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Technology and Integral Ecology

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Abstract

This paper begins with two preliminary forays, the first into creation theology and its deployment in environmental ethics, and the second sketches some implications for 'integral ecology' of reading theological ethics through the lens of human freedom and autonomy. The third and main focus of the paper is an exploration of aspects of the philosophy of technology, thinking in terms of the 'technocratic paradigm' and human 'agency in context'. This analysis points to the potential for reimaging technologies for a sustainable planet and presents two examples: one new, the management of drone technologies and bird habitat; and one old, rethinking city transport though reinterpreting cycling as development at all income levels. This article is also intended as a contribution to the ongoing development of the concept of 'integral ecology' and its application: a concept that has now been added to related key principles of the common good in the Catholic social tradition: solidarity, subsidiarity, participation.

Keywords

Creation, *Laudato Si'*, integral ecology, autonomy in ethics, drone management systems and bird habitat, cycling as development at all income levels

Introduction

One task, some would argue *the* task, facing this generation of theologians, is the challenge also offered in *Laudato Si*': to develop a theology of nature that reinterprets what it means to be made in the image of God and to care for the earth. This paper begins with some observations from creation theology and its deployment in environmental ethics, and then sketches some implications for 'integral ecology' of reading theological ethics through the lens of human freedom and autonomy. The reinterpretations of human freedom, capability and agency in the autonomy approach in Christian ethics are not simply minor adjustments to an anthropocentric core, but are intended to also offer revisions of

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hitherto forgotten, lost or inchoate insights from creation theology in environmental hermeneutics. Relational autonomy, vulnerability, finitude and contemplative approaches all express both what is meant by 'embodiment' and the idea that nature is the true context of human life. Environmental hermeneutics alerts us to the complexity—justifications and blind spots—that impact on all of our interpretations of 'nature'.

The third and main focus of the paper is an exploration of aspects of the philosophy of technology and the implications of thinking in terms of the 'technocratic paradigm' and human 'agency in context'. It may be that we continue to operate in a society that evaluates each technology piecemeal but also need to see that any 'solutions' to the problems of technology are to be sought outside of the technological domain.

I. Creation and Other (Rival) Cosmologies

Creation in the Christian theological tradition is concerned with many interrelated themes, the drama of which is not captured in any one literary type. There are many accounts in the biblical text and more than one model of creation. Each one of these presents different possibilities for envisioning the Creator-creation relationship, as well as addressing the question of the origins and mystery of evil in a good creation.[1] Creation texts are, therefore, concerned with much more than the physical order of the universe. They present—in plural and paradoxical forms—the idea that God is not dependent on creation yet is deeply involved with it; that the creation is not 'necessary' but willed by God and is thereby loved; and that matter is neither divine nor demonic but good. This last affirmation of the goodness (not perfection) of creation emerges from enduring disputes with forms of world-rejecting dualisms. Creation, then, is not a point in historical time but presents us with a 'stream of beginnings', a proliferation of dynamic events all of which illumine, from different viewpoints, the distinction, not distance, between Creator and creation: 'the creation of the world, the creation of humanity and the creation/decreation of evil'.[2]

The key phrase 'creation out of nothing'—*creatio ex nihilo*—stands as code for all that is implied by any Christian doctrine of creation. At the same time it can gloss over nuances of interpretation. So it may be the case that for Greek philosophy the idea that something could come from nothing was incoherent, God had to have fashioned a world from eternal matter, and this was incompatible with Christian cosmology.

[1] Cf. C. Russell, 'Creation: an invitation to share God's love', *Search: a Church of Ireland Journal* Summer 2018, pp. 91-99.

[2] P. Ricoeur, 'Thinking Creation', *Thinking Biblically* (Chicago: University of Chicago Press, 1998), pp. 31-67, p. 47.

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Yet this is only incompatible with the doctrine of creation, as Paul Ricoeur argues, inasmuch as it implies the self-sufficiency of the world, or conflates the eternity of God with the temporality of the beginning of the world. To create is to form, and in Genesis God's word does not create out of nothing.

The doctrine is, at the same time, a legitimate response to subsequent speculation about the radical origin and end of all things. Time is a creature, God is the only necessary being, and God also does something new in creation: as the continuing creative source of present existence and the free creative source of the ever new and unforeseen. He is the God 'who gives life to the dead and calls into existence the things that are not' (Rom. 4:17). The promise of salvation is, therefore, not a promise of mere restoration to a prior order—to the original Adam or the original Garden of Eden—but of transformation, a work in progress of the Creator.

This doctrine, later ignored or misunderstood, encapsulated the classical understanding of the relationship between Creator and creation in response to rival ancient cosmologies: God transcends the world, in contrast to pantheism; creation is good, in contrast to cosmic dualism; creation is contingent not necessary, and yet willed by God and thereby loved by God; and the Creator is a living God, active in a new way in creation. These are theological and not empirical claims about primal mystery that leave 'world causality' in place.

At the same time there is a kinship that relates the mythic with the scientific point of view that is 'not negligible', and seeking the principle of order in the universe is part of what it means to seek God. The creation texts testify to the same wonder, the same will to understand found in any modern scientific thinker who hopes to start 'from experiences belonging to their own sphere of observation'.[3] In that light, creation theology does seek a coherent metaphysics that can account for an immanent and personal God. In his own long engagement with the natural sciences, Wolfhart Pannenberg argued that theologians should feel able to use the science of their day to retell the story of God's creation of the world and to explicate the Creator-creation relationship in light of the discoveries of science.[4]

The application of historical-critical method to geology, biology, and physics—in the recalibration of the age of the earth, the evolution of life, and the models of an emergent universe—has brought new, previously incredible, insights to the human understanding of the physical world. These realisations have led to the arrival of new emphases in models of the Creator-creation relationship, which were in part eclipsed or obscured by the doctrine of *creatio ex nihilo* or were

[3] P. Ricoeur, op. cit., p. 51.

[4] Wolfhart Pannenberg, 'Notes on the Alleged Conflict between Religion and Science', *Zygon* 40:3 (2005) p. 585.

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filtered out by almost two hundred years of deism. Separated from revelation and redemption, what could be said about creation no longer made sense; deism left epistemology with 'an unknown God, a self-explanatory world, humankind delivered over to the tragedy of evil and of death'.[5]

And finally, creation is also related to fragility, vulnerability and contingency and these are constitutive of creation; they are not the origin of evil and are there even after the victory over chaos.[6] These also point to the danger of turning 'order' into an idol.[7] Creation is not a completed work; it is a work in progress of the Creator and of the created. If we insist on relating creation only to the physical order of the cosmos, then we break apart what creation theology has held together: God, the world, and humankind.

Nor is it clear what role the human person plays in this unfolding story, or what might be encapsulated in the concept of *imago Dei*, of the human person being made in the image of God. As Paul Ricoeur once wrote,

> When the theologians of the sacerdotal [or priestly] school elaborated the doctrine of [hu]man[ity] that is summarized in the startling expression of the first chapter of Genesis—'Let us make man in our image and likeness'—they certainly did not master at once all its implicit wealth of meaning. Each century has the task of elaborating its thought ever anew on the basis of that indestructible symbol which henceforth belongs to the unchanging treasury of the Biblical canon.[8]

One task—some would argue *the* task facing this generation of theologians, and the task laid out in *Laudato Si'*—is to develop a theology of nature that reinterpret, what it means to be made in the image of God and to care for the earth. Eco-theologies have initially at least offered two possible responses to the ills of anthropocentrism: biocentrism or theocentrism. Both of these, if in different ways, are said to provide the necessary alternatives: non-hierarchical, non-instrumental, non-reductionist models that are self-evidently egalitarian, value all of life intrinsically and are holistic. Yet the complexity of both the tradition and of the environmental issue facing humanity are not always well served by carving up the field into dichotomies, in this case of creation: redemption, or ecocentrism: anthropocentrism, or intrinsic:instrumental, or holism:reductionism, or monism:dualism, or utopias:dystopias, or freedom:determinism. Rather it seems that if 'excessive anthropocentrism' (LS, 116) has had its day, then human agency (dignity, responsibility, interpretation) comes more and more, not less and less, into the frame.

[5] P. Ricoeur, op. cit., 66.
[6] Ibid, p. 67.
[7] Ibid, p. 57.
[8] P. Ricoeur, *History and Truth* (Evanston: Northwestern University Press, 1965), p. 110.

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II. Autonomy in a Christian Context

The perspective here is that of the autonomy approach in Christian ethics, which has sometimes been seen as a 'late representative of the classical Catholic natural law ethics, now reinterpreted though the lens of the modern consciousness of freedom'.[9] In the autonomy position in Christian ethics the good is not based on a given nature but is a reflection of historical experience, a shift that it shares with revised natural law.[10] Also in common with revised natural law, the autonomy approach gives a greater role to human self-determination and recognises a plurality of forms of the good life. At the same time it differs from revised natural law in that the Kantian emphasis on freedom, from which this position takes its starting point, offers related but distinct interpretative categories to express the theological message of salvation in Christian ethics. One aspect of the approach is that it keeps central the conviction that a teleological ethics needs a deontological framework to prevent it from being co-opted by instrumentalist readings. Kant's categorical imperative secures the individual from the violation of others and violation in the name of the collective.

At the same time, it is not atomism, nor a naturalistic approach to autonomy; those owe more to Mill than to Kant, as Onora O'Neill argues.[11] Kant's emphasis on individual moral autonomy—each as an end in a 'Kingdom of Ends'—is a world in which 'we first acknowledge our likeness to one another as the very condition of our being moral agents'.[12] It is inherently intersubjective and thereby social, identifying a constraint or limit on our actions in relation to others, which we may not override or control.[13] He developed a demanding and sophisticated concept of human freedom, at the core of which is the dignity of every human person.[14]

But what has that to do with theology or environmental ethics? From a theological perspective, as Junker-Kenny points out, understanding ourselves as being made in the image of God does have parallels

[9] E. Schockenhoff, *Natural Law & Human Dignity: Universal Ethics in an Historical World.* Trans. Brian McNeil, (Washington DC: Catholic University of America Press, 2003), p. 2.

[10] cf. M. Junker-Kenny, 'Natural Law', *Approaches to Theological Ethics: Sources, Traditions, Visions* (London/New York: Bloomsbury/T&T Clark, 2019), p. 154ff.

[11] O. O'Neill, *Autonomy and Trust in Bioethics* (Cambridge: University Press, 2002), pp. 28-48.

[12] D. Mieth, 'Bioethics, Biopolitics, Theology' in *Designing Life? Genetics, Procreation and Ethics*, ed. Maureen Junker-Kenny. (Aldershot: Ashgate, 1999) pp. 6-22, p. 7.

[13] M. Junker-Kenny, 'Valuing the Priceless: Christian Convictions in Public Debate as a Critical Resource and as a "Delaying Veto" (J. Habermas)', *Studies in Christian Ethics* 12 (1) (2005), pp. 43-56, p. 48.

[14] H. Bielefeldt, 'Autonomy and Republicanism', *Political Theory* 25(4), 1997, pp. 524-558, p. 525.

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with this concept of human dignity established on purely philosophical grounds, but it is also not exhausted by it.[15] What are specifically Christian in this position are the intensifying, motivational, heuristic, integrating and relativizing dimensions of a Christian faith background.[16] At the same time it is clear that finding shared justifications for our obligations is not first dependent on going through the God question, as it is in theocentric approaches.

From the perspective of environmental ethics it also seems clear that it has been taken as axiomatic that a Kantian autonomy approach is simply incompatible with the key commitments to the extra-human world of life, and the interrelated systems that sustain our planet. After all, for Kant it is the good will and not nature that is morally relevant. However, much has happened since Kant, and in its reintegration of the right and the good, the autonomy school has reinterpreted and expanded on what it means to be *anthropos*: a 'finite freedom', embodied with capabilities, agency and asymmetric responsibilities. It neither dissolves anthropology into nature, nor into theology. And these reinterpretations are not simply minor adjustments to an anthropocentric core but responses to hitherto forgotten, lost, inchoate or as yet impossible but desired insights from creation theology and environmental hermeneutics. Relational autonomy, vulnerability, finitude and contemplative approaches express both what is meant by 'embodiment' and the idea that nature is the true context of human life. Environmental hermeneutics alerts us to the complexity that impacts on our interpretations of 'nature' and points us to the capacities of human societies to revise the terms on which they coexist and interact with one another in caring for our common home.

III. Technology and the 'Technocratic Paradigm'

Of course, the excesses of human agency are not universally celebrated, but nor have they ever been—we recall the pride of Prometheus and the sin of Adam. At the same time it is legitimate to say that we are the first historic society in which technics is a dominant phenomenon.[17] The scope of the human reach has been enlarged so dramatically that geologists (and philosophers and theologians have followed them in this) have named this era the Anthropocene, an epoch in which nature itself is 'made over anew by humanity' where humans have become a

[15] M. Junker-Kenny, 'The Image of God—Condition of the Image of the Human' in *The Human Image of God*, ed. H. G. Ziebertz, et al. (London: Brill, 2001), p. 81.

[16] Cf. C. Russell, *Autonomy and Food Biotechnology in Theological Ethics* (Oxford: Peter Lang, 2009), p. 96.

[17] D. Lewin, 'Ricoeur and the Capability of Modern Technology', in *From Ricoeur to Action* (eds) Mei, T., and Lewin, D. (London/New York: Continuum, 2012), pp. 54-71

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geophysical force that rivals that of earth systems. We are hurtling out of the relative stability of the Holocene into the unknown.[18]

In the history of philosophy, technē is a form of knowledge that is distinct from the arts and from politics, the human ability to make and to perform. Technologies, both 'hi' and 'lo' have brought efficiency in the provision of resources to meet human needs for food, fibre and fuel. However, the pursuit of efficient means can displace a deeper reflection on ends. What amounts perhaps to a cliché in the philosophy of technology is the idea that the field is divided into those who argue that technology has become so powerful that it is a force that threatens human freedom and those who would maintain that technology is just another tool, a neutral means to ends, an expression of autonomous human agency. If those are the options before us then we either submit to the rationality of techno-capital and let it govern our lives, or attempt, always against the odds it seems, to recover our cultural and political life, tame the economy and make it work for us.[19]

However, the picture is even more complex than that, and we have seen with many old and new technologies that public responses to technology are as Jasanoff puts it 'embedded within robust and coherent political cultures and are not *ad hoc* expressions of concern that vary predictably from issue to issue'.[20] Jurisdictions govern uncertainties, although some political cultures offer fewer opportunities for public consultation and deliberation. If we are interested in technology it is perhaps more because we are interested in human freedom and agency, and, as Lewin observes, human 'agency' is only meaningful within a particular interpretative context. In turn, context is shaped by more than technology; it is shaped by all cultural conditions. In looking at technology in particular we revisit some of the central questions of agency and capability in the definition and pursuit of ends.[21] It might be possible to recover some of the context in which that action is structured and with it human agency, not so as to demonise technology, or just to evaluate it piecemeal, but to talk about its future shape.

Laudato Si' reflects a distinction that we can make between evaluating technologies piecemeal for their utility, and developing a philosophy of technology. It refers to the benefits of technology but it also refers to the 'Technocratic Paradigm' in which we live, a paradigm that is tied up with consumerism and vested interests. It argues that technological products are not neutral, for they create a framework that then conditions lifestyles and shapes social possibilities along the lines

[18] W. Steffen, P. Crutzen, and J. McNeill, 'The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?', *Ambio* 36:8 (2007) pp. 614-621.

[19] D. Lewin, op. cit., p. 60.

[20] S. Jasanoff, 'In the Democracies of DNA: ontological uncertainty and political order in three states', *New Genetics and Society*, Vol. 24, No. 2, (August 2005), p. 139.

[21] Lewin. Op. cit., p. 55.

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dictated by certain powerful groups. Decisions that may seem purely instrumental are in reality decisions about the kind of society that we want to build. (*LS*, 106).

Lewin argues that we are not victims of a technological fate, any more than we are masters of technological destiny, we are not forced to take sides on the question of neutrality or determinism.[22] Yet we do need to be conscious of what he calls *de-worlding* at the technical interface because technology foregrounds functionality and conceals complex operations. It provides us with unmediated function, concealing fragile, insecure or at least contingent interactions and deliberations and in that way it can exclude 'practical reason'. The fragility of existence is hidden or denied. In the classic example of the Law of Instruments—Maslow's hammer, or the Golden Hammer—the very reliability of the instrument prefigures our action. As it is popularly paraphrased, if you have a hammer, you treat everything as if it is a nail. In biblical hermeneutics, Lewin goes on to say that this could be equated with reading the text 'literally', solidifying it into an 'interface' that conceals the interpretative complexity, And classically this is contrasted with the symbol, which introduces alterity.[23]

The creation of an 'interface' is on the other hand just what is desirable for designers and users. After all it is *alterity* that disrupts functionality, exactly because it cannot be anticipated. The outcome, however, can be that this displaces the other. *Laudato Si'* foregrounds this issue:

> Furthermore, when media and the digital world become omnipresent, their influence can stop people from learning how to live wisely, to think deeply and to love generously. In this context, the great sages of the past run the risk of going unheard amid the noise and distractions of an information overload. Efforts need to be made to help these media become sources of new cultural progress for humanity and not a threat to our deepest riches. True wisdom, as the fruit of self-examination, dialogue and generous encounter between persons, is not acquired by a mere accumulation of data which eventually leads to overload and confusion, a sort of mental pollution. (LS, 47)

In light of the experience of the Covid-19 pandemic measures, this insight has been the subject of much analysis but has also been informed by profound and international experiences. The text seems rather prescient in saying:

> Real relationships with others, with all the challenges they entail, now tend to be replaced by a type of internet communication which enables us to choose or eliminate relationships at whim, thus giving rise to a new type of contrived emotion which has more to do with devices and

[22] Ibid, p. 64.
[23] Ibid, p. 65.

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> displays than with other people and with nature. Today's media do enable us to communicate and to share our knowledge and affections. Yet at times they also shield us from direct contact with the pain, the fears and the joys of others and the complexity of their personal experiences. For this reason, we should be concerned that, alongside the exciting possibilities offered by these media, a deep and melancholic dissatisfaction with interpersonal relations, or a harmful sense of isolation, can also arise.

This analysis, of course, implies a wish to safeguard human agency exactly in its relations with the other, other human beings and nature. To keep at the forefront the idea that technology performs a human activity, even if in doing so it attests to 'an identity that remains real but elusive'.[24] In that way we might be able to agree that the hermeneutics of human agency subverts any (false) dichotomy between freedom and determinism in modern technological rationality, and rather asks how to bring about a free relation with technology.

In the field of moral theology, Hille Haker (Loyola University, Chicago) has 'transformed' this realization into a programme. She argues that the so-called ELSa approach (Ethical, Legal, Social aspect)—that interprets ethics as that discipline that 'must continually catch up with technology' and new applications—needs to be complemented by a distinct social-ethics analysis. Ethics should approach new technologies as social practices first, whose categories, goals and means are open to philosophical and societal deliberation. This reverses the catch-up perspective and asks instead that we interpret 'science and technologies as social practices that should be, from the beginning, justified in light of our normative frameworks'.[25]

> The social-ethics analysis of science and new technologies demands that we reverse the perspective; it does not ask what societies may or may not do with the new developments, how they can adapt to the applications, or how they will need to change, but rather asks…which societal goals (in fact some of these goals are obligations) are the most urgent from the perspective of human rights claims, and which social practices are best equipped to bring about changes.[26]

There is no simple response. We may evaluate each technology piecemeal, but we also need to interpret the technological paradigm: that solutions to the 'problem of technology' should be sought outside of the technological domain.

[24] Ibid, p. 69.

[25] H. Haker, 'Synthetic Biology—An Emerging Debate in European ethics' in *Ethics for Graduate Researchers* (eds) C. Russell, L. Hogan, & M. Junker-Kenny, (Netherlands; Elsevier, 2013), pp 227-239.

[26] H. Haker, ibid, p. 231.

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A. Evaluating Technologies: 'Agency in Context'

Technology and technologies can be interpreted in terms of 'agency in context' where agency here is neither determined by nor fully determining in relation to technology. We can imagine and evaluate how new contexts can shape use: for example, telecommunications and solar farming are already allowing developing economies to 'leapfrog' some of the worst excesses of development seen in rich countries.

Assessing technologies in 'context' can also be revealing; for example, the current developments in transgenic cropping may bring some agronomic advantages but only within the industrial agriculture model for which they were devised. The more hyperbolic claims that they might feed the world or bring resilience in the face of climate change are as yet unsubstantiated. And ironically, while the world's attention is often focused on the newest thing, on innovations and even 'disruptive' technologies, there is much less attention given to tried and tested sustainable practices: to the maintainers and indeed the 'impoverished providers' as Onora O'Neill calls the situation of institutionally structured poverty endured (mostly by women) in developing countries. And there are still nature-based fortunes to be made mainstreaming good practices that are already a good fit in terms of productivity and environment, such as the substantial opportunities in recovering soils vulnerable to land degradation through agroforestry or conservation agriculture.

Undoubtedly technologies are productively evaluated from the point of view of their efficiency but also their 'effectiveness in context'. This in itself yields an important axiom for development: that a plurality of approaches is needed and the prevalent idea in many early development models that 'one-size-fits-all' should be side-lined. At the same time we cannot ignore the close interrelations between technology and economics. We might be able to imagine a free relation to technology but this is harder to reach in an international 'system of commercial relations and ownership which is structurally perverse' (*LS*, 52).

In the next section I shall present two examples, one new and one old, of evaluating technologies from the perspective of 'agency in context'. The first, drone capitalism, challenges our obligations to safeguard the lives and conserve the habitats of those species with which we share our sky space. The second involves rethinking what constitutes development in transport infrastructure, through reinterpreting an older but supremely efficient technology, the bicycle.

B. 'Unmanned' Aerial Vehicles and Drone Capitalism

Although formerly an inaccessible frontier, the near sky or proximal sky is now the subject of regulatory responses to drone capitalism

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that raise new questions of legal and illegal activity in 'vertical publics'.[27] Common European rules proposed for the operation of 'unmanned' systems—a prerequisite for market expansion—were published in 2019 replacing a previous patchwork of regulations across Europe.[28] High-level obligations on the safety and security of society are a central part of the consultation processes—where it occurs. Yet there is almost no incorporation of key obligations to conservation of species and their habitats in the planning or consultation processes of the proposed framework. Apart from some brief reference to domesticated animals it is not clear that conservation policies are to play a central role in the formation of this strategy. This would be an alarming dereliction. In the last forty years *The Birds Directive* and *The Habitats Directive* have become the 'cornerstones' of Europe's nature conservation policy, safeguarding against potentially damaging developments. *The Birds Directive* set out to reverse a century of dramatic decline in bird life by ensuring that all new significant developments be assessed for their potential impact on wild birds. New EU aviation rules for the 21st century should, at the very minimum, assess unintended outcomes in advance, and monitor the impacts of challenges to all, but especially endangered bird populations in terms of the levels, geographical distribution, and reproductive rates of species: and not just from a theoretical or speculative starting point. Good quality real time monitoring has been essential to past success. It may be that other considerations, such as privacy, health and safety, and a lack of social acceptance, will mitigate against a 'full sky' outcome—as well as the failure of drones, in sustainability lifecycle analysis, to out-perform terrestrial systems for many of the applications proposed—but that cannot be assumed. Many formerly common bird species in Ireland and Britain are already endangered, for a multiplicity of reasons. The alarm had been raised about bird populations and electricity infrastructure in the 1980s but this is only now leading to retrofitting, late in the day. The point of these key directives is to integrate these concerns at the start of new developments and not to wait until the damage has been done irreversibly.

[27] C. Russell, 'Creation, the biosphere as common inheritance, and the commodification of the proximal sky' Paper delivered at the *International Congress of the European Society for Catholic Theology: Creation–Transformation–Theology*, University of Osnabrück, Germany, August 25th-28th, 2021.

[28] Cf. European Union Aviation Safety Authority Easy Access Rules for Unmanned Aircraft Systems Jan 2021. https://www.easa.europa.eu/document-library/easy-access-rules/easy-access-rules-unmanned-aircraft-systems-regulation-eu#group-publications

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C. Cycling as Development at all Income Levels

The bicycle has a long, complicated, more than 200 year-old history, and has proven to be both an ingenious invention and an instrument of liberation. Cycling was a very common and significant means of transport in European cities in the early 20th century. Indeed it transformed societies a hundred years ago, initiating new experiences of time and space that were not bound to schedules of the industrial clock and the train. As a form of efficient transport it reduced commuting times and gave workers more options in seeking employment. The middle and working classes made it their own, and it was even responsible for a rise in inter-village marriages. It was also acclaimed for doing more for women's emancipation than any other technologies at the time, and had a profound impact on women's clothing and fashions. It seemed to be on the verge of delivering cleaner, calmer, happier, and healthier cities.

However, despite its impact on transport in the early part of the 20th century across Europe—and Ireland and Britain were no exception—it lost its centrality from the 1960s onwards, even though it is a tremendously efficient means of transport, better than any other, including walking. Perhaps this aspect of cycling has been recovered in the two-wheel transport boom that happened during the Covid pandemic, offering new opportunities for change. However, the 'traditional' development trajectory for transport has remained stable for almost half a century in many developed societies and it is this: those who must, walk; those who can cycle; far preferable is the motorised bike; but the true mark of development and economic success is a personal car.

Despite appearances to the contrary this move also happened in the 1960s in the Netherlands, one of the few countries in Europe that has put cycling at the centre of a transport planning. In the Netherlands the relatively sudden return to cycling in the early 1970s, rather than being a naturalistic continuation of an earlier innovation, was the result of a people-driven political decision made in the face of circumstances not unlike those facing developed and developing societies now in the 21st century. These include overloaded transport networks that was destroying the centres of cities; poor car-driven planning; the rising costs not just to the country but to the planet of fossil fuels; the structural limits to electric car technologies and the insecurity of energy supplies. In this new context, one in which almost 70% of humanity are predicted to live in cities by 2050, the bicycle, being rather an intermediate stage in the trajectory of development, and in spite of vested economic interests, represents development at all income levels. To paraphrase Jim McGurn, a cycling enthusiast: the bicycle might be 'too cheap, too available, too healthy, too independent and too equitable' to be an indicator of development. Yet in an age of excess it is effective and, 'in an economy fuelled by consumer discontent, has the subversive potential to make people happy'.

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Towards the close of *Laudato Si'*, in the section entitled 'Beyond the sun' the text refers to the promise of future salvation and liberation. It also says this: that in the meantime 'we come together to take charge of this home that has been entrusted to us' (LS, 244). The task, then, is not a solitary one, and it includes engendering a wholesome 'ecology of daily life' that can light up even a seemingly undesirable environment. We can seek the beauty of design, but can also create new networks of knowledge, of solidarity and of belonging. About cities it says this:

> How beautiful those cities which overcome paralyzing mistrust, integrate those who are different and make this very integration a new factor of development! How attractive are those cities which, even in their architectural design, are full of spaces which connect, relate and favour the recognition of others! (*LS*, 152).

Theologies of nature have a way to go in thinking about what it means to live well in the city, to understand the city as a theatre of social action, culture and nature, to understand what makes a city an attractive place to live in and even perhaps recover something of the early adventures of the urban church. *Laudato Si'* (232) echoes this too:

> Some, for example, show concern for a public place (a building, a fountain, an abandoned monument, a landscape, a square), and strive to protect, restore, improve or beautify it as something belonging to everyone. Around these community actions, relationships develop or are recovered and a new social fabric emerges. Thus, a community can break out of the indifference induced by consumerism. These actions cultivate a shared identity, with a story which can be remembered and handed on.

IV. Conclusion

Creation theology and the creation narratives and other biblical texts provide us with many images of origins and ends and many different models for interpreting the Creator:creation relationship. In adopting a starting point in ethics of 'autonomy in a Christian context' the emphasis is placed not on ready-made solutions, or alignments with newly discovered order in nature, or one-size-fits-all models of development, but the ability and capability of societies to revise the terms on which they co-exist.

If technology is neither the neutral application of human desire nor is it all-determining, then the evaluation of technology has to be part of all our evaluations of 'agency in context', not something uncritically endorsed nor naively rejected. We know enough, for example in the European context, to know that 'environmental integration', which sounds very pro-environmental but hides a pro-commodification bias, needs to take conservation policy more seriously. The achievements in species

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and habitat conservation that have been secured in policy should be urgently applied in the case of the regulation of civilian drones and drone capitalism. And we also know enough to know that so-called outmoded technologies, the bicycle in this case, could be the most appropriate technology, the heart of a transport policy that also includes other public and personal vehicles, to cater for varying capabilities.

Integral ecology makes solidarity and hope the horizon for theological ethics: and what is hoped for is to hand on not just a sustained but also a restored planet and a home that is welcoming to newcomers. There is a saying that looks to that horizon and with which I will close and it is this: that it is a blessed thing to plant a palm tree even on the last day of the world, live for this world as if you will live forever and for the next as if you will die tomorrow.

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