

Biological processes and moral events

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Author's abstract

It is often argued that the continuity of the processes of embryo development precludes the establishment of morally significant boundaries, once development is under way. These arguments typically claim that marking out any moral boundaries requires identifying particular significant events, and that in such circumstances this is either impossible or arbitrary. In this paper it is argued that arguments of this kind are not cogent. The paper concludes by indicating where the real problems lie.

In the course of discussing the moral acceptability of embryo research, the Warnock Report makes the following observation:

'While . . . the timing of the different stages of development [of the embryo] is critical, once the process has begun, there is no particular part of the developmental process that is more important than another; all are part of a continuous process, and unless each stage takes place normally, at the correct time, and in the correct sequence, further development will cease. Thus biologically there is no one single identifiable stage in the development of the embryo beyond which the *in vitro* embryo should not be kept alive. However, we agreed that this was an area in which some precise decision must be taken, in order to allay public anxiety' (1).

This passage is important because it draws attention to a way of thinking about the moral issues raised by the new biotechnology which has a considerable appeal. The way of thinking in question sees a crucial moral significance in the continuity of the processes which constitute the development of a human infant. It understands the continuity of the developmental processes to debar the drawing of any moral distinctions except at the beginning and end of the process. The view is commonly, though not always, expressed in the claim that the drawing of moral distinctions in such cases is wholly *arbitrary*.

Key words

Embryo development; continuous processes; potentiality; moral judgements.

In the quotation, the Warnock Report appears to concede the importance of this way of thinking, only to deny it in the final sentence. For, if there is no biological stage at which a crucial moral difference is generated regarding how to treat *in vitro* (or other) embryos, how is a precise decision to help? Rather than allaying public anxieties, will not such a decision *provoke* anxieties by its apparent arbitrariness? For if the decision is not based on a biological difference, on what could it be based (2)?

The purpose of this paper is to argue that the Warnock Report's approach is indeed justifiable, despite the popularity of the kinds of objections just provided. It will be argued, that is, that the continuity of biological processes is no bar to making precise and non-arbitrary moral decisions about the treatment of human embryos. It is important to show this not least because of some politically influential treatments of such issues which follow the popular line. In at least one such case, the above-quoted passage from the Warnock Report is employed to *support* the popular view and reject the 14-day limit given in the report.

The case in question is the majority report of an Australian Senate Select Committee on the moral and legal issues raised by the prospect of embryo experimentation, *Human Embryo Experimentation in Australia* (3). The report argues against allowing any destructive non-therapeutic experimentation on human embryos no matter what their stage of development, by stressing that, after fertilisation, there is 'a continuum of development until birth' (3.21). In particular, it argues that there is no 'marker event' (ie, no event which introduces a change in the moral status of the embryo) after fertilisation and before birth (4). To support this view, it lays particular stress on the Warnock Report's claim that 'once the process has begun, there is no particular part of the developmental process that is more important than another; all are part of a continuous process' (quoted at 3.17) (5).

It is possible to interpret arguments of this kind in two ways. The more common interpretation is that already referred to – that where we are dealing with continuous processes, any form of demarcation, or line-drawing, is simply arbitrary. The second interpretation is stronger: it holds that the continuity

of the biological processes must exclude marker events, because processes are fundamentally different from events, and necessarily exclude them in all cases. Therefore they must exclude them in this particular case. (A picture which may encourage this view is the idea that processes 'flow' whereas events do not: so processes exclude events because processes are smooth and continuous, whereas events are *irruptions*, breaks in what otherwise would be smooth and continuous processes.) This second interpretation is rarely stated explicitly, but often seems to be used to buttress the first against criticism. Since it implies that processes and events *must* be sharply distinct, any problems encountered by views such as the first interpretation can be regarded merely as problems of *formulation*, and not of substance. However, it will be argued in this paper that, on either interpretation, this kind of argument is not successful. To show this, it will be best to examine the second interpretation first, in order to avoid complications generated by its influence on arguments which explicitly depend on the first interpretation.

It is certainly true that the process of development from fertilised egg to human baby is a continuous process, but from this fact it does not follow that markers are impossible. This is because processes, no matter how continuous, are not fundamentally different from events. What distinguishes an event from a process depends on the context of inquiry – they are not, as the second interpretation seems to suppose, different kinds of natural phenomena. One way of showing this is by considering the same occurrence in the light of different time-scales: for example, kicking a ball. If I kick a ball, this is certainly an event, something which happens at a particular time. If we employed a slow-motion camera, however, we would not be able to identify a precise moment (a specific frame on the camera film, for example) when the ball could be said to be kicked, for what had seemed an instantaneous event now is seen to be a process which occurs over time – first the foot makes contact with the outer surface of the ball; the ball distorts as the foot invades the space previously occupied by the ball alone; as the foot continues on its path we see the ball begin to return to its original shape until, as it regains its original shape, it begins to lose contact with the foot, and then follow an independent path.

In considering this process, no precise moment presents itself as *the* moment when the ball is kicked. But, despite any initial surprise that this should be so, there is no deep problem here. This can be shown in the following way. If we ask, 'Exactly *when* was the ball 'kicked?', what should we answer? When the foot made contact? When the foot and ball were in the most intimate contact (the point of maximum distortion of the ball)? Or when the ball left the foot? These questions appear difficult to answer because they prompt us to look for a precise moment when the event occurred, and such a moment is not clearly revealed by the camera. However, in so prompting us the questions

lead us astray. The difficulty we have in answering them is not testimony to a difficult problem, but to having been misled by our own original question. The only adequate answer to that original question is to insist that the *whole process* caught by the camera is the event of kicking the ball. Kicking a ball is not only an event which occurs at a particular time, it is also a process which occurs over time. This may seem paradoxical, but only if we fail to recognise that in speaking thus we are employing two different time-scales. The difference between processes and events is not a difference between two fundamentally different kinds of thing, but (in this sort of case at least) between different time-scales, time-scales which reflect the different interests underlying our different forms of inquiry, and which are presupposed by the correspondingly different forms of language we employ for different tasks.

If we now turn to consider the case of human fertilisation, we find that the same principles apply. The fertilisation of an egg by a sperm is the event that begins the process of development which culminates in the birth of a human baby. So significant has this particular event seemed to many (including the majority of the Senate Committee) that it is defended by them not only as a suitable marker event for the recognition of moral and legal status, but as the only possible such event. However, if we examine this event carefully, we find that our increased knowledge of human conception has put us in a position not unlike that encountered in the case of the slow-motion camera. It is no longer obvious what fertilisation is (that is, what the scope of the concept is), because our use of the word 'fertilisation' is not pre-adapted to discriminate between cases discernible only with the aid of modern medical technology. In its ordinary employment, 'fertilisation' refers to the egg and sperm getting together, becoming intimately acquainted as it were, so that the developmental processes get underway. Does this mean, then, that fertilisation occurs when the sperm penetrates the egg? Or at chromosomal syngamy? Or at some intermediate point? The matter cannot be settled by identifying some instantaneous event, not least because there are none (even penetrating the egg takes the sperm several hours). The best solution seems to be to insist, once again, that what is an event from one standpoint is, or can be, a process from another; and thus to conclude that fertilisation is that causal sequence beginning when the sperm succeeds in penetrating the egg, and ending when syngamy is complete. But to conclude this is, in the first place, to propose a convention to govern the proper employment of a term in our language, not to insist on an obvious matter of fact; and, in the second, to allow that 'fertilisation' is the name for a biological *process*. But this no more implies that fertilisation cannot be a marker event than it is true that causal processes cannot constitute an event. Fertilisation can be understood to be a process, and is even perhaps best understood as a process; but this in

no way precludes its being a marker event. The distinction between processes and events is contextually sensitive, and much confusion arises when this is not recognised.

The second interpretation therefore fails. It is no argument against the possibility of marker events that there is a continuous process from the sperm's penetration of the egg to the birth of the baby. Whether markers can or cannot be discerned depends not on whether there are continuous processes or not, but on whether the achievement of a certain level of development, however it comes about and whatever it leads to, makes some kind of morally significant difference. A morally significant difference arises at least in those cases where a consideration of moral significance comes to bear. What these considerations are has not been directly addressed here, but candidates are not hard to find: for example, sentience, viability, or (of course) potentiality. In this light, it might even seem that a rather brisk conclusion is warranted, thus: regard for considerations such as these will help to resolve moral problems; fussing about continuous processes will not.

Such a brisk conclusion is not warranted, however, because the argument so far has failed to indicate any weakness in the first interpretation of the continuous processes argument. The first interpretation does not depend on any sharp distinction between processes and events, but may even be understood as a critique of the reply to the second interpretation. This can be illustrated as follows. It is all very well (it might be said) to identify the achievement of certain stages of development as morally significant markers, but the very continuity of the processes in question here mean that this is an achievement of little, if any, moral use. Morality is a practical matter, so our deliberations on an issue are morally valueless if they do not help us to decide how to act on the matters that concern us. Vague talk about stages of development, of processes constituting events, etc, does not help us to decide where to draw lines governing our research practices. For that task we need markers as precise and exact as our technological expertise itself. But our expert knowledge shows only continuities. There are thus no natural markers revealed in our research, so establishing a marker, for whatever reason, will be an arbitrary decision.

Putting the matter this way helps to show the strength of the first interpretation: by avoiding the conceptual muddle about the relationship between processes and events, it is able to focus on the crucial practical matter. However, it is also, for that very reason, comparatively easy to meet. Drawing a precise line where there is no correspondingly precise natural marker means that the line in question could have been drawn somewhere else. It does not, however, mean that the line could have been drawn *anywhere* else. There may be several possible answers to the question of what counts as fertilisation, for example, but it does not follow that we could say anything. Whatever the

initial imprecision of such a term, some answers to the question can be readily ruled out as unreasonable or even absurd. Whatever else it is, fertilisation is what happens to the egg to get the developmental processes underway; and this fact functions as a limit on what answers to the question are reasonable. Applying this more generally, we can say that drawing a precise line for legal or moral purposes in cases where there is no precise natural marker to follow is not arbitrary where it is not unreasonable. As long as it is in the right general area to tie up with the relevant moral feature(s), a precise line can quite reasonably be drawn.

Our legal practice already draws such lines in a variety of cases. For example, legal adulthood is attained at the age of eighteen, despite the fact that this is only a rough indicator of the age at which the appropriate qualities come to fruition – qualities which develop gradually and continuously, and at quite different rates in different individuals or circumstances. But a precise line is needed for legal purposes, and this is generally accepted as a reasonable point at which to draw the line. The same approach can be employed in cases concerning early human development. Exactly where the line is drawn is less important than that a line *be* drawn in the general area of the appearance of the morally relevant feature. A line drawn in the appropriate general area will be a reasonable line; and, *ipso facto*, it will be a non-arbitrary line. Of course, in those cases where it is necessary to be morally scrupulous, or where for a variety of reasons it might be necessary to avoid even the suspicion of doing wrong, some kind of safety margin should be built in, thereby ensuring that we err on the side of caution rather than of carelessness. By doing so, interestingly enough, we make the task of drawing a precise boundary all the easier (although we also leave ourselves open to pressure to have the boundaries revised should new circumstances arise or old interests revive). Despite widespread convictions to the contrary, then, it is perfectly possible to settle on precise markers to govern research practices and resolve legal problems.

This does not mean that there is no problem about settling on marker events. In fact, there is a problem here, but it is a problem about moral beliefs. This can be illustrated as follows. It has been argued here that, despite the fact that there is a continuous developmental process from fertilisation to birth of a human baby, it is possible to determine marker events nonetheless. But this does not, of course, tell us what markers we should adopt, or even that there are such (morally significant) markers. Both issues require, for their settlement, the application of a moral viewpoint. Different moral views will recommend the adoption of different events as markers, or may even resist thinking in terms of markers in many cases.

The continuity of the developmental processes in the formation and development of the human embryo thus raise no special problems concerning the establishment of marker events for the purposes of regulating

research. Rather, the central questions are whether the early embryo should be recognised as an individual worthy of respect in its own right, and whether specific research programmes can be justified by reference to their (intended or likely) consequences. Whether the Warnock Report or the Australian Senate Committee's report provide adequate answers to questions such as these is, of course, quite a separate matter (6).

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References

- (1) Warnock, M. *A question of life: The Warnock report on human fertilisation and embryology*. Oxford: Basil Blackwell, 1985: 65.
- (2) Rather surprisingly (given its earlier insistence – in the Introduction – on the separateness of questions of fact from questions of value or decision), the Warnock Report

seems to invite this objection to the quoted passage. For if there is indeed such a sharp fact/value distinction, how could there be a biological stage which implied moral conclusions about how to treat the embryo?

- (3) Senate Select Committee on the Human Embryo Experimentation Bill 1985. *Human embryo experimentation in Australia*. Canberra: Australian Government Publishing Service, 1986. (Textual references are to paragraph numbers of this report.)
- (4) This is a simplification of the report's position, but not, I believe, an unwarranted one. The report says only that *as yet* there is no 'compelling evidence' for the existence of a marker event (3.19). However, given its appeal to the continuity of the biological processes, it is not clear what could count *as* evidence for a marker event. Does the committee envisage the future discovery of a *discontinuity* in embryonic development?
- (5) In stressing this point the Senate Committee attaches most weight to one point of the quoted passage which is clearly vulnerable to objections. For, while it is certainly true that every stage in the embryo's development is equally necessary for that development to come to fruition, it is not therefore true that every stage is equally important. Morally speaking, the stage at which the brain is formed would seem to count for more than the stage at which the fingers or other external features are formed, even though the brain cannot be formed without the successful prior completion of the earlier stages.
- (6) I would like to thank Helga Kuhse and Peter Singer for helpful comments on an earlier version of this paper.

Continued from page 134

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- (4) Lorber J. Reply to Harris. *Journal of medical ethics* 1981; 7: 120–122.