'NEW CREATION' DUE TO BIOTECHNOLOGY? THE ESCHATOLOGICAL TRANSFORMATION OF NATURE IN TED PETERS' VIEW

Rajmund Porada^{*}

University of Opole, Faculty of Theology, ul. Drzymały 1a, Opole, 45-342, Poland (Received 15 May 2020, revised 28 December 2020)

Abstract

In the context of an interdisciplinary scientific discourse, eschatology is permeated by reflection from the field of natural sciences. Moreover, it can be observed that dogmatic considerations and arguments resulting from the relationship between creation and eschatological complement are also included in the ethical evaluation of genetic technology problems. In the theological interpretation of Biotechnology, there is a trend that proposes to see it from the perspective of the anticipation of the eschatological 'new creation', undertaken - as opposed to the 'first' one - by man as the new 'creator'. The first section of this article presents the main assumptions of this concept. In the next two ones, an eschatological reflection, representative especially for the American Lutheran theologian, Ted Peters, is analysed, who proposes a positive view of the achievements of genetic engineering. Particularly in the face of the experience of suffering, Peters advocates a link between salvation and the transformation of human nature. In the fourth section, an attempt is made to formulate critical remarks and proposals for the discussed concept. In interventions in a creature that is clearly marked by its shortcomings and flaws, one should see at most the actions aimed at preserving it, rather than the equivalence of eschatological transformation. Man as a sinful being can be tempted to use genetic engineering not so much for 'corrective' as for 'creative' purposes in the sense of producing a new human being. Furthermore, the transformation of human nature must not lead towards transhumanism, since the risen Christ, who is the 'model' of future humanity, remained a human being.

Keywords: biotechnology, genetic technology, eschatology, new creation

1. Introduction

The achievements of modern biotechnology constitute a major challenge for a contemporary theological reflection. Dogmatic considerations and arguments based on a theological vision of the relationship between Creation and eschatological complement seem to be particularly interesting. In this context, among others, the following questions are asked: if God wants to transform all creation in such a way that it can participate in His glory, and at the

^{*}E-mail: porada@uni.opole.pl, tel.: +48 606 217 775

same time, nature is subject to development, then from the theological perspective, is it not possible to recognise genetic techniques as tools for improving nature and the form of human participation in *creatio continua*? Does, and to what extent, theology allow biotechnology to be seen as a kind of human contribution to the realisation of the eschatological 'second (new) creation'? To what extent in the effects of genetic interference in nature could one look for the future redemption anticipation, so as to give hope for eternal life a new dimension? [1, 2]

In the context of hopes associated with the opportunities of modern biotechnology, the question arises about the sense of an eschatological hope formulated by Christianity [3]. Therefore, attempts are made to somehow link the development of biological sciences with an eschatological idea of a new creation, which is an eschatological complement of the Creation at the end of times. In the theological interpretation of Biotechnology, there is a trend that suggests the perception of it in the perspective of eschatological anticipation of the 'second Creation', undertaken - as opposed to the 'first' - this time by man as a new 'creator' [4-6].

One of the leading theologians who attempted to use the connection between Creation and eschatology in the interdisciplinary debate between Theology and natural sciences is the American Lutheran theologian, Ted Peters. In his theological reflection he refers to genetic engineering challenges, putting theological arguments forward for a possible positive assessment of its achievements. In this context, he attempts to understand human activity in the light of God's creative activity and God's promise of salvation. The aim of this article is therefore an analysis of its concept of understanding the achievements of genetic technology as an anticipation of the eschatological completion of creation together with its critical evaluation. After the presentation of the main assumptions of the developed concept, there will be an analysis of Ted Peters' thoughts, and then in the final part the elements that are subject to critical assessment will be indicated.

2. Premises - 'imago Dei' and 'playing God'

In the theological debate on the problems of Biotechnology, two key issues have hermeneutic significance that find their basis in the biblical message and describe the human condition in the light of the Bible: man as *imago Dei* and man leaning towards 'playing God' as a result of pride through a sinful fall and irresponsible use of freedom.

2.1. Imago Dei

Man's special place in God's creation plan is most often described by pointing out that he was created in the image and semblance of God (*imago Dei*). This category is subject to different interpretation in Christian theology and therefore various aspects of its understanding are indicated. Among them,

two meanings of the *imago Dei* category - to some extent competitive towards each other - come to the fore: man as a 'steward' or as a 'created co-creator'. The choice of one of the aspects of understanding the *imago Dei* category depends on how the Book of Genesis, Psalm 8 and the Gospel accounts of Jesus' healings are read, but to some extent, also on the position taken on two important issues: nature and extent of man's responsibility for striving for genetic progress and theological teaching, both justifying human interference in genetic material and knowledge of God's intentions regarding the Creation [7, 8].

The theological model of the 'steward' is this aspect of understanding *imago Dei*, which was historically more often referred to. It emphasises the fact that man has been entrusted with the care of creation and therefore has a responsibility for its behaviour and persistence. This model tends to restrict human freedom in relation to activities for changes in the area of God's creation. Within the framework of this model, at most, the acceptance of somatic cell therapy is expressed. The man's task in the creation process is to care for and take responsibility for God's creation and living in harmony with him [7, 9].

A more progressive aspect of understanding *imago Dei* is the model of the 'created co-creator'. In terms of terminology, a Protestant theologian, Philip Hefner, is regarded as the author of this model [10, 11], because he was the first to use this term, although its meaning was already present in an anticipating manner in the theological reflection of the Catholic theologian K. Rahner [12] [13] at the end of the 1960s. In the light of this theological model, it is obviously assumed that man is a created being who entirely depends on God in his existence. However, at the same time, man, created in the image of God, reflects the creative ability of God in himself, even if it refers only to the ability to shape the already existing matter. Only God creates *ex nihilo*. An important role in this model is played by the assumption that Creation is a continuous process (*creatio continua*), and the creation itself has not reached its final stage yet - it is not complete. Man is partly responsible for completing the creation - he is to support the process because of the place occupied in the order of Creation [7].

In the 'created co-creator' model, man is credited with greater freedom of interference in the order of Creation, without excluding the human genome from it. In this model, Ronald Cole-Turner finds moral justification for somatic cell therapy. It is justified in the following way: God works through the processes that occur in nature, admittedly, but his creative intentions exceed nature. As a 'co-creator', man must discover these divine objectives, so that he can interfere in moral disorder in nature, which is universal in nature and is an inevitable by-product of the evolutionary process, in order to correct it [14, 15]. However, Cole-Turner does not refer to the theological teaching of Creation, but to the doctrine of redemption, which provides him with a noetic key to learn God's intentions about the Creation, in order to be able to take treatment of genetic diseases [7].

This model was applied much more widely by Ted Peters, who found support in it to justify the transfer of human genes not only for therapeutic purposes, but also to improve human nature in both somatic and germ lines. An important modifying factor in this case was the application of this model in the Christian eschatology perspective, and not as in the previous case - soteriology or theology of Creation. It was eschatology that became for Peters a place of recognising human responsibility for shaping nature and learning God's intentions regarding the creation in the eschatologically understood future [7]. According to Peters, the 'created co-creator' model outdoes all others due to the fact that its starting point is a vision of openness to the future of God and responsibility for the human future. This vision, in turn, is based on the vision of God's promised kingdom. These frameworks of future possibilities determine the moral limits of the human activity in the field of Genetics [16]. It is related to a kind of anticipation, which is a structural element of ethical argumentation and enables a specific update in the present of what relates to the future transformed reality. According to Peters, in the ethical assessment of the transfer of human genes, it is important to start with the vision of a new creation, and then, to return to the present, in order to discover our moral responsibility for the (eschatological) future [17].

2.2. 'Playing God'

The theological debate in the field of Genetics and the use of genetic technologies, especially in relation to man, is also affected by the question whether man's interfering in the matter constituting life does not cross his own borders, thus adopting the role of God ('playing God')? In this case, the temptation 'to be like God' (cf. Genesis) - already recognised in the Bible - would be implemented. As noted by James J. Walter, the answer to this question largely depends on a way of understanding the theological *imago Dei* category. Those, who are in favour of interpretation according to the 'steward' model, that is, emphasise the need for care and preservation of the creation in an intact form, will pay attention to the danger of adopting this role of God ('improperly playing God') at any interference in the genetic material. The followers of the 'created co-creator' model, in turn, represent the opposite trend, recognising the need for such interference not only for therapeutic reasons, but also owing to the possibility of positive transformation of human nature [7, 18].

The above-mentioned author convinces that it is impossible to indicate one commonly accepted sense of the 'playing God' category. However, there is a view that the category defines a clear theological perspective that can be used to assess scientific and technological innovations. Then, it can serve as an 'instance' warning of dangers or explicitly prohibiting certain activities or encouraging taking activities that could be interpreted as imitating God and realising its care in an immanent dimension [7].

'New Creation' due to Biotechnology?

The use of the 'playing God' category within the framework of the discussion on genetic determinism seems to be a sufficient reason for theologians to join the debate on genetics and possibilities included in genetic technology. According to Peters, the ethical and ontological questions arising in this context are, at the same time, theological questions [19].

3. Eschatological transformation of Creation into a 'new creation'

Peters' theological concept follows a cosmic dimension of eschatology [20]. He argues for a change that covers all Creation, which begins with the resurrection of Christ. Wolfhart Pannenberg's anthropology, developed in the 'eschatological ontology' medium, is important for Peters' argumentation. Pannenberg's eschatology presents the transformation of hope regarding the new creation.

According to Pannenberg, the creation objective is finally implemented only in the eschatological complement [21]. The Creation and eschaton belong to each other. By imagining the eschaton as a complement of Creation, Pannenberg made a close and constructive connection between Theology of Creation and eschatology, and at the same time, transformation of the theology of creation from the doctrine of the beginning of everything to the doctrine oriented towards eschatological future. However, at the same time, he demanded a new definition of the relationships between Creation and eschaton, as well as the relationships between Creation and new creation. The traditional opposition of the creation 'at the beginning' and the new creation 'at the end' seemed to be out-dated [1, p. 229-230].

In accordance with Pannenberg's conviction, eschaton should not be opposed, as it most often took place in the tradition, to the originally perfect creation. The priestly creation description that sees the fullness of the world in its beginning, and at the same time, justifies it in its understanding of time, still shares - like many other biblical texts - a mythical conception of the world [21, p. 171]. Abandoning the mythical understanding of the world, it should be assumed that only in eschaton, at the end of time, God's intention for Creation will reach its fulfilment. Therefore, a definition of the created things as 'very good' refers to an eschatologically fulfilled Creation, or a new creation [21, p. 196].

The above mentioned 'reconstruction' of traditional theology of Creation necessarily also concerns Christian anthropology with its concept of man as the image of God (*imago Dei*). According to Pannenberg, it was only Jesus Christ in whom the implementation of God's creative likeness was revealed. The statement about man in God's image neither indicates something initially existing, which was lost as a result of a sin-related fall, nor something unsurpassed and unchanging that already exist. Rather, man is always an image of God, but not always to the same extent and, above all, not to a full extent. Although, God's image of man was initiated in the creative act, ultimately and definitively, such a destiny of man became open only in Jesus and it involves the

transformation to the image of God. Along with the resurrection of Jesus Christ, a new eternal life appeared, which from the beginning, was the objective of God's image of man. The historically complete implementation of human destiny was initiated in Jesus Christ and completed in eschaton [21, p. 249].

Therefore, the new creation is God's action, aiming for complement of the imperfect from the beginning Creation. The theology of Creation emphasises the need to see, in what exists, the real promise of the Kingdom, and vice versa: God's kingdom should be understood as fulfilling not only the historical, but also the natural promise related to the world. The world is constantly 'created' in the process of natural development and has not yet reached the final development stage. The ultimate meaning of history lies in the new completed creation. In this way, Pannenberg opened the opportunity to assimilate the evolutionary image of man by theological anthropology.

4. Anticipation of the eschatological 'new creation' through genetic interventions

The greatest benefit of the 'reconstructed' theology of creation, that is changing the temporary orientation of Creation towards processual development, is certainly the opportunity of a constructive dialogue with the modern science, which is guided by an evolutionary paradigm of thinking [1, 233f]. This eschatological and anthropological concept was used by Peters to look at the genetic technology possibilities in an acceptable manner and to include it in the transformation process of creation towards its more mature form. In the light of Christian theology of Creation, which emphasises the continuity of God's creation act and creates an image of man as a co-creator [6, 7], human health and well-being of future generations must be the subject of care and reflection. Therefore, according to Peters, in the face of genetically conditioned suffering, salvation should be associated with a reordering of nature. Genetic modifications should be seen as one of the possible measures to achieve the complete development of humanity, including realising or at least alleviating the suffering associated with nature defects. At the same time, the mentioned genetic interventions are a way to affect our evolutionary future. Therefore, it is important to use genetic knowledge to improve human health and alleviate suffering [16]. The future oriented theology of Creation allows formulating an adequate answer to these challenges.

The awareness of the necessity of providing such an answer was already present by Rahner, who described the history of human evolution in terms of 'becoming'. He claimed that becoming a human being is based on selftranscendence towards the living matter. In his opinion, man is not only an observer of nature and his history is not only limited to the dimension of culture, but it is expressed in active transformation of the material world. Therefore, he is the subject of his own action. In other words, he becomes his own creator [22]. Importantly, in this context, these statements were related to Rahner's positive attitude towards the Genetics achievements. He wrote that the temptation to condemn genetic tests and practical use of their achievements is a manifestation of cowardly conservatism, which hides behind a falsely understood Christian ideal [13].

Peters, raising the issue of the 'playing God' principle, discussed by opponents of the 'creative' interpretation of the *imago Dei* category, took a positively indirect position on the above-quoted opinion. In his opinion, the 'playing God' principle is aimed at limiting scientific research and medical therapy, especially in the field of genetics. Meanwhile, the search for better future first of all means 'playing human', not usurpation of being God ('playing God'). Man's 'creativity' is of a different type than God's creativity. Man does not create out of nothing; therefore, he is not able to 'play God'. Human creativity is of transformative nature. However, also in this respect, human capabilities are limited and do not have an absolute impact on the direction and type of changes [16]. Nevertheless, man, being the 'created co-creator', is somehow determined to be a creative being. This applies to all dimensions of life, and therefore, also to its own future as species. In this case Peters' position corresponds to Rahner's view, that human existence is open to the future and non-determined. Clearly, from the theological perspective, it is determined by God who remains, however, an infinite and unspoken mystery. Therefore, the openness to the future, including the evolutionary one, is associated with responsibility for this future. Thus, such recognition of the human place in the world results in an ethical imperative [13, 16].

According to Peters, if God's creative activity is to open the world to the future, and the theological *imago Dei* category persuades to perceive man as the 'created co-creator', then human activities should be seen in the perspective of creating a better future, or at least the possibility of genetic improvement of the humanity condition and impact on our evolutionary development. The 'co-creator' term means that the creation process is in progress, and man, being a 'created co-creator', becomes a subjective participant of God's *creatio continua*. Peters is aware of the dangers of technology abuse here, although, he believes that man cannot renounce his creativity [16, p. 16, 157, 197].

While accepting the genetic interventions, it is important to reject the idea of nature sacralisation. In the theological perspective, natural life, paradoxically, is not of the highest value, because only God has such a value. Everything that exists was called into existence by God (*creatio ex nihilo*), and therefore, it is finite, temporal and mortal. Consequently, nature is not a mother of itself and cannot claim the status of finality, holiness, immunity and equality with God. The natural processes are also not of sacred nature. If God is a creator, then nothing made by God is god [23]. Compared to the creator or life-giver, or the one who determines its order, the value given to life is of relative nature [24]. This theological assumption is particularly relevant in the context of genetic technologies. And theologians should avoid this intellectual trap behind this assumption. Thinking that the genetic material is exclusive reality, which is a result of God's grace and a direct creative activity, would mean reducing God to the level of biological processes and phenomena [15, p. 45].

One of the arguments raised by the so-called naturalists is that the current state of affairs is adequate to the order of creation and hence its *status quo* should be maintained. Meanwhile, this status is filled with suffering and misery that to a certain extent have a genetic source. Thus, Peters proposes a vision of a better future in which there will be no need to suffer due to genetic defects. It requires the involvement of human creativity and the use of genetic technology in order to activate processes moving in this direction [16]. The theological *creatio continua* principle indicates the dynamism of nature and its openness to the future. As Peters emphasises, God is a constant source of newness and as the world came into being as completely new one at the beginning, God continues to introduce this newness to the world, making the promise of a new creation. However, it should be emphasised here that according to the view of Peters, God exerts his creative power on the world through the course of history. This is not 'extra' action from the outside, but it is an immanent dimension of 'dynamic' nature in its essence.

In this sense, the development of genetic engineering could be seen as the next stage in the course of history, in which new opportunities for the future of God's creation were opened up [15, p. 98].

5. Reservations and critical remarks

In the Niceno-Constantinopolitan Creed Christians confess: "...We look for the resurrection of the dead, and the life of the world to come". It articulates the hope for a 'future (by implication: a better) world'. The confession of faith only states the existence of such hope, but does not develop it. However, the Christian is called to justify the hope he carries within him (1 Peter 3.15). This attempt to justify genetic interventions on the basis of an eschatological vision of the transformation of all creation can therefore be seen as a clear response to this call. The reference to the category of 'new creation', which - especially in Protestant theology - is the central eschatological category, does not in any way undermine the importance of the first creation. Statements about the new creation take into account the seriousness of this world in a double way. On the one hand, this world will be transformed, on the other, this transformation is directed towards this world. Also the Catholic theologian, Y. Congar, referring to the eschatological category of the new creation and writing about the salvation of the world, emphasizes that it is not about salvation from 'this world' by leaving the world, but it is about the salvation of 'this world', that is, that 'this world' is to benefit from salvation [25]. In this perspective Peters' concept deserves recognition because it defends in a certain sense the realism of salvation and the eschatological completion of creation, and makes man a subjective participant in this process.

The theological assessment of the formulated concept concerning the relation between Biotechnology and eschatology is not unambiguous. It raises the fundamental question: to what extent can genetic changes be identified with the eschatological complement that Christian eschatology promises at the end of time? The answer to this question cannot be unequivocal. On the one hand, it seems that in a situation of waiting for the final redemption of all Creation, one should not too one-sidedly place hope for future transformation in an earthly dimension. On the other hand, in the face of faith in the salvation and coming of the new creation that was initiated in the resurrection of Jesus Christ, a negative assessment of the effects of genetic interference optimizing nature would not be allowed. This would mean, in fact, opting for extreme eschatologicalism, which would question the balanced view that the eschatological Kingdom of God appears in clear connection with human history and the results of human achievements, in which the announcement of a better world can be seen [26]. Taking into account the above remarks, several comments and demands can be made.

It seems that Peters does not sufficiently take into account the eschatological tension between the announcement and its realization. In the case of eschatology, the final stage of Creation is resurrection. The change of nature, and thus also of the biological constitution of man, due to the results of genetic interventions, cannot be identified with the salvation. Meanwhile, the hope associated with genetic technology suggests that such a state has already been achieved in the earthly reality. Interventions made in creation, which is still burdened with deficiencies and defects, should be seen at most as an effort to preserve, heal, strengthen, or even improve it, rather than an equivalent of the eschatological transformation. As Günter Thomas notices. in the pneumatological perspective the Spirit of God is - as it is clearly indicated by the resurrection of Christ - the most powerful power complementing the creation and bringing it to its fullness. But at the same time He is also the one who accompanied Christ in His passion and is still present as the Comforter of the suffering. Without taking into account this dimension of consolation and the presence of the Holy Spirit in suffering, there is a danger of reducing Him to the spirit of biological vitality and biological life alone. In the light of the biblical message, the Spirit as the Comforter is the one who fills the hope for final redemption in the eschaton. He is the teacher of 'patient hope', the fulfilment of which goes beyond this earthly time [1, p. 440-441].

The reserve is also dictated by Christian hamartiology and its implications. By intervening at the level of the genome, man enters a space which until now has been relatively beyond his influence, above all beyond the possibility of destruction, manipulation or abuse. However, as a sinful being, man may be tempted to use genetic technology not so much for 'corrective' as for 'creative' purposes, in the sense of 'producing' a new human being. With genetic interference the whole spectrum of possibilities opens up. Undoubtedly, a useful aim would be to expand the possibilities for the treatment of serious genetic diseases, or at least to alleviate genetic suffering. At the same time genetic technology would open up opportunities for abuse, right down to the 'creation' of insensitive killer soldiers. Christian hamartiology, which sees the sometimes tragic consequences of human actions in the socio-cultural sphere, suggests that man may not be able to resist the temptation of using genetic technology for destructive purposes. Opening up the genome opens up all risks related to human creativity. For this reason, the permissibility of genetic manipulation in the human genome should rather be questioned, even when it undoubtedly offers great therapeutic opportunities. The expected opportunities are disproportionately smaller than the possible negative effects [1, p. 445-446].

The anticipation of the eschatological new creation through the genetic man cannot become form of transformation of а transhumanism. Transhumanism, according to the declaration of the representatives of this cultural and intellectual movement, also seeks to increase human capabilities through the achievements of biotechnology, based on principles and values that promote life. The proponents of transhumanism believe that it will be technically possible to rewrite the vertebrate genome, redesign the global ecosystem, and use biotechnology to alleviate the suffering of living beings throughout the world. Lack of suffering is important for the transhumanistic vision of human bloom and this goal gives meaning to life [Transhumanist Declaration #5, Humanity+, http://humanityplus.org/philosophy/transhumanist-declaration/, accessed on 25.09.2019]. Transhumanists advocate individual freedom, especially the right of those who want to use technology to expand their mental and physical abilities and improve control over their lives. From this perspective, the improvement of the human condition is a change that gives individuals more opportunities to shape themselves and their lives according to their individual wishes [Transhumanist Declaration #8, Humanity+, http://humanityplus.org/ philosophy/transhumanist-declaration/, accessed on 25.09.2019].

Transhumanists see biological life, i.e. their bodies, as personal property to which they have an autonomous right, according to their own preferences. It is therefore a kind of vision of salvation. It is based on the belief that technology can enable people to overcome their own limitations, which cause pain and suffering, and lead to a completely new way of existence, free from current limitations.

Both visions are linked by the use of biotechnology for changing human nature, i.e. mastering the evolutionary process in such a way as to modify those features of human nature that are considered to be limiting or problematic. In this context, there is a real danger of radically changing the human species, or at least its specific characteristics. This raises the question of the extent of possible change, or - considering the data of Christian anthropology - of the inviolable characteristics of man as a being created in God's image and likeness. Of course, this question is pointless for the supporters of transhumanism, who reject the claim that human nature is normative or given. From a Christian perspective, this question is crucial. It is particularly sharpened in an eschatological context. The 'model' of the future humanity is the resurrected Christ, who has not abandoned his humanity. Thus, a significant limitation of progress in the field of biotechnology is to maintain the integrity of the human race (homo sapiens). Any technology that would strive for the elimination or modification of essential uniqueness and integrity of man, encoded in human DNA, would be incompatible with Christian theology [27].

In the theological perspective of the new creation, when the opportunities and dangers of genetic technology are taken into account, the profound sense of Christianity becomes all the more evident. Its essence is expressed in the nonselective practice of love and the expectation of the eschatological hope for a new Heaven and a new Earth.

References

- [1] G. Thomas, Neue Schöpfung. Systematisch-theologische Untersuchungen zur Hoffnung auf das ,Leben in der zukünftigen Welt', Neukirchener, Neukirchen-Vluyn, 2009, 438.
- [2] T. Peters, Science, Theology and Ethics, Routledge, London, 2003, 15-16.
- [3] M.S. Burdett, *Eschatology and the Technological Future*, Routledge, New York, 2015, 3-5.
- [4] W.P. Cheshire Jr., Ethics & Medicine, **31(2)** (2015) 79-80.
- [5] S.L. James, *New Creation, Eschatology and the Land: A Survey of Contemporary Perspectives*, Wipf and Stock, Eugene (OR), 2017, 11.
- [6] J.H. Brooke, Detracting from Divine Power? Religious Belief and the Appraisal of New Technologies, in Re-ordering nature. Theology, society and the new genetics, C. Deane-Drummond, B. Szerszynski & R. Gorve-White (eds.), T&T Clark, London, 2003, 43-64.
- [7] J.J. Walter, Theol. Stud., 60(1) (1999) 124-125.
- [8] R.J. Middleton, *A New Heaven and a New Earth: Reclaiming Biblical Eschatology*, Baker Academic, Grand Rapids (MI), 2014, 11-10.
- [9] A. Peacocke, *Relating Genetics to Theology on the Map of Scientific Knowledge*, in *Re-ordering nature. Theology, society and the new genetics*, C. Deane-Drummond, B. Szerszynski & R. Gorve-White (eds.), T&T Clark, London, 2003, 124.
- [10] P. Hefner, The Evolution of the Created Co-Creator, in Cosmos as Creation: Theology and Science in Consonance, T. Peters (ed.), Abingdon, Nashville, 1989, 211-233.
- [11] P. Hefner, Biocultural Evolution: A Clue to the Meaning of Nature, in Evolutionary and Molecular Biology. Scientific Perspectives on Divine Action, R. Russell, W.R. Stoeger & F.J. Ayala (eds.), University of Notre Dame Press, Vatican - Berkeley, 1998, 330.
- [12] K. Rahner, *Experiment Mensch* in *Schriften zur Theologie*, vol. VIII, Benziger Verlag, Einsiedeln, 1967, 260-285.
- [13] K. Rahner, Zum Problem der genetischen Manipulation, in Schriften zur Theologie, vol. VIII, Benziger Verlag, Einsiedeln, 1967, 286-320.
- [14] R. Cole-Turner, Theol. Today, 44(3) (1987) 345-347.
- [15] R. Cole-Turner, *The New Genesis: Theology and the Genetic Revolution*, Westminster/John Knox, Louisville, 1993, 98-103.
- [16] T. Peters, Playing God? Genetic Determinism and Human Freedom, Routledge, New York, 2003, 144-156.
- [17] T. Peters, For the Love of Children: Genetic Technology and the Future of the Family, Westminster/John Knox, Louisville, 1996, 155.
- [18] R. Song, Ecotheology, 11(2) (2006) 194-195.
- [19] T. Peters, Science, Theology and Ethics, Routledge, London, 2003, 43-44.
- [20] T. Peters, Zygon, **36(2)** (2001) 349-351.

- [21] W. Pannenberg, *Systematische Theologie*, vol. II, Vandenhoeck & Ruprecht, Göttingen, 1991, 164.
- [22] K. Rahner, Die Christologie innerhalb einer evolutiven Weltanschauung, in Schriften zur Theologie, vol. V, Benziger Verlag, Einsiedeln, 1967, 183-185.
- [23] H. Bouma, D. Diekema, E. Langerak, T. Rottman and A. Verhey, *Christian Faith, Health and Medical Practice*, William B. Eerdmans, Grand Rapids (MI), 1989, 4-5.
- [24] J.M. Gustafson, Journal of Contemporary Health Law and Policy, 8(1) (1992) 196.
- [25] Y. Congar, Jesus-Christ: Notre Mediateur notre Seigneur, series Foi Vivante 1, Cerf, Paris, 1995, 198.
- [26] J. Rahner, Eschatologie, Ethik und die Frage nach dem Sinn von Geschichte, in Worauf es letztlich ankommt. Interdisziplinäre Zugänge zu Eschatologie, T. Kläden (ed.), Herder, Freiburg, 2014, 265-266.
- [27] D. Hollinger, Ethics & Medicine, 29(3) (2013) 181.