

REALISM AND MENTAL REPRESENTATIONS IN COGNITIVE PSYCHOLOGY

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Abstract. The article presents the problematic consequences of the application of one possible and very intuitive definition of realism to mental representations postulated by cognitive psychology. A brief explanation of what sort of entities mental representations are taken to be in the framework of cognitive psychology is provided. The definition of realism taken into consideration consists in two parts – claim of existence and independence of beliefs, linguistic practices and conceptual schemes.

Keywords: cognitive psychology, mental representation, realism.

Cognitive psychology is the leading paradigm in the field of psychology today. One of its central assumptions is that mind and mental representations exist and that they can be studied as other entities, processes, etc., postulated by other sciences (Uttal 2004; Pitt 2018). But are mental representations real? What is their ontological status – do they exist, and if so, what kinds of things they are? The text examines the consequences of application of a well-accepted, very intuitive definition of what realism consists in to mental representations.

We should start with a clarification of what we mean when we use the notion of “mental representation” in the framework of cognitive psychology. One can define representations in general as “any notation or sign or set of symbols that “re-presents” something to us” (Eysenck and Keane 2000: 267). “That is, it stands

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for something in the absence of that thing; typically, that thing is an aspect of the external world or an object of our imagination (i.e., our own internal world)" (Ibid.). Cognitive psychology takes this idea and assumes that the "mind" can be described in terms of representations and relationships, computations, etc. between them. Mental representations, however, are "theoretical constructs" (Pitt 2018) which can be studied only by analogies with representations in general, because "the mind" is considered private – the others do not have direct access to a cognitive agent's mental life. According to cognitive psychology, mental representations are of two types – propositional and analogical (Eysenck and Keane 2000: 269). The differences between them are derived by analogy with the representations in general. Propositional representations are discrete, explicit, combined according to rules, and abstract (Ibid.); in short, they are language-like. Analogical representations are described as non-discrete, representing things implicitly, having loose rules of combination and concrete (Ibid.: 270); they resemble images, maps, etc. The distinction abstract-concrete entails that propositional representations are amodal (they can be extracted from all modalities – visual, auditory, etc.) while analogical representations are modal (they are extracted from a particular modality) (Ibid.). Mental representations can be interpreted as mental objects with semantic properties (Pitt 2018) – propositional mental representations may have content, reference, truth conditions, truth value, etc. and non-propositional may have content and reference.

What can be deduced from this description? At first glance the nature of *mental* representations, seems obvious (indicated by the name). If this is the case, we can conclude that cognitive psychology presupposes some kind of ontological dualism – we have on the one hand the physical reality (which is not called into question) and on the other hand another thing – "the mental" which *re-presents* the first (or some of its aspects). It is not surprising that cognitive psychology presupposes the existence of a reality independent of the mind (a "physical" or "external" one). The ontological idealist position that "there is no world external to

and thus independent of the mind" (Chakravartty 2017), is not popular even in philosophy and when it comes to science – the question of the existence of a "physical" (or "external") world is rarely posited. Of course, there are some epistemological versions of idealism which do not exclude the existence of something mind-independent, but only argue that everything we can "*know*" about this mind-independent "reality" is held to be so permeated by the creative, formative, or constructive activities of the mind (of some kind or other) that all claims to knowledge must be considered, in some sense, to be a form of self-knowledge" (Guyer 2018). So, if cognitive psychologists desire to have a scientific status (which could be questioned (Uttal 2004; Elchinov 2016)), they cannot deny the existence of an external world (they cannot be committed to ontological idealism). One can make the following remark here: in general, the distinction "external-internal" is not always interchangeable with "physical-mental" (for example we can speak of the brain as internal and inside the body, even if it is physical). In any case, the presupposition of the existence of mental representations seems much more confusing from a scientific point of view than the assumption that there is an external or physical environment (supposedly represented by mental representations).

We can pose the question of the ontological status of the mental representations. Are they real? First of all, it is necessary to explain what realism consists in – what conditions must be satisfied for someone to say that something is real. Here, we take that to say that x is real is the same as to be realist about x . By taking realism for the everyday world of macroscopic objects and their properties, we can say that there are two aspects of realism: the claim of existence and the independence of beliefs, linguistic practices, conceptual schemes, and so on (Miller 2016). If we apply these two criteria to mental representations, it turns out that to be realist in regard of mental representations postulated by cognitive psychology, we must accept that they exist independently of (a) our beliefs, (b) our language and (c) our conceptual schemes. We are not going to examine in detail what "existence" consists in

(since this is not the aim of the text), here the word “exist” is used in a trivial sense – to say that “ x exists” is to say that “there is an x ” or, alternatively, that “ x is”.

A widely shared view of scientific realism is similar to realism in general: “scientific theories give true or approximately true descriptions of observable and unobservable aspects of a mind-independent world” (Chakravartty 2017). The representational theory of mind (RTM) is where we encounter mental representations, so we will examine it. The theory presupposes the existence of intentional mental states (which are *about* or which *refer to* something) as relations to mental representations (Pitt 2018). If we have for example the mental representation “the cat is on the chair”, we can have propositional attitudes (desires, beliefs, regrets, fears, etc.) related to that representation. We can *be afraid that* the cat is on the chair, or *want* it to be there, etc. This theory assumes that mental representations and propositional attitudes (including beliefs) exist. If we make a connection with the definition of realism that we examined earlier in the text and especially with the condition that to be realist about something is to state that the thing exists independently of (a) our beliefs, we can build the following argument:

1. Realism about something consists in accepting the existence of this thing independently of our beliefs.
2. The representational theory of mind is a realistic theory with respect to beliefs.

Therefore:

3. According to the representational theory of mind, beliefs exist independently of beliefs.

Obviously, something is not quite right. Moreover, the problem remains the same each time when one tries to define the reality of something (for example “the external world” (“the physical world”, “the non-mental world”)) with respect to the mind:

1. Realism about something consists in accepting the existence of this thing independently of the mind (including mental representations).

2. The representational theory of mind is a realistic theory with respect to the mind (including mental representations).

Therefore:

3. According to the representational theory the mind, the mind (including mental representations) exist independently of the mind (including mental representations).

The conclusion might be that the definition of realism we considered earlier is not accurate and we must reconsider it. How can we do that? We can exclude the condition “independently of our beliefs” (or “independently of the mind”). So, the argument would be as follows:

1. Realism about something consists in the accepting of the existence of this thing.

2. The representational theory of the mind is a realistic theory with respect to beliefs and mental representations.

Therefore:

3. According to the representational theory of mind, beliefs and mental representations exist.

That way, one can overcome the absurd and tautological consequence. But is it a satisfactory outcome? We obtain the following definition of realism: “for every x : x is real if x exists”. So, the external (the physical) is real if it exists and the internal (the mental) is as real if it exists. But are they dependent or independent? We have seen that in the framework of cognitive psychology the mind depends on the physical (since mental representations represent the physical world). And does the physical world depend on the mind? If the answer is “yes”, we enter in the field of ontological idealism, which would be very problematic if cognitive psychology is to be considered a scientific discipline. If the answer is “no”, we return to the argument we examined above.

Let's examine the other part of the definition of realism – “ x is real if x exists (b) independently of our language”. Is it possible that mental representations exist independently of language? It's not quite problematic regarding analogical representations, but as we have seen in the context of cognitive psychology, propositional representations are also proposed. Propositional representations

(as indicated by their name) resemble propositions in general. It is also often assumed that mental representations constitute a fundamental language called “mentalese” (Eysenck and Keane 2000: 270). Thus, propositional mental representations are very dependent on language (it is unlikely that they can exist without language). So, we can compose the following argument:

1. Realism about x consists in accepting the existence of x independently of language.
2. Propositional mental representations are not independent of language.

Therefore:

3. Realism about propositional mental representations is contradictory / incoherent.

We will examine the last part of the definition of realism “ x is real if it exists (c) independently of our conceptual schemes”. The notion of “conceptual scheme” requires a brief explanation (because it is a bit vague). They can be understood as “ways of organizing experience; they are systems of categories that give form to the data of sensation; they are points of view from which individuals, cultures, or periods survey the passing scene” (Davidson 1973: 5). Thus, conceptual schemes are a kind of framework, a way of classification. Obviously *conceptual* schemes cannot be constructed without concepts (otherwise they would be only schemes or non-conceptual schemes). So, we can conclude that for conceptual schemes to be constructed, there are two conditions – one needs concepts and the scheme of these concepts. According to cognitive psychology, concepts are mental representations or they are constituents of mental representations (Margolis and Laurence 2014). For example, one can have a mental representation (or a concept) of a “dog”, or one can have a mental representation “a dog under a table”, which consists of the concepts “dog” and “table”. One can also have complex concepts, such as “diamond ring” which is a concept, composed by two other concepts and which has emergent properties (that the concepts “diamond” and “ring” lack separately). In any case, in the context of cognitive psychology, concepts are mental representations

and without concepts, we could not have representations. Thus, mental representations are not independent of concepts.

1. Realism about x consists in accepting the existence of x independently of our conceptual schemas (of our concepts and the schemes of these concepts).
2. The mental representations postulated within the field of cognitive psychology are not independent of concepts.

Therefore:

3. Realism about mental representations is contradictory / incoherent.

We can ask the question “Can mental representations exist independently of *others* beliefs?”. It seems, at first glance, that mental representations of others can exist independently of the beliefs of given subject (S) and vice versa – the mental representations of S can be independent of the beliefs of others. So, the beliefs and the mental representations of others are independent of the beliefs and the mental representations of S in the same sense that the external/physical world is independent of S 's beliefs and mental representations. At the same time S 's mental representations are not independent of S 's beliefs (in the framework of the RTM) – if we take the mental representation “the cat is on the mat”, S can believe that this is the case, but this mental representation depends on other beliefs of S – for example “cats exist”, “cats can be on mats” etc. But the RTM doesn't make a difference between S 's beliefs and mental representations and others beliefs and mental representations – at least, it shouldn't, if the theory is supposed to be coherent – the theory cannot be realistic (to accept the independent existence of) *some* mental representations and at the same time to be non-realistic towards other mental representations (to accept that they are dependent of some beliefs). It seems odd if the RTM (a realistic theory towards mental representations – i.e. a theory that accepts that mental representations exist independently of our beliefs) accepts that there are two types of mental representations – some dependent of beliefs and some independent of beliefs (i.e. if the theory is realistic towards *certain* amount of mental representations), because that

means that according to the theory there are *some* mental representations that are real and *some* that aren't real. Additionally, this makes the theory incomplete, because it ignores certain mental states (the mental representations and the beliefs of *S*, which are dependent of *S*'s beliefs).

We have seen that when the reality of the external/physical world is defined in relation to its existence independently of our beliefs, language and conceptual schemes (a definition implicitly used in science), we receive criteria of reality that pose problems when they are applied to mental representations. Perhaps the definition of realism is poorly constructed, or the problem is not the definition, but the assumption that mental representations must meet the same criteria of "reality" as the entities, processes etc., postulated by other sciences. The last will be a big obstacle if cognitive psychologists insist that cognitive psychology is a scientific enterprise. Perhaps realism is not the best attitude towards mental representations and maybe within science in general. If one examines the mental representations from the point of view of instrumentalism ("the view that theories are merely instruments for predicting observable phenomena or systematizing observation reports" (Chakravartty 2017)), we only have to conclude that if cognitive psychology has a good theory postulating mental representations with which one can predict observable phenomena, the question of reality will not be essential. Does cognitive psychology offer us such a theory (which includes mental representations)? Not yet (and it's an open question if psychology will propose it to us in the future). First, if there is an observable phenomenon that should be predicted, it is human (and perhaps some animal's) behavior, but cognitive psychology does not have a complete theory of behavior. Moreover, in the field of psychology itself, there are serious disagreements – whether there are really two types of representations or only one (Eysenck & Keane 2000: 270), whether the phenomenal character of a mental state is reducible to a kind of intentional or non-intentional content (Pitt 2018), whether the representations are symbolic structures with semantically

evaluable constituents (classical view) or they are realized by patterns of activation in a network of simple processors ("nodes") (connectionist view) (Ibid.) etc.

There is another kind of anti-realism that suggests that mental representations postulated by cognitive psychology (those that resemble images or language) do not exist. Eliminative materialism is the position that folk psychology is a radically erroneous theory, and the entities postulated in this theory will be replaced by terms of complete neuroscience (Churchland 1981). One of the reasons to suspect that popular psychology proposes a good theory is the impossibility of making appropriate and accurate predictions of behavior and the lack of explanation for many observable phenomena. Mental illnesses, creative imagination, differences in intelligence between individuals, sleep, perceptual illusions, learning (Ibid.: 73) – all of this remains unexplainable within the framework of folk psychology.

In any case, if we set aside the antirealist positions, the status of mental representations remains problematic, if we apply the same criteria of "being real" to them, as we do for other things of the physical/external world and entities postulated by science. If the options are either the acceptance of scientific realism or ontological idealism (which seems to be a consequence of realist positions towards mental representations), the first alternative is preferable or at least not as problematic as the second. The corollary of this dilemma is the elimination of the notion of "mental representation" from the scientific vocabulary.

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