A comment on Ferreira, F. Apel, A. & Henderson, J. M. (2008). Taking a new look at looking at nothing. *Trends in Cognitive Science*. 12(11), 405–410.

Ferreira et al. (2008) recently published an 'Opinion' article in which they advance an account of a phenomenon first observed (in different forms) by Richardson & Spivey (2000) and by Altmann (2004). The phenomenon (as I observed it) is this: You show a scene on a computer display for a few seconds, and then take it away. With the screen blank, you then play a pre-recorded sentence which describes something about the objects that had been in the previously seen scene. As you refer to those objects, it turns out that participants' eyes return to the locations where those objects *had been* even though they are there no more.

The purpose of this comment is simply to correct some inconsistencies between what Ferreira et al. say I have written, and what I have in fact written. Readers who are not familiar with this work need not concern themselves with this. I am merely reporting here a factual account of what I have and have not written, contra Ferreira et al's description of what I have written.

Ferreira et al. cite me as suggesting that when the screen is blank but the eyes move back to the original locations of previously viewed objects, they do so: "*because the visual system uses the world as an external memory rather than relying on internal representations*". They then attribute to me the view that "*the lack of internal representation also explains why the oculomotor system would program a saccade to nothing: because there is no internal representation of what had been present before, the visual system does not detect that the display has changed from containing objects to being empty.*"

Here is what I actually wrote in 2004: "*One might suppose, however, that when the screen is entirely blank, the processing system would be aware that there was nothing relevant in the visual field*" I went on to say "*More likely is the idea (also considered by Richardson & Spivey, 2000) that the spatial pointers are a component of the episodic trace associated with each item— activating that trace necessarily activates the (experiential) component encoding the location of that item, and it is this component that automatically drives the eyes towards that location*".

And here is what Ferreira et al. advance as a part of their new look at looking at nothing: "*We propose that looking at nothing reflects something important about the nature of mental representations. Specifically, it reflects the existence of an integrated memory representation derived from visual and linguistic input*" And they then say: "*Later, when part of an integrated representation is reactivated, the other parts are retrieved as well. This, in turn, causes the eyes to move to the location in which the item originally appeared*". They cite neither my nor Richardson & Spivey's earlier theorising to this same effect.

I have never held the view, nor published the view, that the visual system does not rely on internal representations – indeed, I have published papers in a book edited by Ferreira and Henderson (Altmann & Kamide, 2004), and in a special issue of the *Journal of Memory and Language* edited by Ferreira and Tanenhaus (Altmann & Kamide, 2007), in which I very explicitly argue for exactly the opposite. In the 2007 paper I explicitly develop further an account of eye movements based on internal representations and the re-activation of episodic traces of previously encountered visual objects. This account shares much with the prior work also of Richardson and Spivey.

We (Richardson, Altmann, Spivey, & Hoover) have written a joint letter to the Editor of *Trends in Cognitive Sciences* which we hope will one day be published. Too late, no doubt, for the many people who, reading Ferreira et al. (2008), will believe things about me (or my theories) that are simply factually incorrect.

References

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