The Andromeda Paradox, Bricolage, and Perspectival Realism

Abstract

Previous failures to resolve the Andromeda paradox are discussed, and a resolution is presented using bricolage.

Introduction and Modus Operandi

Paul Nahin (1998) gives an amusing historical account of the Rietdijk/Putnam paradox, with many references. Nahin portrays it somewhat as a comedy of philosophical errors, involving tolerably well known names like Putnam, Rietdijk, Harris, Capek, Sklar, Stein, Fitzgerald, Weingard, Earman, Godfrey Smith, and Smart. But much mirth has to be cautioned as we must bear in mind that this is simply normal and very reputable progress in the field of scientific discovery.

The Rietdijk/Putnam paradox has become more latterly known as the Andromeda Paradox or the Rietdijk/Putnam/Penrose paradox and of course there are still 'philosophical' problems. A current reasoned description is that of Savitt (2006), which by and large defines the current situation at the time of writing. Bresnard (2010) and others continue to ponder the matter.

Huw Price has considered causal perspectivalism as a way to resolve apparent discrepancies in physics, particularly in quantum theory. Price (2005) has written enough to establish that there is a case for using perspectivalism in one form or another to deal with such cases.

Without wishing to go over the merits of various possibilities of perspectivalism we are immediately led to the work of Caspar Hare (2010). His notion of 'eternalist A-theory' (as distinct from 'eliminativist A-theory' or 'presentism') would seem to be almost part of a description of our own MBI (Many Bubble Interpretation), in the sense that the MBI can be taken as implying a form of his 'perspectival realism', discussed in Hare's simply written paper.

It is important to be clear that this does not infer that we support some form of "murky relativism" (Hackenberg, 2010) for which Hackenberg's example of an extreme form would be to grant equal time to all areas of human knowledge, such as astrology and astronomy.

An example of Giere's (1999) view of perspectival realism is that vision of the color of an apple, for example, is a psychological property of the interaction between the apple and the observer and that it does not exist apart from either.

Returning to the Andromeda paradox and Hare's (2010) paper we clearly take the option suggested by Hare that special relativity does not tell us all we need to know about simultaneity, thus avoiding any direct conflict with the Andromeda paradox whatsoever. So in the MBI there may be no problem with the Andromeda paradox. There certainly does not seem to be any problem. As Hare points out, denial that special relativity is a complete description is an option that can be taken by Hare's 'tense realist' as well, as it happens. Of course tense realism is in some ways quite close to our position of perspectival realism which refers also to things of which one is not perceptually aware, such as, indeed, a possible future invasion by Andromeda to use the 'Andromeda paradox' example.

As Petkov (2009) has made clear, there is a lot that special relativity does not give to us that we may really feel we should know but that special relativity will never vouchsafe to us, the actual value of the one-way velocity of light being just one example. This situation may be felt unsatisfactory though any dissatisfaction could perhaps be written off by some philosophers as a matter of 'folk psychology'

Other Approaches

Zimmerman (2007, 2010) perhaps presents the other most current detailed attempt to further resolve these problems. Other approaches such as that of Craig (2001) include the use of Lorentzian space-time and seem to carry as many or more problems.

Zimmerman (2007) says " I do not believe the A-theory automatically requires a return to Lorentz; and I try to explain why elsewhere. Granted, the A-theorist attributes a special status to one way of slicing the manifold. But this structure can be added without thereby undermining relativity's account of the way space-time works; the causal role assigned to space-time by relativity is consistent with a privileged slicing. The A-theorist's additional fundamental structure can, in principle, leave the web of relativistic spacetime distance relations intact – still doing its intended job in explanations of why things move in the ways they do".

Zimmerman (2010) also adds "If, as A-theorists believe, there is an objective fact about what is presently happening, there must be an objective fact about which events are simultaneous with one another — in other words, a fact about simultaneity that is not relative to anything, including the frames of reference of SR, or the local frames of GR. But, on the face of it, these scientific theories require that simultaneity be frame-relative."

Zimmerman tries to include his 'A-theory type' views in the special/general relativity approach by affirming "There is an objective, important difference between events that are really happening to me, and ones that merely did or will happen to me; and the events that are really happening to me are confined to a tiny region, r, on the world-line I will eventually have traced through the manifold."

He can of course do so, but the principle of parsimony suggests that for the moment it may be simpler to consider a more general approach as we do here, and at least for the moment take the option that special relativity does not tell us all we need to know about simultaneity.

Bricolage

Bricolage is the art of tinkering (or improving, or improvising) with what is to hand to improve it.

On bricolage, Deleuze (1983) quotes Levi-Strauss where bricolage is defined as almost just a feature of the home workshop, and one feels there is some element almost of both disdain and mild admiration, a view which also seems to be focussed on by Kauffman (1995), though Dennett rather disapproves and refers to Kauffman as a "meta-engineer". Elsewhere, however, Dennett (1998) even uses the word 'kludge' rather disrespectfully but still offers obeisance to Gould as an early describer of Nature's bricolage. Dennett seems to realise that philosophers have somewhat of a blind spot to bricolage, and indeed even refers to Putnam in that connection !

Thus there has clearly been an unfortunate tendency for philosophers and natural scientists to

depersonalise physical experience and importantly Giere and other perspectival realists have tried to temper and usefully modify that tendency. This would seem to be a genuine psychological problem, of a somewhat similar type to that which Copernicus found with the Catholic Church.

Derrida seems to begin to see a rift where he says (in “Structure Sign and Play in the Discourse of the Human Sciences”) "there are two approaches to inquiry which are absolutely irreconcilable, that which seeks the origin or center, and that which affirms play and becoming". Derrida actually suggests that all discourses are bricoleur, a view to some extent mirrored in Varela's (1995) own view that "Organisms have to be understood as a mesh of virtual selves. I don't have one identity, I have a bricolage of various identities. I have a cellular identity, I have an immune identity, I have a cognitive identity, I have various identities that manifest in different modes of interaction. These are my various selves. I'm interested in gaining further insight into how to clarify this notion of transition from the local to the global, and how these various selves come together and apart in the evolutionary dance"

So in further experiments we have to tinker with various mental process in different ways, perhaps directly using some of the methods of experimental philosophy in questionnaires snd other ways (Yates 2008, 2009, 2010 etc) but also by other methods such as robotic simulation and tinkering, techniques summarised to an extent in the work of Chalmers, Clarke and of course the important work of Dawson (2010). In short there is not much use in hoping that special relativity alone would revise the processes of the mind. It is essential to beware of the 'uncanny valley' phenomena often written large for philosophers and even natural scientists, and to dare to carry out effective robotic mind simulation techniques without depersonalisation worries or fears, though as the old saw goes 'the price of freedom is eternal vigilance' rather than ignorance, superstition or untoward enthusiasm. So in our new laboratories at Chandor, Goa, we are using robotic techniques after the manner of Dawson to begin with.

Conclusion

Our MBI interpretation resolves the Andromeda paradox, just as it was able to explain the Schrodinger Cat mystery (Yates 2008, 2009, 2010). There seems remains a problem that, in the way of 'resolution' of such paradoxes, there is still the feeling that there 'was something there to look at'. We have carefully defined what that 'something' is - basically a misplacement of worries about special relativity. We have also defined at least one way of dealing with that 'something' - the way being bricolage. We proceed further with this way in a later paper in this series.

Acknowlegements

I would like to thank Professor Dean Zimmerman for his helpful advice and comments on this work.

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