

## ORIGINAL ARTICLE

# Metaphysics of concepts: In defense of the abilitist approach

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## Abstract

Abilitism is an approach to the metaphysics of concepts according to which each concept consists of a managing cognitive ability coordinating other abilities (cognitive and non-cognitive) and a set of subordinate abilities associated with this managing ability. As I argue here, if we accept the abilitist approach, we can efficiently solve such puzzles in the metaphysics of concepts as the partial possession problem, the concept pluralism problem, etc. However, there are some possible objections to abilitism, concerning the abilitist explanation of compositional properties of concepts, knowledge-that, an extension/intension of concepts, and the idea that concepts are constituents of thought. However, as I demonstrate here, these objections can be answered.

## KEYWORDS

abilities, abilitism, concepts, mental representations, metaphysics of concepts

## 1 | INTRODUCTION

The metaphysics of concepts is quite an ancient topic. Similar discussions have been known since Plato's time, maybe even earlier. Nevertheless, there are many contemporary philosophers who discuss this problem (Fodor, 1987; Fregean, 2001; Laurence & Margolis, 2007; Peacocke, 1992). In order to understand the various controversies around the concepts' metaphysical status, we have to ask ourselves "what are concepts?" Philosophers and cognitive scientists usually describe concepts as what thoughts are made of. In contemporary philosophical and psychological literature on this topic, we can find descriptions like "building blocks of thought" (Solomon et al., 1999: 99), "constituents of thoughts" (Prinz, 2002: 2), "units of thought" (Carey, 2009: 5), etc. Unfortunately, these descriptions cannot tell us anything about the metaphysical status of concepts. Hence, using that characterisation, we cannot answer questions like "how do concepts exist?," "where do they exist?," "what type of existence is it?," "are they psychological units or abstract entities, or both?" etc.

In contemporary philosophy and cognitive science, there are several approaches to answering these questions. The main views on this topic are the representational view and the

abstractionist view. The representationalist view (Carey, 2009; Fodor, 2003) is based on the representational theory of mind (RTM). One of the most influential theorists of RTM is Fodor (1975, 1987). According to the representationalist view, concepts are mental representations (or mental symbols) in the language of thought. For example, the concept DOG<sup>1</sup> is a mental symbol that refers to a dog.<sup>2</sup> Another mainstream approach to the metaphysics of concepts is abstractionism. Abstractionists claim that concepts are abstract entities whose existence is independent of the mind (like mathematical objects). For instance, some theorists suppose that concepts are Fregean senses (from Frege's "Sense and reference") (Fregean, 2001; Peacocke, 1992). According to this type of abstractionism, a concept can be described as a mode of presentation of a referent (Peacocke, 1992: 3).

There are also mixed views, which combine representationalism and abstractionism (Davis, 2003; Laurence & Margolis, 2007). For instance, in line with some of these views, concepts can be mental representations typed in terms of the Frege's senses they express (Laurence & Margolis, 2007: 569).

Representationalism, abstractionism, and views that combine them in one way or another are quite popular approaches, but they aren't the only ones. The view, which I will call here *abilitism* is rarely mentioned in today's discussions. However, as I will argue here, abilitism at the very least deserves to be considered a serious opponent to the representationalist and abstractionist views.

## 2 | WHAT IS ABILITISM?

In "De Anima", Aristotle (1931) writes, "It follows that the soul is analogous to the hand" (432a1). This Aristotelian way of thinking, as I will show, can be efficiently adopted in modern discussions about concepts' metaphysics. One of the facts that may confirm the last thesis is that we can find the similar line of thought in more recent works (Geach, 1957; Kenny, 2010). However, here I'm going to formulate a more concrete and nuanced description of this view, which takes into account both the influential psychological studies of concepts and the possible objections to this approach.<sup>3</sup> So, what is abilitism?

*Abilitism is the view according to which each concept consists of a managing cognitive ability coordinating other abilities (cognitive and non-cognitive) and a set of subordinate abilities associated with this managing ability.*

In order to shed light on the characterisation above, we have to clarify what cognitive abilities are. Cognitive ability is an ability that our psyche uses to cope with tasks like categorization, object detection, etc. (Benjafeld et al., 2010). The term *ability* can be described, as it was suggested by Kenny, with the Aristotelian distinction of *potential* and *actual*, where an ability is a potential state, and a performance of this ability is an actual state (Kenny, 2010). The more precise way to describe ability was proposed by van Inwagen, who distinguished abilities from dispositions and capacities:

*[W]e say that penicillin has the power to kill certain bacteria, that a hydrogen bomb is capable of destroying a large city, and that a certain computer can perform a thousand calculations per second. (These are statements about capacities that may be unrealized. The vocabulary of our talk about the realisation of causal capacities and*

<sup>1</sup>Concepts are usually capitalised in academic literature.

<sup>2</sup>However, the concrete details of this reference depend on the theory of reference we accept (e.g., the causal theory of reference describes it through the causal relations).

<sup>3</sup>Despite the fact that the works of Kenny and Geach contain some prominent insights, they lack such a description.

*the vocabulary of agency similarly overlaps: we talk about the action of hydrochloric acid on zinc and the action of an automatic pistol.) But this sort of talk is really very different from talk of the power of an agent to act, despite their common origin in the technical terminology of medieval Aristotelianism. (Van Inwagen, 1983: 10)*

And from possibilities:

*Suppose I have been locked in a certain room and suppose that the lock on the door of that room is a device whose behaviour is physically undetermined; it may come unlocked and it may not: there is a future consistent with both the actual past and the laws of nature in which an internal mechanism unlocks the lock and another such future in which it does not. Then it is physically possible that I shall leave the room. But it does not follow that in any relevant sense I can leave the room. (Van Inwagen, 1983: 9).*

From van Inwagen's examples, we can conclude that abilities are features of autonomous objects (agents), unlike possibilities, capacities, and dispositions. Other non-autonomous objects lack abilities. Agents, on the other hand, can have capacities and dispositions as well as abilities. For instance, people are disposed to age, and they are capable of becoming heavier than a dog. Another notable feature of abilities is that they are associated with a certain action or a group of actions. The ability to kick a ball is associated with kicking a ball, the ability to run is associated with running, etc.

Summing up, we can characterise a cognitive ability as a feature of an autonomous object (agent), associated with a certain action or a group of actions and used by our psyche to accomplish its tasks. As I mentioned above, according to abilitism, concepts aren't just cognitive abilities. The main thesis of abilitism is that concepts consist of cognitive abilities coordinating other abilities (cognitive and non-cognitive) and sets of subordinate abilities associated with those managing abilities (an ability to categorise certain objects, an ability to use a word corresponding to that concept, etc.). Geach proposed a great analogy with the game of chess. An ability to play chess puts together and coordinates many interconnected abilities associated with making appropriate moves from certain given positions<sup>4</sup> (Geach, 1957: 13).

It is quite likely that scientists in the near future will be able to construct theoretical models of some (or even most) of our concepts. These models, in order to be accurate, should include for each concept: (1) a managing ability, and (2) a sufficient group of abilities governed by this managing ability.<sup>5</sup> Those possible generalised theoretical models of certain concepts describe types of concepts. A token of a concept is presented in a given person's mind as a concrete, sufficient set of abilities and the managing ability associated with them (also presented in this person's mind). Hence, a carrier of a token of a concept would be a creature who possesses a sufficient set of abilities and has the ability to manage them. A concept owner (i.e., a concept token carrier) can be distinguished from the concept or the group of concepts she owns. Abilities (including concepts) are also different from their performance. For example, the ability to discriminate between red and other colours is separate from a concrete act where a person uses this ability to choose a red napkin. We should also differentiate a concept from a concept's vehicle. A concept's vehicle is a concrete physical implementation of a concept, which is usually neural networks and their interactions.

Abilitism is neutral toward the representational theory of mind. Representations in the abilitist view may or may not be associated with concepts (i.e., cognitive abilities), depending

<sup>4</sup>In fact, Geach uses this analogy to show how concepts and acts of judgement are related. However, I think this analogy also fits our purposes.

<sup>5</sup>For example, the theoretical model of the concept FREEDOM should include a sufficient set of abilities associated with the phenomenon of freedom (ability 1, ability 2, etc.) and the managing ability orchestrating these abilities.

on our view on the nature of representations an abilitist can believe that all concepts have representations, or she can think that only certain concepts have representations. An abilitist can even stick to a more radical anti-representationalist view. However, in the abilitist view, representations just aren't concepts themselves (like it was proposed by representationalists).

Abilitism is also neutral to the abstractionist thesis. According to abilitism, concepts can exist as abstract entities. However, there are also cognitive abilities that are associated with those abstract entities in one way or another (depending on our metaphysical stance).

Now we can illustrate the abilitist approach using the concept DOG as a toy example.<sup>6</sup> DOG consists of the ability to coordinate abilities such as: (1) the ability to distinguish dogs from other objects; (2) the ability to use the word *dog*; (3) the ability to compare and combine an image of a dog with other images; (4) the ability to compare and combine the language unit *dog* with other language units; (5) the ability to discover relations between DOG and other concepts (e.g., PUPPY or HOUND) and the abilities (1)–(5) themselves. The carrier of a token of the concept DOG in this example can be a person who has at least the abilities (1), (3), and (5) from the list above and the ability to coordinate these abilities with each other. The performance of the concept DOG would be the usage of some of the listed abilities. Finally, the vehicle of the concept DOG would be neural mechanisms a person (the concept owner) uses to perform these abilities.

One may wonder why a concept *X* is not just a primitive ability (not the ability to coordinate the group of abilities)? For instance, the ability to use a word corresponding to *X*. The answer to this question is that views of this type oversimplify the cognitive processes accompanying the possession and acquisition of concepts. Possession of the ability to use the word *X* is certainly not enough to possess the concept *X*. It is just *one of the abilities* a person has to master to acquire the concept. To illustrate this thesis, I ask you to imagine the person *P* who can use the word *tomtit*. She knows how to pronounce this word, and she effectively uses it during chats about favourite animals with her friends. During these talks, *P* can say that she adores tomtits and that she especially likes their black heads and yellow bands across the breast (real tomtits usually have these traits) and never says anything else about them. However, *P* thinks that tomtits are mammals, not birds. Should we, based on this knowledge, agree that *P* possesses the concept TOMTIT? It seems, we should not agree with that. Even though *P* can effectively use the word *tomtit* during the conversation, she does not really possess the concept. To possess it, she has to be able to categorise tomtits adequately (in our situation, she obviously cannot do it). This example shows that possession of the ability to use the word *x* is certainly not enough to possess the concept *X*. For other abilities (categorization, concept combination, etc.), we can imagine similar situations. Therefore, we have to conclude that concepts aren't just specific primitive abilities; they have to consist of more than one primitive ability.<sup>7</sup> If so, another question should be asked: "Why does concept possession require a managing (metacognitive) ability?" Because, even if we agree that concepts aren't just single primitive abilities, we can still say that concepts are just clusters of those primitive abilities.

To answer the question raised, we should consider the hypothesis stating that concepts are clusters of primitive abilities. The problem with this view is that it does not explain how we separate concepts from each other and how we switch between them so quickly and effectively. Consider two scenarios: (1) We have to quickly switch between the ability to detect a *tiger* in our visual field and the ability to explain what a *tiger* is (e.g., an animal, a mammal, a big cat,

<sup>6</sup>The real list of abilities related to the concept DOG should be made up by cognitive scientists during the research of this concept.

<sup>7</sup>A minimum sufficient number of abilities a person has to have to possess a concept is a matter of discussion. The possible answer is that it depends on the concept type. For example, the possession conditions of abstract concepts (numbers, moral concepts, etc.) may differ from the possession conditions of concrete concepts (chairs, tables, etc.). On the other hand, we can also be argued that the minimal sufficient set is more or less similar for each concept (e.g. (Newen & Bartels, 2007)).

etc.). (2) We have to quickly switch between the ability to detect a *chair* in our visual field and the ability to explain what a *tiger is*. In which situation will the switch be faster and more effective? I argue that the first scenario would proceed more efficiently and faster. The reason is that in (1) both abilities are parts of the same concept—TIGER. In contrast, (2) presents us with abilities that are parts of the different concepts—TIGER and CHAIR. We expect that switching between those two abilities will be slower and less efficient. The experimental studies support those statements. One good example is the research that shows that responses to picture naming tasks and word categorization tasks were faster and more accurate when pictures belonged to the same semantic category or the same object as the words (Dell'Acqua & Grainger, 1999). This effect is called priming.<sup>8</sup> One may notice that the mentioned study does not show a significant difference between repetitive priming (e.g., the picture of a tiger followed by either the word *tiger* or a picture of a tiger) and semantic priming (a picture of a horse followed by either the word *tiger* or a picture of a tiger). However, another study more recent study shows that the difference between these two types of priming if we extend time-exposure of a prime (Chng et al., 2019).

The two mentioned findings can be interpreted in the following way. Switching between abilities can be more efficient if those abilities are parts of semantically related concepts and even more efficient if those abilities are parts of the same concept (if the first ability had been used long enough). This leads us to the suggestion that abilities of the same concept have to be somehow orchestrated to produce more efficient switching between them compared to abilities that are parts of different concepts.

However, these reasonings still do not immediately lead us to the conclusion that concepts contain high-order managing abilities. Another possible option is to guess that fast and efficient switching between abilities of the same concept happens because those abilities are associated with the same perceptual image. For example, the ability to detect a fox and the ability (or abilities) to use the word *fox* are associated with the same visual or auditory image of a fox. That common link to the same perceptual data allows abilities of the same concept to stick closely together (have more neural links between each other), which in turn allows them to interact with each other more efficiently and more reliably. The problem with the described hypothesis is that it fails to explain how we differentiate concepts with similar perceptual images from each other. For example, the perceptual images of the concept PYRITE (fool's gold) and the concept GOLD are similar, but we categorise them differently (e.g., the former is a sulfide mineral; the latter is a metal), we reliably use the words *pyrite* and *gold* in appropriate contexts, etc. If abilities were put together into concepts solely because of their shared connection to perceptual images, then PYRITE and GOLD would have the same or a very similar set of abilities, but they do not. Another problem is that we cannot explain the possession of abstract concepts (SQUARE ROOT OF TWO, INFINITY, etc.) if we accept this view. Abstract concepts do not seem to have any obvious perceptual images associated with them. However, we are able to use them quite effectively.

Thus, our only option is to conclude that in order to possess a concept, we have to possess a high-order managing ability that orchestrates the other abilities associated with that concept. The high-order managing ability is required in the abilitist framework to explain how we effectively switch between abilities of the same concept. We just use them as auxiliary mechanisms when we process low-order abilities. The assumption that managing abilities are parts of concepts also allows us to explain how we differentiate concepts from each other. The high-order ability A of the concept C is associated with some set of abilities S, and that is how we know all members of a set S are parts of the concept C.

<sup>8</sup>The priming effect can be described as a phenomenon in which exposure to one stimulus influences how the test subject responds to a subsequent (related) stimulus.

### 3 | ABILITISM AND SOPHISTICATED CONCEPTS

So far, I've discussed the abilitism approach with regard to very basic concepts (CHAIR, DOG, etc.). However, a good explanatory model for metaphysics of concepts also has to work with more sophisticated concepts (IMAGINARY NUMBER, HIGGS-BOSON, etc.). It seems not to be that obvious how we should explain possession of those concepts in terms of cognitive abilities. I argue here that, despite possible initial confusion, the mentioned objective can be easily accomplished. I'll start by describing abstract concepts like mathematical concepts in terms of abilitism. Take for example the concept IMAGINARY NUMBER. Except for a linguistic ability (adequate usage of the expression *imaginary number*), that concept requires the ability to correctly construct and manipulate mathematical expressions that contain the square root of  $-1$ . Another ability that is required to possess the concept IMAGINARY NUMBER is the ability to correctly categorise imaginary numbers (they are numbers, they are real numbers, etc.). On top of that, the concept requires a managing ability to manipulate the mentioned abilities.

For scientific concepts, we may use similar tactics. Scientific concepts like HIGGS-BOSON require an ability to use a linguistic unit ("Higgs-Boson"). Another ability that is possibly required to possess HIGGS-BOSON is the ability to refer to the dictionary definition of the term. Here we need to clarify that just remembering the definition is not sufficient; we need the ability to use that definition in our tasks. Additionally, to possess the concept HIGGS-BOSON, we have to be able to categorise that phenomenon and compare it to other phenomena. One may even add that in order to fully acquire that concept, a person has to be a specialist who works with those particles (or has the appropriate skills to work with them).

Another type of concepts that at the first glance can be a challenge to abilitism is the type of concepts which are very complex and specified. For example, the concept STARS IN THE CLOSEST NEXT GALAXY WHICH ARE BIGGER THAN EARTH AND SMALLER THAN JUPITER AND DO NOT CONTAIN ANY WATER MOLECULES. Here, the obvious answer is that it is hardly believable that most people fully possess the mentioned concept. The reason is that we cannot practice it in the vast majority of situations (because of its complexity and exoticism). It is even difficult to fully comprehend and remember the related language unit the first time we read or hear it. Obviously, practical usage of it is even more difficult. We can speculate that somebody possesses that concept for the most part (full possession seems unreachable because of complexity and a lack of practical usage). In that imaginary situation, a person would be able to use the language unit in appropriate contexts, would be able to manipulate some of the images related to that concept, would be able to categorise and compare it with other concepts, and on top of that, would have a managing ability connected to the mentioned concepts.

It should be noted that representationalists also have to do additional work to explain possession conditions for that group of concepts. What does it mean to have an appropriate representation of the square root of two? It seems that the most obvious way here is to say that possession means the ability to use the set of abilities related to that concept. Of course, representationalists may have some answers to that challenge. Here, we just want to highlight that this challenge should not be directed only to the abilitist approach.

### 4 | WHY CHOOSE ABILITISM?

One of the substantial advantages of abilitism is that *cognitive ability* is a clear and functional term. For comparison, the situation is radically different with the term *mental representation* from the representational view. This term is so vague that we cannot really say what this natural phenomenon is. The only thing we can say about mental representations with certainty is that



they are *in mind*. Plenty of various definitions of mental representation are a good illustration of this problem. For instance, Roitblat describes mental representations as any internal changes caused by experience (Roitblat, 1982). At the same time, Newell said that mental representations are mental entities that designate facts of the world (Newell, 1980). As for designation, Newell describes it in the following way: "An entity X designates an entity Y relative to a process P, if, when P takes X as input, its behavior depends on Y" (Newell, 1980: 156). Another definition of mental representations came from Laurence and Margolis, who describe them as constituents of propositional attitudes (Laurence & Margolis, 2007: 563).

Despite some minor differences in interpretations of it, the term *cognitive ability*, as we have shown earlier obviously is much clearer than the term *mental representation* (at least now).

The second asset of abilitism is that it can effectively explain concept pluralism, saving the term *concept*. Based on experiments in cognitive science, we can conclude that different concepts can have different structures. Additionally, we can conclude that different concept carriers (or even the same concept carrier in different ages) can have the same concept with different structures. Concept pluralism is the theory suggesting that the structure of the same concept may differ from person to person and may differ in the person's mind over time.<sup>9</sup> One of the examples of experiments I'll mention is the study by Gelman, in which she points out differences between categorization mechanisms that we use for processing concepts of artefacts and categorization mechanisms for processing concepts of animal kinds (Gelman, 1988; Gelman & Markman, 1986). According to abilitism, tokens of concepts tend to have different sets of abilities depending on the carrier of the concept, the kind of concept (a concept-ideal, a concept of an abstract thing, a concept of a natural kind, etc.), and other variables. Therefore, there is no difficulty in explaining these phenomena. For instance, in the mentioned experiment, we can assume that people tend to have different sets of abilities for concepts of artefacts and for concepts of animal kinds. Another example is the experiment, where Carey discovered that children tend to associate the concept ANIMAL with the concept PERSON, whereas adults do not associate these concepts (Carey, 1985; Carey & Johnson, 2000). Abilitism explains these observations. According to abilitism, a concept carrier sometimes can lose an ability related to this concept or acquire a new ability during the lifespan. Of course, the question may arise whether these two or more states of the set of abilities separated by time are the same concept. This question has the same structure as the personal identity problem. Therefore, we can adapt some of the answers to this problem. For example, the narrative theory (Schechtman, 2014) implying that each concept has a historical narrative which maintains concept's unity over time, may be a good option. The abilitist approach unites various phenomena under the term *concept* and, with that, does not make this term too broad. In contrast, representationalism does not have this advantage. According to the representationalist view, we can explain this conceptual change discussed above in two ways. First, we can assume that the change in the concept ANIMAL presupposes the replacement of the mental representation *animal 1* with another mental representation—*animal 2*. Therefore, we have to assume that there are at least two concepts of an animal: ANIMAL 1 and ANIMAL 2. The problem with this explanation is that we have to assume the existence of a very huge number (potentially infinite) of similar concepts (ANIMAL 1, ANIMAL 2, ANIMAL 3, ..., ANIMAL N etc.). Another way of explaining this conceptual change with representationalism is to expand the term *mental representation*, which is already too broad. In that case, we have to assume that mental symbols can somehow transform with time and differ from person to person. Of course, representationalists can find better explanations of concept pluralism. Here, I just want to demonstrate that concept pluralism is a significant challenge for them. In contrast, as we have seen abilitism supporters can easily avoid this challenge.

<sup>9</sup>Another version of concept pluralism suggests that the structures of different concepts may differ.

The third advantage is that the abilitist approach has no commitment to the abstract entities problem, unlike abstractionism. The problem is that there is no clear explanation of how concepts, if they are abstract objects, are related to the human mind and brain (which are parts of the physical world). In contrast, abilitism avoids the abstract entity problem (unlike abstractionism) by not using such abstract entities in its framework.

The fourth point in favour of abilitism is that it is good at explaining the partial possession of concepts. For some concepts, we can say that we partially possess them. For example, we may know the word *Parus* and know that it's a bird with certain features (e.g., a black head, a habitat), but we do not possess the proper image of a *Parus* and cannot distinguish a *Parus* from other birds with a black head in the appropriate habitat. In contrast, if concepts are mental symbols, what does it mean to partially possess them? Does it mean that we possess just a part of a certain mental representation? If so, how can we be sure that it's a part of a mental representation if we do not have the sufficient understanding of what mental representations are? Abilitism does not have this problem. It explains the gradation of possession of a concept with the suggestion that a person can initially acquire some abilities related to a concept and do not acquire other abilities related to it.

The fifth advantage is that there is no methodological gap between experiments and the abilitist theory of concepts. Philosophers and cognitive scientists who argue for the presence of certain concepts usually mention some experiments (Carey, 2009; Laurence & Margolis, 2001, 2013; Prinz, 2005). These experiments most of the time demonstrate that research participants (children, animals, adult humans) have a certain ability: the ability to perceive objects as spatio-temporally persisting (Kellman & Spelke, 1983; Spelke, 1994), the ability to distinguish relative sizes of objects (Brannon, 2002; Brannon et al., 2004; Lipton & Spelke, 2003, 2004; McCrink & Wynn, 2004; Wood & Spelke, 2005; Xu & Spelke, 2000; Xu et al., 2005), etc. For instance, Kellman and Spelke conducted an experiment in which they attempted to show that three-month-old children understand object cohesion (Kellman & Spelke, 1983). In that experiment, children were shown the object(s) which look(s) like a moving bar with a hidden central part of it. They dishabituate (look more at) the object(s), when it is revealed to them that there are two bars moving in a sync. They dishabituate less if the hidden part is revealed to be solid, meaning that there is one bar.

Philosophers and cognitive scientists usually draw from this type of experiments the following conclusion: If a participant has a certain ability (e.g., the ability to detect a certain object through changes of it in space and time), then she has a representation that is associated with this ability (e.g., (Carey, 2009: 63–64)). For instance, some researchers argue that ability to distinguish relative sizes of objects is strongly associated with the representation (and therefore, with the concept) of number (Dehaene, 1997; Gallistel, 1990).

However, there is a tangible gap between the presence of a certain ability and the presence of a representation associated with this ability. These experiments show the former but not the latter.

At this point we should ask ourselves: What kind of experiments can be evidence for the presence of representation? It's a tough question, which representationalists have to answer in order to argue for their view with empirical evidences. In contrast, an abilitist can consider these experiments as sufficient for proving/disproving her view on certain concepts. Hence, we can conclude that the abilitist approach is more consistent with recent experimental approaches in psychology.

As we just saw, abilitism has many strong points. Therefore, we can conclude that abilitism is a good explanatory model for the metaphysics of concepts. However, there are some possible objections to abilitism. Further, I will respond to them. But before that we have to consider the view which we call "representational abilitism".



## 5 | REPRESENTATIONAL ABILITISM

Above, we claim that abilitism is neutral to the representational theory of mind, meaning that an abilitist can believe that some or all concepts have representations associated with them. However, according to the abilitist view, concepts aren't themselves mental representations. If so, one might wonder "Why don't we simply posit that mental representations are individuated by cognitive abilities?" It seems that if we accept this line of thought, then we will be able to safely say that concepts are mental representations without rejecting the abilitist thesis. The mentioned line of thought has been proposed by Newen and Bartels (Newen & Bartels, 2007). The authors claim that

*Tokens of concepts are mental representations. Concepts as types of mental representations are individuated by their content. The content of a mental representation is determined by the mental capacities of the cognitive system having the representation, and can be spelled out in terms of functional roles.* (Newen & Bartels, 2007: 284)

As one may notice, the mentioned view (ignoring some minor technical nuances) does not contradict the version of abilitism that I am presenting here (let us call it *straightforward abilitism*). Straightforward abilitism's main thesis is that a concept should be described as two interconnected parts: a managing cognitive ability and a sufficient set of abilities associated with this managing ability. Representational abilitism, on the other hand, presupposes that certain interconnected groups of cognitive abilities should be called *mental representations*.<sup>10</sup> As we can see, the difference between straightforward abilitism and representational abilitism is mostly terminological. The decision to accept representational abilitism depends on whether we agree to call groups of interconnected abilities *mental representations*.

If we want to preserve and reform the term *mental representation*, representational abilitism is certainly a good option. However, the authors do not explain why such a radical shift in the meaning of the term *mental representation* has to be done or why we even need this term in the abilitist theory of concepts. It seems that we can safely drop the term *mental representation* without any loss in the explanatory power of our theory (at least until it is shown otherwise).

That is why here I stick to the position that straightforward abilitism is more preferable than representational abilitism.<sup>11</sup>

## 6 | OBJECTION 1: ABILITISM DOES NOT EXPLAIN COMPOSITIONALITY

The first possible objection to abilitism is that it does not explain compositionality. Compositionality is a principle according to which *the meaning of a complex expression is determined by its structure and the meanings of its constituents*. We tend to agree that at least in some cases, concepts have compositional properties. For instance, we tend to agree that the complex concept BLUE BALL consists of two simpler concepts BLUE and BALL combined with combination rules possessed by our cognitive mechanisms. Abilities, on the other hand, do not seem to combine in any obvious way. If so, abilitism as an explanatory model fails to explain the compositionality principle. The compositionality principle, if we accept it, allows us to explain the productivity of thought—"the *possibility of our understanding sentences which we have never heard before*" (Frege [c. 1914], 1980: 79), as Frege puts it. Taking into account the compositionality principle and consequently the productivity of thought phenomenon is crucial

<sup>10</sup>The authors do not specify whether managing cognitive ability can be part of a concept.

<sup>11</sup>Nonetheless, more persuasive argumentation in favour of one of these versions of abilitism requires another separate investigation.

for any psychological theory of concepts. Hence, rejecting the compositionality principle will cost abilitism dearly.

At first glance, this objection seems legitimate because abilities do not have the same combinatorial properties as representations or as Fregean senses. Indeed, how do we combine cognitive abilities? I think there are two possible explanations that do not necessarily exclude each other. The first option is to say that a concept combination is a combination of different abilities. For instance, imagine a situation in which P possesses two concepts: A and D. The concept A has the set of abilities {a,b,c} and D has the other set {d,e,f}. According to abilitism, when P combines A and D into AD, she actually combines sets of abilities {a,b,c} and {d,e,f} into {a,b,c,d,e,f}. However, the combination process is not usually so straightforward. In a standard situation, the context also affects the process of combination. Depending on the context and features of concepts, some abilities can be dropped or/and some additional abilities can be added. For example, {a,b,c} and {d,e,f} can be combined into {a,d,f,g}. This context-dependency was highlighted by Estes and Glucksberg when they showed that one concept usually attributes its properties to another during the combination process (Estes & Glucksberg, 2000). For instance, when we combine the concept SHARK and the concept LAWYER, we attribute the most salient features (or abilities to discriminate them, according to the abilitist view) of the concept SHARK (“predatory”, “aggressive”, “vicious”) to the concept LAWYER, which has some relevant dimensions for attribution (“temperament”, “competence”, “cost”). Evidently, these properties and dimensions strongly depend on the context in which a person is.

Another solution to the problem of combination is the suggestion that we have distinct abilities to combine various mental entities (e.g., visual images, linguistic units). Since concepts have compound structure,<sup>12</sup> for different parts (or aspects) of concepts there can be different combination mechanisms. It is very possible that there is the visual combination mechanism that is to a certain extent is separate from the word-combination mechanism. We can speculate that these separate mechanisms can modify abilities that are associated with a certain concept. For instance, the ability to discriminate foxes in a visual field can be modified and become the ability to discriminate black foxes in a visual field when the concepts BLACK and FOX are combined. Some insights on how this can work can be found in Barsalou’s theories (Barsalou, 1999, 2017). In his works, Barsalou also suggests that concept combination is a context-sensitive process, to the extent that we cannot say that there is only one distinct combination mechanism in our psyche. The second solution does not necessarily exclude the first one. We can have the general ability to combine concepts and the set of specific abilities to combine specific aspects of concepts. I think that the question of which solution is better and whether they are compatible with each other is a matter of future research.

One can argue that when we combine concepts it seems evidently that we combine features in the first place. In contrast, the combination of abilities seems like a side process. If so, then why should we state that concept combination is combination of abilities instead of combination representational features? Of course, most of the time we combine some features, and that process is usually the most apparent to us. However, possession of representational features is neither necessary nor sufficient condition for possession of a concept. For instance, features of SWIMMING or GRAMMATICAL CORRECTNESS seem insignificant compared to the abilities of those concepts. Features aren’t necessary to possess the mentioned concepts. We claim that a person possesses those concepts when she is able to swim and write correctly. Representational features also aren’t sufficient for concept possession. Should we agree with the claim that a person possesses APPLE if she cannot categorise and/or recognise apples?

<sup>12</sup>This thesis is a matter of discussion. However, we tend to agree with the pluralistic theory of concept structure (Weiskopf, 2009; Laurence & Margolis, 1999).

Obviously, we should not agree with that. Hence, the combination of abilities cannot be just a side process; it is an essential part of concept combination.

## 7 | OBJECTION 2: ABILITISM DOES NOT EXPLAIN THE KNOWLEDGE-THAT

Another possible objection to abilism is that it does not explain knowledge-that. Knowledge-that is a knowledge of some fact (e.g., a knowledge of a weather report). In contrast, knowledge-how is presented in our mind in a form of a skill (e.g., the ability to swim) (Ryle, 1945). Ryle uses this distinction between knowledge-that and knowledge-how to show that a person usually has two distinct powers of the mind (which, nonetheless, can be used simultaneously). Evidently, abilism can incline us to think that all concepts should be classified as knowledge-how. The point of this objection is that if some thoughts can be classified as knowledge-that, all concepts are knowledge-how and all thoughts are made up of concepts, then we need a good explanation of how knowledge-how (concepts) converts to knowledge-that on the level of thoughts.

There are two possible solutions. The first one is to accept radical anti-intellectualism, according to which every knowledge can be expressed in terms of knowledge-how (and eventually reduced to it) (Hetherington, 2011). If all knowledge can be explained in terms of knowledge-how, then there is no need to explain the compatibility between abilism and knowledge-that. However, radical anti-intellectualism is a rather controversial approach (Adams, 2009); hence, it itself requires a justification. An analysis of all the pros and cons of this position is beyond the scope of this article. Here, I just want to highlight that radical anti-intellectualism can possibly be a solution to the said problem.

Another solution is to say that knowledge-that consists of modal images (visual images, audial images, etc.) that are usually handled with specific abilities related to these images. If so, these modal images can be described as knowledge-that and we do not have to abandon abilism, since modal images aren't concepts. This solution seems preferable. However, the first one also can be used if it will be proved that radical anti-intellectualism is correct.

One might argue that the second solution is misleading because knowledge-that is propositional, meaning that knowledge-that always has a form of proposition. If so, we cannot say that modal images handled by cognitive abilities can be described as knowledge-that because propositions in our mind themselves consist of the modal images (and rules of combination). But if we accept that, then we still have to explain the transition between concepts (knowledge-how) and propositions (knowledge-that). The answer is that propositions (thoughts) do not consist of concepts alone. Other components of propositions are images (visual, audial, motor, etc.) and language units (words, phrases). Images and language units are components of thoughts in virtue of which thoughts can be knowledge-that. Without them it is a knowledge-how. Therefore, the transition between concepts (knowledge-how) and propositions (knowledge-that) can be easily understood as a process of combining concepts and associating them with images and language units.

## 8 | OBJECTION 3: ABILITISM DOES NOT EXPLAIN AN EXTENSION AND AN INTENSION OF CONCEPTS

**Another objection to abilism was suggested by Glock**

*Concepts have an extension (the set of objects which fall under them) and an intension (the features which qualify objects for falling under them); yet this cannot be said of abilities. (Glock, 2010: 122)*

This objection fails to distinguish between two separate contexts of usage the term *concept*: the logical one, and the psychological one. In a logical context, we usually assume that concepts (as logical entities) have extension and intension. However, there is no guarantee that such aspects of a concept occur in a psychological dimension of a concept. An extension and an intension both can be just useful fictions that help us with logical analysis of concepts.

But even if we accept that an extension and an intension both exist in the psychological dimension of a concept, we can easily find some features of concepts resembling an extension and an intension. We can say that an extension of the concept *C* is the set of objects *S* that we associate with *C*, and the way in which we associate *C* with *S* will be an intension of *C*. For instance, the concept *PAPAYA* under this consideration will have the following extension and intension. An extension will be the set of fruits that we are able to detect, classify, and associate with the word *papaya*. An intension of *PAPAYA* will be the way by which we detect this fruit (e.g., shape, colour, smell) and compare it with other fruits. Again, we may have an image containing relevant features of papayas in order to compare objects with them, but that image is not a concept itself. The concept in the mentioned situation consists of an ability orchestrating a set of abilities related to papayas and that set itself.

## 9 | OBJECTION 4: ABILITIES CANNOT BE CONSTITUENTS OF THOUGHTS

This objection can be expressed in two variants. According to the first, cognitive abilities and thoughts are distinct and different types of psychological entities. If so, we cannot say that the former can be a part of the latter. That line of thought leaves us two options: Reject the thesis that concepts are constituents of thoughts or reject the thesis that concepts are abilities. Fortunately, there is no need to follow it. The statement that cognitive abilities and thoughts are two distinct and different types of psychological entities is an empirical statement. Hence, it should be based on experimental evidence. However, we cannot find any experimental evidence supporting this claim. On the other hand, we can find evidence of similarity between the abilities and thoughts. Pulvermüller showed in a series of experiments that we can predict by neural activity what type of lexeme has been shown to a test subject. For example, verbs and words designating tools are usually accompanied by relatively high neural activity in areas associated with actions (e.g., the premotor area). In contrast, visual-oriented words (usually nouns designating animals) are accompanied by relatively high neural activity in visual areas in the occipital lobe (Pulvermüller, 2001, 2002). If these observations are correct, we can conclude that abilities (visual, motor, etc.) aren't really that different from lexemes, which are believed to express our thoughts.

Another variant of this objection is more radical. According to it, the terms *ability* and *thought* designate objects of different metaphysical categories. Hence, when we say that cognitive ability (i.e., concept) is a constituent of thought, we make a category mistake. Before we answer this objection, we have to clarify why one might think that abilities and thoughts are objects of two different metaphysical categories. Possibly, the reason behind it is that, according to our common understanding, the ability is *what allows us to launch the process*, and the thought is *the process itself*. Similarly, the ability to run is what allows us to launch the process of running. That ability differs from the process of running. Hence, if thought is distinct from the ability to process thought, then abilitism, according to which concepts are constituents of thoughts, makes a category mistake.

There are two answers to this objection, both of which are quite plausible. First, we can say that mind is a system which does not hold the distinction between the starter and the started.

One neural activity in the brain causes other brain activities, which send signals backward, causing activity in the initial neural network. The described state of affairs radically differs from the running example, in which we can easily differentiate parts: “ability to run” and “running”. In contrast, “the ability to discriminate dogs in a visual field” and “the process of discriminating dogs in a visual field” are quite similar. Furthermore, if we say that the concepts are only the latter, we would have to agree that non-actual concepts like *ALLIGATOR WITH BIG EYES AND A SMALL INJURED TAIL* does not exist before we explicitly hear it. However, I argue that we know what the mentioned concept means even before we have heard it. When we hear the expression “alligator with big eyes and a small, injured tail”, we know exactly what it describes. We are also ready to act according to this knowledge. For example, we know that alligators are dangerous, and we should be careful if we want to help this alligator. Hence, we also possess non-actual concepts, which according to abilityism are abilities.

Another possible answer to this objection is that the distinction between a cognitive ability and thought is a folk-psychology distinction. Hence, we should not suggest that this distinction describes reality. Of course, it is sometimes handy when we talk about our mental life. However, there is no reason why we should take it for granted. Indeed, as we have shown previously, there can be no real distinction between these two entities.

## 10 | OBJECTION 5: THE CHALLENGE OF A SUFFICIENT PRECISENESS OF INDIVIDUATING CONCEPTS

As it was stated above, the same concept may vary from person to person and may change during a person’s lifetime. Though it seems that some communicative acts require preciseness. When we formulate new sentences using our concepts, people usually understand those sentences. People seem to be able to extract precise meanings from our speech. If concepts are abilities that can be taught/learned in a speech act, then it is not quite clear how people are able to make those communicative contracts.

We can answer that challenge by pointing out the fact that meanings of words in our utterances usually aren’t as precisely defined as we tend to think. Let us imagine the situation in which we ask an average person about the precise meanings of the words she said. It will not be an easy task, requiring additional processing. Even for ordinary and simple concepts like CHAIR or WALL, it would not be that easy to find precise descriptions. Furthermore, lots of our communications aren’t successful, and we regularly re-ask and misunderstand each other. As for precise definitions, they mostly exist in dictionaries and handbooks. Of course, a person can develop the ability to reference a precise description of a concept from a dictionary, but that’s not what’s required for successful communication most of the time. If so, how are we able to understand each other then? Before I answer that question it’s worth noticing that the problem of mutual intelligibility is not solely a problem of abilityism. That standard philosophical problem can be addressed regardless of our view on the metaphysics of concepts. As Nagel puts it,

*It is the conceptual problem, how I can understand the attribution of mental states to others.* (Nagel, 1986: 19–20)<sup>13</sup>

However, I can highlight two reasons why, according to the ability approach, mutual understanding is successful most of the time. The first is that we refer to the same objects/events/phenomena of reality. Here, I follow the externalist claim that the content of concepts is to a large extent determined by the external world. We can talk with each other about trees because

<sup>13</sup>Other examples where the mentioned issue is addressed: (Zagzebski, 2008: ch. 6), (Hills, 2009), (Newen, 2015), etc.

we live in a world where trees exist and where our mind is able to see trees as separate entities.<sup>14</sup> The second reason is that, as Kripke and Wittgenstein famously noticed, meanings occur in language practice (Kripke, 1982). We do not need precise meanings because our interactions in a language community and language practice push us toward appropriate understanding. We can add that those communities and practices occur in the same world and include the same creatures (humans), which is why those communities and practices have more or less similar rules and contexts.

## 11 | CONCLUSION

As it was shown, abilitism is the view according to which concepts consist of cognitive abilities coordinating other abilities (cognitive and non-cognitive) and sets of subordinate abilities associated with those managing abilities, is a livable alternative to representational and abstractionist approaches. Abilitism is good at explaining concept pluralism and partial possession of concepts. There are some possible objections to abilitism, but, as it was shown, they can be handled.

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<sup>14</sup>Nonetheless, we can possibly defend abilitism from the internalist stance, which claims that content is determined mostly by our mind. We can say that linguistic meaning is closely related to modal images that aren't concepts themselves. Those modal images are usually handled with specific abilities related to them. Modal images do not vary that much from person to person (the same we can say for cognitive abilities) because of the similarity in human brains and cognitive mechanisms.



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