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Comment on Demont, Wesseler and Tollens: Irreversible costs and benefits of transgenic crops: what are they?

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This paper is an elucidating and useful contribution to a subject that is of interest not only to economists and biologists, but to anyone concerned with the meaning accorded to ‘irreversibility’ and the way the concept is employed in the debate on transgenic crops. That said, and reading the paper as an ‘outsider’ to this specific academic debate, there are several points that I believe ought to be clarified.

First, it is not clear whether the authors are discussing the concept ‘irreversibility’ or the ‘irreversibility effect’. The former relates to those effects on human health, biodiversity, climate change, etc., which are (arguably) not reversible. The latter is the term used for the effect that the likelihood of more information about the nature (and/or possibility) of irreversible costs has on the valuation of a project. In other words, it relates to the value of information about irreversible costs under uncertainty rather than to some property of the widespread introduction of transgenic crops. It may be that this is the way economists relate to ‘irreversibility’, i.e. only to the degree that it effects the valuation of a project. However, if this is the case, it should be made clearer to the reader who is not an economist.

Second, considering the centrality of information to the ‘irreversibility effect’, some clarification is needed about the nature of the information expected. The illustrative examples provided by the authors deal mainly with uncertainty about the future benefits of a technology, i.e. those regarding output and input prices in agriculture “not known with certainty due to several factors including the microclimate, agriculture policies and technical change”. While the authors mention that there is uncertainty about the irreversible costs and benefits of transgenic crops, it is less clear to me how this dimension of uncertainty figures in the ‘irreversibility effect’, according to the authors.

Furthermore, the value of further information has underlying it the assumption that such information is forthcoming and that uncertainty is to an extent reducible. However, is it not the case that much of the debate about the irreversible costs of transgenic crops deals with a condition more adequately characterized as ‘ignorance’ (i.e. not knowing what it is that we do not know)? And if this is indeed the case, does not the necessary information about the effects of transgenic crops ultimately depend on their widespread cultivation? Of course it may be that the way ‘irreversibility’ is discussed by economists precludes such questions, in which case we return to the necessary clarification of what irreversibility means to economists (vis-à-vis the ‘irreversibility effect’).

Finally, a central contribution of the paper is introducing and operationalizing the concept of irreversible *benefits*, which play an important role in a cost–benefit assessment of transgenic crops that recognizes the ‘irreversibility effect’. The authors

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argue that when considering the ‘irreversibility effect’, irreversible benefits reduce irreversible costs by an order of one. However, while this may be the case where the benefits and costs are monetary, does it remain the case where the benefits and costs pertain to effects on health, biodiversity, climate change etc.? Does the inclusion of irreversible benefits not inevitably introduce a cost–benefit analysis into the ‘irreversible dimension’ of the equation and, as a consequence, the question of whether these irreversible benefits and costs are commensurable?

To conclude, while the economic understanding of ‘irreversibility’ is an important element in the debate on transgenic crops, at the end of the day, any decision – to introduce transgenic crops or not to introduce them – is irreversible (on various meanings of irreversibility, cf. Humphrey 2001). Either decision generates irreversible costs and benefits, and it is the likely distribution of these which remains the central political question.

References

Humphrey, M., 2001. Three conceptions of irreversibility and environmental ethics: some problems. *Environmental Politics*, 10 (1), 138-154.