Sidestepping the holes of holism

Tadeusz Ciecierski

taci@uw.edu.pl

University of Warsaw

Institute of Philosophy

Piotr Wilkin

pwl@mimuw.edu.pl

University of Warsaw

Institute of Philosophy / Institute of Informatics

Abstract

In our paper we attempt to achieve two goals: one of providing a more explicit characterization of holism and the other of showing that holism about confirmation and holism about meaning are less attractive positions than it is often presupposed. In the course of accomplishing the first task we distinguish two theses strictly connected with holism – one which we call the Contingency Thesis and the second one called the Degrees of Holistic Involvement Thesis. Both theses are used in arguments against holism sketched in the final parts of our paper.

1. Introduction

Holism is a position shared by many contemporary philosophers beginning with French conventionalists, Ajdukiewicz and some logical empiricists, ending with Quine, Davidson and even some postmodern philosophers. It has been characterized usually in an implicit manner, using metaphors rather than precise definitions. Nevertheless, it has found a strong rooting in many branches of philosophy, such as epistemology, philosophy of science, philosophy of language, philosophy of mind and social philosophy. Despite its vagueness, it is nowadays usually not the subject of strong controversy among professional philosophers that some holistic picture characterizes essential properties of the scientific enterprise, language, or the mind, respectively. Below we will attempt to show that holism might not be as attractive an idea as it appears at first glance. We will concentrate on two versions of holism: holism about confirmation and linguistic holism (holism about meaning). Our approach will borrow the

argumentational strategy from the holists themselves, as they used to argue in favor of holism by showing weak points in localism and atomism. We will accordingly defend localistic and atomistic claims by pointing out difficulties in the holistic program.

2. What is holism?

Holism with respect to entities of a given type (sentences, scientific theories, mental states etc.) is a claim that some relevant properties of those entities are best understood as somehow derivative from properties of some structure containing the entities. For example: holism about sentences' meaning is a theory which claims that meaning of a particular sentence is derivative in character from properties of the language system to which the sentence belongs; holism about confirmation assumes that impact which experience has on sentences depends on the theoretical context in which a given sentence is situated; holism about knowledge is a thesis that true belief states of a rational agent are justified (and, as such, count as knowledge states) only in virtue of the relation of that belief state to other belief states of the agent. The notion of a *derivative character of some property* is often left unexplained but it is usually presupposed that is should be closely connected with two theses – one about the contingent character of the derivative property (which may be called the "Contingency Thesis") and one about its gradual nature (which may be called the "Degrees of Dependence Thesis"):

Contingency Thesis. All relevant properties an entity possesses within a given system are systemic properties. Internal properties can only be attributed to entities via a derivation from systemic properties. The relevant properties of an entity might have been different, had the entity been an element of a different system.

Degrees of Holistic Involvement Thesis. The holistic character of a property comes in degrees, i.e. holism may (although does not have to) take only some relations and entities as the basis for determining the relevant feature of the entity.

Thus, according to the Contingency Thesis, it may be claimed that a sentence's meaning may be different, had the sentence been an element of a different linguistic system. It may be also

claimed that the rejection of a sentence in light of some experimental data may be transmitted to some of the background assumptions of the whole theory, had the assumptions been pragmatically or meta-theoretically less important. Finally, with respect to holism about knowledge, the Contingency Claim results in admitting the possibility that a true belief state might be unjustified, had the beliefs of the person been different. The Degrees of Holistic Involvement Thesis is rather methodological in character – it states that radical holism is just one possible option (it also shows that the so-called "localism" is simply holism to a lesser degree) and points to a possible source of the lack of clarity in holistic doctrines – namely the refusal of making the degree of dependence explicit. This last feature is especially important if we keep in mind that some holistic theories seem to be trivial in character – if, for example, by "being an element of the linguistic system" we understand, among other things, the fact that a linguistic system contains sentences stating meaning conventions (in the appropriate metalanguage or in a form of meaning postulates), then holism about meaning trivially follows. According to the Degrees of Holistic Involvement Thesis we may be proponents of many versions of holism about meaning, holism about confirmation and holism about knowledge – for example we may claim that the meaning of a given sentence is determined by its inferential (in a standard semantical sense) impact and we may claim also that in addition to this impact some pragmatic inferences are relevant; one can also defend different versions of holism about confirmation – e.g. one which imposes taking some particular scientific theories as theoretical context in which a conformation result is evaluated and the other which assigns this role to the other theories; eventually varieties of beliefs may be taken as decisive for describing true belief as justified.

One of the possible conclusions which can be drawn from the above characteristic is that every type of holism which strives to be a philosophically salient theory must, in some form, find an equilibrium between the Contingency Thesis and the Degrees of Holistic Involvement Thesis. While the Contingency Thesis and the Degrees of Holistic Involvement Thesis are not strictly opposing, one must be careful, when endorsing a strong case of the former, not to fall into a trivial formulation of the latter. A good example would be Leibniz' ontology if understood in a holistic way. According to Leibniz, every individual is specified by a unique set of properties; moreover, all those properties are essential and global – they are sufficient to single out all other individuals in the world. In this scenario, changing a single element of the universe requires a

change of the whole system – but as a side effect, we cannot speak about modifying any properties of this specific entity, since after even the slightest modification, the entity loses its sole criterion of individuation. This is a real problem for many versions of holism – how do we speak about having an entity play a different role in a given system without having the entity possess criteria of individuation outside the system?

3. Arguments against holism

We would like to begin our critique with a version of holism whose consequence is the egalitarian treatment of mathematical and logical statements and of empirical statements. This version of confirmational holism is widely defended in many works of Quine. It is worth noticing that said egalitarian treatment is in fact a variant of our Contingency Thesis, namely, one states that the sentences of logic and mathematics can be modified if they are a fragment of a different theoretical context from the one which we are given. Furthermore, the Degree of Holistic Involvement in this specific case is extremely vague. Due to this vagueness, the egalitarian treatment of said sentences is one of the few consequences which one can draw from this version of holism without fear of misinterpretation.

Treating empirical and logical sentences on par is something that drives Quine's famous criticism of modal logic and is one of the main assumptions behind his *slingshot* arguments targeted at quantified modal logic. It is therefore something which is a consequence of his holism beyond any reasonable doubt. Quine does consider logical sentences to be more fundamental than empirical sentences, however, in no way does he endow upon them any special status, since this would run contrary to his holistic claims.

However, this treatment proves to be the undoing of a holistic theory that is so described. Let us assume that we take Quine's position for granted and we try to examine a case where an empirical statement that is contrary to the entire theory forces us to revise parts of the theory. On the surface, nothing seems to be wrong with such a description. However, the real problem is – how do we determine that said empirical sentence runs counter to the entire theory? We have to have an inference of the type: T & O => False. Let's even assume a simple case: that our

theory consists of exactly the sentences constituting T and said inference. How do we conclude that the empirical sentence requires a revision of our theory? The solution seems to be obvious: we apply *modus ponens* and arrive at the false conclusion. However, what is the status of the *modus ponens* rule of inference?

One can try to save Quine's holism by stating that the *modus ponens* rule is itself a sentence of the theory. However, such a solution quickly runs into the famous logical paradox formulated by Lewis Carroll and known as the paradox of Achilles and the tortoise: we have T & O => False, T & O and (T & O => False) & (T & O) => False in the system, but we are no closer to inferring False from this than when we started.

Maybe the *modus ponens* rule is a metalanguage rule instead? Here, however, we run into another paradox, with unfounded levels of metalinguistic inference. If the rule is metalinguistic and states "If we have T & O and we have T & O => False, then we conclude False", how do we actually apply this rule to the said example? For the metalinguistic definitions to be meaningful, we have to assume the principles of their meaningfulness are themselves expressed in the theory, which requires a metametalanguage – tortoises on top of tortoises on top of tortoises and so on.

Let us consider a popular version of moderate holism about meaning, namely inferentialism. We will omit a version of this view according to which for an expression to be meaningful it suffices to play a role in some inferences (so-called *strong inferentialism* in the sense of Brandom), since according to this view even brackets and dots are extremely meaningful expressions. Let us concentrate on a version of this view according to which the meaning of a sentence (in a given language L) can be defined as the set of inferences in which this sentence partakes. Formally, the meaning of a sentence p is an ordered pair $<f, g>$, where f is a forest of proof trees that have p as a conclusion and g is a forest of proof trees which have p as a premise in one of its axiomatic leaves (of the form $p \vdash p$). This system is not holistic *per se*, what is needed to make it holistic is constraints imposed upon the proof tree structure. For example, if a certain proof containing a proposition q as a leaf belongs to the second element of the meaning of p, then the same proof has to belong to the first element of the meaning of q. This comes from the fact that while we call the trees that constitute the meaning-forest pair "proof trees", they are not in reality proof trees

because we do not have a deductive system provided (one can only infer a deductive system from the meanings). Thus, we could have a bizarre situation in which the "results" part of the meaning for p contains q, but the "sources" part of the meaning of q does not contain p. The constraint imposes a quasi-deductive system on the meaning structure.

However, here we face a problem. We already imposed a structure on the system, making the trees inside the meanings some sorts of quasi-proofs. However, do we really want quasi-proofs? We probably want the system to have a certain sort of *proof structure* altogether. Now, we're faced with a decision: do we *impose* this proof structure on our model?

If we do, we are faced with a dilemma: why do we need a holistic structure anyways? If the means by which we construct a holistic system is an axiom-and-rule based one, then why not dispose with the entire holistic structure and just define meanings in the traditional, compositional way? It is certainly more feasible both in terms of explicatory strength and computational complexity.

The holist might try to defend his method by saying that it allows for constructing systems where rules have exceptions: situations that aren't really governed by rules, but where rules are inferred from the system itself. However, such an approach tends to fall under a *God's eye point of view* problem: how do we construct a viable theory with a possibly infinite structure that is not governed by rules? Do we really construct such structures? It seems to us that holism is really a poor magician's hat – one first puts the rabbit in the hat, then claims that no rabbit was ever there, then pulls the rabbit out of the hat and everyone seems genuinely surprised. Similarly, one first constructs a system based on rules, then forgets the rules, then seemingly recreates the rules from the system – making it seem a deep conclusion something that is essentially *petitio principii*. This time, as opposed to the failed attempt by Quine outlined above, we have tried to avoid the impossibility of considering a sentence as such outside the whole language system (and save the Contingency Thesis) by excluding rules of inference from the class of those elements of the system that are relevant for determining the meaning of the sentence (decreasing the grade of holistic involvement). However, as a result we have discovered those rules of inference as exactly those core elements that constitute the holistic structure.

4. Conclusions

It is hard to argue about holism since the view itself is usually not explicitly defined in the literature in which the term is used. We hope that by a systematic explication of some principles governing holism, we were able to show that at least in some cases, when explored thoroughly, holism comes out as either fallacious (as in Quine's case) or as hiding an underlying structure which can be then used as the main theoretical content instead of the holistic one. Our two theses about holism do not preclude a holistic theory from being meaningful, however, it seems that successfully applying a holistic methodology by balancing the two theses is something that is not often achieved in contemporary philosophy.

Literature

Ajdukiewicz, Kazimierz, 1977, *The Scientific World-Perspective and Other essays 1931-1963*, Dordrecht, Reidel.

Davidson, Donald, 1984 *Inquiries into Truth and Interpretation*. Oxford: Clarendon Press.

Fodor, Jerry and Lepore, Ernest 1992 *Holism: A Shopper's Guide*. Oxford: Blackwell.

Quine, Willard 1953 *From a Logical Point of View*. Cambridge, MA: Harvard University Press.