

Biological Essentialism and the Person

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1. The Gene Myth

The Age in which we inhabit has often been described as an 'Age of Information' and an 'Age of Biology'. The Human Genome Project, which is purposed to uncover the nucleotide sequences of DNA in the different human chromosomes, significantly expresses the confluence of the two characterisations of our Age. But the Age of Biology has brought about a disturbing metaphor, one which presents the gene as a powerful cultural icon that holds the very mystery of life, and determines the future and destiny of humankind. What is emerging is therefore a picture of the gene as the key to understanding the secret of life itself, and a new definition of the human being as a molecular and genetic entity, whose behaviour and culture is shaped by its biological-genetic constitution.¹ An article from the June 24, 1996 issue of *Time* Magazine published this quotation from the book *Timeless Healing*, which very much sums up the Gene Myth that has pervaded the present culture: 'Our genetic blueprint has made believing in an Infinite Absolute part of our nature'. The recent cloning of Dolly has intensified public interest in genetics and raised a number of important questions and concerns. These questions have to do with genetic determinism. Media report on the so-called discovery of the 'obesity' gene, the 'criminal gene' or 'novelty seeking gene' has resulted in similar concerns.² These concerns have been succinctly articulated thus: 'Do genes make us who we are? If we knew all the factors completely, would we find that our actions are fully determined?'³

The popular media is not the only source responsible for the Gene Myth. Scientists and academics must also assume responsibility for its fabrication and perpetuation. The entomologist E. O. Wilson, for instance, tries to explain human social behaviour within the framework of evolutionary biology and the 'survival of the fittest' in his now famous *Sociobiology: The New Synthesis* (1975).⁴ Wilson believes that the whole social order can be explained in biological terms. This led Wilson to embrace a determinism that renders human freedom a delusion. 'The agent itself', Wilson writes, 'is created by the interaction of the genes and the environment. It would appear that our freedom is only a self-delusion'.⁵ Consequently, according to Wilson, the genes determine even culture itself. Thus Wilson could say that '[t]he genes hold culture on a leash'. The leash, Wilson continues, 'is very long but inevitably values will be constrained in accordance with their effects on the human gene pool'.⁶ Wilson's sociobiology has since come under different names: behavioural ecology, Darwinian anthropology, evolutionary

¹ Jacquelyn Ann K. Kegley, 'Genetic Information and Genetic Essentialism: Will We Betray Science, the Individual, and the Community?' in *Genetic Knowledge: Human Values and Responsibility*. Edited by Jacquelyn Ann K. Kegley, (Lexington, Kentucky: An ICUS Book, 1998), p. 41.

² See also 'Alzheimer's gene found', *USA Today*, June 28, 1995, p. 1, and 'Genetic Link Found to Personality Trait: Explanation for Impulsiveness', *New York Times*, January 2, 1996.

³ V. Elving Anderson, 'A Genetic View of Human Nature', in *Whatever Happened to the Soul? Scientific and Theological Portraits of Human Nature*, edited by Warren S. Brown, Nancey Murphy, and H. Newton Malony (Minneapolis: Fortress Press, 1998), p. 49.

⁴ (Cambridge, MA: Harvard University Press, 1975).

⁵ Edward O. Wilson, *On Human Nature* (Cambridge: Harvard University Press, 1978), p. 71.

⁶ *On Human Nature*, p. 167.

psychology, and evolutionary psychiatry. But whatever its label, these approaches are shaped by a deterministic worldview that is constructed by the so-called doctrines of molecular biology. The same perspective is found in Richard Dawkins's controversial 1976 book, *The Selfish Gene*. Dawkins describes human beings as 'survival machines – robot vehicles that are blindly programmed to preserve the selfish molecules known as genes'.⁷ Like Wilson, Dawkins argues that genes produce culture or cultural products. Dawkins calls the latter memes. Memes, like genes, are selfish: they try to influence the culture to ensure their own survival, at the expense of rival memes. Like most behavioural geneticists, Wilson and Dawkins are two-factor determinists, that is, they attribute the development of character traits both to the genes and the environment. Both maintain that human identity must be seen in terms of the gene, a view shared by James Watson, the co-discoverer of the DNA double helix. Watson declares that it is DNA which 'makes us human'⁸, thereby combining, as often is the case, determinism with reductionism.

Reductionism and determinism are of course not new to science. Mainstream modern medicine, for instance, relies on explanatory strategies that are reductionistic, deterministic and dualistic. A reductionistic conception of the human being sees the human body as a genetic-neurological-hormonal information-processing machine. Medicine as a group of applied sciences – anatomy, physiology, pathology – are based on basic sciences like physics, biochemistry and molecular biology. Such reductionism easily leads to determinism in which genetic, physiological, and mental processes become the principle causal explanations for diseases and disorders. The Cartesian body-mind dualism, and the tendency to abstract the human being from its natural and social environments very easily lead to the view that 'disease is a deviation in the body's structure or processes that in principle can be localised and treated on a material basis'.⁹ Reductionism in science was in fact the pivotal idea initiated by Rudolf Carnap and other logical positivists in 1938. But it was Steven Weinberg, a Nobel-prize physicist, who is responsible for giving this reductionist approach its contemporary expression. The aim of the reductionist approach is to demonstrate that one level of reality, namely, social behaviour, can be explained by a lower or deeper level of reality. In an age of biology, 'it is not surprising that many of today's advocates of reductionism are biologists'.¹⁰ Such reductionism has led to determinism. Richard Lewontin defines genetic determinism as the theory that holds 'that human lives and actions are inevitable consequences of the biochemical properties of the cells that make up the individual'. All human behaviour, Lewontin continues, 'is governed by a chain of determinants that runs from the gene to the individual to the sum of the behaviour of all individuals'.¹¹

2. On Demythologising 'Science'

The central dogma of molecular biology states that hereditary information is stored in the DNA in the form of a code, and this information is expressed by being transcribed into the RNA and translated into specific proteins that are essential for the expression of individual traits. This has led some to conclude that the genetic information that is

⁷ *The Selfish Gene* (New York: Oxford University Press, 1976), p. 24, 36.

⁸ Quoted in Leon Jaroff, 'The Gene Hunt', *Time*, March 20, 1989, pp. 62-67.

⁹ Henk Jochimsen, 'Reducing People to Genetics', in *Genetic Ethics: Do the Ends Justify the Genes?* Edited by John F. Kilner, Rebecca D. Pentz and Frank E. Young. (Grand Rapids: Eerdmans, 1997), p. 76.

¹⁰ Kegley, 'Genetic Information', p. 49.

¹¹ Richard C. Lewontin, Steven Rose, and Leon J. Kamin, *Not in our Genes: Biology, Ideology and Human Nature* (New York: Pantheon, 1984), p. 6.

found in the DNA determines the phenotype of an organism.¹² This deterministic account is still the leading model in molecular-biological and human-genetics research. Such a paradigm has no doubt led to many difficulties and disturbing consequences. For instance, genetic essentialism may result in the medicalisation of social problems. Behavioural geneticists attribute behavioural traits to the genes. Mental illness, addiction, sexual orientation, criminality, and even educational success are all reduced to a genetic base. In his recent book, *The Sexual Brain*, Simon LeVay claimed that homosexuality can be explained biologically and genetically.¹³ LeVay's claims subsequently received support from Dean Hammer and his team of geneticists at the National Cancer Institute. They tried to show the existence of a gene located on the X-chromosome that predisposes some men towards homosexuality.¹⁴ But this theory may accentuate human differences, and may threaten and further alienate marginal groups instead of helping them. Thus instead of promoting tolerance and non-discrimination, the biological-genetic explanation may lead to an emphasis on 'individual pathology'. The medicalisation of social problems absolves society of responsibilities for any social aspects pertaining to those problems.¹⁵ The genitification of behavioural traits and abilities will lead to issues of justice. The genetic explanation for intelligence and its correlations with social and economic success presented by Richard Herrnstein and Charles Murray in their controversial book *The Bell Curve* is a case in point. Those with the highest IQs are at the top of the social ladder, while African-Americans, with lower IQs are at the bottom of the economic and social scale.¹⁶ While blatant 'front door' eugenics is no longer acceptable, biological essentialism has resulted in what sociologist Troy Duster has called 'back door' eugenics. This is already evident in some medical practises like 'IVF, genetic counselling, the selective identification of genetic diseases, and the concept of genetic health'.¹⁷

The central dogma of molecular biology must be rejected because it simplistically reduces human beings to their genetic makeup. Put differently, this reductionism, which reduces the human person in all its complexities to genetics, claims too much by its over-emphasis on the role of genes. The relationship between the biochemical structure of proteins and the trait of the organism is largely unknown. What is known is that there exists a biochemical and biophysical relationship between a particular nucleotide sequence of some stretch of DNA and the structure of a particular protein. This relationship has enabled the production of insulin and interferon under certain suitable conditions. But this does not yet justify the claims made by some geneticists regarding the relationship between genes and the physical and character traits of human beings. As Jochemsen has cautioned: 'the relationship between specific protein and the expression of a particular trait of an organism under normal conditions is mostly unknown, even for micro-organisms (not to mention the human being).'¹⁸ The human genome is a highly complex and open system that interacts very richly with the environment. In the course of this interaction, it may gain or lose material, reorganise itself, and produce variations in the different cells. Thus, as Pinchiera has pointed out, the genome is generally very dynamic, and should not be seen only as a fixed, stable body of information coded by sequences of nucleotides.¹⁹ Furthermore, the 'cause' and

¹² Joschemsen, 'Reducing People to Genetics', p. 77.

¹³ Simon LeVay, *The Sexual Brain*. (Cambridge, MA: MIT Press, 1993).

¹⁴ See D. Hammer *et al.*, 'Androgen Involvement in Homosexuality', *American Journal of Human Genetics* 53 (1993), pp. 844-52.

¹⁵ Kegley, 'Genetic Information', p. 41.

¹⁶ See Richard Herrnstein and Charles Murray, *The Bell Curve* (New York Free Press, 1994).

¹⁷ Kegley, 'Genetic Information', p. 47.

¹⁸ Jochemsen, 'Reducing People to Genetics', p. 78.

¹⁹ Genome physiology includes the following: (a) replication in a semi-conservative way to create similar genomes; (b) mutations to produce new forms of genes; (c) repair activities to correct defects; (d)

origin of biological life cannot simply be attributed to DNA. Consequently, the message that is found embedded in the DNA sequence cannot give a sufficient explanation of the development of the organism.²⁰

Most behavioural geneticists are two-factor determinists. This position is typified by the consensus pertaining to the study of identical twins. The study of a Dutch extended family reported in the *American Journal of Human Genetics*²¹ is a case in point. All eight affected males in that family have a propensity towards aggression and violence. Laboratory analyses show that each of the five male members available for testing has a mutation in a gene on the X-chromosome that produces an enzyme called monamine oxidase. Three of them showed abnormalities in two brain chemicals – high levels of norepinephrine and low levels of serotonin – which were associated with aggression in human behaviour. But besides the genetic predisposition, aggression in these subjects, behavioural geneticists believe, was triggered by environmental stresses.²² The same conclusions were reached in a separate study, conducted by Thomas Bouchard of the University of Minnesota. Fifty pairs of monozygotic twins, all of whom were separated from each other shortly after birth and raised in different environments, were studied. Based on their findings, the researchers maintain that the heritability of intelligence may be estimated to be about 50 percent. 'Going beyond phenotypic traits to behaviour, such studies claimed to have identified underlying genetic influences on leisure-time interests, mate selection, proneness to divorce, job satisfaction, political orientation (conservative vs. liberal), and even religious preference'.²³ Environmental factors, however, are never excluded. Some geneticists rightly reject the theory that the genotype determines the phenotype. Maintaining that the relationship between the genotype and phenotype is not as unambiguous as some geneticists would have us believe, David Cole argues persuasively that we should not be at all intimidated by those scientists who 'try to convince us that determinism is all that is'.²⁴ Be that as it may, even those scientists who reject genetic determinism are unable to give an account of human freedom or the role played by the human agency. Instead they 'simply buffer genetic determinism with environmental determinism'.²⁵

A common tendency among scientists working in molecular biology is to wrongly draw philosophical conclusions on the basis of their methodological strategies. That is, they fail to make the important distinction between methodological reductionism and ontological reductionism. Methodological reductionism is necessary in scientific investigation because it enables the scientist to frame his research. In the case of molecular biology, it enables scientists to dissect an organism and investigate the biological processes connected with it in order to understand the isolated organism better. But when this reductionism is applied to explanatory strategies, that is, to the philosophical account of the organism as a whole, a categorical mistake is committed,

recombination and reorganisation to create new combination of genes; (e) expression of coded information through transcription and translation; (f) interactions with many other molecules to make possible its own structural transition during cell cycle. See Guido Pincheira, 'The Human Genome: Facts, Enigmas, and Complexities', *Genetic Knowledge*. Edited by Jacquelyn Ann K. Kegley, (Lexington Kentucky, USA: An ICUS Book), p. 14.

²⁰ Jochemsen, 'Reducing People to Genetics', p. 79.

²¹ Brunner, H.G. et al., 'X-Linked Boderline Mental Retardation with Prominent Behavioural Disturbance: Phenotype, Genetic Behavioural Localisation, and Evidence for Disturbed Monoamine Metabolism', *American Journal of Human Genetics*, Vol 52 (June 1993).

²² LeRoy B. Walters, 'Behavioural and Germ-Line Genetic Research', *Genetic Ethics*, edited by John F. Kilner, Rebecca D. Pentz and Frank E. Young, (Grand Rapids: Eerdmans, 1997), p. 107.

²³ Ted Peters, *Playing God? Genetic Determinism and Human Freedom* (New York: Routledge, 1999), p. 34.

²⁴ David Cole, 'Genetic Predestination', *Dialog*, 33:1 (Winter 1994), pp. 20-21.

²⁵ Ted Peters, *Playing God?* p. 33.

resulting in ontological reductionism and determinism. Methodological reductionism has been called to question recently because of its failure to give adequate accounts of the phenomenon under investigation. Such reductionism, it is found, restricts the range of investigative questions, which in turn delimits the interpretation of the data. Concerning genetic science and human behaviour, such 'reductionism', Elving Anderson rightly maintains, 'has a disquieting tendency to ignore diverse approaches to understanding human behaviour'.²⁶

3. On Being Human

According to Ted Peters, there are two types of genetic determinism. The first is what Peters calls puppet determinism – the view that human behaviour and destiny are established and determined by its genetic make-up. The second type Peters calls promethean determinism – the ability to control the genes and so determine our destiny through genetic engineering and manipulation.²⁷ The first type of determinism of course makes the second type possible. W. French Anderson, the leading advocate of gene therapy provocatively asks if it is indeed possible for us to alter our humanness itself by genetic engineering. To his own question Anderson gives the following reply: 'If what is uniquely human about us is something beyond our physical structure – if it is not our body, or our mind, or any collection of measurable traits, but rather something profound and unmeasurable – then, since genetic engineering can only alter our physical structure, we cannot alter that which is uniquely human, i.e., our soul, by scientific technology ... My tentative conclusion is this: We cannot alter our humanness by genetic engineering except in ways that can be measured and, therefore, potentially controlled'.²⁸ The significance of this reply cannot be exaggerated. Anderson does not make the mistakes that we have been describing in the previous section. As a scientist, he points beyond a physicalist account of the human being, to an aspect that transcends the biological, and attributes the 'soul' as that which determines human uniqueness. What follows is an outline of a theological anthropology, which takes seriously the discoveries of the new biology but without embracing its deterministic worldview.

Theological anthropology must begin not with the phenomenon of the human being, but with God, especially in the light of his creative and redemptive activities. The fundamental premise that is here adumbrated is that theological anthropology must be truly *theological*, that is to say, human self-understanding is not independent of an understanding of God in his revelation. This is because the human being is not an isolated autonomous being, but one who is profoundly related to God its Creator. Thus the human being has no existence in itself, and cannot be defined as an independent self-subsisting reality. The human being can only exist in relation to God, and so must be defined *theologically*, in the light of divine revelation. This insight was expressed eloquently by John Calvin. Because God has disclosed himself as the God-who-has-made-us-for-himself, we understand that we are the creature-uniquely-related-to-him.²⁹ Human beings are solidly part of nature, and in their creatureliness, they are at one with the rest of God's creatures. But human beings are distinguished from the rest of God's creatures because they are created in the Image of God (Gen 1:26-27). What constitutes this image will emerge gradually as this theological anthropology is developed.

²⁶ Anderson, 'A Genetic View of Human Nature', p. 70.

²⁷ Peters, *Playing God?* P. 28.

²⁸ W. French Anderson, 'Genetic Engineering and Our Humanness', *Human Gene Therapy* 5 (1994): 758-759.

²⁹ Paul Jewett, *Who We Are: Our Dignity as Human*. Grand Rapids: Eerdmans, 1996., p. 18.

Human beings, unlike the animals, are open to the world, to its possibilities and challenges. This characterises humans as well as distinguishes them from the animals, consequently lifting humans, as it were, from non-human nature in general. The awareness of humans of their world is qualitatively different from the way in which animals are 'aware' of their environments. Animals do not perceive their environment in its fullness and in its richness, but narrowly, and only in so far as these are instinctually important for the survival of the species. 'One can say that man *has* a world, while each species of animal is *limited* to an environment that is fixed by heredity and that is typical of the species'.³⁰ It is the contention of the behavioural sciences that hereditary instincts play only a small part in the goal of human striving. The human being decides the purposes to which he wishes to commit his life. The search for orientation to the world testifies to the fact that neither nature nor society can be the binding standard of his life. But here we must speak theologically about the directionality of the human being's striving. This movement into the open, it must be maintained, is always a movement toward God; the openness of man is his openness toward God. Beyond everything else that confronts man in this world, man's striving is towards his true destiny, which is communion with God. The human person therefore is dependent not only on food, climate and other vegetative conditions of life, he is dependent on God, and whether he realises it or not, lives his life vis-à-vis the one on whom he is ultimately dependant. Thus bound to the transcendent God, man is lifted up, as it were above all the other creatures, and is not like them bound to nature and to the environment. This is true even for the concrete man, the sinner, who in his introversion and self-assertiveness is still open to that which is beyond him, and that which escapes him.

The human person is a conscious being. On the basis of human intellectual and volitional activities, the human individual is different from other individual things like animals, plants and inorganic matter. Human beings, like the animals, are sensual beings. But humans are distinguished from the animals in that we understand and are reflectively conscious of our sensing. Only the human is designated as *person*; the rest of the animal kingdom cannot be honoured with this term. This is because only the human being is a self-conscious and reflective being, capable of self-knowledge and complete reflective action. We know who we are and we are not only conscious of our actions, but also able to indicate why we act as we do.³¹ The word *I* becomes the infallible sign of self-consciousness, for it designates the ultimate subject of all our thoughts, activities and habits. The *I* is also the invariant and permanent structure of the person. The *I* 'is not a mere flowing stream of consciousness; it is not a mere series of activities, nor a full spectrum of learned habits. Rather it is the underlying reality to which all activities and habits are attributable'.³² The *I* is self-conscious because it is self-present, and this is based due to its spiritual and intellectual nature. As intellectual being, the human person is open to *being*, that is, to all that is. But as intellectual being, the human person is open to the *ground of Being*, to use Tillich's helpful but not entirely unproblematic phrase. Put differently, the human individual, created in the *imago Dei*, is a person capable of self-presence, and open to the Other. Personhood is therefore grounded on its 'other-orientedness'. He is being-made-for-communion, made in the image of the God who is Being-in-Communion.

4. Relationality, Freedom and Responsibility

³⁰ Wolfhart Pannenberg, *What is Man?* Philadelphia: Fortress Press, 1970., p. 4.

³¹ James B. Reichmann, S.J., *Philosophy of the Human Person*, Chicago; Loyola Press, 1985., p. 208.

³² Reichmann, *Human Person*, p. 209.

The image of God, understood in relational terms, has a vertical as well as a horizontal dimension. The vertical image points to the human being's relationship with God, and this is presented in scripture dialogically as call and response. God's creative and sustaining activity on his rational creatures elicits, enables and deserves a free and thankful response. In the divine address is provided a space for free human response to take place. The human being is therefore God's dialogue partner, created, as we have already seen as a person, as being-in-partnership with God, and therefore addressed as a Thou by God's I³³. Human beings are also oriented to other human beings, and this is the horizontal dimension of the image of God. Put differently, if the image of God is construed in relational terms, the very structure of human and personal being may be said to be ex-centric, that is, 'persons are oriented upon themselves (centred) by moving towards the reality of others'.³⁴ This ex-centricity, which is based upon the recognition of the otherness of others, takes the form of dialogue. That is to say, it is based upon and directed towards other personal centres, and it is through this interaction that one and others become centred. Personal identities are therefore shaped in relation to other identities: 'Persons are a manifestation of their relations, formed through though not simply reducible to them'.³⁵ This means that the identity of the person cannot be the determination of his physical or biological constitution. The concept of the image of God establishes the fact that we become persons in our relationship to the whole world, in openness and accountability, and ultimately in our relationship to God.³⁶

The relational concept of personhood must address the question of freedom and responsibility, for relationship presupposes both. We begin with the assertion that human freedom, its power of self-determination, is given to us by God – it is the result of grace. Freedom is intrinsic to the fact that we are created in the image of God. To be sure, a theological account of freedom is radically different from some philosophical theories, especially the naïve extremism of philosophers like Jean Paul Satre, who argues for absolute freedom. If man is free, absolutely free, Satre asserts, then God cannot exist. For his existence would mean that man must be subordinated to him, and this ultimately means that man is not free. Most philosophers would take issue with such a concept of human freedom. Human freedom is always conditional. Christian anthropology maintains that human freedom is not the freedom to do whatever one desires. Rather human freedom is a freedom under God, a freedom in which one is accountable to God for all of one's actions because all our decisions and choices are ultimately responses to him. As Brunner puts it, 'the freedom from which, in which and for which man has been created is freedom-in-responsibility, freedom-in-and-for-love'.³⁷

A purely physicalist account of personhood fails to provide an adequate treatment of the self-transcending ability of human beings. A clear example of this can be found in those philosophies of personhood that are influenced by the development of neuroscience. By ascribing every aspect of personhood to the activity of the brain, these scientists and philosophers fail to provide an adequate account for human consciousness and volition. The distinction between the so-called acts of the autonomic nervous system and the acts of the conscious self is not made. By confusing the two, these scientists and philosophers are often cornered into embracing determinism. There is a dimensional difference

³³ Alistair I. McFadyen, *The Call to Personhood. A Christian Theory of the Individual in Social Relationships*. Cambridge: Cambridge University Press, 1990., p. 19.

³⁴ McFadyen, *Personhood*, p. 40.

³⁵ McFadyen, *Personhood*, p. 40.

³⁶ Philip Hefner, 'Imago Dei: The Possibility and Necessity of the Human Person', *The Human Person in Science and Theology*. Edited by Niels Henrik Gregersen, William B. Drees and Ulf Görman. Edinburgh: T & T Clark, 2000., pp. 74.

³⁷ Emil Brunner, *Man in Revolt*. Philadelphia: Westminster Press, 1939., p. 262.

between the beating of the heart and the inflation of the lungs and the volitional acts of the conscious self. While it is true that all these activities are controlled by the same electrochemical impulses, and are subjected to the same laws of the central nervous system, the beating of the heart and the inflation of the lungs are involuntary; they are not dependent on choice or will. The human I is passive as object. But in a voluntary act, the human I is active as subject. The concept of transcendence enables us to see the qualitative difference between the two. The brain does not choose to do something – the will is not the function of the brain. It is the human *I* that makes the choice. Although it is true that decisions cannot be made apart from brain functions, it would be a mistake to understand them only as brain functions, ‘for brain functions are a part of the larger cause-effect nexus and therefore determined, whereas acts of will are free, that is, transcendent’.³⁸ The same argument applies to the genes.

The person is therefore a biological and cultural being. Space does not allow for a detailed discussion on a theology of culture in the light of this anthropology. From the discussion so far, it may be sufficient to note at this juncture that human self-transcendence is the presupposition of culture. In this regard, even hard reductionist thinkers like Daniel Dennett and Richard Dawkins have to in some sense appeal to culture as necessary to human development and personhood, thereby rendering their own reductionism wholly contradictory. Yet, in another sense they are wholly dismissive of culture, and, like other scientists, they leapfrog from biology and genetics, over culture, to make judgements and assertions about the human mind and behaviour. Hefner is right to observe that as a consequence these thinkers ‘fall into near absurdity in describing human personhood’.³⁹ As we have seen, a person, in its being and becoming, is constituted by a cognitive process of perceiving and understanding itself in the world and in relation to the other. This process, however, is not just a cognitive process. It is also a moral one because of a person’s response in relation to that world. Reductionist thinkers have failed to consider the moral question. Some have even argue that morality is a ploy set up by the genes. Edward O. Wilson and Michael Ruse, in an article entitled ‘The Evolution of Ethics’, could assert that ‘Morality, or more strictly, our belief in morality, is merely an adaptation put in place to further our reproductive ends. Hence the basis of ethics does not lie in God’s will ... or any other part of the framework of the universe. In an important sense, ethics ... is an illusion fobbed off on us by our genes to get us to co-operate’.⁴⁰ Such a view cannot give an account of the meaning of ‘conscience’. Theologically, conscience presupposes human self-transcendence because it is an awareness of the moral quality of one’s thoughts and actions. Calvin, for instance, argues that conscience presupposes an inner knowledge of God’s law, it is a witness to this inner knowledge.⁴¹ Conscience therefore requires self-presence as well as self-transcendence, intellection as well as freedom. Morality and conscience prevent a strictly deterministic view of human beings that is here propounded by Wilson and Ruse. Conscience and freedom argue for human self-determination, which makes accountability (and culpability) possible.

A proper understanding of the relationship between determination and freedom is important. The human being is a psychosomatic unity, and belongs to the soil as well as to the spirit. Because we are biological beings, there is a sense in which we are ‘shaped’ by our genes. To put this differently, our ‘nature’ does specify us. Our freedom, we have already seen, is conditioned. We can therefore say that ‘DNA determinism, to the extent that it is influential, sets the initial conditions or parameters within which free will

³⁸ Jewett, *Who Are We*, p. 72.

³⁹ Hefner, ‘Imago Dei’, p. 78.

⁴⁰ *New Scientist*, 108:1478 (17 October 1985), pp. 50-52.

⁴¹ See *Instit.* 3:19:15.

comes to particular expression'.⁴² Our freedom is creaturely and contingent. Does this mean that genetic necessity diminishes or dissolves human freedom? The answer to this question must surely be 'No', since freedom transcends necessity without destroying it. The view that is presented here, and the thesis that is here argued does not present freedom in competition with determinism and necessity. The opposite of determinism is not freedom but indeterminism, and it has already been stated that theology must reject the latter. The human being is an embodied self. Because the human being is an *embodied* self, it is the result of the physical and biological processes, and shares its creaturehood with other animals. But because the human being is an embodied *self*, it is also 'called constantly by God to go beyond its biological beginnings and beyond its cultural achievements to embrace new creation'.⁴³ It therefore has self-transcending propensities, and is open to its future and destiny.

5. DNA and the Resurrection: Towards an Eschatology of Personhood

It is to the future and destiny of man that we must now turn our attention. The creation paradigm that we have been considering enables us to develop a richer, more complex understanding of man than the paradigm set up by genetic science would allow. Christian anthropology, however, cannot restrict itself to the doctrine of creation. It must develop its understanding of the human being also in the light of redemption and the new creation. The hope of the resurrection is foundational in the Christian faith, and the resurrection of Christ is the decisive event upon which this hope is established. So crucial is the resurrection of Christ for Christian hope that the apostle Paul could assert that if Christ has not been raised, self-sacrificing Christians would be the most pathetic of all people. If Christ has not been raised, there would be no redemption, we would still be in our sins, faith in Christ would be futile and those who proclaim his resurrection would be liars (1 Cor 15:14-19). It is important, therefore, at the outset to understand the significance of the resurrection of Christ. The resurrection of Christ is not to be understood as a fulfilment of a restorative process that had begun with the Old Testament community. Rather, the resurrection of Christ is the first point of a new creation, which signals its perfection. Christ's resurrection goes beyond this present creation; it is the inauguration of the new creation in which those who are in union with him will participate.⁴⁴ The resurrection of Christ, Conzelmann argues, is not merely the validation of some apocalyptic idea: it is rather that which is constitutive of *our* resurrection. Thus as Conzelmann has rightly emphasised, 'Christian belief in the resurrection is basically Christ centred'.⁴⁵

It is therefore important for us to understand the nature of Christ's resurrection in order to flesh out a Christian anthropology. From the Gospel narratives we can say that the Risen Christ was bodily present within history, and yet his body is constituted of a substance which is different from that prior to his death and resurrection. Christian tradition describes Christ's body as agile – it is not bound by the limitations of time and space – and impassable – it is incapable of earthly suffering.⁴⁶ There is continuity as well as radical discontinuity. How are we to understand this in the light of our resurrection? In the statement 'I believe in the resurrection of the body', 'body' refers quite simply to whole man. Resurrection is therefore not the continuation of life as such, but rather its completion. In the resurrection, 'To this man a "Yes" is spoken which the shadow of

⁴² Peters, *Playing God?*, p. 162.

⁴³ Peters, *Playing God?*, p. 165.

⁴⁴ Hans Schwarz, *Eschatology*. Grand Rapids: Eerdmans, 2000., p. 285.

⁴⁵ Hans Conzelmann, *A Commentary on the First Epistle to the Corinthians*. Philadelphia: Fortress, 1975., p. 249

⁴⁶ Mary Timothy Pokes, *Toward a Theology of the Body*. Grand Rapids: Eerdmans, 1996., p. 166.

death cannot touch'.⁴⁷ But in the resurrection, our life is involved. That is to say, it is *we* who rise again – no one shall take our place, although at the resurrection a quite different life begins. The identity of the future life with this present one is fundamental if the resurrection is to have meaning at all. To be sure, as we shall see later, resurrection means transformation and transfiguration, in which the corruptible shall put on incorruptibility, and the mortal immortality. But as Pannenberg has rightly argued, 'nothing will be put in place of this present life. No matter how pitiable, this finite existence will share eternal salvation'.⁴⁸ In other words, the identity of the person continues with the resurrection. Everything that is bound up with the person, especially his name, is preserved. 'I have redeemed you; I have called you by your name, you are mine' (Isa 43:1).

What is it that guarantees the identity of the individual? The Christian tradition recognises the importance of this question, and has tried variously to explain this continuity. Christian theology has taken over the Greek idea of the immortality of the soul in an effort to establish this continuity, but not without modification. It defines the soul as the vital principle of life for the individual. The problem with this concept is that one's life history is constitutive for one's individuality. Thus the concept of the survival of the soul after bodily death would raise questions about the possibility of new experiences during the intervening period, and the consequences of such experiences. From what has been said so far, the continued existence of the soul in the interim period without new experiences would be inconceivable. But if there are such experiences, then they 'would make us more or less different from what we are in our whole earthly history between birth and death'.⁴⁹ This means that the concept of the soul itself 'cannot guarantee the identity of the future life with this earthly life that the idea of the resurrection from the dead seem to demand'.⁵⁰ We need then to return to the concept of the image of God that we have developed earlier. By creating his image on earth, God puts himself in a particular relationship with human beings. Thus, the identity and continuation of man is to be found in God's relationship with him, and not in something which is intrinsic in man. Seen from this perspective, the image of God in man cannot be destroyed by sin or death. So long as God maintains his relationship with man, so long as he holds fast to man, his designation as the image of God is indissoluble, inalienable and immortal. 'If it were not, then sin and death are stronger than God, and God would not be God.'⁵¹

In the light of our current discussion on biological essentialism, clarification must be made concerning the meaning of wholeness. The whole is defined not as the sum of the parts, but as the *form* in which the different parts of an organism coalesce and cooperate. The whole supervenes upon the sum of its parts. Thus, human beings as wholes must be more than the sum of their organs. Similarly, a person is more than the sum of his genes. The genotype does not equal the phenotype. Furthermore, the whole transcends the parts. The person's total configuration, which we will call *Gestalt* – the *I* – transcends the sums of the parts. Thus although at death the sum of the parts disintegrates, the totality of the person, which comprises his lived life, his lived *Gestalt*, still stands 'before God'. God's relationship with that person continues even after that person's death. 'In death, this Gestalt does not disintegrate into its several parts, but remains what it is "before God"; for since the whole is more than the sum of its parts, it

⁴⁷ Karl Barth, *Dogmatics in Outline*. London: SCM Press, 1988., p. 154.

⁴⁸ Wolfhart Pannenberg, *Systematic Theology*. Volume III. Grand Rapids: Eerdmans, 1993., p. 574.

⁴⁹ Pannenberg, *Systematic Theology*, III:577.

⁵⁰ Pannenberg, *Systematic Theology*, III:577.

⁵¹ Jürgen Moltmann, *The Coming of God*. Philadelphia: Fortress Press, 1996., p. 72.

is also more than the disintegration of the parts'.⁵² This thought then should shape our understanding of death itself. We cannot simply say that death is the annihilation or the end of the whole person. God's relationship to people is a dimension of their essence that they do not lose in death. In this way, the 'continuance' of an individual is not based on something intrinsic to that individual. It is rather based on God's relationship to him. Similarly, death is not the separation of the soul from the body. Nor is it a separation of human being from God.

Just as death cannot be seen as the annihilation of life, but an event belonging to the whole of life, so the resurrection cannot be described merely as 'life after death'. For resurrection, too, belongs to the whole of life, the new life that comes with a human being's incorporation into Christ. The dead are raised to eternal life. What does 'eternal life' mean? Is it *another* life? Is the resurrection another birthday for the individual? Paul described the resurrection as this mortal life putting on immortality. Resurrection is the 'immortalising' of this mortal life. How are we to understand this? If expressions like 'raising' or 'resurrection' are synonymous with 'transformation' (1 Cor 15:52) and 'transfiguration' (Phil 3:21), then resurrection is healing, transformation and completion. To be raised to eternal life does not entail that something of our past, something of our lived *Gestalt* is lost to God, but rather that one's whole history is present, but as reconciled, rectified and healed.⁵³ To be sure, resurrection cannot be mistaken for biological revivification, for that would mean that we would receive in the resurrection a body analogous to our present one, with all its limitations, tensions and weaknesses.⁵⁴ Resurrection in this case would not be transformation and healing. Transformation, transfiguration and healing point to the 'otherness' of the resurrection, and it is precisely this that makes the discussion on the resurrection so difficult. In one sense, death de-restricts us. As Peters put it, 'genetic determinism dies with us'.⁵⁵ But the resurrection transforms us. Death separates: at death we disintegrate. But the resurrection unites: it is the gathering of all our temporal moments into the eternal present, a healing and reconfiguration to wholeness. Paul speaks about the resurrection as a negation of our present condition. The antitheses he uses are: perishable and imperishable, dishonour and glory, physical and spiritual, weakness and power (1 Cor 15:42-54). Paul also uses specific terms to distinguish our present bodies from the resurrected bodies that we will receive. He calls the resurrected body *soma pneumatikon*, literally, a spiritual body, to distinguish it from the body prior to death and resurrection, which he calls *soma psychikon*, the ensouled body. The resurrected body is therefore a spiritual body that is free from the tensions of the present body. The resurrection therefore points to the destiny of man, as God has intended it. And because this is so, resurrection helps us to define our humanity. Ted Peters writes:

Our resurrection from the dead will be a divine act, and action of God's grace that accompanies the advent of the new creation ... Resurrection belongs to God's promise of redemption, of transformation of the present creation into the new creation. That the advent of the new will be due to divine action and not the continuation of evolutionary progress marks discontinuity. That the advent of new creation will bring transformation and wholeness marks the future fulfilment of nature and history as we know it. This is our future destiny, something the theologian includes in the definition of our humanity.⁵⁶

⁵² Moltmann, *Coming of God*, p. 76.

⁵³ Moltmann, *Coming of God*, p. 70.

⁵⁴ Schwarz, *Eschatology*, p. 288.

⁵⁵ Peters, *Playing God?* p. 177.

⁵⁶ Peters, *Playing God?* p. 171

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