

A naturalistic perspective on intentionality. Interview with Daniel Dennett

by Marco Mirolli

Marco Mirolli You describe yourself as a philosopher of mind and you reject the exhortations to get more involved in the abstract problems of ontology and of philosophy of science in general, even if the problems of the philosophy of mind and those of philosophy of science are deeply mutually dependent. I think this is an important issue because, while you say that your philosophy presupposes only the standard scientific ontology and epistemology¹, it seems to me that what you really presuppose is rather a Quinean view of ontology and epistemology, which is not so standard, even if it may well be the one we should accept.

Daniel Dennett Well, maybe so, let's see. Certainly I have seen almost no reason to adopt any other ontology than Quine's; and when I look at the work in the philosophy of science and more particularly at the work in science, I do not find any ground yet for abandoning a Quinean view of ontology for something fancier. It could happen, but I haven't seen any reason for doing this; so if you want to say that I am vulnerable on this, that's really true. I have stated that I don't see any of the complexities of science or philosophy of mind raising ontological issues that are more sophisticated than those a Quinean ontology could handle; but I may be wrong. You might show me where I am wrong.

M.M. No, I also think that Quinean ontology and epistemology are the ones we should accept. The point I wanted to stress is that much of the discussion about the realism on intentional entities is due not to a substantial disagreement on intentionality itself, but rather to ontological assumptions. I mean, for example, your discussion in "Real Patterns"² about what you called 'mild realism' versus 'strong realism' and so on.

D.D. Well, in "Real Patterns" I presented what I thought the issues were and I showed what the difference was between my position and Davidson's, and between my

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¹ Cf. Dennett, 1991a; 1993.

² Dennett, 1991a.

position and Churchland's. It's ten years since that piece came out and in those ten years I have not been shown any compelling reason to change my view on what the ontological issues are. Neither Davidson himself nor even the Davidsonians have shown – or even tried to show – that his position can handle problems that I can't. I mean: maybe they are not interested, maybe they see there is nothing much to divide us there. With Churchland it's only a matter of emphasis, I think.

M.M.: And what about Ruth Millikan? You tend to minimize the differences between Ruth Millikan's account of intentionality and yours, but I think there is an important difference between the two. Both of you give a teleological account of functions, but it seems to me that while Millikan uses the notion of 'being selected for' to identify functions, you think that an appeal to selection (either natural or artificial) is to be used only in the explanation of the existence of what can be viewed as functions. The difference, if real, is quite important, because it brings Millikan to an essentialist notion of functions and so to a strong realism about intentional entities. On the other hand, you treat attributions of functions and intentional states as holistically relative to the observer and this leads you to a milder kind of realism. What do you think about this explanation of the differences between your position and Millikan's?

D.D. She thinks she can be more... you say essentialist about function. Well, yes: in a way, I think you are right. I think that is the disagreement that we have.

M.M. Let us go back to eliminativism: can you explain better why you think that between you and Churchland there is only a difference in emphasis?

D.D. In the introduction to *Brainstorms*³ I gave the example of *fatigues*. Imagine that we find people that when they are tired they say "We have so many fatigues". So those people think there are these things: fatigues. That is, their ontology includes fatigues. So, what about when they come to us and ask: "What are these fatigues?". Now, they are making a mistake, but what mistake are they making? The eliminativist – the Paul Churchland – says: "Oh, fatigues do not exist. We eliminated those things a long time ago. Go away, you are stupid. A certain sort of identity theorist went to tremendous lengths to identify fatigues and took on the task of trying to come up with a definition which could be proof against all kinds of counterexample and so forth. And that's a hopeless endeavour".

Now what I would prefer to do is saying: "Well, look: your way of speaking is not really very perspicacious here. In one sense there are no such things as fatigues, but I can help you. See: there is a sort of sense in which there are. If you want to go on talking about fatigues, go ahead, but don't demand the sort of reduction that the identity theorist are trying to give". Now, in a way this has been my message all through my career. In *Content and Consciousness*⁴ I gave the exam-

³ Dennett, 1978.

⁴ Dennett, 1969.

ple of 'voices'. I said: "Look, it would be insane to be an identity theorist about voices. It would also be insane to be eliminativist about voices. Just get used to the fact that the word 'voice' plays a certain role at a certain level in the way we speak, and there is nothing mysterious about voices". It seems to me that we have two artificial problems, problems that are only puzzles for philosophers who have too much time to waste. One of them is to give a counterexample-proof definition of voice in terms of the identity theory, and the other is to give a counterexample-proof of eliminativism: you know, showing how to make all your business without ever referring to voices. It's very useful to refer to voices. I wouldn't advocate not referring to voices. So my ontological scruples: in a way I know this is very frustrating to many philosophers because I am just not playing this kind of ontology; I am just saying this is not a ball-game that I want to play, and I don't think there is a reason to play it. I think in the case of voices it's obvious. There is no deep puzzlement about voices. If there were interactionist voice-dualists, then we would have to start the game much more seriously on the ontology, for instance. But in fact people just get it: they see there is no problem here. Now in the case of mental entities in general it's much more puzzling, but I think that is like all of the scientific puzzles: the scientific puzzles are seriously infected with the confusions that arise in ordinary language. I think that after all the scientists get their puzzlement from everyday thinking and talking just the way most of us do; and these puzzles arise when they try to map folk psychology onto science. But what I want to say is that they should maintain that loose pragmatic attitude that they maintain with regard to voices to mental entities too. That is, they should not think that the only possible solutions to these problems lie with the identity theorist and eliminativist or the dualist. They rejected that trio for voices and for fatigues and they should reject that trio for qualia and beliefs too.

M.M. Okay; but sometime you say you are a realist about beliefs, so sometime you accept to play the game, and playing this game from a Quinean point of view, as it is yours, means to say: "As far as we need to adopt the intentional stance in the cognitive sciences, we can and must be realists about beliefs". But if this is true, there is the possibility that the intentional stance would no longer be a scientific one. Actually, it seems to me that this is not a science-fictional hypothesis, because there are already some scientists who think, for example, that the best way of looking at human behavior is from a dynamical-system point of view. In that case, there would be no more space for the intentional stance within science.

D.D.: Yes, good. So we do have some serious scientists and philosophers who think that eliminativism is a real and strong possibility. I think that's an excellent avenue down which a challenge might come: I want to see it. The road exists: if there is anything travelling on it, that is what I don't know. Tim Van Gelder, for instance, is an Australian philosopher who in the States pushed this idea very hard a few years ago. He was advocating that when we switch to the dynamical-system approach, this will revolutionize cognitive sciences: no more information-processing; we are all complex dynamical systems. He showed one or

two examples of phenomena that one might suppose needed a cognitivist explanation and he gave what one might accept was a non-cognitive dynamical-systems explanation. This was like Skinner saying: "Today the pigeon, tomorrow chess!" Well, yes: there is something you can train the pigeon to do that you don't need a cognitive science to explain. That is enough to establish the possibility that we might have a non-intentional science of human beings – let's not say a science of the mind because if it is really non-mental, if it's really dynamical-systems, we won't talk about the mind, we won't talk about information. But the fact remains that we have huge, uncontroversial repositories of robust predictive facts in terms of information...

Let's speak about vision: if the dynamical-systems approach to vision is to establish itself, we won't talk about vision, we'll just talk about eyes; we'll talk about the complex, dynamical interrelationships between the eyes and the rest of the world. I challenge anybody in dynamical-systems theory to make any prediction at all using the dynamical-systems theory that will cover any of the facts that are incontrovertibly known about vision. They could try, but they haven't done it yet. I mean: as soon as you get away from simple things like the control of the limbs and following a wall by touching it and a few other very simple things, it seems to me that the dynamical-systems people just end up with not very much science at all! Now, I want to make another example. Suppose a physicist comes up, not a complex dynamical-systems physicist, but just an old-fashioned physicist, and says: "Look, basically what you have got here is a bunch of photons, you have got a bunch of atoms, so let's do it all in terms of photons and atoms, and let's cut out all that vision stuff". You say: "Wait a minute, you mean depth perception? Are we not going to talk about depth perception?" "Right! No need to talk about depth perception; I can simply take every case of what you call 'depth perception' and I can analyse it in terms of photons and the motions of the atoms that make up the body." Well, in a certain sense we know that in principle he is right; and he might as well, whilst he is at it, include the stock market and just handle that in terms of particles. After all it's just made of matter. But the fact is that sciences have regularities at these higher levels and so the regularities of the social sciences seem to me to be uncontroversial, precisely in the sense that you get real patterns. That is, you could get rich betting on it if only you could get anybody stupid enough to take your bet. There are huge redundancies in nature that are describable from the intentional stance and from no other stance.

M.M. The point I wanted to stress is that anyway you need a criterion for ontology in order to distinguish good abstract objects – that is scientific abstract objects – from bad abstract objects like 'Dennett's Lost socks circle', as you yourself say in "Real Patterns"⁵. This is the point at issue, I think, for it is this criterion that we need in order to be able to assert whether intentional objects are real objects or not. And it seems to me that you, following Quine, take this criterion to be the usefulness in a scientific theory. This was the reason for me to introduce dynam-

⁵ Dennett, 1991a.

ical-systems theorists: if they were right, then you would have to say that there are no things such as beliefs.

D.D. Yes, if they were right! If they were able, using their dynamical-systems perspective, to predict all the patterns that were predicted from my intentional stance and then more; and could also predict the failures of my pattern. Remember, for them to have a good pattern or a better pattern – one so that we should abandon our pattern and go to their pattern – it’s not enough that we know that in principle if we gave them eternity and a fine microscope they could do it. We know that in principle you could predict everything using the physical stance, but the question is that they are still leaving out patterns, patterns that can only be described from the intentional stance. And maybe they are going to say: “And there are also patterns that could only be described from the dynamical-system perspective”. That’s an interesting claim. Let’s see if it is true. But until they can also predict the patterns that are predictable from the intentional stance, they haven’t given us any reason to eliminate those as good entities.

M.M. But there is another possibility, that is they can say that the patterns predicted from the intentional stance are not patterns that are worth including in science. The point is that there is an infinity of patterns, and some are worth explaining and some are not. After all, patterns are a matter that is relative to an observer.

D.D. Uhhh. Not really so. Think about the example I give in “Two black boxes”⁶. That’s not a pattern that is relative to an observer at all. I made up the case so that there is a puzzling causal regularity between pushing a button on one box and a light going on on another box. That’s a pattern that is not observer-relative and that can only be explained from the intentional stance (because the connection between the boxes carried information about the wider world *believed* by the designers of the two boxes). This would be an example I would present to the dynamical-systems people saying: “You know this phenomenon exhibits the following deep regularity: whenever you press button A the red light goes on, and whenever you press the button B the green light goes on. Now, please explain this regularity to me”. And I claim they could not explain this regularity without using the intentional stance.

M.M. Can you explain better your position regarding the relationships between patterns and ontology?

D.D. OK, let’s see. We have got all these atoms, and then we have the patterns that we discern among these atoms and four dimensions: space and time. Now the question is: Do the patterns have ontological significance? And for me the answer is: That’s what ontology is. What other criterion could you ever use? What other reason could you ever have for your ontological presuppositions?

⁶ Dennett, 1991b; 1995.

If an economist came running into the university and he said: “I found a new economic force: the ‘Third of April Uncle force’”. And we say: “What?” He says: “On the third of April uncles play a very special role in economics”. We would say: “Wow! That’s amazing! Show me that this is a real pattern”. Now, if he can show me it’s a real pattern, then I’ve got a problem because he has a good reason for saying there is a force, an up-to-now unimagined, unidentified force. If he can’t show me that pattern, then he is just kidding himself, he is just foolish. That’s what ontology is about, I think. There are lots of economic patterns or psychological patterns and we can also describe lots of non-patterns, like the ‘Third-of-April-Uncle’ pattern, which I am sure doesn’t exist. So I would say: any ontological point is to claim that there is a pattern. The reason that we are so sure that there is no ‘Third-of-April-Uncle’ force is that in spite of his efforts, in spite of his claims, he can never show anything happening which depends on what uncles do on the third of April. It turns out after severe examination to be a phantasm; that he is just crazy; that there is nothing, that is, no-thing there, no real pattern. So there is no ontology. If there was a real pattern, there would be ontology.

I think this is a crucial issue, so let’s take another example. An ontologist comes in and says: “I found out there is a kind of thing that nobody has ever imagined before”. And we say: “What is it?” and he says: “It is a freebuz”. And we say: “What’s a freebuz?” So we want to know what convinced him that there was this thing. Now, if he says: “I have got one, I have one in my pocket. Here it is!”, then I know what he is talking about. Or he could say: “I postulated this freebuz force and now I can make sense of something that we could never make sense of before”. And if he can do it, I will take the freebuz seriously just as if he had taken it out of his pocket. But if he can’t do anything like that then I think he is just a mad man. I don’t know why he is talking of ontology to me.

It seems to me that ontology is always grounded in our sense of there being a regularity in our experience. This is my way of being a ‘phenomenalist’ without being a ‘Phenomenalist’. There are two ways you could view a policy of this sort: you could view it as a proposal, as a normative recommendation for how we are to think; or you could view it as an observation about how in fact we have always thought, how ontological issues have been treated in the past. And quite frankly I am inclined to think that they are both true, that is to say: if we look at the history of ontology, look at what sorts of things people have included in their ontology throughout history, we would see that – because they have thought they had these patterns – that lead them to the ontological convictions they had.

M.M. To accept the idea that the Quinean ontological criterion of existence must be relative to scientific theories, is to claim that we have to consider real, that is existent, everything that is – and only that which is – used in our best scientific theories of the world. So our theorizing seems to be, in a Kantian sense, the condition of possibility of ontology itself, and so of existence in general. It seems to me that if we put the matter this way, we are able to explain the special status that most people, and some philosophers as well, are inclined to give to our mind and

intentionality, but, at the same time, we are not compelled to the negation of the possibility of 'strong Artificial Intelligence' and to all the other obscurantist views on human beings. On the one hand, we can admit a special status to human intentionality in the sense that it's human language that gave birth to science and so that is the condition of possibility of every existence, in the only sense of "existence" that is worth considering. On the other hand, we can deny the inef-fability and unaccountability of our intentionality: nothing prevents us from giving an evolutionary explanation for it. Do you think that this way of thinking is sound or is it still too mystic for you?

D.D. What you say is close to what John Haugeland says in his new book, *Having Thought*, where he has some interesting lines of this sort. And this also reminds me Brian Smith's book *On the Origin of Objects*, especially when you say: "it's human language that gave birth to science and so that is the condition of possibility of every existence, in the only sense of 'existence' that is worth considering". That's not quite what I would say, but I think Haugeland would say that. Actually he says something different too. He says we have to understand that it is not so much language as the normativeness of human social culture which is the condition of possibility of every existence.

M.M. It seems to me that your theory of intentionality strongly depends on the thesis of the normativity of intentional attributions, that is the thesis that such attributions presuppose the rationality of the object of the attributions. In fact, if Hume was right, and I assume he was, in saying that you can never get 'ought-sentences' from 'is-sentences' then, if intentionality is a normative concept, it cannot be an essential feature of a system, but it must be relative to an observer. And from this fact, holism and your mild realism follow quite tacitly. But what are the reasons for believing that intentional ascriptions presuppose rationality? Are they only considerations about our ordinary language, or is there some other argument to support this claim?

D.D. Well, I think evolutionary thinking can give good grounds for that claim: evolution makes agents with imperfect knowledge, but when those agents attempt to exploit their imperfect knowledge they treat other agents as rational, because this is the most efficient way for them to exploit their imperfect knowledge of the world. There is no better strategy for predicting the behavior of another agent than assuming that it is at least as rational as you are.

M.M.: Can you say something more about the notion of rationality you are talking about? After all, there is less than universal agreement on what the word 'rational' actually means, and you have claimed that rationality is a intrinsically pre-theoretical notion⁷.

⁷ Dennett, 1987 (*Reflections to Dennett* 1981).

D.D. Yes, that's what I think, and it doesn't embarrass me that I cannot define it. I think that it is the nature of it that proposed definitions are in effect proposed reductions of rationality; and since we always understand the hypothesis that they fail or that they might fail, we all just have to see whether this does justice to our notion of rationality. This shows that we are using the concept of rationality as a sort of normative maximum as yet undefined, because we can imagine somebody putting forward a definition of rationality which is substantially incompatible with our practice but on reflection we found was better, that gave better results. Isn't it true that wherever we find such a proposal, we adopt it, and we enlarge our notion of rationality to include it? When good probabilistic reasoning is formulated that repairs the fuzzy, informal probabilistic reasoning that gave birth to it; from that moment, we understand that it is rational for us to rely on a calculus of probability, and so we add it to our vision of what rationality consists of. And I think we did the same thing earlier with logic. As it were Aristotle was the first to propose that sort of prosthetic device for rationality: the Tool, the Organon. And people say: 'yes'! That's a part of what it is to be rational. To be bound by this tool sharpened our notion of rationality.

M.M. What are, according to you, the implications of this strong kind of naturalism with respect to epistemology? Do you think there will still be a place for normativity in epistemology?

D.D. I have never thought that naturalized epistemology was entirely not normative. No, I have thought that to say that it was naturalized was simply to say that it was going to begin with the assumption that we were cognizers that were natural, that is, we were evolved biological beings; that we had limitations and that the epistemological problems that we face are the problems of living entities in a biological world. Now, that removes the sort of hyper-idealizations of some traditional epistemology; it's a way of making it clear that we have to consider things like the cost-benefit calculus. You get a very different picture of epistemology if you think of a sort of sultan protected in his court who has nothing to do all day but avoid error and is fed and protected from harm and can just devote every waking minute to mathematics. That man can be a cartesian because it doesn't matter how long it takes him to work out the problem and it doesn't matter how much energy he has to spend to work out the problem and it doesn't matter whether the problems are important. All that matters is that he doesn't make a mistake, that he gets certainty. Well, in one sense I don't think there is anything wrong with the vision you get of epistemology under that sort of assumption: it turns out to address many of the interesting epistemological problems that we actually face, but when you address epistemology in this pure cartesian aprioristic spirit, things puzzle you that are not puzzling from a naturalistic perspective, or so it seems to me. But I don't see naturalized epistemology as a way of abandoning the normativity of epistemology.

Let's take an example. Certainly, one can be interested in the norms of health: whether one ought to eat; whether one ought to exercise; whether one ought to

sleep and all these things. That's normative, but it won't be any good unless it's naturalized health theory, because if we really want to know what we have to eat and why, then you'd better to be a naturalist. Now, I think it's like that: naturalized epistemology is just how to satisfy your epistemic hunger in the best possible way.

That's sort of funny. Imagine somebody who said: "My goal is to eat as much as possible, in my whole life". If it really is your goal, then we can stop and figure out how best to eat as much as possible. We could take it that our summum bonum is eating as much as possible and we could ask: given the constraint of naturalism, what should you do? Now, switch from food to knowledge. You want to know as much as possible. Well, it looks like a much more reasonable goal than eating as much as possible, but we might ask: is it really? What are the goals of epistemology in the first place? What are you trying to maximize? What are you trying to optimize? I mean: that's the normative of epistemology. But I don't think we are just given what the right answers to those questions are without already going naturalistic.

M.M. That's true, but I think that the point of naturalism is that you can never get outside the system and judge from an infallible point of view, so no kind of normativity can be absolute.

D.D.: Well, that's part of the point, I would think. I think there are many aspects. One of the points of naturalized epistemology I would stress is that if you don't do that, then, in spite of your pretensions to analytic rigour at conceptual analysis, you, in fact, have got blinkers. You're only letting yourself consider those aspects of human practice which are clearly consolidated in our everyday concepts. Suppose you want to know whether knowledge is justified true belief: this just becomes a battle of definitions and counterexamples. Now, the question is: well, where are you getting your premises? Get reflective about your methodology and ask yourself: what are the grounds for the conclusions that you're drawing about these various definitions and counterexamples? Well, just your sense of what the words mean: conceptual analysis, that's what you are doing...

M.M. Could you explain which are, according to you, the relationships between the philosopher and the scientist from a naturalistic point of view?

D.D. Well, I would say that the philosopher is just one more enquirer, one more investigator. I think that the distinction between a philosopher and a scientist is not deeper than the distinction between a chemist and a mathematician or a biologist and a geologist; that is, slightly different methods and slightly different goals, but they are all asking questions critically and reflectively and trying to answer them, and they all have the goal of getting the right answers. There is nothing that makes philosophy special. Well, I think that the issues are at least strongly suggestive of, if not entirely parallel to, the issue about the nature of mathematics. There is a strong case to be made for mathematics being a com-

pletely autonomous field, only incidentally applied. There is also a case that could be made that mathematics didn't just get born out of surveying and counting and other worldly issues. But the fundamental concepts of mathematics are still anchored to the world through its various sources. So you should see mathematics as a sort of limiting case of empirical enquiry. But it seems to me the same issue arises for philosophy as well: as you see, philosophy is just a sort of limiting case of empirical enquiry. The most general, the highest level. That's the way I tend to see it. I think the case for mathematics being an autonomous enquiry is better than that for philosophy. I think Plato aspired to make philosophy as autonomous as mathematics and philosophers ever since have taken mathematics as their ideal. But it doesn't work!

To conclude, I want to tell you a story: back in 1978 I met a mathematician who was getting very interested in logic and in philosophy. We would have lunch two or three days a week in those days and he got reading Quine on my suggestion. He loved and hated him. One day he said: "Whenever things get really philosophical in Quine's work he starts making jokes and becoming less serious. Why is that?" I know that it's not true, I mean: I had never found that till then, and I still think it is not true, but I said: "I think I know what you mean, and I think I know why. It's because even though Quine is a great philosopher, I think he's never quite been able to convince himself that philosophy is proper work for grown men. I think he is always a little bit embarrassed to be a philosopher, and he thinks it is not quite as serious or obviously worthwhile work as being a scientist. So when he finds himself being especially a philosopher he gets a little bit shy and embarrassed and starts telling jokes". Once I asked Quine, and he said there was some truth in this. He thought of himself as a logician first, and as a philosopher only by accident.

Critical bibliography

Dahlbom, Bo (Ed.) (1993) *Dennett and His Critics* (Cambridge MA, Basil Blackwell).

An important collection of articles by Dennett's critics and his reply to them. The 'unhorthodox' introduction by Dahlbom is of special interest because it is the best of the very few attempts to give a comprehensive analysis of Dennett's philosophy.

Dennett, Daniel C. (1969) *Content and Consciousness* (London, Routledge & Kegan Paul).

The PhD thesis of Dennett, written under the supervision of Gylbert Ryle. There are two main reasons to recommend the reading of this book: first, the most important ingredients of Dennett's philosophy are already present in this relatively short book; second, this is where both Dennett's debts towards Ryle and Quine and his very new ideas are more explicit.

Dennett, Daniel C. (1978) *Brainstorms* (Montgomery VT, Bradford Books).

The first collection of Dennett's articles, divided in four parts. The first is about the general assumptions of his philosophy, while the others are dedicated to the three particular themes in which Dennett has divided his work: intentionality, consciousness, and free will.

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Dennett, Daniel C. (1981) Making Sense of Ourselves, *Philosophical Topics*, 12, n. 1, special number, reprinted as J. Biro & S. Shanan (Eds), *Mind, Brain and Functionalism*, Norman, University of Oklahoma Press 1982; now in Dennett 1987.

The response to Stephen Stich's "Dennett on Intentional Systems", *Philosophical Topics*, 12, 1981, reprinted in W.G. Lycan (Ed.), *Mind and Cognition*, Oxford - Cambridge MA, Basil Blackwell, 1990, 4th edition 1994. In this article – and in the reflections on it (appeared in Dennett 1987) – Dennett discusses in depth his thesis of the presupposition of rationality implicit in all intentional attributions.

Dennett, Daniel C. (1984) *Elbow Room: the Varieties of Free Will Worth Wanting* (Oxford, Oxford University Press).

Dennett's book on free will. An interesting discussion on the notion of 'intuition pumps' and on their importance and dangerousness in the philosopher's methodology can be found here.

Dennett, Daniel C. (1987) *The Intentional Stance* (Cambridge MA, The MIT Press).

The book dedicated to Dennett's theory of intentionality. It's a collection of articles posterior to *Brainstorms*. I recommend "True Believers", "Three Kinds of Intentional Psychology", "Styles of Mental Representations", "Evolution, Error and Intentionality" and, especially, "Starting On the Right Foot", which is a sort of introduction where Dennett unusually makes explicit his theoretical and methodological assumptions.

Dennett, Daniel C. (1988) Précis of The Intentional Stance, *Behavioral and Brain Sciences*, 11.

A sort of summary of Dennett 1987, followed by a collection of critics by a number of philosophers, cognitive psychologists, artificial intelligence researchers and evolutionary biologists, and by Dennett's response to them.

Dennett, Daniel C. (1991a) Real Patterns, *Journal of Philosophy*, LXXXVIII (1), reprinted in Dennett, 1998.

Dennett's ultimate word on ontology of intentional entities (and on ontology in general).

Dennett, Daniel C. (1991b) Two Black Boxes, <http://ase.tufts.edu/cogstud/papers/twoblack.htm#1>.

An 'intuition pump' (that is a mental experiment) built in order to reveal the necessity of intentional language for describing and explicating some 'real patterns'.

Dennett, Daniel C. (1991c) *Consciousness Explained* (Boston, Little Brown and Company).

A deep, extensive, penetrating and illuminating book that try to resolve (or 'dissolve', or 'elude') the hardest problem (or 'pseudo-problem', or 'mystery') left to science: consciousness.

Dennett, Daniel C. (1993) "Back from the Drawing Board", in Dahlbom (Ed.), 1993.

The reply to Dennett's critics, which includes interesting defences of two Dennett's practices: his discomfort with giving labels to his theories and his denial of 'playing the game of ontology' too seriously.

Dennett, Daniel C. (1994) "Self-Portrait", in S. Guttenplan (Ed.), *A Companion to the Philosophy of Mind* (Oxford, Basil Blackwell), reprinted in Dennett, 1998.

Very important article, where Dennett self-analyses his work with an historical perspective. Together with Dennett 1969 and the first chapter of Dennett 1987 ("Starting On the Right Foot"), it is certainly the place in which Dennett is more explicit about his debts towards Ryle and Quine.

Dennett, Daniel C. (1995) *Darwin's Dangerous Idea. Evolution and the Meanings of Life* (New York, Simon and Schuster).

An important book on the theory of evolution by natural selection and its upshots on philosophy of science, philosophy of mind, ontology, social sciences, and ethics.

Dennett, Daniel C. (1996) *Kinds of Minds: Towards an Understanding of Consciousness* (London, Phoenix).

A very useful introduction to Dennett's theory of mind: short, easy-to-read and fascinating.

Dennett, Daniel C. (1998) *Brainchildren* (London, Penguin Books).

A collection of the last most important articles by Dennett. They cover various subjects and disciplines, such as philosophy of mind, artificial intelligence, artificial life, cognitive ethology and methodology for cognitive science.