

*What Minds Can Do: Intentionality in a Non-Intentional World*

By PIERRE JACOB

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In this book, Jacob attempts to defend intentional realism and physicalism despite the difficulties which this type of position faces. The two main difficulties are giving a naturalistic account of intentionality (which, for Jacob, amounts to showing how semantic properties of mental states supervene on some physical properties, such as the brain and the environment) and showing how propositional attitudes, in particular the semantic properties of propositional attitudes, can play a causal role in intentional behaviour. The structure of the book neatly mirrors this, the first half being a defence of information-based teleosemantics and the second half defending the thesis that broad content is not epiphenomenal.

Jacob presents in a detailed manner the basics of informational semantics, relying heavily on Dretske's account in *Knowledge and the Flow of Information*. He examines issues such as distinguishing normal or channel conditions from relevant information and the difference between conceptual or digital, propositional attitude content and non-conceptual or analogue, experiential content. He also makes some attempt to show how intentionality can have some bearing on consciousness; however, there is little new work here and his account relies both on the higher-order theory of consciousness and Evans's claim that to be conscious one must have concept-forming abilities.

Jacob then looks at several problems that face informational semantics. He outlines these and points the way towards solutions. His main preoccupation is rightly with the problem of ensuring that content is determinate when informational semantics threatens to render it indeterminate. He claims it can only be solved by turning to teleology. Rather than a benefit-based, non-informational account of teleology such as that forwarded by Millikan, Jacob offers an informationally-based, stimulus-based account. He argues quite convincingly that Millikan's account is not fully naturalistic, does not solve the indeterminacy problem and does not account for the special environments of some creatures. He then considers Fodor's objections to teleological solutions to the indeterminacy problem. While I was not quite convinced by Jacob's solution, the arguments and issues are clearly and fairly set out in this area. Indeed, it is a merit of the book in general that the author tries to provide a clear sense of the power and effectiveness of his own arguments both in relation to the problems themselves and in relation to the work of others.

The second half of the book begins with a discussion of the Computational Representational Theory of Mind. Jacob accepts the Language of Thought Hypothesis, as it accounts for the compositionality of semantic properties. He argues that it is not an empirical hypothesis but something conceptually necessary for thought. He also discusses the nature of psychological explanation, arguing against Davidson that non-strict laws can be causal laws.

Jacob discusses the view that meaning holism threatens the possibility of there being psychological laws. He argues persuasively that there is much wrong with the standard views in this area and that so long as one holds that psychological laws do not refer to the contents of psychological states but merely quantify over them, then one can vindicate psychology.

Jacob then examines how semantic properties or content could cause behaviour. The first problem is that of pre-emption. If semantic properties are higher-order properties of the brain and causation takes place on the physical level then there is a worry that mental processes look like mere pseudo-processes, not involved at the causal, physical level. Jacob points to a solution, based on Jackson and Pettit's work to the effect that a property can enter into a causal explanation without being directly causally efficacious. It can do so by featuring in a program explanation. Jacob, however, holds that this solution works only for narrow content—content that supervenes on the physical properties of the brain. This solution would therefore leave broad content epiphenomenal. Combined with his attack on theories of narrow content, the onus is thus on Jacob to show how it can be that broad content can cause intentional behaviour. The problem is that an externalist approach to content implies that semantic properties are non-local properties while the cause of an individual's behaviour is a local physical process. Jacob's solution rests on Dretske's componential view of behaviour, namely, that behaviour is a process whereby a propositional attitude causes some bodily movement. Behaviour is, therefore, not mere bodily movement and is not caused by propositional attitudes. Jacob argues that semantic properties can be structuring (as opposed to triggering) causes of the behavioural process. He concludes with an interesting discussion of the difference between the semantic properties of propositional attitudes and experiences and the type of explanation that ontogenetics and phylogenetics (learning and natural selection) can provide.

Jacob's book is a densely argued piece of work and the reader is often met with a barrage of aims and claims. It must be stressed, however, that although the full import of Jacob's arguments is not always clear until he comes to sum them up, he consistently argues with philosophical precision and commendable rigour.

Although there is originality in Jacob's book much of it stems from the modification of Dretske's position based on distinctions and arguments made by others in the field. One of the best things about the book is its bringing together in a well organised way the recent large and complicated body of literature on the subject of intentionality and content.

THE UNIVERSITY OF STIRLING

FIONA MACPHERSON