

On the Problem of Interpretation Concerning the Contemporary Philosophy of Biology ^[*]

Çağdaş Biyoloji Felsefesine Dair Yorum Problemi Üzerine

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Abstract: In the first part of the study, I discuss three methodological problems of the interpretation of the biological data, namely subjectivity of perspective, anthropocentrism of jargon and perspective-orientation of the studies. Then, I defend intentionality of moral acts against the functionalist morality, emphasizing the interpretation of the observations on animal behavior cannot assume that animals have intentionality. In the second part, I review the ambiguity problem of the traits in the heritability studies. I voice the argument that the heritability studies do not work for the traits with well-circumscribed definitions as well, pointing out three methodological shortcomings of the studies, i.e., overestimation, underestimation and omission of the genetic contribution to the traits. Disagreeing with those who give priority to biology, I conclude that, methodologically philosophy should be prior in the interpretation regarding the contemporary philosophy of biology.

Keywords: Problem of interpretation, functionalism, morality, ambiguity of the traits, heritability of traits.

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1. Problem of Interpretation and Functionalist Approach to Morality

Lakatos converts the famous Kantian dictum about intuitions and concepts as “Philosophy of science without history of science is empty; history of science without philosophy of science is blind” (Lakatos, 1970, p. 91). There are intuitions and concepts, converting them into the contemporary jargon and disregarding the distinction between the things-in-themselves and appearances, there are biological data and our interpretations of them. We perceive things, and without our concepts that allow us to maintain structures of knowledge between our perceptions, we would not be able to understand what we perceive; and thus make no judgments and interpretations. The problem is whether the fact *is* the way it is interpreted or facts disclose themselves through different interpretations such that the interpretations amount up to nothing but the phenomenology of science. This problem of subjectivity is still a methodological problem concerning the interpretations of the scientific data, mainly the philosophical interpretation of the data from biology. It is beyond doubt that there *are* facts of science but once they are perceived or cognized by the scientist, there arises the problem of interpretation. No matter what conclusion one draws out of a biological observation, he interprets it from his own perspective which he has built by his personal culture and context dependent experience, or a perspective centering on human nature as the ideal criterion of all analogies. Wright gives an example of this methodological handicap through the anthropocentric interpretations in the works of Nikolaas Tinbergen and Konrad Lorenz: “All of their research—which emphasized mating patterns, pecking orders, territoriality—offered fascinating information on the complexities of animal behavior but always with obvious parallels to human behavior” (Wright, 1998, p. 172).

Rather than the nature of the animals that can perform some certain physical acts, the problem of concern regarding this example is *the nature of these parallels*. The nature of parallels actually indicates three different problems about the methods of interpreting biological data. As the first problem, it seems that Tinbergen and Lorenz probably could not avoid interpreting their observations in a non-anthropocentric viewpoint and maybe there is no such a dehumanized perspective at all. Secondly, the



biologists probably cannot find any other way of expressing themselves than by an anthropocentric language, and as the third and the worst probability biologists perhaps observe what they observe in a perspective-driven manner. Let us consider the first option and discuss whether it is possible to hold a purely objective perspective when it comes to interpreting the behavior of the animals. Heidegger has a plausible and defensible perspective on the issue. Rather than realist naturism, he was close to structuralist nurturism. Dahlstrom reports that according to Heidegger, to construe self-preservation and adaptation as the relation between things and the environment does injustice to animal or human nature. Instead of this approach of Darwin that he calls 'an economic approach', Heidegger proposes an ecological approach, glossing the concept of the biologist Franz Doflein, intending that researching into the manner of animals *in relation to their surroundings* (2013a, pp. 51-52). Thus, the meaning of this phrase gets clearer through the two basic notions of Heidegger's thought, namely *ontic* and *ontological*.

In the Heideggerian context, *ontic* refers to "a specific entity (or specific entities) as well as the description, interpretation or investigation of it (or them)" (Dahlstrom, 2013b, p. 146) while the term ontological investigation, in contrast, is "directed at disclosing an entity's manner of being as such" (Dahlstrom, 2013b, p. 146). On the grounds of this distinction Heidegger lists biology among the ontic sciences and according to him "In the order which any possible comprehension and interpretation must follow, biology as a 'science of life' is founded upon the ontology of Dasein, even if not entirely" (2001, p. 75). The statement *even if not entirely* designates the ontical aspect of the biological entities as the ontic foundations of biology. On that account, for him how one interprets biological data cannot be thought to be separate from the Dasein's being *as such*, as he is a *Dasein* himself and his Being is fundamental to any of his interpretations. Heidegger's layout applies to the interpretations on the environment as well. One cannot think of the interpretations on the environment, and on his observation scene in biology, to be distinct from the interpreted data as if there is an object or data being *as such* that is completely irrelevant to the Being of Dasein. The difference between the ontic and ontological, and their interpretational inseparability are clearer



in Heidegger's statement "To talk about 'having an environment' is ontically trivial, but ontologically it presents a problem. To solve it requires nothing else than defining the Being of Dasein, and doing so in a way which is ontologically adequate" (2001, p. 84). Actually, the dependence of the interpretation on the Being of Dasein explains why, for Tinbergen and Lorenz, there was no way of interpreting their data in a non-anthropocentric way. As *Daseins* they were interpreting and defining the ontic data in the light of their human perspective. In this sense, a completely objective interpretation requires the scientists even to keep their interpretations free of the ambiguity of their anthropocentric perspective, including all the sociological and psychological analogies that they establish between the interpreted and the interpreter. The interpreter cannot be isolated from the way he interprets and the way he interprets cannot be detached from the Dasein's Being *as such*. That is, there is no way of interpreting biological observations from a non-human perspective, particularly the studies which, when interpreted, compose an intersection between philosophy and biology, such as observing animal behavior and searching for the moral motivations if there are any. Heidegger expresses this in quite a structuralist manner in what follows: "Yet, even as an *a priori* condition for the objects which biology takes for its theme, this structure itself can be explained philosophically only if it has been conceived beforehand as a structure of Dasein" (2001, p. 84). The further implication of this problem is about the truth-value of the interpretations. No matter how ontic the observed is, the interpretation always includes Dasein, and there will always be differences in how the object of observation discloses itself to Dasein.

The second problematic issue is about the impossibility of adopting a non-anthropocentric language in the interpretation of biological data. A good example of this weakness is given by De Waal, who criticizes those who object him for adopting an anthropocentric language while interpreting his observations:

As a student of chimpanzee behavior, I myself have encountered resistance to the label 'reconciliation' for friendly reunions between former adversaries. Actually, I should not have used the word 'friendly' either, 'affiliative' being the accepted euphemism. More than once I was asked whether the term



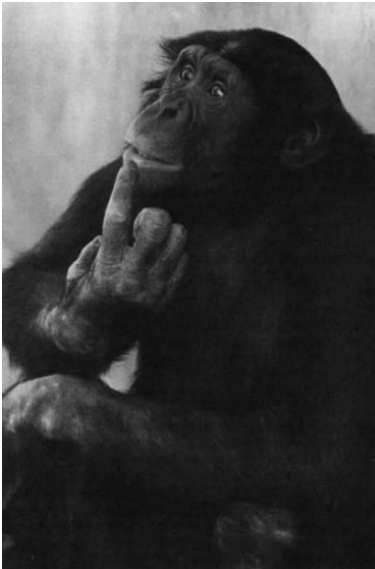
'reconciliation' was not overly anthropomorphic. Whereas terms related to aggression, violence, and competition never posed the slightest problem, I was supposed to switch to dehumanized language as soon as the affectionate aftermath of a fight was the issue. A reconciliation sealed with a kiss became a 'postconflict interaction involving mouth-to-mouth contact' (De Waal, 2003, pp. 17-18).

De Waal is right in his reply that the term anthropomorphism should fairly cover the terms *aggression*, *violence* and *competition* as well as their so-called *positive* counterparts. However; dehumanizing the language does not necessarily entail dehumanizing the perspective. When one were to ask De Waal what *mouth-to-mouth contact* means, he would most probably answer it to be a *kiss*, because his functionalist attitude takes *kissing* and *mouth-to-mouth contact* as functionally the same. The question is whether all mouth-to-mouth contacts should be interpreted as kisses, such that regardless of the diversity of cultures (where *kissing* may have some other form) and change in time (i.e., the same *act* may have different meanings in the same culture in different eras in its history). The answer does not seem to be affirmative. Another upfront illustration is from the chapter *Cognition and Empathy* in De Waal's *Good Natured*, where De Waal prefers to present a photo essay, consisting of photos and their

mere interpretations with no factual justification if there is any:

Kevin, an adolescent male bonobo, striking a philosophical pose. (*San Diego Zoo*) (2003, p. 91).

However, the *philosophical* meaning that De Waal imposes at this pose must be shared by Kevin as well, i.e., Kevin must at least have a notion of *philosophical pose* in the light of which he can strike such poses and that notion must be shared by De Waal as well such that his interpretation could avoid functionalism and anthropocentrism. Nevertheless, we will never



learn if there is such an intersection of notions, or if bonobos have such a notion after all, because we are different from bonobos both in its ontic and ontological sense.

The third methodological problem is even more destructive, namely, observing the pre-determined interpretation itself, such that the biologist observes the nature from his perspective-oriented angle. The case of Kropotkin demonstrates an example of a politically oriented interpretation. De Waal writes about Kropotkin's work *Mutual Aid*, in which animals are described as in cooperation rather than struggling against each other, and this interpretation is based on such observation that "Cooperation is common, as when beavers together dam off a river or when horses form a protective ring against attacking wolves" (2003, p. 20). We have any reason to believe that cooperation among animals is not a discovery, but an invention of Kropotkin. If all the scientists in a circle adopted this question-begging, thus fallacious method, all trust in science would perish. As De Waal unfolds:

Kropotkin did not stand alone in his emphasis on sociality and communion among animals: an entire generation of Russian scientists was uncomfortable with the primacy given in evolutionary thought to competition. ... Playing down Huxley's competitive principle, Kropotkin instead saw a communal principle at work: cooperation and mutual assistance among animals arose in response to the common enemy. The idea of a common enemy is perhaps the most significant of all of Kropotkin's ideas. In his mind it referred to the hostile environment in which many animals try to exist and multiply. ... He had a (not so) hidden revolutionary agenda, and read political preferences into nature to the point that he totally overlooked its nasty side. ... Kropotkin, however, was writing in direct response to people who reduced everything in nature to savage, unmitigated combat. Their position too could hardly be considered free from ideological bias. Russian scientists of that period saw the gladiatorial view as a concoction of the British upper class to defend the status quo (2003, pp. 21-23).

This type of abusing science for the sake of ideologies is not an attitude typical of only the socialist scientists. We know that, just like Nazis, almost all the powerful and totalitarian regimes produced a literature of their totalitarian science. Thus, this supports Heidegger not only as an



example of the ontology of Dasein as the foundation of how we interpret scientific data, but also how we prefer or build up the method.

Aside from these three problems, the basic assumption of functionalism seems to be another malignant problem on its own. Generally speaking, a functionalist focuses on the act that he interprets to be in accordance with the definition of the act. Especially those like De Waal adopt this view to argue that apes have morality to some degree, interpreting their actions as fulfilling the definition of that certain moral act. De Waal makes it clear about his functionalist stance by:

Reliable nonverbal signs of thought in humans do not exist, and the indicators that we sometimes do use (staring into the distance, scratching the head, resting the chin on a fist) are commonly observed in anthropoids. Would an extraterrestrial observer ever be able to discern that humans ponder moral dilemmas, and if so, what would keep that observer from arriving at the same conclusion for apes? (2003, p. 10).

Indeed, we do not know what would keep that extraterrestrial observer arriving at the same conclusion, but we do know what would not: *functionalism*. If the observer were a functionalist, as De Waal imagines as holding the same position he does, then we would agree that the observer would give the same answer that De Waal expects, but even doing so would not save the observer from falling into misinterpretation. Petitto, a sign language trainer for the animal named Nim Chimpsky, with which she shared the same mansion for a year, gives us an example of how flawed the functionalist attitude can be:

At first glance Nim seemed to 'imitate' her washing the dishes, but with an important difference. A dish was not necessarily any cleaner after Nim rubbed it with a sponge than before, and if he was given a spotless dish, Nim would 'wash' it just as if it were dirty. Nim didn't get the concept of 'washing', namely using liquid to make something clean (Pinker, 2003, p. 61).

The problem of functionalist attitude is the equation of the act with the motive, disregarding moral and teleological intentionality motivating the acts. Thus the definition of any mental or moral act already presupposes these two sorts of intentionality, negligence of which would leave no difference between doing something because it is good and doing



something good. Apparently, Nim has the nature to act that way including the imitative mechanism, but he does not have the self-consciousness that lets him ponder on what he is doing. In other words, he is not in possession of the concept of washing the dishes and what he does is not washing the dishes as the extraterrestrial observer of De Waal would affirm it to be, but just a blind imitation of the observed behavior. Drawing attention to the important notion of intentionality, Prinz illustrates:

Bees, for example, will sacrifice their lives to save the hive if it is threatened, but they are not driven by a deep moral conviction that their sacrifice will serve the common good. ... Chimp consolation and helping behaviour might be driven by genuine empathy, but even so, that wouldn't entail that it is driven by a moral sense. There is a difference between doing something because you hate to see others suffer and doing it because it's right (2012, p. 319).

As pointed out by Prinz, the notion of intentionality distinguishes the moral and the non-moral. It is also the main distinguisher of crime and mistake. An assassin engaging in a planned shooting of somebody does not get the same convict as a soldier who kills another soldier of the same side with friendly fire. As human beings intentionality is what universally pertains to our nature. Baldwin states that even the infants have the notion of intentionality and selectively imitate the intentional acts, e. g., if an adult utters an exclamation after a non-intentional accident, the infant will not imitate the behavior, but if the adult performs the same behavior, the infant will imitate it thinking that it is an intended behavior (Baldwin, 1991, p. 888). Carpenter, Akhtar and Tomasello have carried out a similar study in which the infants try to imitate what the adult intended to do, rather than just copying and imitating the behavior (1998, pp. 315-330). Regarding the notion of intentionality in language, Pinker as well, shows us how confusing the language gets without an accurate detection of the intention in meaning: "Autistics who do learn to speak on their own often use the word *you* as if it were their own name, because other people refer to them as *you* and it never occurs to them that the word is defined relative to who is addressing it to whom" (2003, p. 62).

De Waal's functionalist view apparently treats the intentionality, which uniquely pertains to the nature of human beings (so far no evi-



dence have been gathered for animal intentionality), thus he sees no flaw in arguing morality in apes, including complex moral behavior such as altruism (2003, p. 12). Prinz, on the other hand, argues that “Human morality extends to third parties; it’s not about how you treat me, but how you treat others” (2012, p. 319), then gives the example of study by Silk and her colleagues, which shows that the apes ignore the opportunities to give each other food, even if doing so costs them nothing (Silk, Brosnan, Vonk, Henrich, Povinelli, Richardson, Lambeth, Mascaró, Schapiro, 2005, p. 357-359). Thus, functionalism is not an adequately expository position, but a reductive position that reduces morality to action, cropping such fundamental notions as moral and teleological intentionality, treating both apes and humans as if they were Turing machines.

2. Ambiguous Definitions of Traits and Three Shortcomings of Heritability Studies

The debates regarding the heritability of the traits center around two controversial sub-topics, namely the definition of traits and the interpretation of the heritability rates. The traits sound quite culture-specifically defined, such that one cannot help doubting whether anything is measured at all. Let us have a look at the heritability rates of some traits which Bouchard introduces as a result of a twin-study. Among the personality traits there we see extraversion 54%, agreeableness (aggression) 42%, openness 57%, positive emotionality 50%, and lastly negative emotionality 44% (Bouchard, 2013, p. 140). There are traits concerning psychological interests, such as realistic 36%, investigative 36%, artistic 39%, social 37%, enterprising 31% and conventional 38% (Bouchard, 2013, p. 141). Among social attitudes there are conservatism 45-65% (over age 20 years), right-wing authoritarianism 50-64%, and religiousness with heritability rates 11-12% (16-years-olds) and 30-45% (adults) (Bouchard, 2013, p. 141).

The definitions of extraversion, agreeableness, openness and positive/negative emotionality are so ambiguous that they are not even culture-specific, but almost subjective. Whom we will consider as, e.g., agreeable, or extravert are vague enough to be labeled as context-specific. And again, the psychological interests, *enterprising* and *conventional* seem



to be confusing when one tries to consider them *psychologically*, as they seem to be belonging more to the field of business administration. Although there is some psychological and mostly sociological explanation of these traits, like any other human trait, the main problem is the category mistake that accompanies with the ambiguity of the definitions of the traits. The traits *realistic* and *artistic* are no less puzzling. They might have different interpretations and definitions depending on the metaphysical views one has, such as Plato. For him what the psychologists understands as realistic will be a forger of reality, and an artist would be even worse, the forger of the forgery of reality. Although philosophers are mostly quite conscious about their world-views, people with no philosophical education are generally not. Nonetheless, endeavoring to measure ambiguously defined traits in people who have no philosophical education but strong and unrecognized views cannot provide purely scientific and unbiased information. The traits *investigative* and *social* have as much ambiguity. The trait *investigative* depends on what is being investigated and how much investigation *really* goes on in one's life. Moreover, the culture and context dependency of the trait *social* gets clearer when one thinks of the two contexts and cultures where the same behavioral pattern is interpreted as *friendly* and in another as *easygoing*. If the term *social* is an umbrella term covering these and other sub-traits, then the same doubt emerges about what exactly it is that is being measured. Conservatism depends on the set of values one preserves and the set of innovations one resists. Twins from the Amish community and twins from a Texican family would not have the same definition of conservatism, and apparently their communities interpret the notion of *innovation* very differently. Right-wing authoritarianism is undoubtedly a description belonging to the Western politics and let alone its metaphorical ambiguity, there are many right-wings and many different types of authoritarianism. The heritability rates for religiousness are lower among the 16-years-olds than the adults, which can be explained by the difference in variance rates between different sets of subjects; however, the image of the religious person diverges even among the denominations within Christianity, such as Evangelicals and the Presbyterian Church. There are of course some other traits in the study which have almost universally standardized definitions and



criteria; nevertheless I claim that whenever we try to measure the heritability rate of a trait which we can use in comparative or superlative forms, we methodologically face the problem of *measuring* the heritability rates of something *qualitative*, rather than *quantitative*. In the latter, measurement may hold as long as there are conventional standards, but in the case of the former, only relative and subjective comparison holds.

In the heritability studies ambiguity of what is measured is not the only difficulty; the heritability rates of the traits are irrelevant to the contribution of the genetic structure to the traits. In other words, although we do not know what exactly is being measured, we know what is not: genetic contribution to the traits. Prinz sums up the three methodological weaknesses: “Heritability can overestimate the genetic contribution, underestimate the genetic contribution or conceal the extent to which the impact of the genetic contribution can be overridden by environmental variables” (2012, pp. 35-36). Let us begin with the first one, namely the overestimation of the genetic contribution to the heritability.

As known, Hume does not deny causation, but its perceptibility. The fallacy *post hoc, ergo propter hoc* was his target. If there are two series of events which coherently and constantly follow pattern in succession, it would be fallacious to argue that former event is the cause of the latter, as there is no perception of the causation but only a coherent and constant succession, which we call correlation. Heritability is all about the measuring the correlations, not demonstrating causation. Prinz explains the common misunderstanding about the heritability as “To say that a trait is heritable is to say that it varies along with a genetic trait. That does not mean it is caused by the generic trait” (2012, p. 35). Heritability studies demonstrate the correlation of a property with the genetic trait, and drawing any conclusion about the genetic trait being the cause of the observed property would be fallacious. The example Prinz provides is the case of the trait of lipstick usage, which is generally a habit of women. There would be a strong heritability rate for lipstick usage since sex is determined by the genes and most women wear the lipstick, i. e., lipstick usage is highly heritable. But arguing that genes determine the lipstick usage would be a misuse of induction, overestimating the role of genetic contribution to a trait, sacrificing nurture for nature (2012, pp. 35-36). An



important point is that this example makes the difference between *sex* and *gender* obvious, and evidently, the lipstick usage is a result of gender, which is a product of social construction, not genetic nature (for a tragic case that includes twins see: Butler, 2004, pp. 57-75). The second problem is confusing what is genetic with what is heritable. Studies on heritability measure variance, of course as long as there is some variance of the trait. Prinz's example is the trait of having an organ called *heart*, which does not display any variance among humans although it is genetic (2012, p. 35). Due to the absence of variance, any interpretation of study that denies the genetic contribution to heritably having a heart would be again fallacious, but this time, underestimating the role of genes and sacrificing nature for unsound reasoning. The third problem occurs when one confuses the observations on traits without paying any heed to the effect of the environment on that trait. In such cases, upon analyzing the frequency rates, if the researcher concludes that the observed trait to be genetic, he will definitely confuse nature with nurture, treating nurture as if natural and genetic. As heritability studies are statistical and carried out on finite number of subjects, the domain of the subjects play a crucial role in the study. Prinz's example is that of miners most of whom lost some of their fingers. If we try to measure how many fingers people have, and if we carry out the research on a set of subjects consisting of those miners, since environment has more effect on the observed trait than genetic structure, the heritability rate between genes and the trait of having five fingers will be quite low. However, if the research is carried out on a set of subjects consisting of subjects from various professions, the heritability rates will be considerably higher. Despite that genes have the same power of effect in both sets of subjects; the role of genes will not be explicit (2012, p. 36). Due to these three methodological problems of the heritability studies carried on twins, we cannot get a crystal-clear picture of exactly what role the genes have on traits. In Prinz's expression "When population geneticists quantify the heritability of a trait using twin research, there is still an open question about what role genetic factors play in driving that trait" (2012, p. 36).

Conclusion

Due to the scientific developments, in the contemporary philosophy



of biology there are two methodological positions, philosophy first and biology second, and biology first and philosophy second. The examples of the perspective-oriented methods and the impossibility of having a purely objective perspective and adoption of a non-anthropocentric language support the idea that method of observation and interpretation is not independent of the observer. Functionalist commitment would be a way of objecting to this position, but it would be reducing morality to behavior, leaving behind almost no morality. Methodologically, the heritability studies give us the rates of the traits, most of which are culture and context dependent, having no scientific and universal definition at all. This blurs the reliability of the design of the heritability studies. Moreover, the heritability studies either overestimate, or underestimate, or cannot demonstrate the genetic contribution to the traits, which indicates that methodological problems should be solved by the help of philosophy, and especially by the help of philosophy of science. I conclude that the interpretation of the biological observations and studies depend more on the subject of interpretation, than the object of interpretation.

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Öz: Çalışmanın ilk kısmında, biyolojik verilerin yorumlanmasına dair üç problem olarak perspektifin öznelliği, jargonun antroposentrizmi ve çalışmaların perspektif-güdümlülüğünü Heidegerci bir perspektiften tartışmaktayım. Akabinde, ahlaki işlevselcilik karşısında ahlaki davranışların niyetsellik içerdiğini savunmakta ve hayvan davranışlarına dair gözlemlerin hayvanlarda niyetsel ahlak olduğu şeklinde yorumlanamayacağını vurgulamaktayım. İkinci kısımda kalıtım çalışmalarındaki özelliklerin tanımlarının muğlaklığını ele almaktayım. Genetiğin özelliklere olan katkısının abartılması, azımsanması ve gözden kaçırılması şeklinde, kalıtım çalışmalarının üç yönetsel kusuruna dikkat çekerek bu çalışmaların tanımları neredeyse muğlaklık içermeyen özellikler konusunda da verimli olmadığı kanaatini dile getirmekteyim. Felsefeye kıyasla biyolojiye öncelik verilmesi fikrine katılmayarak, çağdaş biyoloji felsefesinde felsefenin, yorumlama konusunda yönetsel olarak öncelikli olduğunu sonucuna varmaktayım.

Anahtar Kelimeler: Yorum problemi, işlevsellik, ahlak, özelliklerin muğlaklığı, özelliklerin kalıtımsallığı.

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