

Adriano P. Palma

Functionalist ontologies

Abstract - Il tratto chiave delle ontologie funzionaliste consiste nella rimozione del dualismo di ieri e nel suo rimpiazzamento con una nuova forma di dualismo. Il dualismo del passato (Cartesiano, nella sua forma estrema) era una dualismo di sostanze, almeno di 'oggetti' se il termine <oggetto> non ci raggiungesse con tutto il suo pesante bagaglio di proprietà essenziali. (...) La versione aggiornata è un dualismo tra livello astratto e stadio dell'implementazione. Il livello astratto è una sequenza di regole che sono eseguibili da qualsiasi cosa. A livello di implementazione abbiamo dispositivi concreti (computer, cervelli, società).

Si può difendere ontologicamente tale teoria? Si può rispondere affermativamente nella misura in cui si vuole accogliere nella sua ontologia ogni tipo di oggetti astratti (come ad es. atteggiamenti proposizionali...). Le descrizioni funzionali, come le forme platoniche, possono essere 'condivise' da sistemi differenti come me e il mio laptop.

La stessa possibilità di una ontologia funzionalista si basa su una considerazione metafisica controversa. Seguendo Kim penso che si dovrebbe affrontare la sfida presentata dagli argomenti davidsoniani sull'idea che non esistano leggi psicologiche. A meno che non si trovino delle strade percorribili, tali argomenti sono destinati a restare un'ipotesi metafisica e non empirica, nemmeno ad alto livello.

Nel mio intervento sosterrò che accettare il funzionalismo e allo stesso tempo accettare il punto di Davidson comporta un allontanamento radicale dalle leggi psicologiche del senso comune. Si dovrebbe aggiungere che più aumentiamo la precisione della descrizione delle realtà cerebrali sottostanti rispetto agli stati mentali funzionali, più ci avviciniamo alla realizzazione che abbiamo bisogno di criteri diversi da quello proposti da Davidson e Dennett allo scopo di attribuire atteggiamenti proposizionali a un sistema intelligente.

§1 One kind of consensus has developed in philosophy of mind, I am not sure whether one ought to call it orthodoxy. What we see is that most people in the field generally take the "objectual" dualism of the Cartesian tradition for killed. Culprits for the murder are the endless and unsolvable problems of interactionism. I dub "objectual" dualism(s) the view(s) conceiving of minds and bodies as objects. Here "object" does not entail being in space-time. The most notable exponent of objectual dualism, Descartes, very strongly believed and argued for the conclusion that minds, whichever else their properties, are not in space since minds aren't extended(though they are in time, or at any rate that is what seems to me one conclusion that one should draw from the "cogito"-style arguments[1]). This dualism is in bad shape because it is exceedingly difficult to make it tenable in the face it of the most obvious problem, namely the nightmare of showing how it is possible for a non-extended "thing" to be causally relevant to the workings of an extended one. After all one would want minds to accomplish feats that we seem to accomplish, such as bringing about the success or the failure of some actions, voluntary actions such that they can be planned about, willed, and so forth. And no-one can work out a framework within which it sounds even plausible that non-extended minds have a part to play in the causal networks in which they have to play a role[2].

Given the stalemate for this kind of dualism and given the amazing development of a real-life version of Turing's universal machine (the machine I write on now) a new kind of dualism seems to me to have developed. Here I have to coin words since I think it is not always recognized as such. It is a dualism between rules and implementations. The term "rules" here has no normative connotation (if it helps think of your best example of physical law as an unbreakable rule linking, say, mass and energy). Rules in this descriptive and distinctly unethical or an-ethical sense are systematic relationships between certain describable states. To use an abused example: we may conceive of if one is thirsty, everything else being equal, she would try to get a drink as a rule in this sense[3]. Notice that nothing hangs so far around the description of the state of being thirsty, it may specifiable in countless different ways (in human beings it usually coincides with or is identical with some degree of lack of fluids in one's body). Nothing, though, bars us from thinking that a computer having on its screen the token I AM THIRSTY[4], followed lawfully by the production of an icon with some goon going to a fountain, is following (i.e.,

implementing) the rule in question[5]. Nothing in the rule shows or suggests that the quenching of thirst or the increase of bodily fluids be at stake. To make this plausible reinterpret "drink" as something that can again be understood as one of a set of behaviors (and this has to be the case, since even in commonsensical drinking, "drink" can be actualized by a near infinity of particular movements[6]). So one can have rules carried out by a variety of devices as long as each of them exhibits some behavior that can be described as satisfying the "consequent" part of such rules. Notice that in fact we can conceive of very "weird" physical systems as implementing rules of this form. An entire society of ants, or for that matter of wolfs or humans, can be seen as a system implementing them. Rules in this sense are idealized descriptions of input-output correlations, and since they're idealized enough they can be implemented by nearly anything[7].

What I've done so far is just to give an abstract version of a functionalist philosophy of mind. Think of mental states in their correlation w.r.t. behavior as instances of satisfaction of rules. The input states are some, presumably, central nervous system conditions and the outputs are instances of behavior. What worries me, or at any rate what I think it interesting to explore is the kind of ontology one is committed to when subscribing to this kind of functionalism. It is a dual ontology. This time it is not a duality between two kinds of "objects," it is a duality between two different realms. Input-output rules are abstract entities, physical systems are concrete (perhaps modulo some finetuning of the notion if one is skeptical about societies of animals or of neurons as bonafide objects). The rules are implemented by a variety of systems in the same way Platonic forms are partaken or shared by a variety of particulars. This is what is behind, I think, the views of the single-substance with two different sets of properties in the mind-body debates. Now, should one accept such a duality within one's ontology? This is the question that will take up the remaining of this paper.

§2 One clear answer to the question that closed §1 is positive. It is the answer of all, broadly speaking, instrumental philosophies. Led by Quine a working majority in the philosophical community holds that the entities one has to countenance within one's ontology are exactly those that are logically necessary (objects quantifiers will range over) for the total scientific language one needs to adopt (so, if in physics nothing can reduce <photon> to something else, the photons are objects of physics). This is the key reason why the most recent Quine does indeed accept within his own ontological views sets and numbers. In his early phases, the years of his nominalist period, Quine thought one ought to be more skeptical about abstract entities. However since physics is the overall science of the universe we know, and science needs numbers to go to work, numbers or sets have to be let in[8]. Generally, I think, one should conclude that since abstracta such as the functional rules or numbers, are not dispensable, one should harbor no qualms in having them as real building blocks of the ontological commitments of any theory of anything. One may still quibble whether they are really real[9], but by and large there is no reason to think that they are troublesome.

§3 I introduce here one point which appears to make a difference in the particular case of psycho-physical "laws". If mental states are reduced to input-output rules of the proper level of abstraction (since they should be implementable by any kind of apparatus, they got to get rid of any particular linkage with a specific physical object which implements them) they can thence be likened to sets and numbers; i.e., they play an ineliminable role in our science (or more modestly in our understanding) of behavior, we ought to accept them without too much fuss. Notice one key distinction between abstracta like sets and numbers and mental states. Sets, numbers, golden mountains and the even prime greater than 71 have no causal role: they are inert. Mental states, one would hope, aren't inert in the same sense. If we need mental states in explaining behavior it is only because we want to explain instances of behavior via the contents of the mental states which are relevant. It is of some import here that "explain" is semantically ambiguous. The ambiguity is healthy because we need to "explain" different phenomena in different ways. In the case of explaining behavior

I shall motivate and assume, although not argue directly for, a thesis. The thesis is the following: anything that deserves the name of explanation of an instance of behavior should be a causal explanation and should avoid any notion of "interpretation". I'm aware that this might seem extreme and it would require too long a discussion on its own. Suffices to say, by way of motivation, that causal explanations are the kind of explanation which is counterfactually robust, and that a view that sees propositional attitudes or mental states in general as dependent upon an interpretive "stance" is an unpalatable choice for me since I think we end up explaining something else. Quickly put, but I am quite willing to discuss the point in the question period, resisting the idea that mental states are the constructs of an interpreter is tantamount to a form of realism w.r.t. mental states. So the desiderata for a theory of mental states request, among other things that there are mental states, regardless of any interpreter doing all the work, as it were, "from without". Second desideratum a theory of mental states ought to be that it be a theory of causally relevant connections. The two conditions tend to merge. I see nothing incoherent in the idea that an isolated subject capable of one mental state, say <being thirsty>, acts upon it. It is a separate issue to decide whether we could correctly attribute to it such a state (whether we could identify the mental state in this starkly atomic[10] landscape is an epistemic question). The mental state is there if it is causally relevant in the behavior of the entity.

§4 The two conditions of §3 set for me the nonnegotiable core of realism w.r.t. the mental. The worry one can develop here is related to a general outlook one may not share: physicalism. In rough terms this is the view claiming that our best shot at understanding phenomena is an extension of physical sciences. Many functionalist philosophers share the physicalist option. If one does not share it, the remarks of this paper are immaterial to her. I would humbly suggest the consideration of the deep mystery of how non-physical entities could be causally efficient and no more. Physicalist outlooks tend to eschew abstract entities and sees them with a great deal of skepticism. Many a functionalist philosophers have taken the route of supervenience to have a dual theory in which, although the so-called supervenience basis is physical, the supervenient properties are mental. The idea was original in G.E. Moore's treatment of moral properties, in his view supervenient over natural properties (for Moore moral properties are eminently non-natural and non-reducible to anything at all).

§5 To quote just one, supervenience theorist w.r.t. the mental: ".. such supervenience might be taken to mean that there cannot be two events alike in all physical respects but differing in some mental aspects." [11] Similar informal definitions can be given defining supervenience for objects, particulars, properties, and so forth. The most acute mind working on supervenience is quickly remarking that "there is no reason why the "things" involved in the claim of supervenience cannot be abstract objects: numbers, properties, and the like." [12] There are different degrees of strength in supervenience claims. Weak supervenience claims amount to the idea that in fact a set of properties supervenes on another in this world. Weak claims are compatible with any doctrine, including Leibnitz's on mind-body. Strong supervenience claims are equivalent to the counterfactually robust covariance laws. A supervenience claim is equivalent in abstract form to the idea that whenever two particulars (events, objects, etc.) share the same base properties, the supervenient properties are shared as well. It is a formal way to capture the intuitive idea that without a change in the basis there is no change in the supervenient set properties. Strong supervenience in psychophysical correlations does not admit of the contingent covariance of instances: it implies that if covariance is there in the actual world, it holds likewise for other possible worlds. It is a way to capture to notion that the covariance has the form of a law. Laws in this sense are insensible to modalities ranging over possible worlds. I defer here to Kim's works, for the arguments showing that under the most plausible construals, supervenience as a form of materialism without reduction is not a

"stable" position[13]. The key point of those arguments is that a notion of supervenient causation is not easy to formulate if not within a framework of strong supervenience. Strong supervenience for the reasons mentioned above entails the existence of psychophysical laws. The physicalist wishing to hold on her dual ontology is in a bind. The dilemma consists in the unpleasant fact that in order to preserve the mental in mental states, they have to be relegated in an alien land where they have to play no causal role. This seems to be the outcome of the debate over the possibility of fitting in a supervenience framework with the further requirement that no reduction is possible.

§6 I go back to my dual ontology story. I take it that the outcome of the compressed line of argument I am defending is the following.

¥ The realism about the mental imposes on us the "honesty requirement" to have mental states as causally efficacious.

¥ Taking a supervenience route would not help with the problem of lawlike causal relationships between the mental and the physical.

Hence it would seem to follow that either we abandon a physicalist option or we have to opt for the unfashionable view that the mental is not "autonomous" and that the dependence relations do leave room for local reductions. Reductions will be local because the functionalist point of the multiple realizability remains intact: it is very plausible that even my own state of desiring a cup of coffee is identical in different times of the days with slightly different brain states[14]. Reductions will be local because they will be, to begin with, specific to an individual and secondly (though this seems empirically a far away hope) specific to groups of individuals (species) when the structural affinities among the members of the group are sufficiently easy to establish. Local as they may be these are still reductions, the (in)famous type identity view of mental and physical states would be back.

§7 All of this rests on one assumption: namely that correlations between mental states and physical states to be real have to be lawlike and that being causally efficacious requires being lawlike. Of course one can decide to relinquish these assumptions but they seem to me harder to give up than most. The very notion of cause if detached from its modal force seems to be conceptually fused with any contingent link. The price to pay is very high. Even leaving aside the more metaphysical question (such as freewill), reductionism is out of fashion since it seems to entail a restricted view of our mental life, it seems to miss the essential of it. Last but not least, i.e., what is most important, we have too few empirical results to date to make good on the promissory note that mechanisms embodying the reductions are available. My opinion is that the price ought to be paid in order to have a theory of the mind. None the less I think not useless to look again at what the alternatives can be. One stark alternative can be giving up physicalism. This could be by seeing the basis of supervenience even in a strong supervenience view as mental and the physical as the supervenient set of properties. Not the one to beat around the bush: this would mean that a universe, in which the distribution of mental properties is the same as this, could not have one less molecule of plutonium. If anyone can make sense out of such an hypothesis, I am not that one. It would entail the existence of minds with capacities that we simply seem not to have at all.

It is then here that dual ontologies play a bigger role. Allowing increasingly weaker supervenience claims to be the backbone of the views, one can save the autonomy of the mental, its explanatory role if explanatory does not have any causal connotation. This seems to be the route taken by the anomalous monism of Davidson[15]. The physicalism is saved at the price of isolating the mental from the causal network. This may seem to be not a serious consequence. What I urge is that in this way one loses completely the notion of what mental life is for. Denying causal powers to mental states seems to me to eliminate any sense in the understanding of the mind as a phenomenon. I am aware that Davidsonians will reply that the role of mental noncausal explanations (call them interpretations, for convenience)

is quite similar to ex-post rationalization and have no predictive power at all. By the same token I realize that one can very well take Kim's position and claim that mental explanations reflect and try to satisfy the demands of practical reason, rather than those of theoretical reason. But to accept such a duality in the end is equivalent to the jettisoning of the mind (I am not even sure whether this would not entail a sort of pragmatic paradox at the end of the day) as real object of study, as an object of theoretical reasoning. Relegating mind to the realm of practical, fashionable as it seems, is a way of denying its reality. It seems that the evidence goes exactly in the other direction.

Notes

1. I argued for this view in *Indexicality*. unpublished PhD dissertation, Indiana University, 1989.
2. Unless one calls in the miracles of pre-established harmonies.
3. The 'everything else being equal' qualifies covers a lot of cases (one may be very thirsty and paralyzed) which seem to show that such rules are not counterfactually resistant. For this paper's sake I ignore the problem, though some people (Stephen Schiffer for instance) think it crucial and unsolvable, hence destroying the whole idea of having rules in my sense, or psychological laws or any kind of ceteris paribus laws at all.
4. The indexical element may, again, be a source of troubles, but skip it. If you're interested in why it is so, see my 'Hopes and Doubt', in press, 1st issue of the *European Yearbook of Philosophy*.
5. If you worry about the 'trying' part one may very well have a computer where the goon has to overcome some obstacles and sometimes it does it and sometime it doesn't.
6. Allow for argument's sake the blurred line between behavior and movement.
7. This is the source of the multiple realizability problem for functionalism
8. More stalwart nominalist people, (e.g. H. Field, G. Hellman) continue to hold the view that we can and we should interpret mathematical theories w/out making use of numbers as their real objects. Then again Quine may have been too quick in his countenancing platonic sets (see in this regard Solomon Feferman's contributions on reverse mathematics in PSA 1992).
9. The late JosŽ Alberto Coffa used to pound the fist on the table while pronouncing really. To his memory this effort in spelling out what can be real is dedicated.
10. I use atomic, as opposed to anatomic, following Fodor&Lepore's terminology (see their *Holism: A Shopper's Guide*).
11. Davidson, Donald, "Mental Events", now in *Essays on Actions and Events*, Oxford and New York O.U.P., 1980, p. 214.
12. Kim. Jaegwon, *Supervenience and the Mind*. Cambridge, C.U.P. 1993, p. 110. It is self-evident how much my point owes to Kim's work. I think there is some more to say about the causal efficacy of mental properbes viewed as supervenient over physical ones.
13. See in particular his 'The Myth of nonreductive materialism', in Kim, op. cit.
14. By the same token reductions will be located since they will be based on long disjunctions of descriptions of physical states that are identical with a uniquely identified mental state.
15. I share the basic assessment by Kim (see his 'Psychophysical Laws' in op.cit.) of Davidson Kantism. I do not share his irenic final remarks.

Bibliografia

- D. Davidson, 'Mental Events' in *Essays on Actions and Events*, Oxford and New York O.U.P., 1980,
- J. Fodor- E. Lepore, *Holism: A Shopper's Guide*, MIT press 1993
- J. Kim, *Supervenience and the Mind*, Cambridge, C.U.P. 1993,
- J. Kim, 'Psychophysical Laws' in Kim 1993
- J. Kim, 'The Myth of nonreductive materialism', in Kim 1993
- A. Palma, *Indexicality*. unpublished PhD dissertation, Indiana University, 1989.
- A. Palma, 'Hopes and Doubt', 1st issue of the *European Yearbook of Philosophy*.