do these structures with their functional roles fit into the supposed causal network? Given the complexities of the internal structure phe-

nomenology has elaborated, the task will be much more difficult if one has to take into account the different components of the content (the representing activity as such, the intentionally implied activities, the represented correlates, etc.). What exactly enters the causal relations is not evident. More difficult even is the demand according to which “causal relations are only as physical as the terms they relate” [McGinn (1991), p. 52]. What terms have to be shown to be physical entities? [Dretske (1988), chap. 4] would ask to abandon simply this line of reasoning, arguing that something having an intentional content, whatever that may be, can play a causal role without the possession of this content being pertinent for its causal power. According to Dretske’s explication, it is possible that the causal power of the intentional state depends not on the semantic or representational properties, the properties of having this or that content, but on other properties. He then has to show what these other properties are. The causes rest mysterious as long as we do not have a clear idea about what the pertinent properties are. If the properties do not belong to the phenomenological, the *explananda* of cognitive science are not the more sophisticated phenomenological data such as the forms obtained in the foregoing examples. But then, it is difficult to pretend to have offered a physicalistic treatment of the problem of Brentano.

The same question can be asked for the functions of the intentional/ representational states. If the functions have to be physical functions, the having of a function is a physicalistic property to the extent that the bases of realization of the function are themselves physicalistic, according to the second slogan of McGinn [McGinn (1991), p. 56]: “Functions are only as physical as their bearers”. The question then is: What exactly of the exhibited structures of intentional activities enters into the relation of realization, this relation being a kind of upward determination or generation from the basis to the intentional/representational characteristics. In the case of a gas, we are told, one can explain that a gas has a certain temperature at time *t* by virtue of its having a certain kinetic energy of its molecules at *t*. The same for intentional properties. “If *P* realizes *Q* (in objects of kind *K*) [...], then the tokening of *P* at any time *t* by any object *O* (that is a member of *K*) necessitates the tokening of *Q* at *t* by *O*, but not conversely” [Tye (1995), p. 41], *Q* being a phenomenal property, while *P* the property of the physical bases supposed to realize the phenomenal property.

Furthermore, with the identification of the functions of the intentional activities, one must be in a position a) to formulate explicitly the standards of adequate fulfilment of the different functions, and b) to elaborate the framework in relation to which these standards can be considered as physical standards. In the case of biological functions, the standards of adequate performance are physical if they result from physical selection, the general standard of evolution being maximizing fitness. In the case of the functionality of intentional conscious activities, one has to show that the standards of fulfilment of

the functions were selected by virtue of their contribution to fitness. It is obviously difficult to integrate the idea of functionality of intentional/representational states in an evolutionary scenario and to show, eventually, that the standards of rationality governing, beliefs, preferences, desires, etc., are directly related to selective value.

If the *explananda* of cognitive science are not the occurrence of intentional experiences (from the first-person perspective) or their properties — the typical *explananda* in cognitive psychology is reaction time —, what then concerning phenomenal/representational consciousness is to be explained in the third-person perspective? Long time ago, Boring [Boring (1953), p. 185], a historian of psychology, noticed that “consciousness or phenomenal experience, or sensory datum — sensation —, or some other equivalent mental term indicates a psychological construct which is got by inference from the observations”. But if “phenomenal experience”, for instance, is a theoretical construct obtained inferentially from observations, what then is “observation” or “inferring” if not “phenomenal experience” or intentional conscious experience. This reasoning seems obviously circular. Intentionality and consciousness are simply presupposed in the last resort. This last conclusion perhaps indicates a metaphysical enigma behind any bridging the explanatory gap.

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NOTES

¹ I should mention further forms of consciousness [Chalmers (1996), chap. I,1] such as, awareness, introspection, self-consciousness, monitoring-consciousness, attention, wakefulness, etc., which play a more marginal role from the taxonomic point of view.

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