

Blanks in cognition: escape from the limits of the language

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Abstract This paper considers some philosophical implications of a claim that language relates to the world not by the means of (re)presentation, but in actions, taken by humans. The enacted approach to language shifts the attention of a researcher from language structure to human embodied action and its comprehension. Considering the philosophical implications of this idea, we come to a conclusion that enacted understanding of action should reveal the gaps (blanks) in our cognition, appearing because of structural difference between our actions and language. Consequently, it shows how we can extend in action our knowledge of the world, limited by language. Thus, here I present an attempt to escape from the limits, put by Wittgenstein in his dictum: “the limits of the world are the limits of language”.

Keywords: Limits of language, Wittgenstein, enacted approach, representation, meaning

0. Introduction

It is common to hold that language is a means by which we cognize reality. Language is intentional – that means it has the ability to be directed towards reality. Reality is conceptualized in accordance with the words we use. But how can we conceptualize the connection between language and reality? How can language be attached to something that is not linguistic, how can language represent anything that is “not of the same species”, as Heidegger puts it? (HEIDEGGER [1962] 1978: 259). Descartes’ notion of cognition in terms of representation has dominated the recent history of Western thought (TANESINI 1999: 9). This notion is related to the emphasis on vision as a primary form of cognition, common for (especially modern) Western philosophy and culture. For a long time the term “cognition” was almost identical to a passive, mirror-like, reflective representation of the world. After the Kantian turn in the approach to knowledge this concept was overthrown: philosophers do not hold that humans simply reflect what is going on in the world anymore. We realize the important role of some inner structures forming our cognition.

Still, we can see the remains of this notion of cognition as reflection in the conception of language as representation, as for example in Wittgenstein’s *Tractatus*. Perhaps it is the structure of language itself that deceives us: our usage of words directed to some parts of reality makes us prone to *objectification*. Indeed, the very structure of language at some points makes us believe that language represents reality: the nouns, especially those of medium sized dry goods (such as “cat” and

“mat”) seem to represent the things of the real world.¹ Representationalists believe that sentences and words refer to the world via mental representations of objects and facts. For example, representationalists consider the words “cat” and “mat” as corresponding to mental representations of real cats and mats and therefore believe that representation is a major form of relation between language and reality. As in the pictorial notion of language, introduced by Wittgenstein in *Tractatus*, the words stand for the objects and relations between them, forming pictures isomorphic to the real states of affairs.² But the idea of representational relation of language to the world is problematic. If we speak of language in terms of descriptions and representations, we quickly encounter many problems: what do moral statements describe or of what are numbers the representations?

But, at the same time, empirical and theoretical considerations of language give us a hint to a new direction of thought, proposing the idea that language is related to action. This line of thought was developed in the twentieth century by Heidegger, Austin and other philosophers. Austin proposes an idea that language has a performative function as well. He states:

Suppose, for example, that in the course of a marriage ceremony I say, as people will, “I do” – (sc. take this woman to be my lawful wedded wife). Or again, suppose that I tread on your toe and say “I apologize”. Or again, suppose that I have the bottle of champagne in my hand and say “I name this ship the Queen Elizabeth”. Or suppose I say “I bet you sixpence it will rain tomorrow”. In all these cases it would be absurd to regard the thing that I say as a report of the performance of the action which is undoubtedly done – the action of betting, of christening, or apologizing. We should say rather that, in saying what I do, I actually perform that action. When I say “I name this ship the Queen Elizabeth” I do not describe the christening ceremony, I actually perform the christening; and when I say “I do” (sc. take this woman to be my lawful wedded wife), I am not reporting on a marriage, I am indulging in it. (AUSTIN 1961: 222).

Moreover, the idea of language’s relation to action and consequent investigation of the role of action in language understanding was very fruitful in empirical research: cognitive science, psychology, neuroscience, etc. The embodied and enacted approaches to language oppose the idea that language understanding is based on syntactical manipulation of the system of abstract symbols, which represent real objects and relations between them. For example, Lakoff and Johnson’s theory of metaphor and image schema suggests that body influences both comprehension and production of language (LAKOFF 1987, 1999; JOHNSON 1987). Strong relation between action and language was revealed in a study of narrative comprehension in adults. This investigation has shown that we do not need all the details of the mental

¹ The representational way of thinking about the language-reality relation also has ramifications for the truth issue. As Lynch puts the main idea of representationalism, “truth of complex beliefs is recursively defined in terms of the truth of simpler beliefs and the rules for logical connectives, while less complex beliefs “correspond to reality” in the sense that their component parts – concepts – themselves represent objects and properties.” (LYNCH 2009: 24). Lynch proposes also a critique of representationalism, showing that this theory cannot account for moral truths and other truth claims that consider the entities we cannot locate in the physical world (LYNCH 2009: 35).

² Wittgenstein, *Tractatus Logico-Philosophicus*, §2.1511. However, as for Wittgenstein there is no gap between the subjective and the objective, the representational relation between language and world is internal, not external, as it is for representationalists.

states of the characters to understand and memorize the story. The story told purely in terms of actions, stripped of all the mental terms and details is understood, grasped, and retold equally well (FELDMAN, BRUNER et al. 1990). Additionally, some psychological experiments indicate that language understanding is related to action on the bodily level (MCGURK and MACDONALD 1976; GLENBERG, HAVAS, BECKER, and RINCK 2005; GLOVER, ROSENBAUM, GRAHAM, and DIXON 2004: 103). Experiments have shown that semantic properties of language contribute to our bodily actions, and action execution contributes to understanding. As Gallese and Lakoff claim, “imagining and doing use a shared neural substrate”, thus “the same neural substrate used in imagining is used in [language] understanding” (GALLESE and LAKOFF 2005: 456). But some experiments have shown that the embodiment of language understanding is even stronger. Considerations of the role of embodied action in language comprehension have led to the *motor theories of language understanding*. For example, one of the theories proposes that language understanding is based on a simulation of the sensory motor conditions described in a sentence or utterance. It suggests that meaning is embodied in the sense that it is strictly connected to the bio-mechanical nature of bodies and perceptual systems (GLENBERG, HAVAS, BECKER, and RINCK 2005). Meaning arises from activation of the same cognitive processes during both language understanding and action execution. So we can say that not only our mind, but also our body, understands language. Motor reactions influencing action execution are elicited during language understanding: for example, our muscles, related to jumping, slightly contract when we hear the word “jump”. Language influences not only embodied action, but also the way we perceive. For example, Borghi and Cimatti revealed that language can help to reshape the way we implicitly perceive our own body (BORGHI, CIMATTI 2009: 763). The role of language in perception and action was also shown in the experiments where usage of language influenced action execution. Glover et al conducted experiments demonstrating that embodied reactions can be activated by word labels attached to target objects. This is how they describe what was done:

We examined whether affordances could be activated implicitly by words representing graspable objects that were either large (e.g., APPLE) or small (e.g., GRAPE) relative to the target. Subjects first read a word and then grasped a wooden block. Interference effects of the words arose in the early portions of the grasping movements. Specifically, early in the movement, reading a word representing a large object led to a larger grip aperture than reading a word representing a small object. This difference diminished as the hand approached the target, suggesting on-line correction of the semantic effect (GLOVER, ROSENBAUM, GRAHAM, and DIXON 2004: 103).

Here I want to emphasize two discoveries: first, that the character of action in its initial stages was shaped by the word; and second, that in the late stages the action was conformed to an object. Thus, we may suppose that this experiment corroborates the phenomenological idea of the object’s shaping of the action directed to it. As Kelly states,

[I]f I'm having a perceptual experience of an apple, I cannot completely and accurately describe this experience without at least some reference to the very apple I'm having an experience of. Because the apple and the experience of the apple are intertwined in this way, we would be misdescribing the perceptual

phenomenon (equally, the content of the perceptual experience) if we said it was attributable to a completely independent, inner self (KELLY 2001: 151).

Thus, the actions are in fact shaped by both the language we use and the objects towards which the actions are directed.

The experiments considered above suggest that words are capable of evoking some readiness for action. The main inference from this and similar experiments we can make is that language is interwoven with other properties of human cognition – such as bodily action, visual and audial perception, and comprehension. The modular model of language in cognitive science is undermined by these and other experiments of the same kind. This is how Silvano Zipoli summarized this:

Contrasting the idea that language understanding is grounded in a symbolic dimension and that abstract categorization is made possible by abstract and disembodied comprehension, numerous experimental findings converge into assuming that linguistic symbols become meaningful only when mapped to non-linguistic experiences such as action and perception (ZIPOLI 2010: 167).

We do not have a separate language-processing module, which functions independently of other modules, as cognitive scientists hypothesized (FODOR 2001: 115). On the contrary, our perception, body and language compose a tightly knit whole system. These experiments reveal an intimate link of language to our body and its actions. This link exists both in perception and in comprehension and the way our language and concepts are structured. We may put it the other way round: *our bodily actions and our perception are permeated by language*.

We can see that language influences our bodily reactions and movements. Moreover, and more interestingly, language shapes so to say mental perceptions, i.e. the way we perceive the size of the objects or discriminate various things in reality. We can approach the same object as an instrument, an environment, an object per se, etc. This means that language shapes our perception and action, but not entirely, as it was seen in the experiment with the labeled objects. Language guides the actions, but reality makes corrections during action execution.

Thus, we can conclude from the evidence gathered by cognitive science, linguistics, philosophy and psychology, that language has manifold relation to embodied action. Language cannot be seen as a separate subjective or objective system, as it is ubiquitous in cognition and permeates various levels in it. In the following I will consider some important inferences from the embodied and enacted approach to language, emphasizing the role of human.

2. Blanks

The first important idea of *Tractatus* is that the world consists not of objects, as was held in traditional atomistic philosophy, but of facts. What is the case – a fact – is the existence of states of affairs. The facts are present in our thinking in the form of pictures isomorphic to the states of affairs. That means that the “pictures of facts concerning red flowers or green leaves need not have the colours 'red' and 'green' as elements... there must only be a structural similarity between a picture and its prototype”(STENIUS 1960: 113). In turn, the propositions and sentences expressing them are also pictures. Thus, the world, a thought and language are tightly bound together. They have similar logical form and can be mapped on each other.

Language both speaks about reality and exhibits it. “And what a sentence exhibits but cannot say is the 'logical form of reality'... [T]his is something that a sentence must have in common with reality to be capable of representing it” (STENIUS 1960: 179). Thus, the analysis of language only allows us to know the structure of the world, as the structure of reality is isomorphic to the structure of language. Moreover, Wittgenstein identifies the limits of world and the limits of language. He claims that “limits of my language mean the limit of my world” and that “the limits of the world are also [the limits of logic]” (WITTGENSTEIN, *Tractatus Logico-Philosophicus*, §5.6).

Building the world out of atomic propositions leaves no spaces and no blanks. There is no space between atomic propositions or between language-games. It always struck me as interesting that if the limits of the world are the same as the limits of language (WITTGENSTEIN, *Tractatus Logico-Philosophicus*, §5.6.), there is nothing outside of language. But if we build the world of actions that are directed by language towards reality, then we will easily see that there are lots of blanks to be filled in, lots of things to be discovered, lots of possible actions to take.

Does the way our language directs action cover all possible things and their combinations? We can check this out by comparing the words and the things they relate our actions to. This task may seem tautological, as here language is a tool we use to check the language: if we can name or point at something, then language is capable of doing this. How can we say with language things this language is unable to grasp? But here the key instrument is not the language, but our body and the actions we can perform upon the things language points at.

Here I start with the observation that there is a considerable structural difference between language and the environment as it opens for us in actions. The words and utterances are distinctly detached from each other, having clear beginning and end. But the things and space around us are not that distinct and do not have strict and insuperable borders and boundaries. This is why it is questionable whether we “cut nature at its joints” (PLATO, *Phaedrus*: 265E). We can change an apple by making an apple pie, change the borders of an apple by squeezing it. But the word “apple” does not allow the same changes. We have to use different words to describe the changes taking place with the apple. In the environment the space and things in it are perceived as a whole continuum with no unchangeable borders or boundaries inside. The things may consist of multiple parts, like sand, have fuzzy borders, like water, a complicated structure, like a bee hive, and experience changes in time.

I am going to develop this observation by citing Michal Lynch’s example revealing the role of ontology in our relation to the world.

Imagine that I ask a friend how many objects are in my study. After counting the books, computer, desk, chair, and whatnot, she announces that there are exactly one hundred objects in the room. One sort of philosopher might claim that even though my friend's answer is acceptable loosely speaking, strictly speaking she is incorrect because she has forgotten to count the molecules and atoms in the room. Or consider the mereologist, who believes that every part of an object is itself an object, and that for every pair of objects, there is an object that has each member of that pair as parts. He will insist that we also count the “mereological sums” of the various macro and micro objects in the room, such as the object made up of the sum of the tip of my nose and my keyboard. If either of these philosophers is right, it would seem that the number of objects in the room is much larger than what my friend believes. (LYNCH 1998: 17-18.)

We can see from this example that there are multiple ways to cut the environment into objects using language. But there is one more important thing, perhaps not that evident from this example: the way we cut the environment into objects has consequences for our actions upon the environment.

I will show this with another example. Let us look around and count everything we see, as was proposed by Michael Lynch in the experiment described above. Our language and the conceptualizations hidden in it are convenient for our actions in a certain environment. Thus, in the working room we inevitably will see everything we use. But if we try to undertake an unprejudiced exploration of the space, we will soon see the lack of words to describe the environment. Let us, for example, take a look at an apple on a desk. We have the words for the skin, seeds, pulp and stem of an apple. But we do not have any special words for all the visible parts of an apple, for the places of connection of apple skin to pulp, for various combinations of parts of the apple, like the seed plus 1 cm of pulp around it, etc. All of these parts are covered by the same collocation “piece of apple” and the properties and actions connected to this collocation are distributed to all of them.

Of course we can create some structures to point at these real existing entities, in the same manner as I have done now. But the lack of wordings for these parts shows us that we do not in fact directly act upon them. We do not distinguish these parts and do not manipulate them as with standalone objects. They are involved in our acting upon objects we distinguish in our language, so our interaction with them is only collateral and indirect. We bite a piece of apple thereby cutting the place of connection of skin and pulp; we throw away a core of an apple including a seed and 1 cm of pulp around it. But we do not interact directly with these objects and combinations of them; we do not make observations of them. Moreover, as we do not direct our actions and attention towards these things, we also do not pay attention to the response of these parts to our actions. Thus, we can hardly register their role in our action. This example reveals not only the issues of mereology, but also the issues of perception and action driven by language and thus constituting our environment.

But is it really important which parts of an apple are present in our language? I believe it is, as the wordings direct our actions. When we are able to distinguish a virus in an apple, we can start research on apple viruses. And vice versa, the actions we take upon the world eventually lead to encountering new things and properties, which we conceptualize in new words, such as the words “contagious” and “virus” for example. Both molecules and viruses were present in apples for thousands of years, but we could not name them and could not directly act upon them. They were transparent for the actions humans took upon apples. And for now, lots of people eat apples as if there were no viruses in apples. Apple viruses are not a part of these people’s environment. The same is applicable to anything in the world: if we do not act upon something, it is not conceptualized and not present in our environment. The way in which world is cut into joints determines the actions to be taken upon this world. And the possibility to cut the world in lots of different ways, getting different environments and repertoire of action, as we can see in different cultures, suggests that there are lots of spaces for possible actions opening the world in numerous new ways. Otherwise these ways of directing various actions, which the conceptualizations of different religions and cultures suggest, would not be possible.

I propose to call these things that are unaccounted by language and not addressed in direct action **blanks**. The points in our environment, to which our language directs our action, have a profile of all possible actions upon them and their constellations. Our language drives our actions, which are directed at some aspect of this whole

profile and result in perceptual opening of things in a certain way. The rest of possible ways of opening of things by actions, remaining uncovered through language-directed action, I will call blanks. Our language both directs and focuses our actions, thus not driving our actions towards unnamed objects. We cannot directly and intentionally act upon a thing that is outside our scope, which we cannot focus upon.

So I claim that language-driven action leaves lots of things and properties uncovered in blanks. I can show this lack of attention to lots of things, their combinations and corresponding conceptualizations, in quite a simple way. We could ask: can we, by moving our attention, close-ups and combinations of visual patterns (as in the picture “Three worlds” by Escher) see new things, previously unnoticed?³ Yes, we can. Can we do just the same with the other senses? Can we move our attention from its focus upon the overall sensation of the presence and the weight of an apple in hand to the feeling of the particularities of the apple’s skin, its roughness or smoothness? Yes, we can. We can also move our fingers to feel the areas of the apple’s skin that we have not touched yet. Therefore our own experience hints at a lot of things we leave unnoticed in our common actions, a lot of properties we could encounter if we change the character of action – all what is left in blanks.

Thus our language leaves a lot of things unnoticed and absent in our actions. If we now consider the important idea that our actions constitute the objects of perception (LEGRAND 2010: 328-331, NOË 2004) – we can conclude that our environment is a result of particular actions upon certain conceptualizations, opening some aspects of the profiles of the world. It is one of many possible environments, and if we change actions (at the same time changing conceptualization), we will come to a different environment where different actions are possible. In fact, such changes can take place on the social level – and here we can compare the differences between the actions and conceptualizations of the Middle Ages to those of our time. The changes can also take place on an individual level – and here we can compare how we perceive the world and act in it before and after religious conversion.

3. Conclusions

In our speaking and everyday acting we usually do not perceive that there are gaps in our knowledge and blanks in our environment. There are no gaps in language, as language contains nothing more than itself. We do not feel gaps and blanks in action, as our repertoire of actions keeps our focus upon things relevant for the repertoire. But we can see these blanks when we direct our action upon reality in a spontaneous way and not in ways our language suggests. This means that these gaps can be filled in by many different actions, leading to various new responses from the world. We can also compare how differently humans and cultures conceptualize the environment, and act in it, to see the possible profiles of the things.

Blanks, just as a black hole in physics, is a theoretical construct implied by a theory proposed. Representational approach to language gives no special meaning to the blanks, focusing on the words solely. But if we adopt enacted approach to language, the situation changes drastically. If we embrace action-based relation to the world, where language is guiding our actions instead of mapping the world, we have to

³ The constructive and creative role of attention in perception was stated by Merleau-Ponty (MERLEAU-PONTY, 1970 [1945], 29). Recently J.-L. Petit has gathered neuroscientific data corroborating this statement (J.-L. PETIT, 2010, 281-285).

admit that blanks in our actions conceal lots of possible objects and properties to be discovered. Thus in action we transcend limits of the world put by language.

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