

might be possible. These include the optical phenomenon of the hologram where it is possible to repeatedly subdivide the photographic plate yet retain the whole overall image though at a lower level of definition. Another example of this sort of one/many correspondence is provided by the mathematical procedure of the Fourier Transform and the transitions between the space or time and periodicity domains it permits and this latter technique has been used by, for example, visual physiologists looking for visual cortex cells responsive to particular spatial frequencies.

In conclusion I would just like to say how pleased I was to see an essay addressing such basic and broad ranging scientific and philosophical questions in your pages and would wish to congratulate the author on a most thought-provoking piece.

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DEAR SIRS

I found Peter O'Hara's article on the mind science very interesting. As a model of the relationship between neuronal activity and mental function, it does offer food for thought and may well reappear in some form in future research into the relationship of mind and brain. Dr O'Hara applies his understanding of the working of electronic computers in arriving at this model, and it may well be that we have built computers to reflect the way our brains work—impelled by intuition.

However, in the concluding paragraphs of his article, Dr O'Hara expresses a disquieting conviction, not only that his viewpoint constitutes a *science*, but also that it is *satisfactory* and above all *true*.

It may in the long run prove to be the case, but at this point in time it is only an opinion, an analogy drawn from another field of knowledge. Some day, perhaps, a way may be found to subject this hypothesis to experimental testing.

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DEAR SIRS

Writing as one who has only a limited understanding of the mind and the brain and no understanding at all of computers, I found Peter O'Hara's article fascinating and incomprehensible. If I am right in thinking that the gist of his argument is that there is a connection between mind and the brain which we do not yet understand then, for what it is worth, I agree with him.

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## *Dr O'Hara replies*

DEAR SIRS

I am gratified to see so many responses to my article, and glad of the chance to reply to them. I had never seen such matters discussed in psychiatric journals and felt impelled to bring them to psychiatrists' attention after reading J. R. King<sup>1</sup> say 'at one end of the scale physical scientists scratch patiently away at the chemistry of receptor sites on cell membranes, at the other clinicians make brilliant deductions by sheer intuition, and in between is a hazy land'. Unsure of its reception, I kept my article clear of references to philosophical schools of thought, much as I would avoid giving myself a party political label if publicly arguing for a new social proposal. However, Dr Tantam has referred to most of these philosophical terms, in some cases misunderstanding my position, and so I must address them.

With regard to philosophical behaviourism (readers can see from my second and third paragraphs that I am not a psychological behaviourist), Flew<sup>2</sup> defines it as the idea that 'psychological concepts can be analysed in exclusively behavioural terms, and this is what such words mean'. Bullock & Stallybrass<sup>3</sup> rather emphasise behaviourists as viewing mental states as dispositions or tendencies to certain behaviours. In contrast, I have emphasised the possibility of an internal mental state description.

I was also surprised to be seen as rejecting reductionism and so, perhaps believing in holism. Here Flew<sup>2</sup> and Bullock & Stallybrass<sup>3</sup> see reductionism as *reducing* mental events to physical and chemical events. Both define holism as the idea that some wholes are more than the sum of their parts. Bullock & Stallybrass<sup>3</sup> add that the wholes have characteristics that cannot be explained in terms of the properties and inter-relations of the parts. Hofstadter<sup>4</sup> defines holism similarly but sees reductionism as 'a whole can be understood completely if you understand its parts and the nature of their "sum"'. The reductionism of Flew<sup>2</sup> and of Bullock & Stallybrass<sup>3</sup> is obscure because they don't define *reducing*. The extreme view of reducing, of an *identity* or one-to-one correspondence between events and predicates of the reduced science (e.g. psychology) and those of the basic science (e.g. physics), is given by Fodor.<sup>5</sup> By this standard I agree with Fodor in rejecting reductionism. However his reductionism is so extreme that it appears false at first sight, and indeed he states that he defines it thus in order to prove it false. I suspect that Fodor is in a minority in defining reductionism so extremely. It also cedes the middle ground to holism which I have always seen as the idea that 'something else' (spirit, perhaps) must be added to the parts (neurons and brain structure) in order to explain the whole (mental function). My many examples were designed to show that properties of neurons could cause them to relate to each other in such a complex fashion as to underlie (or be a satisfactory substrate for) mental function. In my fifth paragraph I also criticised holism's 'something else' for being amorphous and so not open to further investigation and analysis. So I