

## ARISTOTLE'S PARADEIGMA AND HUSSERL'S ANALOGIZING APPERCEPTION

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*A motive for this paper was a series of papers by Vittorio Gallese (Gallese, 2014; Gallese, 2016). While developing his Embodied Simulation Theory, Gallese argued in favor of paradeigma (example, rhetoric argument based on parallel cases) as a naturalization of embodied simulation. In my opinion, this rhetoric argument is based on a fundamental cognitive procedure best understood in terms of Husserl's analogizing apperception.*

*In an introductory section, I briefly characterize the motivating ideas of Gallese and introduce the conception of neurophenomenology that I adhere to. The second section describes Aristotle's interpretation of paradeigma and a related conception of first principle grasping presented in Prior and Posterior Analytics. The third section contains an examination of the logical structure of paradeigma as a non-deductive argument. In the fourth section, I propose a novel reconstruction of both paradeigma and underlying fundamental cognitive procedure involved in first principles grasping based upon the phenomenological conception of apperceptive transfer of sense. The conclusion recaps on the work done and indicates prospective avenues of future research.*

*Keywords: Paradeigma, rhetoric example, phenomenology, non-deductive argument, analogizing apperception.*

## 1. Introduction

The motive for this paper is twofold. Firstly, it can and should be considered to form another stage in the development of our recent approach to cognitive activity to be depicted briefly in this section. Secondly, there were several papers by V. Gallese, which became an impetus for producing a string of articles, including the present one.

Vittorio Gallese, a prominent cognitive neuroscientist and neuropsychologist, one of discoverers of mirror neurons, is also known as the author of the Embodied Simulation Theory (Gallese, 2005; Gallese, 2014). The pivot of the theory is an interpretation of sense-formation process via simulation as reuse, when some cognitive procedures initially employed in one way are reused in a different way. Quite predictably, this simulation-as-reuse is in turn explained with the help of mirror resonance mechanisms thereby appearing embedded and automatic. In so doing, Gallese exposes close connections between simulation and Aristotelian rhetoric paradeigma (see e.g. Gallese & Cuccio, 2014; Gallese, 2016). According to Aristotle, example (paradeigma) is reasoning from like to like, “of part to part” in his own words. It allows an inferring of a general rule from particular cases. In the next section, I will consider paradeigma in more detail, however, at the moment I will confine myself to this brief description. Gallese’s hypothesis is that “embodied simulation allows us to naturalize the notion of paradigm, anchoring it at a level of sub-personal description, whose neural correlates we can study” (Gallese, 2016, p 136). In other words, embodied simulation-as-reuse can be viewed as paradeigma because a cognitive agent uses previous personal experience as an example for understanding other ones. “The analogy with the cognitive mechanism subtended by paradigmatic reasoning appears evident. Indeed, in the case of Aristotle’s paradeigma, an example, a particular case, is understood because it is close to our feeling, our experiences, and our baggage of knowledge” (Gallese & Cuccio, p. 16).

Thus, the main characteristic of the paradeigma is that it is based on agent’s simulation of past actions and events, due to which reactivation of the agent’s interaction with the non-linguistic essences occurs. In this process, linguistic expressions are bestowed with meaning, reflecting an agent’s specific linguistic activity. The paradigmatic transfer connects a linguistic expression with its meaning, rooted in a bodily embodied experience. Surprisingly, while developing ideas of embodied simulation, Gallese directly refers to Husserlian phenomenology while concurrently passing over an obvious cognitive phenomenological interpretation of rhetoric example via a concept of analogizing (analogical) appresentation (apperception). Below, I attempt to explore the cognitive role of analogizing apperception, thereby closing the gap by suggesting a novel reconstruction of paradeigma.

The above interpretation of cognitive activity in a phenomenological manner has much in common with our ideas developed in (Zaitsev & Zaitseva, 2016; Zaitseva & Zaitsev, 2017). In short, it can be introduced through the following key provisions.

First, we consider intentionality to be a universal fundamental characteristic of cognition shared by animated bodies of various kinds. It means that intentionality is no longer associated solely with human consciousness; it becomes a fundamental characteristic of embedded and embodied cognitive faculty aimed at adaptation.

Second, this interpretation opens a possibility to consider intentionality as functional relations between stimuli, interpreted as intended objects, and recognized, and thus meaningful individuals. Intentionality transforms a stimulus into an ideal intentional object thereby performing the meaning-bestowal function.

Lastly, construed that way, intentionality may be considered as a concept function from stimuli into recognized objects. In particular, as a consequence of this approach in (Zaitsev & Zaitseva, 2016) a categorization process was modeled via analogizing apperception-like function. Moreover, I am of a strong opinion that analogizing apperception (apperceptive transfer) is one of universal and fundamental cognitive abilities forming the basis for different intellectual procedures including paradeigma as a telling example.

In accordance with these guidelines, the paper is structured as follows. In the next section, I will consider Aristotelian conception of paradeigma (example) and show its connections with the problem of grasping first principles. Subsequently, in the third section, I examine paradeigma from the logic perspective as a mode of non-deductive argument. The last section is aimed to clarify the role of apperception in underlying paradeigma cognitive activities.

## 2. Paradeigma and First Principles

Following Gallese, I will start with the Aristotelian interpretation of paradeigma as a kind of rhetorical argument. However it is worth noting that a) Aristotle did not pioneer the invention of and exploiting this rhetorical device, and b) a hasty interpretation of paradeigma as rhetoric-specific is superficial, this argument gains its persuasive power from a deeper underlying cognitive procedure to be considered in the next section.

Before addressing Aristotle's vision of paradeigma, here are some introductory remarks concerning pre-Aristotelian roots of this vision: it was Isocrates, an Attic rhetorician, who was one of the first thinkers (but hardly a pioneer, too) to use arguments based on parallel cases under the name of paradeigma (παράδειγμα). In his writings, he primarily refers to examples from past experience not as a kind of

the background that shadows the basic claim; rather, he makes paradeigma one of methods of speech invention. Despite all differences, Aristotle was influenced by Plato, and the interpretation of paradigm is among those issues that make both philosophers akin. Paradeigma in Plato's *Sophist* and *Statesman* is an important subject in itself; it is worth a separate exploitation, and at this point, I just refer to Moor's paper (Moore, 2016) as the most recently published one.

At the opening of *Rhetoric*, Aristotle introduces two modes of argument, namely, an enthymeme and an example. The latter "is neither the relation of part to whole, nor of whole to part, nor of one whole to another whole, but of part to part, of like to like, when both come under the same genus, but one of them is better known than the other" (*Rhet A2 1357b*). These abstract considerations are illustrated as follows. "For example, to prove that Dionysius is aiming at a tyranny, because he asks for a bodyguard, one might say that Pisistratus before him and Theagenes of Megara did the same, and when they obtained what they asked for made themselves tyrants. All the other tyrants known may serve as an example of Dionysius, whose reason, however, for asking for a bodyguard we do not yet know. All these examples are contained under the same universal proposition, that one who is aiming at a tyranny asks for a bodyguard." (*Rhet A2 1357b*)

In Book II of *Rhetoric*, he distinguishes two kinds of examples: examples from the past and imaginary examples. Touching upon the peculiarity of paradeigma as a persuasive method, Stagirite recommends using examples for evidence when there is no enthymeme at hand, or reinforcing the enthymeme with examples as evidence. At the same time he observes: "Wherefore also it is necessary to quote a number of examples if they are put first, but one alone is sufficient if they are put last; for even a single trustworthy witness is of use". (*Rhet A2 1394a*)

Aristotle put more emphasis on example (paradeigma) in *Prior Analytics*, where he devotes a whole chapter to this subject matter *APr B24*. He explains the nature of example (paradeigma) as a specific kind of argument.

For example let A be evil, B making war against neighbours, C Athenians against Thebans, D Thebans against Phocians. If then we wish to prove that to fight with the Thebans is an evil, we must assume that to fight against neighbours is an evil. Conviction of this is obtained from similar cases, e.g., that the war against the Phocians was an evil to the Thebans. Since then to fight against neighbours is an evil, and to fight against the Thebans is to fight against neighbours, it is clear that to fight against the Thebans is an evil. (*B24 68b40-69a5*)

Hereinafter I will follow the modern tradition and in my reconstructions, I am going to use low-case letters for singular terms preserving capital letters for predicates (e.g. *d* instead of *D* for “Thebans against Phocians” and *A* as it is for “evil”). In fact, this argumentative fragment contains two separate arguments, that is, a standard categorical syllogism being the second step of the complex argument

(2)

To fight against neighbours is an evil

To fight against the Thebans is to fight against neighbours

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To fight against the Thebans is an evil,-and the preceding argument needed to justify (develop a conviction of) the major premise, presented below in my reconstruction:

(1)

The war against the Phocians was an evil

The war against the Phocians is similar to the war against Thebans

(*in the sense they are the wars against neighbours (B), and thus are B-similar*)

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The war against neighbours is an evil

Formally the latter argument can be presented in the following way:  
 $d$  is  $A$ ,  $c$  is  $B$ -similar to  $d$  / (All)  $B$  are  $A$ .

This argument looks odd at a glance. Instead of concluding by analogy from two premises, namely, “The war against the Phocians is similar to the war against Thebans” and “The war against the Phocians was an evil”, that “To fight against the Thebans is an evil” Aristotle constructs a complex two-step argument, where the first step (in the logical order) is at least bizarre. I will save my interpretation of this paradigmatic argument for the next section, and am now turning to a cognitive procedure of grasping first principles as it was presented in *Posterior Analytics*, because I think that it is closely connected with the paradigm.

Thus, in *APo* B19, Aristotle examines the way a knower may gain non-demonstrative knowledge of first principles (*archai*). Being a kind of explanatory primitives, these principles cannot be demonstrated. The process of acquiring such knowledge is described as a consequent move from perception via memory and experience to the capture of first principles. It is *nous* that is the cognitive state responsible for getting to know *archai*. I would argue that there is a sticking similarity between the problem of grasping first principles and justification of a major premise in syllogistic

argument as it was presented in *APr* B24 in terms of paradigm. Consider several quotations from *APo* B19 which, in my opinion, speak in favor of this suggestion<sup>1</sup>:

We must therefore possess some sort of capacity... And this is clearly true of all animals: they have an innate discriminatory capacity, which is called perception. (99b32–35)

But those (animals) that do (retain what they have perceived) still have (it) in their soul even after perceiving. When many such things are (retained) there is then a further difference: some animals come to have reason (logos) from the retention of such things, and others do not. (99b36–100a3)

And so from perception there arises memory, as we say, and from memory (when it occurs often in connection with the same thing) experience; for many memories form a single experience. And from experience, or (rather) from the entire universal that has come to rest in the soul (the one apart from the many, whatever is one and the same in all those things), (there arises) a principle of craft or science. (100a3–9)

When one of the undifferentiated things makes a stand, there is for the first time a universal in the soul; for although you perceive particulars, perception is of universals — e. g. of human being, not of Callias-the-human-being. And again a stand is made among these, until something partless and universal makes a stand — for instance ‘such-and such an animal’ makes a stand, until ‘animal’ does; and likewise with ‘animal.’ (100a15-100b5)

To recap, I would like to use the following bullet points to underscore the most important points in the Aristotelian considerations:

- innate discriminatory capacity shared by animals;
- the role of undifferentiated things in gaining knowledge of first principles.

Paradigm is closer to knowledge mining and finding regularities rather than to empirical generalization, and it is exactly what makes it a good candidate for grasping first principles. General conclusion of paradigmatic example clearly demonstrates the machinery of comprehension of first principles and thereby – the way to tap into *Nous* as a specific cognitive state. Thus paradigm as a linguistically expressed reasoning receives its convictive force from the underlying cognitive faculty common for all animate beings. My interpretation of the faculty’s nature will be detailed in the forth section below.

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<sup>1</sup> For *APo*, I follow (Barnes, 1993).

### 3. Paradeigma and Non-Deductive Arguments

As argued above, Aristotle places paradeigma in a broader context of a certain cognitive situation, in which it is accompanied with a syllogism. More precisely, paradeigma is needed to justify the major premise of an appropriate syllogism. The vast majority of Aristotle's commentators (Bronstein, 2012; Gasser-Wingate, 2016, etc.) claim in unison that a reasonable answer to the question as to how we grasp first principles lies in doing it by induction (more precisely, by inductive generalization). However, from my point of view, this answer is one-dimensional and inaccurate. As I see it, this cognitive activity is undoubtedly connected with induction in a broad sense as an alternative to deduction, where the former provides only an evidential support to a conclusion. At the same time, it essentially differs from induction in a narrow sense, meaning an argument from singular propositions about elements of a certain set to a conclusion about this set as a whole. Let me discuss the issue in more detail.

Pushing the situation into complications, Aristotle affords a ground for different interpretations of paradeigma. To mention but a few, in *Rethoric*, Aristotle literally asserts that the example is induction. "Accordingly I call an enthymeme a rhetorical syllogism, and an example rhetorical induction". (*Rhet A2 1356b*). At the same time, in *Prior Analytics* one comes across the following passage: "It [example] differs from induction, because..." (*B24 69a19*). Some three decades ago, the interpretation of paradeigma evoked discussions among philosophers, with polar perspectives formed by Hauser (1968) and Bonoit (1980). There are three possible (and referred to in the literature) candidates for formalization of paradeigma – induction (inductive generalization), analogy, and abduction.

In an attempt to keep in line with the Aristotelian idea as we see it paradeigma is an argument from two premises, where one premise is a singular proposition (a is P), and the other states the X-similarity between two objects, one of them denoted by the subject of the first premise. Furthermore, a general conclusion of paradeigma connects the similarity term (X) with the predicate (P) of the first singular premise, asserting that all members of category X are included into the category P. It is evident that this scheme differs essentially from inductive generalization (incomplete enumerative induction). The latter presupposes an inference from a number of singular premises about members of a sample to the conclusion about the whole population (target group). In our terminology, these premises must be of the form "a<sub>1</sub> is P", "a<sub>2</sub> is P", "a<sub>n</sub> is P", where  $S = \{ a_1, a_2, \dots, a_n \}$  is a sample. A relevant conclusion is supposed to look like "all G are P", where G is a population,  $S \subseteq G$ . It certainly is not the case with paradeigma whose premises are different and play different role in drawing a

conclusion. Roughly speaking, in the case of paradeigma there is no generalization (as a transfer from the sample to the population)!

Paradeigma more often is interpreted as an analogical argument. However, analogy in the Aristotelian case is closely connected with likeness (homoiotes). In *Topics*, we find the following explanation of argument from analogy.

“Try to secure admissions by means of likeness; for such admissions are plausible, and the universal involved is less patent; e.g. that as knowledge and ignorance of contraries is the same, so too perception of contraries is the same; or vice versa, that since the perception is the same, so is the knowledge also. This argument resembles induction, but is not the same thing; for in induction it is the universal whose admission is secured from the particulars, whereas in arguments from likeness, what is secured is not the universal under which all the like cases fall”. (*Topics* 156b 10–17)

Indeed, the above mentioned X-similarity is not a symmetric relation of likeness. For that matter, I agree with the author of SEP entry “Analogy and Analogical Reasoning”: “The argument from likeness (homoiotes) seems to be closer than the paradeigma to our contemporary understanding of analogical arguments” (Bartha, 2013).

Abduction is typically understood as a form of explanatory reasoning aimed at generating or justifying a hypothesis. According to Charles Sanders Peirce, who coined the term, “(a)bduction is the process of forming explanatory hypotheses.” (Peirce, 1974, 5.172). Schematically it can be presented as an inference from two premises and the best way to capture the idea of abduction is to follow Pierce and compare it with deduction (in syllogistic form) and (incomplete enumerative) induction:

#### Deduction

Rule: All the beans from this bag are white.  
Case: These beans are from this bag.

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Result These beans are white.

#### Induction

Case: These beans are from this bag.  
Result: These beans are white.

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Rule: All the beans from this bag are white.



Abduction

Rule: All the beans from this bag are white.

Result: These beans) are white.

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Case: These beans are from this bag.

At the first glance abduction in Piercean sense and Arestotelian paradeigma are similar – in both cases the reasoner arrives at a general conclusion. However, a more close examination reveals a dramatic difference between these two modes of argument. While paradeigma allows inferring general conclusion from particular cases, in abduction, to generate explanatory hypothesis for a particular case one employs an already established rule. Hence, abduction cannot be interpreted as a cognitive procedure for justification of major premises of a syllogism.

Thus none of non-deductive arguments considered in this section can be regarded as a formalization of paradeigma. All the above allows to make a tentative assumption that in the case of paradeigma we face a new kind of non-deductive argument.

#### **4. Paradeigma and Apperceptive Transfer of Sense**

To make my reconstruction of paradeigma self-contained I would like first to briefly recall the Husserlian concept of analogizing apperception and then to present my phenomenological interpretation of paradeigma in terms of the cognitive procedure.

In fact, Husserl addresses (sometimes without mentioning the exact term) the appresentation (analogizing apperception) already in *Logical Investigations*, and some years after in an unpublished in his lifetime *Thing and Space: Lectures of 1907* (Hua XVI) and *Analyses Concerning Passive and Active Synthesis: Lectures on Transcendental Logic* (Hua XI). He deeply and meticulously studies this cognitive procedure in close connection with the theory of part-whole, so that later, when necessary, to return to its presentation in a condensed form. In the context of this paper, it seems appropriate to follow Husserl and without getting into details come to the point.

A direct reference to apperceptive transfer (analogizing appresentation), appears when Husserl runs into a problem of Alter Ego in the Fifth Cartesian Meditation while trying to avoid charges of being prone in solipsism. Literally, “appresentation” means making something “co-present”, and Husserl introduces this concept through an analogy with ordinary perception and recollection. Operating analogizing apperception, he demonstrates that the Other is always a projection of one’s very self. Not only the other self but any object in the world is typified “by analogy” to a model

object which the cognitive agent has experienced earlier. Zooming in, the apperceptive transfer is based on a more fundamental bottom procedure of pairing. Pairing appears to be, as Husserl notes in §51, a primal form of passive synthesis designated as "association". The idea behind the pairing association is that two objects are given in pure passivity in a phenomenological unity of similarity, which constitutes a pair (if there are more than two objects they are constituted into "phenomenally unitary group", which again forms a pair with the model object). Pairing association leads to an overlap between each component of the pair with the objective sense of the other, which results in a "mutual transfer of sense", that is, an apperception of one object according to the sense of the other.

Broadly speaking, the meaning of an analogizing apperception (appresentation) lies in the transfer of sense characteristics (type) from the model object to a new object (stimulus in perceptive case) on the basis of identity parts, moments or sides of those objects. At this point, it would be relevant to cite Husserl's famous example with the scissors and the child who has finally grasped the idea of scissors (understood "the final sense of scissors"), and henceforward he/she "sees scissors at the first glance as scissors" (Husserl, 2013b, p. 111).

It is critical to underscore that apperceptive transfer is neither an inference from analogy (and not an inference at all), nor a thinking act. It is "a universal phenomenon of the transcendental sphere", an embedded and embodied fundamental cognitive mechanism<sup>2</sup> that forms the basis of cognitive faculty as a directed interaction between a subject and an object. In Husserl's words: "Even the physical things of this world that are unknown to us are, to speak generally, known in respect of their type. We have already seen like things before, though not precisely this thing here. Thus each everyday experience involves an analogizing transfer of an originally instituted objective sense to a new case, with its anticipative apprehension of the object as having a similar sense" (Husserl, 2013b, p. 111).

As far as the development of Husserl's analogizing appresentation by his followers is concerned, it is usually associated by phenomenologists with the study of the problem of Alter Ego, thereby undergoing certain changes. In particular, Merleau-Ponty offers his solution by shifting the emphasis from bodily similarity to an intentional object. According to (De Preester, 2008), Merleau-Ponty interprets pairing in a different way: for him the mediating term between Ego and Alter Ego is the intended object to which both of them are equally directed. Thus "the Merleau-Pontian in-

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<sup>2</sup> Though Husserl himself does not use the expression 'cognitive mechanism' for analogizing apperception or appresentation, nowadays it is customary to apply this word combination with that connotation in cognitive phenomenological context. So hereinafter I will use it as a convenient notation.

tentional transgression differs radically from Husserl's conception, basically because Merleau-Ponty's interpretation of the pairing no longer seems to presuppose the Husserlian analogous appresentation" (De Preester, 2008, p. 133).

With that in mind, we can circle back to paradeigma and first principles. As suggested before, paradeigma is not an analogical argument, nor is it an inductive generalization, either. A distinctive feature of paradeigma lies in one of its premises asserting the X-similarity of two cases. The similarity is as a result of the recognition a side or part X of one object, say, d, which was experienced earlier and stored in memory in a new object c. These two objects, c and d, form a pair and are experienced in 'a unity of similarity'. It becomes possible thanks to the fact that a rational agent discovers their common part or moment X and for that matter forms a new set (or category) X based on the recognized similarity. This way, a basis for a further transfer of sense from a model object to a new object is formed.

The salient feature of the apperceptive transfer is that whichever new object falls into the sphere of perception, if it forms a pair with the model object (that is, an agent finds a side or a moment X in it), it automatically receives the meaning from the model. This possibility of a multiple transfer of meaning is expressed verbally in argumentative form through connection of the previously captured moment of the identity and the pragmatically significant property P of the model object. Linguistically, this connection is formulated as a general conclusion "All Xs are P".

The following hypothetical example illustrates the universality of apperceptive transfer as a cognitive mechanism. Having encountered a hunter for the first time, a wild animal obviously does not perceive him as an immediate threat to its life and does not 'understand' the source thereof. However, lucky to survive the potentially deadly rendez-vous, the animal has gained some experience in which the object it met will be associated with an adverse consequence. Facing a man next time and smelling the smoking shotgun's odor, our smart beast will flee without waiting for a shot. The rationale for it is that both the first hunter and the second one are identified on the basis of the same smell of gunpowder. The beast has never experienced the second hunter – yet it recognizes the smell, which triggers reaction to a new man similar to the first-time one. Such a reaction has already led it to success. Focusing attention and thereby objectifying the smell, the animal reacts to the smell, which is actually perceived of as dangerous. Henceforth, whatever object with the smell of gunpowder (man, gun, bag, etc.) it runs across, the reaction to it shall be the same. Definitely, so long as animals are concerned, all these cognitive activities are not linguistically formed and occur on the built-in pre-reflexive level, receiving an experiential support as the most effective response to the stimulus.

All these considerations make connection between apperceptive transfer and paradigm evident. Husserl emphasizes that the analogizing appresentation is not reasoning; rather, it is a built-in cognitive mechanism, probably inherent to both people and other living beings. In *Cartesian Meditations*, he does not describe the principle of this mechanism in detail but just sketches it out by illustrating with the telling examples with scissors and the directly seen front of a physical thing which “always and necessarily appresents a rear aspect and prescribes for it a more or less determinate content” (Husserl, 2013b, p. 109). Aristotle, on the contrary, describes a special mode of reasoning, which is expressed linguistically and consists of two connected parts – argument on the basis of an example and a syllogism, in which the conclusion of the first argument appears as a major premise. In my opinion, the connection between representational transfer and rhetorical reasoning lies in the recognition of the fact that the basis of Aristotelian reasoning is the cognitive mechanism described by Husserl. To recap, I would argue that cognitive procedure of appresentation including (1) pairing and (2) appresentative transfer of sense on the level of reasoning and argument appears as (1) example accompanied by (2) an ad hoc syllogism.

Interestingly, in a newly translated into English appendix to the *Krisis* (Beilage XXIII – Husserl 2013a), Husserl provides some important comments on the relationship between phenomenology and natural science by citing biology as a fundamental example in regard to biological life, consciousness, empathy, and sense-bestowal. He postulates biology’s proximity to sources of evidence (*Quellen der Evidenz*) that provides “a proximity to the depths of the things themselves (*Tiefen der Sachen*)” and to the true a priori. In the footnote on the first page of Beilage XXIII he clarifies this idea:

Naturally one always has a biological a-priori starting point from the human being: here we have the a-priori of the body’s instincts, originary drives (*Urtriebe*), which bring to fruition (eating, mating, etc.) the a-priori itself. Of course, this holds for animals, to the extent that animality is actually experienced through empathy. Thus we have a generative a-priori. (Husserl, 2013a, p.8)

I am of opinion that the mechanism of transcendental appresentation can be categorized as generative a priori. It is important to note, that Husserl considers universal generative a priori, senses and cognitive procedures that underlie cognition-as-typification of not only humans but also other animals. Whereby the human *umwelt* appears as one of the *umwelts* of the animal world. Thus, Husserl emphasizes human rootedness in the common animal body world. In additional support of this claim, I invoke the words of Husserl in *Phenomenology on Intersubjectivity* (Hua XV, p. 180).

“We can only say this much: there is, in the human environment (Umwelt) and in the human being itself, as its subject, a layer that can be abstractly discriminated – a layer of animality (das Tierische), that is to say, that which is shared with the animal (and whose unearthing requires a more in-depth examination).” (the translation from Gaitsch & Vörös, 2016, p. 213)

Husserl, as a successor to the transcendental tradition, focuses on *a priori* conditions for cognition in general. He comprehensively explores and develops the concept of intentionality (*aboutness*, or *directedness to*), which, being a fundamental a priori cognitive structure, makes possible the transformation of a thing into an object for me, meaningful this or that way. Exploring cognition from the side of intentionality, Husserl discovers various fundamental cognitive a priori, providing the very possibility of cognition, including reflection. In this new context, the question that Husserl explored throughout his work namely, the question of the *sense of being*, remains decisive for him. This distinguishes Husserl's approach from the phenomenology of his student and follower Merleau-Ponty, who focused on, so to say, *the being of sense*, or the concept of the body, mediated by consciousness.

Generative a priori are present at different levels, and the intension to identification as a basis of appresentation is among them. For example, in logic, it manifests itself in logical formality and normativity, in our tendency to deal with the moment of identity of different statements. The logical laws constitute those norms (L-similarities) that one discovers in all true sentences. All these considerations may be of further use to refine Aristotle's famous conception of the laws of logic as 'rules of reality.'

## 5. Conclusion

The above analysis of paradeigma, or example, has demonstrated the following:

Paradeigma is a non-deductive argument irreducible to all known modes of plausible reasoning and thus can pretend to be a novelty. Its nature can be clarified by the appeal to an underlying cognitive procedure of apperceptive transfer. The procedure concerned is a manifestation of a deeper automatic and non-reflective embodied cognitive faculty, which we consider in close connection with the problem of the first principles grasping by Aristotle. The knowledge of *archai* cannot be obtained by deduction. They manifest themselves in the universal mode of cognition that is inherent in all knowing beings. This is the way, in my opinion, of analogizing apperception, which is connected with the a priori intention of identification and which is the basis of cognition as typification.

Aristotle's consideration of example-based reasoning shows that even deductively correct (syllogistic) reasoning needs to show the truth of the general premise in order to be sound (and convincing). Revisiting the first part of the paradeigma (d is A, c is B-similar to d / (All) B are A *in my reconstruction*), an obvious conclusion by the analogy that c is A is not something that would satisfy Aristotle. He comes to the same conclusion, but in a more complex, two-step way. In my opinion, this is because the paradeigma according to Aristotle contains a manifestation of the above-mentioned first principles. We do not just infer the occurrence of an individual's property; we discover the fact of its occurrence as a manifestation of a law expressed by a corresponding general statement.

The statement that c is B-similar to d effectively means that any object that is similar in a certain respect (that is, has a common property B) with object d, experienced earlier and stored in one's memory, is typified in the same way as the model object d. The general conclusion of the first part of paradeigma serves as a linguistic expression of this law. In each particular case of such an argument, the appresentation manifests itself, in the first part: in pairing objects (c and d in our case) and finding the similarity of these objects (c and d are B-similar), and in the second part: in typifying a new object (c as B). In this way, Aristotle rationalizes the universal principle of intuitive thinking, weaving it into the fabric of linguistically formed argument based on example.

I see both the phenomena of paradeigma generally and my considerations of its nature and peculiarities in particular open up new avenues for future research in various directions. Continuation of (neuro)phenomenological investigations of paradeigma and analogizing apperception as performing a meaning-bestowal function in connection with the idea of generative a priori seems very promising.

With regard to logical and cognitive aspects, in the first place my conjecture that paradeigma can be considered a separate mode of non-deductive argument calls for a closer examination and discussion. Secondly, we plan to further develop Intentional Theory of Concept as a (more or less) coherent theory whose foundations we have laid in our paper (Zaitsev & Zaitseva, 2016).

Another avenue of research is related to the argumentative and rhetorical role of paradeigma. In that area, one faces so to say 'controlled' sense-formation, because the aim of argumentation is to change the opposite party's stance in a desired way. In so doing, an arguer must be persuasive, and in the case of a rhetoric example, the persuasive power is rooted in the underlying analogizing apperception.

Yet another prospective application of the aforementioned interpretation of paradeigma and first principles grasping can be found in the theoretical computer

science, and more precisely, in machine learning. There are a number of different procedures providing for an abstract cognitive agent's ability to learn by generalization from experience. One of them is known as instance-based learning. According to Instance-Based Learning Theory (IBLT), an agent makes a hypothesis on the basis of a comparison of a new stimulus with instances experienced before and stored in its memory. As far as I can see, it would be interesting to search for a new algorithm for instance-based learning on the ground of apperceptive transfer of sense.

Either way, we find one and the same cognitive mechanism of sense-formation in argumentation or while typifying a new stimulus at a very primitive stage of perception, which can be identified as analogizing apperception.

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