

Rational Souls and the Beginning of Life

(A Reply to Robert Pasnau)

JOHN HALDANE AND PATRICK LEE

1. Introduction

Our previous essay¹ to which Robert Pasnau responds in his article ‘Souls and the Beginning of Life’,² took issue with several aspects of his original discussion in *Thomas Aquinas on Human Nature* (hereafter ‘*Aquinas*’)³ of human ensoulment and of traditional Roman Catholic teaching on the matter of abortion and the value of human life. Our primary concerns were twofold. First, to provide readers, whose only knowledge of the issues might come through reading Pasnau’s original discussion, with another account of the question of when human life begins, as this may be determined on the basis of Aquinas’s metaphysical views and known empirical facts about conception and embryonic development. And second, to offer a fuller and more balanced representation of how this issue has been treated hitherto.

In his response, Pasnau writes of the ‘fierceness’ of our reply and conjectures that this may be due to the fact that the work of Aquinas has a great deal of authority with people keen to attack the legality of abortion, and because the details of Aquinas’s argument about the origins of individual human life are especially attractive to such people (p. 2). We did not discuss the political question of whether abortion should be legal, but since Pasnau himself now writes that abortion ‘should be considered murder’ (sic.) ‘after roughly the middle of the second trimester’ (p. 1) presumably he himself is among those who think that such terminations at least should be prohibited by law.

Where our tone was strongly critical was not in relation to any of the substantive issues concerning the metaphysics of human gener-

¹ ‘Aquinas on Human Ensoulment, Abortion and the Value of Life’, *Philosophy*, 78, No 304, (April 2003) pp. 253–76.

² *Philosophy*, 78, No 306 (October 2003) pp. 509–19.

³ Robert Pasnau, *Thomas Aquinas on Human Nature: A Philosophical Study of Summa Theologiae Ia 75–89* (Cambridge: CUP, 2001).

ation but in response to the gratuitous nature of Pasnau's remarks about the character of Catholic moral teachings ('a noxious social agenda', *Aquinas*, p. 105) and about the motives of scholars who hold that intentional abortion is morally wrong and who are also familiar Aquinas's view about ensoulment ('Those [of them] who do know [Aquinas's view] are generally not eager to advertise it', *Aquinas*, p. 115). We provided ample data to show that debate in these areas has been extensive, with no evidence of concealment by scholars or in relevant teaching documents; we catalogued how Catholic teaching had developed since the medieval period in response to the development of embryology; and we showed how, far from being 'rhetoric', the claim that 'every human life is of incomparable value' expresses a sincerely held and intellectually considered position.

Pasnau's response does not engage these points of criticism (though he now acknowledges that his book 'goes rather out of its way to discuss the topic of abortion' and he gives what he describes as 'political' and 'personal' reasons for this (p. 2)). Instead, it is directed to the issue of when human life begins. In our view that is indeed more properly the business of a philosophical study of Aquinas's account of human nature than are irrelevant side-attacks on sincere and considered moral and theological beliefs. Accordingly, we now turn to matters metaphysical and biological.

II. Souls, Bodies, and Potentialities

On Aquinas's body-soul (matter-form) analysis of the human being, it follows, as a *general* principle, that the human soul comes to be (or is infused) only when the body generated by the parents is sufficiently organized to be disposed for it. Two key questions arise from this: (1) what *specific* type of organization is sufficient for human ensoulment according to Aquinas's principles? and (2) given what we now know of the embryological facts, at what point in reproduction-gestation is that specific type of organization present?

To (1) we replied, contrary to Pasnau's original discussion, that what Aquinas's principles require (and what he himself required for human ensoulment) is the material organization sufficient for *the development of* those organs that support all of the operations proper to the human species. Aquinas himself believed, on the basis of mistaken embryological assumptions, that such organisation did not occur until the distinct organs were visibly present, and that this did not happen until 40 or 90 days after conception. In reply to (2), however, we argued that when his principles are applied to what is

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now known about reproduction-gestation, the conclusion is that the organization of the body required for human ensoulment occurs at conception, months before the development of a brain sufficient to support actual conceptual thought (Pasnau's claim).

In reply to our argument Pasnau first distinguishes between two views about how much organization is required for human ensoulment. According to what he calls 'the first-potentiality standard' the body must be 'structured in such a way as eventually to produce a fully developed human being' (p. 513). According to 'the second-potentiality standard' the body must be sufficiently organized 'to have the potentiality in hand' for intellectual and voluntary operations (p. 514). Pasnau then claims that Aquinas opted for the second-potentiality standard, and describes our position as opting for the first-potentiality standard which, he maintains, leads to absurdities. The second-potentiality standard *must be* Aquinas's (Pasnau argues), since if it were not, then Aquinas would have had to say that the rational soul is actually present already in *the semen*—'that is, presumably, from its initial production in the testes' (p. 513). The proposed point is that since Aquinas thought that the semen has the potentiality or '*virtus*' to become a human being, then the first-potentiality standard (according to Pasnau) would have led him to say that the soul is already present in the semen in the testes. Yet Aquinas held nothing of the sort, so our (Haldane and Lee's) view violates Aquinas's metaphysical principles and not just his mistaken empirical (embryological) data.

Two observations are in order. First, Pasnau does not clearly distinguish between (1) a *passive potentiality*, that is, a capacity to be changed by another into a certain type of effect, and (2) an *active capacity* (a capacity to perform an action, whether this action remains in the agent or is the production of something distinct), which Aquinas often refers to as a '*virtus*'. At times Pasnau refers to the 'first-potentiality standard' simply as 'the potential to become a fully developed human being' (p. 513). In the text from Aquinas to which Pasnau refers as support for his distinction between a 'first-potentiality' and a 'second-potentiality',⁴ Aquinas is actually distinguishing between a *passive* and an *active potentiality*, and the first type of potentiality Aquinas mentions would not be applicable to either what he thought about the semen (since according to Aquinas it is the agent which will *produce* a body apt for human ensoulment),

⁴ *Commentary on Aristotle's On the Soul*, Bk. II, lecture 2, 240. See *Aristotle's De Anima in the Version of William of Moerbeke and the Commentary of St Thomas Aquinas*, trans. K. Foster & S. Humphries (London: Routledge and Kegan Paul, 1951) p. 177.

or to what we argue is the truth about the human embryo (since we hold it will *grow* to the mature stage of a human organism, and so is already a whole, though immature, human organism).

Second, Pasnau's argument is based on a confusion. While Aquinas certainly did not hold that the semen has a distinct soul, he did hold that it has within it the force ('*virtus*') of the father's soul. According to Aquinas the formation of a body apt for human ensoulment occurs as follows. The male semen, acting as an instrumental cause for the father (who he thought was the sole principal cause) gradually brings the menstrual blood (the material cause, that matter out of which the effect is produced) provided by the female, to the point where it is disposed for the reception of the human soul. The reason why Aquinas did not believe the soul of the child is present in the semen is *not* because he holds Pasnau's 'second-potentiality' requirement (the organs must be developed sufficiently to operate just then), but simply because he holds that the semen is the *agent* (the instrumental agent) and has the force (*virtus*) of the soul of the male parent present in it (in the way that the power of a principal cause is present in the instrument with which it works).⁵ Nor did Aquinas think that *the embryo* produced by the semen acting on the menstrual blood provided by the mother had the active capacity to form a mature human body. That is precisely why he held that the vital spirit of the semen remained and continued to act on the embryo, and then on the foetus, finally producing a body apt for human ensoulment.

Thus, Pasnau's attempted *reductio ad absurdum* fails. Aquinas held that a bodily organization sufficient to develop itself to the stage where it will support intellectual and volitional operations was sufficient for human ensoulment. But he thought this degree of organization does not occur until the organs are visibly differentiated. We now know that this degree of organization is in fact present at conception. Pasnau indicates three 'crucial respects' in which 'Haldane and Lee [allegedly] misdescribe Aquinas's account' (pp. 515–6). But none of the three points he alleges distinguish between what we or Aquinas say about a) the semen as *agent* (or *efficient*) *cause*, b) the menstrual blood as *patient* or *material cause*, and c) the initial product or early products of a.) working on b.), namely, the

⁵ *Summa Theologiae*, Ia, q. 118, a. 1, ad 3; and q. 118, a. 2; also *On the Power of God*, q. 3, a. 9, ad 11. Aquinas has a developed notion of instrumental causality. See, for example *Summa Contra Gentiles*, Bk. III, ch. 70. Though it plays a key role in Aquinas's position on human ensoulment, Pasnau takes no notice of it in his account (either in his book or his reply to our article).

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embryo with vegetative life, and then the embryo-foetus with sensitive life (the perfection of which is still not, according to Aquinas, 'high enough' to warrant concluding that *it*, apart from the continuing extrinsic, efficient causality of the 'vital spirit' of the semen, has the active capacity to develop itself to human maturity).

III. Causality and Embryological Development

Originally (*Aquinas*, p. 103) Pasnau claimed that DNA provided the role that Aquinas thought was played by the 'vital spirit' in the semen, namely, guiding the complex generative process toward completion. That proposal seemed to grant that a single, continuing cause is required for the organized sequence of the embryo's development. We pointed out that if DNA provides that role then, since DNA is actually (in Aquinas's terms) an 'intrinsic organ' of the embryo, this would mean that the embryo herself is internally directing her growth process (sex is determined from the beginning). This in turn would mean that the embryo is already a human being, only at an immature stage of development. Pasnau now claims, however, that a single cause is not needed for the ordered development (p. 519). Just as a dozen generations of fruit flies need no single cause guiding the sequence of substantial changes among the generations of flies over time, so, Pasnau now argues, no single cause is needed for the sequence of changes constituting the development of the more mature foetus's body. That is to say, on Pasnau's view, in both cases (the generations of fruit flies and the embryonic-foetal development), a causes b; b causes c; c causes d; etc. and there need be no *single* cause over and above a, b, c, etc.

But the sequence, a produces b; b produces c; c produces d; etc., is a *per accidens* causal series, the causality being neither simultaneous nor transitive across the series. Accordingly, while each element involves a causal relation it need not be supposed that there is a cause (intrinsic or extrinsic) of the whole. Where, however, there is a many phased but unified developmental pattern, then a cause of the process as a whole *is* required. If there is no extrinsic overall cause then there must be an intrinsic one; and since the process is unified then either there is a single cause explaining the whole or several causes co-operating or somehow harmoniously operating. Aquinas, Pasnau, and we (Haldane and Lee) all subscribe to the idea that the soul is a unitary principle responsible for all the vital functions of an organism. Therefore, the case of foetal development involves an intrinsic principle of natural change in a single sub-

stance. This change involves the internally directed growth toward a more mature stage of a *human* organism, and so the cause of this change, the embryo itself, is already *human*.

In our article we said that the human embryo from the beginning has the ‘epigenetic primordia for the development of those organs ... that support the operations proper to the species’ (p. 266). Pasnau complains that ‘it is not clear what this phrase [“epigenetic primordia”] means’ (p. 514). It derives, however, from common terminology in embryological texts. One standard work, for example, defines the ‘primordium’ as ‘the beginning or first discernible indication of an organ or structure’,⁶ while ‘epigenetic’ is used to mean ‘being developed out of without being preformed’.⁷ It is worth noting that from the very beginning, even in the first two days, the cells of the developing embryo do have some specialization or differentiation (though if separated they can develop into whole mature human organisms). From the very beginning, even at the two-cell stage, the cells of this new organism are cytoplasmically and positionally differentiated. In mammals, even in the unfertilized ovum, there is already an ‘animal’ pole (from which the nervous system and eyes develop) and a ‘vegetal’ pole (from which the future ‘lower’ organs and the gut develop). After the first cleavage, the cell coming from the animal pole is probably the primordium of the nervous system and the other senses, and the cell coming from the vegetal pole is probably the primordium of the digestive system. Moreover, the relative position of a cell from the very beginning (that is, from the first cleavage) does make a difference in how it functions.⁸

IV. Souls, Sentience and Conceptuality

We argued that if one held that human ensoulment does not occur until the brain is sufficiently developed to support conceptual thought then one would then be led to the absurd conclusion that human infants are not human organisms, since they certainly do not engage in conceptual thought. We also maintained that Aquinas was aware that foetuses and infants do not yet have actual conceptual

⁶ K. Moore and T. V. N. Persaud, *Before We are Born, Essentials of Embryology and Birth Defects*, 6th ed. (Philadelphia: Curtis Center, 2003).

⁷ See R. O’Rahilly and F. Mueller, *Human Embryology and Teratology*, 3rd. ed. (New York: Wiley-Liss, 2000), pp. 15–16.

⁸ See K. Moore and T. V. D. Persaud, *op. cit.*, Chs. 1–4; O’Rahilly and Mueller, *op. cit.*, Chs. 3–4; and S. Gilbert, *Developmental Biology*, 6th ed. (Sunderland, MA: Sinauer Associates, 2000), Chs. 7–8.

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thought and so he could not have required, contrary to Pasnau, a brain sufficiently developed to have ‘a capacity in hand’ for conceptual thought. To this Pasnau replies that it seems ‘quite plausible, however, to suppose that the mind of a foetus is active before birth, and that Aquinas himself thought as much’ (p. 517) Pasnau adds that such thoughts need not be ‘higher-level’ but should be viewed as of an ‘extremely crude and rudimentary sort’. He then says that we were ‘unhelpfully conflating the capacity to have any mental operations at all with the capacity to have full-fledged concepts, and then in addition to have “thoughts” about those concepts’. (p. 517)

In our article, however, we said nothing about thoughts *about* concepts (reflexive, second-order thoughts, or acts of ‘second-intention’). But, more importantly, what Pasnau claims could only be plausible if one equivocates on the terms ‘mind’ and ‘thought’. What is distinctive of human beings (and the kind of thought we referred to) is *conceptual* thought. Both Aquinas and we (Haldane and Lee) hold that there is a difference in kind between even the lowest level of *conceptual* thought (thought bearing on the natures of things, or universal characteristics) and perceptual cognition (which one may or may not wish to call ‘thought’), of which other animals are quite capable, it being a power of *sentience* not of intellect.⁹ All of the empirical evidence—including the empirical evidence about infant behaviour available to Aquinas—indicates that in the first several months infants do not have any cognitions on a level higher than that attainable by other sentient animals. That is, the empirical evidence indicates that they do *not* exercise *conceptual* thought. In an article cited by Pasnau himself, the neurologist Stuart Derbyshire writes as follows:

The conscious conceptual system begins from 12 months of age. This corresponds with the cognitive landmarks of object permanence and symbolic play [which elsewhere in the article he explains appear at this time because of the development of synaptic connections between birth and 12 months]. The developing infant now has the capacity for continuous processing of the outside world. People and objects no longer exist one moment at a time, as there is conscious awareness during their absence. Symbolic play and the attempt to make meaningful utterances is further evidence for an internal, abstract, representation.¹⁰

⁹ See J. Haldane, ‘Rational and Other Animals’ in A. O’Hear (ed.) *Verstehen and Humane Understanding* (Cambridge: CUP, 1996) pp. 17–28.

¹⁰ S. Derbyshire, ‘Locating the Beginnings of Pain,’ *Bioethics*, 13 (1999), p. 27.

And, in an article summarizing recent literature on foetal brain and cognitive development, R. Joseph writes that in late term human foetuses and neonates there is ‘rudimentary, learning-related cognitive activity’, but he then adds:

Nevertheless the [human] fetus and neonate appears incapable of thinking, reasoning, understanding, comprehending, or experiencing or generating “true” emotion or any semblance of higher order, forebrain mediated cognitive activity. Rather, although capable of learning, the increasingly complex behaviours demonstrated by the fetus and neonate, including head turning, eye movements, startle reactions, crying, screaming, and rudimentary smiling, are probably best described as brainstem reflexes.¹¹

The reason for this, as Derbyshire again points out is that ‘While there are similarities between the foetal nervous system and the adult, it is important to remember that the real explosion of events in the cortex occurs postnatally between the third and sixth months of life’.¹² So, once one centres on *conceptual* thought, one sees the implausibility of thinking that Aquinas held that foetuses and neonates were actually engaging in intellectual and volitional operations. Moreover, detailed study of foetal and neonatal brain development and behaviour confirms the common sense view that babies do not actually understand or will until some time after birth. Thus it remains that if Pasnau’s standard for the degree of bodily development necessary for human ensoulment were correct, then it would indeed follow that human infants are not even human organisms, a position whose implausibility hardly needs emphasis.

V. Conclusion

On Aquinas’s principles, the formation of a *human* body requires a *human* soul as agent (efficient) cause. Aquinas thought that the

¹¹ R. Joseph, ‘Fetal Brain and Cognitive Development,’ *Developmental Review* 20 (1999), pp. 97–8.

¹² Derbyshire, op. cit., p. 21. See also Gilbert, op. cit., who writes as follows (p. 394.): ‘The human brain continues to develop at fetal rates even after birth. Based on morphological and behavioral criteria and on comparisons with other primates, Portmann suggested that human gestation should really last 21 months instead of 9. However, no woman could deliver a 21 month-old fetus because the head would not pass through the birth canal; thus, humans give birth at the end of 9 months. Montagu and Gould have suggested that during our first year of life, we are essentially extrauterine fetuses, and they speculate that much of human intelligence comes from the stimulation of the nervous system as it is forming during that first year’.

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agent cause was the father's soul mediated via the vital spirit in the semen. We now know that the human embryo herself, from the zygote stage on, is the agent cause. We know that she *forms herself* into a mature human body. So it is that the metaphysical principle, plus the new embryological data, lead to the conclusion that human ensoulment occurs at conception. To those who regard human life as enjoying a special kind of intrinsic value this conclusion should be of great significance.

University of St Andrews, UK
Franciscan University of Steubenville, US

