

Transcendence in technology

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Appeared as:

Aydin, C. and P.P. Verbeek (2015), '**Transcendence in Technology**'. In: *Technè: Research in Philosophy and Technology* 19:3 (Fall 2015), pp. 291-313, ISSN 1091-8264

Abstract

According to Max Weber, the “fate of our times” is characterized by a “disenchantment of the world.” The scientific ambition of rationalization and intellectualization, as well as the attempt to master nature through technology, will greatly limit experiences of and openness for the transcendent, i.e. that which is beyond our control. In so far as transcendence is a central aspect of virtually every religion and all religious experiences, the development of science and technology will, according to the Weberian assertion, also limit the scope of religion. In this paper, we will reflect on the relations between technology and transcendence from the perspective of technological mediation theory. We will show that the fact that we are able to technologically intervene in the world and ourselves does not imply that we can completely control the rules of life. Technological interference in nature is only possible if the structures and laws that enable us to do that are recognized and to a certain extent obeyed, which indicates that technological power cannot exist without accepting a transcendent order in which one operates. Rather than excluding transcendence, technology mediates our relation to it.

Keywords: transcendence, technology, religion, mediation theory, boundary experiences

1 Introduction

According to Max Weber (1864–1920), “the fate of our times” is characterized by “disenchantment of the world.” The scientific ambition to rationally explain the world and

the aspiration to control and master nature through technological calculation will greatly limit “beyond our control,” transcendent experiences. By scientifically uncovering causal chains, the world will ultimately be completely deprived of “mysterious incalculable forces” (Weber 1946, 155). As a consequence, religion will lose, Weber predicts, its reason for existence.

In the context of the disenchantment thesis, Weber considers technology as strongly intertwined with science (Schroeder and Swedberg 2003). For Weber, Western science has two major roots: Greek mathematics and the exact experiment. His definition of “technology” is very broad: “technology” can refer to techniques of making war, techniques of making love, mnemotechnologies, tools, machines, and so on. What brings science and technology together – and is relevant for this paper – is their role in what Weber calls “rational calculation.” Science and technology are manifestations of the attempt to rationalize the world (Weber 1978, 65). “Science” generates concepts and knowledge that allow us to fathom nature’s laws and mechanisms; whereas, “technology” refers to the means employed in order to control and manipulate nature.

The alleged antagonism between religion and science/technology has led some scientists to believe that science must be purified from religious motives and considerations. Religion and science are seen as incompatible or non-overlapping, as expressed in, for example, the Draper-White conflict thesis (Draper 1874; White 1898) and Stephen Gould’s *NOMA – Non Overlapping magisteria* (Gould 2002). Today this view is strongly defended by ‘religion bashers’ like Richard Dawkins and Daniel Dennett. In *Darwin’s Dangerous Idea* (1997), Dennett attempts to show that the evolution by natural selection theory undoubtedly undermines the hypothesis of the existence of God and other ideas about supernatural powers. Although *Breaking the Spell* (2006), his later book on religion, seems more amicable to religious people, Dennett’s message is very similar: if the methods of science are used to scrutinize religion, its spell ultimately will be broken. This approach fits well with Weber’s “disenchantment thesis.”

There have been also various attempts to show that religion and science/technology do not necessarily exclude one another. From a sociological and anthropological perspective, Barbara Strassberg (2005) has pointed out that that magic, religion, science, technology, and ethics are components of cultures that coexist at every stage of the evolution of societies and cultures. Alan Padgett (2005) has defended the view that science and technology are

not secular in the strong sense; only when combined with antireligious secularism, he believes, do we get the modern techno-secular worldview. According to Philip Hefner (2003), the idea that human beings are “created co-creators” implies that technology does not exclude God. Humans “cooperate” with God in the progressive fulfillment of creation. Technology is interpreted as an instrument for transcending human finitude, as a “strategy for denying our mortality and death” (46). Hefner conceives technology as a vehicle of imagination. It supplies “what is not really present in the here and now” (50). Similarly, David Noble interprets technology as an attempt to transcend physical limitations, achieve perfection, and regain paradise, though he is much less optimistic about its outcome: instead of promoting worldly wellbeing, Noble says, “the technological pursuit of salvation has become a threat to our survival” (208). Noble’s conclusion partly overlaps with the (extensively challenged) Lynn White thesis (1967), which holds that values embedded within Christianity in the Middle Ages (especially the idea that nature is void of spirituality) made the pursuit of technology appear virtuous, leading ultimately not only to Western technological dominance, but also to the technological exploitation of nature and the subsequent environmental crisis.

In this paper we will attempt to contribute to the view that religion and science/technology are intertwined, from a so-called mediation perspective. First (§2), we will ask whether Weber’s disenchantment thesis has come true. This question immediately confronts us with the problem of how to define “religion.” Instead of attempting to establish what is religion, our focus will be on transcendent experiences. And *only in so far as* transcendence is indispensable or at least important in virtually every religion and all religious experiences, our findings will also have bearing on religion.

In the next section (§3) we will elaborate our mediation perspective. From this perspective technology is not situated outside human motives, beliefs, and actions, but rather mediates how humans experience the world and themselves. This view will be the basis for conceptualizing the relation between technology and transcendence. In this section, we will also clarify why, instead of science, we focus on technology.

Then (§4) we will analyze the relation between transcendence and technology. We will show how “transcendence” refers to three different (but related) types of experience. The two types of transcendence that we will discuss first indicate, as we will show, that technology can lead to experiences of transcendence (as an external tool, instrument, or

'strategy'), but do not sufficiently show how transcendence and technology are intertwined. The third type of transcendence that we will propose is not something that we experience outside technological efforts and achievements. In this view, technological intervention is only possible in so far as we accept and feed ourselves into what is beyond our control. Within this context we will also indicate in what sense particular technologies do not exclude, but rather mediate, experiences of transcendence.

We will end the paper (§5) with a conclusion.

2 Has Weber's "disenchantment thesis" come true?

Weber's maxim is almost a century old now, and indeed much has changed since then. There is hardly a dimension of reality that is not an object of scientific research, and there is scarcely a domain of our existence that escapes the influence of technology. Our modern Western culture is saturated with science and technology.

But there is also something remarkable about this. While Weber's "disenchantment thesis" expresses that scientific and technological developments have an eroding effect on religion, this is in fact not confirmed by empirical research. Contrary to what theorists of secularization would have us believe, empirical research indicates that religion is ubiquitous in various forms (see Berger 1999; Szerszynski 2005).

Religion is, for example, still a strong political force, not only in Islamic countries, but also in strong scientific-technological countries like the United States. In addition, the total percentage of the population in both East and West that characterizes itself as atheist or non-believer is still relatively small, namely between 12 and 16 percent (see Eurobarometer Poll 2005). Religious beliefs and motives also continue to play an important role in debates on topics such as abortion, euthanasia, homosexuality, stem cell research, and the theory of evolution.

What cannot be denied is that many people in Western countries have detached themselves from institutionalized forms of religion. However, many of these same people often embrace diverse spiritual beliefs and practices (see Heelas, Woodhead, Seel, Szerszynski, and Tusting 2004). Moreover, comparative research shows that especially in countries where the decline of Christian churches and Christian morality has most deeply

advanced (e.g. the Netherlands), the confidence in science and technology has most strongly decreased (Inglehart 1997), particularly among the youth and the higher educated (Houtman and Mascini 2000).

Indeed, these findings as such do not unambiguously prove Weber's "disenchantment thesis" to be wrong. They also do not provide an alternative perspective on the relation between religion and science/technology. The above-mentioned studies work with different definitions of religion and focus on different religious aspects and practices. Religion and religious experiences come in various forms that cannot be related to science/technology in the same way. What complicates matters further is that Weber's notion of "disenchantment" (*Entzauberung*) refers to the elimination of magic as a road to salvation: "magic" as opposed to "knowledge and control." Religions that are inner-worldly oriented and reject powers of gurus (charismatic leaders) and church fathers, such as Protestantism, might to a certain extent be reconcilable with Weber's "disenchantment thesis" (see Carroll 2011). Also Charles Taylor's (2007, 72, 245, 680) discussion of "exclusive humanism" and the (unsuccessful) suppression of transcendence in the eighteenth century indicates that the distinction between the secular and the profane is not as clear as we often take it to be.

Since the effort to define religion is as old as the academic study of religion itself and no definition of religion has garnered a consensus (cf. Wilson 1998), our aim is not to establish what should be conceived to be the real features, markers, or elements of religion, nor is the objective to study or compare specific religions and the way they deal with (new) technologies. Instead, we focus on transcendence, which we will define more specifically later on, and presume that the "disenchantment of the world" is on a par with the eradication of transcendence: the eradication of magic will, at least from a Weberian point of view, rationalize the world and, hence, abolish beyond-our-control experiences. And *in so far as* transcendence is a necessary or at least an important ingredient of religion and religious experiences, our findings will also have bearing on religion and religious experiences. However, we admit that this premise can be challenged: it might be possible to defend religions without transcendence and it might be also possible to acknowledge experiences of transcendence without calling them "religious." This again raises the question of how to define "religion," which is not our focus here.

If we accept the assumption that transcendence is indispensable or at least important in religion, then the discussed empirical findings, at least, do cast some doubts on the Weberian account of disenchantment as a unidirectional and universalizing tendency of modern scientific and technological rationality (see also Jenkins 2000). The premise that there is a strict correlation between the progression of science/technology and the decline of transcendence becomes questionable. And this makes room for other (and possibly more sophisticated) conceptualizations of the relation between technology and transcendence. In the next section we will propose such an alternative.

3 Conceptualizing the relations between technology and society

Up to now we have been speaking about science and technology in the same breath – and in fact, in our time science and technology are hardly separable anymore. Technology can no longer be considered as secondary, in the sense of applied science, because in many areas science can actually no longer be conducted without technology (see Latour 1986, 1992, 1993; Ihde 1990). Nevertheless, in this article, we will specifically focus on the relations between religion and *technology*. There is a long history of debate and reflection on religion and *science*, but not much has been said about the relation between religion and technology (see George 2006, 7–12), even though technology has a profound impact on virtually all facets of our lives.

A second reason is related to the Weberian assertion itself. From Weber's perspective, "technology" seems to be, as Bronislaw Szerszynski (2005) has argued, the strongest antonym of "transcendence." The power of technology seems to deny openness for what transcends analysis and control in the strongest possible way. The rise of modern technology should not merely be seen as a side effect of the disenchantment of the world. Rather, the technological mastery of nature validates the "desacralization of nature." Moreover, it is the technological approach to nature – in particular, its focus on prediction and control – that allows us to make the type of knowledge that science produces intelligible and usable. In the words of Szerszynski: "technology is the desacralization of nature; it is in technology that nature's disenchantment is most clearly performed" (5). Offering an alternative view to the seemingly antagonistic relation between technology and

transcendence could significantly contribute to a revision of our understanding of both technology and transcendence.

We will develop this alternative view on the basis of the approach of “technological mediation” (Ihde 1990; Verbeek 2005, Rosenberger and Verbeek 2015). Building upon the so-called “empirical turn” in philosophy of technology (cf. Kroes and Meijers 2000; Achterhuis 2001), this approach aims to study not “Technology,” but actual technologies, as situated in human practices and experiences. Below, we will first explain the main elements of the “mediation approach” by contrasting it to two other perspectives on the relation between technology and society: instrumentalism and determinism. Although we also believe that focusing on “technologies” is more fruitful than speaking of “technology” in a generalized fashion – and we will touch upon some examples of concrete technologies – we leave for future research the systematic and differentiated application of the proposed framework on particular technologies.

3.1 Technological mediation

The approach of technological mediation analyzes technologies as ‘mediators’ of the relations between humans and world. Rather than seeing technologies as material “objects” that need to be understood in opposition to human “subjects,” the mediation approach understands technologies as constitutive for human practices and experiences.

When used, technologies are always more than instrumental. The instrumentalist perspective of technology understands technology merely as a neutral means developed by human beings to achieve certain goals. It is human beings who have intentions and form interpretations of the world; technologies are always secondary to those intentions and interpretations. I use a car to travel from A to B; the car is just a means to achieve my goal, not a goal in itself, nor capable of setting goals by itself. In neutralizing the role of technology, the instrumentalist approach fails to see how technologies themselves help to shape human goals. Cars are not just neutral means to get from point A to point B: because we have cars, we often now choose to live further away from our work than we used to, giving us a different social environment at home than at work. Also, cars have made us make different decisions regarding city design and the organization of public space. The clock has not only enabled us to know when the morning begins, but has also synchronized the lives of

masses of people and has optimized the division of labor. Without the clock, the whole Taylorian production process would be unimaginable (cf. McLuhan and Gordon 2003).

Does this mean we should accept the idea that technologies determine society? This is the view of the determinist approach, which does not understand technology as a mere means for achieving purposes set by human beings, but as an autonomous force that cannot be controlled or regulated (anymore) by human beings. Jacques Ellul (1977) has argued that the impact of technology has become so great that it is transforming society into a technical system. And according to Günther Anders, the products that we make immediately escape our control and incite practices that we could not have predicted. We are always behind on the technical products that we make. He goes so far as to say that in the last decades, not the human being, but technology is the actual subject of history: people have become the product of the products they have produced (Anders 2002). This is not a satisfactory position either, since it ignores the fact that technologies are always embedded in use contexts, and need to be interpreted by human beings in order to be used.

Both the instrumentalist and the determinist approach assume a categorical separation of human beings and technology. And this is precisely what the mediation approach aims to overcome. It claims that humans and technologies are not alien entities separated from one another, but are in fact intertwined (see Ihde 1990; Latour 1993; Stiegler 1998; Feenberg 2002; Verbeek 2005). Technologies are not external additions to human bodies, but in fact help to shape what it means to be human. Rather than focusing on human intentions or technological determination, we need to study the different *relations* and *interactions* between humans and technology, and investigate how these interactions affect and shape our world and our selves.

We believe that a mediation approach can also help us to develop a framework for an alternative and more constructive view of the relation between religion and technology. Rather than locating technology and religion in separate realms, this approach can be useful to analyze how technologies help to shape religious practices and experiences; how, for instance, using IVF does not necessarily replace the experience of “receiving a child” with “making a child,” but rather helps to shape the experience that pregnancy is not simply “makeable” and can also raise wonder about the fact that nature apparently works in such a way that IVF is possible in the first place. Technology, here, does not replace religious

receptivity with technological manipulation, but rather mediates experiences of the boundaries of manipulation.

Before we further elaborate this perspective on the relation between religion and technology, we will briefly discuss another contemporary approach to that relation: the approach developed by philosopher of technology Albert Borgmann. This discussion will show that Weber's "disenchantment thesis" is by no means obsolete, but has been rehabilitated even in modern philosophy of technology. By contrasting our mediation approach to Borgmann's view, we will be able to further sharpen the contours of our view.

3.2 Borgmann's device paradigm

Unlike Martin Heidegger's more classical philosophy, the contemporary prominent philosopher of technology, Albert Borgmann (1984, 2003) tries to avoid generalization by not reflecting on "technology" in general, but on the role of several concrete technologies in different social contexts. However, his view of technology and technological developments seems to be no less pessimistic than Heidegger's and Weber's: Borgmann sees technology as a threat to intense and rich engagements with the world. Although he does not employ the notions "disenchantment" and "transcendence" directly, his analysis of the disengaging effects of technology expounds on the way technologies were able to enchant the world and abolish all "beyond our control" experiences.

Borgmann's view of technology is more complex and nuanced than the instrumentalist and determinist perspectives that have been sketched above. He indicates his own approach as "paradigmatic," in the sense that he sees technology as a paradigm, a pattern in our way of taking up with reality. The way technology works has, according to Borgmann, increasingly become a hidden process, which only concerns specialists. As a consequence, we do not ask ourselves how devices have been made and how they work. We are only interested in them in so far as they can be used as a means to achieve our goals: we consume their commodities without being engaged with the machineries that procure them. This attitude is for Borgmann neither neutral nor innocent, but has radically changed the human relation to reality as such. Subject to what he calls the "device paradigm," we increasingly treat all things as "devices." As a consequence, our relation to reality has become more and more aloof, indifferent, and superficial. This cultural transformation under the influence of modern technology has led to a significant loss of meaning.

Technological devices impoverish our engagement with the world. The instrumentalist attitude reflected in the everyday use of technology is therefore anything but value-neutral. The device paradigm increasingly shapes our attitude to reality as such. As a consequence, technological instrumentalism turns into technological determinism.

Borgmann argues for a new commitment to things. He calls us to open ourselves up to what he calls “focal things and practices,” which evade the device paradigm. “Focality” refers to the Latin word “focus” which means “fireplace.” It refers to a place that can gather different members of a household. In Johannes Kepler’s work (see Lindberg 1976), “focus” for the first time acquires the meaning of a focal point of a lens or mirror. In both cases, it involves a converging motion, where something is put at the center of attention and becomes clear. Focal things and practices have an orienting and gathering capacity. They impose an attentive attitude toward things.

Examples of focal practices that Borgmann discusses are dining together, running, and praying. Take for example, dining, which Borgmann sets against the ready-made microwave meal. A microwave meal is prepared in a few minutes by shoving it into a microwave and pushing a button. How the contents of a microwave meal came about is unknown to us and we are not even interested in it. It is merely a means to quickly satisfy our hunger. The preparation of a meal on the other hand is a focal practice. It takes time and effort and must be prepared with care. We must ask ourselves what ingredients we will use and what combinations will yield the best result. We are also prompted to wonder where those ingredients come from. In addition, dining is orienting and gathering. Dining is something that we do at a particular time of the day with other family members or friends. Moreover, dining together creates a context in which important and meaningful topics can be discussed (Borgmann 2003, 115).

The example of prayer is even more telling. Prayer is not a focal practice alongside others, but represents pre-eminently what we have to do to regain a committed involvement with the world. Praying for Borgmann is a focused engagement with reality. The term “ultimate concern” from Paul Tillich’s philosophy of religion is deliberately used in this context. It must be clear that it is the attentive disposition that we recognize in prayer, not a ‘beyond this world receiver’ of the prayer. Although Borgmann does not propagate an expulsion of technology, he hopes that this renewed commitment will lead to a sensible constraint of technology (Borgmann 1984, 169).

Borgmann argues that the “device paradigm” has brought about a disengaged attitude towards the world. This attitude discloses a world in which there is nothing that escapes or transcends our control and, consequently, captures our interest. The world does not sing or speak to us anymore, to use the original meaning of “disenchantment.”

Borgmann does not consider the possibility that technologies and technological interventions could also reveal new dimensions of reality (see Verbeek 2005, 173–202) and make possible alternative experiences of transcendence, which could, in fact, increase our engagement with the world. As we will show in the next section, from the perspective of technological mediation, technologies do not necessarily produce alienation, but rather mediate human engagement with the world, in ways that do not exclude, but rather include transcendence.

4 Technology and transcendence

4.1 Technology and transcendence: oil and water?

If human beings recognize that their physical and mental capacities are insufficient to fully comprehend and master an aspect of reality or nature, they typically experience a boundary. Our philosophical approach to transcendence is concerned with an analysis of these “boundary experiences” and their implications for our views of technology, not with theological interpretations of what lies beyond or what sets these boundaries. It is this *phenomenological* notion of transcendence that is the subject of our inquiry, not the belief that there is also a divine entity that explains and/or is responsible for transcendent experiences. From this perspective “transcendence” is, as we will further elaborate below, not opposed but rather bound to “immanence.” Although in the history of philosophy and spirituality these terms are often seen as opposites, there is also a tradition (of especially spirituality) that stresses the “immanent” character of transcendence (John of the Cross, Meister Eckhart, to a certain extent Augustine, Teilhard de Chardin, etc.).

By giving us increasing control over our lives, technology seems to have a problematic relation to transcendence. Technologies such as drainage, electric lighting, computers, and the contraceptive pill have expanded the range of our abilities and steadily shifted the limits of our knowledge and actions. New and emerging technologies like biotechnology, nanotechnology, information technology, and neuroscience have, with some

justification, further strengthened the view that life can be formed, changed, and even created (cf. Drees 2009, 17f.). Today, tissue engineering, for example, has made it possible to grow skin and a bladder outside the body. It is not impossible that in the future we will be able to also grow (perhaps even synthetically) hearts, lungs, and other organs. Nothing seems to transcend the power of technology.

By allegedly annihilating the dimension of “transcendence,” these kinds of boundary-crossing developments seem to make Weber’s disenchantment thesis come true. Strong enthusiasts of (emerging) technologies, such as transhumanists, often conceive the eradication of transcendence simply as “progress” and defend an acceleration of that process (cf. Peters 1980; Kamm 2005). For others, this is a reason to argue that we should put restrictions on technologies that threaten transcendence. Critics, especially of technologies that can radically change our bodily features or mental capacities believe that when it comes to religion moving what was beyond our powers to our side of the boundary is hubristic: playing God is asking for trouble (see Passmore 1980; Chadwick 1990). An influential academic like Michael Sandel (2004) claims – without appealing to a naive or dogmatic religious attitude or to a specific religion – that technologies that intervene in our genetic make-up threaten to banish our appreciation of life as a gift and will destroy our openness to the unbidden (cf. Elliot 2004; Gellner 1987). We must, in other words, stop wanting to control everything.

Approaches such as Sandel’s raise a number of empirically motivated questions. For instance: have parents who decide to undergo an IVF treatment, after years of trying to conceive a child naturally without success, lost their appreciation for life as a gift? And do children who are conceived using IVF have a weaker antenna for transcendence? Would children who have been genetically “designed,” the so-called “designer babies,” have a radically different attitude towards transcendence and religion than children who are conceived naturally?

Most likely the answer to these questions is: “not necessarily.” We have seen above that empirical research shows that technology and transcendence are not phenomena that necessarily exclude one another. This observation does not yet show, however, how religion and technology could be intertwined or how they even could reinforce one another. In order to demonstrate that we first, have to explicate more clearly what “transcendence” entails and if the meaning of “transcendence” is unambiguous. We have to come up with a kind of

typology of transcendence that will make clear how these types of transcendence can be recognized in technological aspirations and practices, and are, in fact, technologically mediated.

4.2 A typology of transcendence

“Transcendence” refers at least to three different (but related) types of experiences. It is not very difficult to comprehend the first two types and how they relate to one another. The first type of experiences of transcendence entails recognizing boundaries or limits that seem difficult, if not impossible, to overcome. The second type refers to experiences of successfully overcoming those very arduous boundaries.

At first sight, technologies and technological developments seem to be directed at overcoming limits (the second type of transcendence) and principally are not willing to recognize limits (the first type of transcendence). If “genuine transcendence” requires a “boundary experience,” then technologies indeed seem to be at odds with transcendence. Technological endeavors might then be reconcilable with “transcending” boundaries, but would not acknowledge something that escapes or goes beyond their attempts to grasp and control. It is not a coincidence that bioconservatives – who argue that we have to respect certain boundaries and not attempt to cross them – are opposed to certain technologies, whereas transhumanists – who believe that there should be no restrictions on overcoming boundaries – embrace those technologies. From this perspective, the first and second type of transcendence are not only impossible to relate to one another, but they even seem to be opposed.

Technological developments are indeed often aimed at and successful in overcoming certain limits that are dictated by our bodies, our minds, or material circumstances. However, the view that technology recognizes no boundaries at all and treats life as raw material that can be shaped according to its logic is inadequate (cf. Heidegger’s late philosophy of technology; Verbeek 2005, 60–76). In the very desire to cross boundaries, those boundaries are in fact recognized. And overcoming one limit immediately calls for another limit. Tissue engineering has indeed made it possible to successfully grow a bladder outside the body and to place it inside the patient’s body without the body rejecting it. However, preparations for this technology have taken more than sixteen years (see Horst et al. 2013). There is also significant progress with growing heart valves and there is a lot of

experimentation going on with the aim of growing other organs. The great difficulty of providing a blood supply, however, has always limited the size of engineered tissues. Therefore, the application of this technology seems so far confined to thin tissues. In the development of this technology, limits are overcome, but are also necessarily recognized. And new frontiers constantly emerge.

One possible objection to this argument is that “genuine transcendence” refers to an absolute limit, while the transcendence that is reconcilable with technology only respects relative limits. This objection is, we believe, informed by wrong assumptions regarding “genuine transcendence,” at least “wrong” from a phenomenological perspective. *That we are constantly confronted with boundaries is indeed absolute. However, that does not mean that we know where to draw the lines.* The experience of transcendence is precisely characterized by the experience that we are not able to look across the border. We are on this side of the border and cannot claim a privileged meta-position that enables us to determine absolute boundaries. Opponents of new technologies that claim to know where the boundaries of our knowledge and abilities should be drawn are, paradoxically, guilty of the same hubris of which they accuse their opponents. They claim a direct access to God’s plan and, thus, fail to recognize the uncomfortable nature of transcendence.

Transcendence is, in other words, always bound to immanence. Presupposing a notion of transcendence that completely ignores and dissolves the immanent position of the human being is denying the human condition. Characteristic for transcendence is that it is a movement that takes place within our world (see Heyde 2000, 169–174). Although humans can develop insights beyond all possible expectations and overcome alleged “absolute” boundaries, this is only possible within the horizon of the world in which they live. If these insights are verified continuously, eventually they will be incorporated in and become part of the actual, concrete world in which we live..

Another possible objection to the argument that the very desire to cross boundaries, in fact, recognizes those boundaries is that recognizing boundaries is not the same as respecting boundaries. This brings us to the third type of transcendence. This type of transcendence is more complicated and subtle than the first and second one. It grows out of a certain insight embedded in the other two types of transcendence – insight in *how* we are able to transcend certain limits and in *why* transcending those limits cannot be entirely

attributed to our own efforts. The third type of transcendence consists in the “givenness” of the possibility to cross boundaries in the first place.

Technologies indeed make it possible to transcend (transcendence type 2) a given state of affairs, and to refuse to take reality and the boundaries that it sets (transcendence type 1) as something that we must accept. When we get ill, we seek out a cure; when we cannot have children in a “natural” way, we try “artificial” ways; et cetera. And technologies enable us to ever better accomplish our goals. These two types of transcendence come close to what Hefner and Noble take as the core of religion (see the introduction of this paper).

The third type of transcendence is not something that we experience outside these efforts and achievements. We rather encounter it when we are intervening in nature. It is the experience of the fact that we can only manipulate nature by virtue of understanding its workings, which we have not created ourselves. As we will elaborate further below, when discussing Karl Jaspers’ approach to transcendence, every technological intervention in nature is only possible on the basis of a state of affairs that is “given.” We can only grow artificial bladders because nature happens to work in such a way to make this possible. Manipulation requires the possibility to manipulate; it always takes place in a situation that transcends it and that it can take as “given.” Only by feeding ourselves into the pre-given character of nature can we regulate it to a certain extent. The technological act of transcending, therefore, comes with acknowledging that manipulating nature does not exclude but rather includes the experience of “not being completely in control.” Technology and transcendence can go hand-in-hand. Rather than being at odds with transcendence, technologies here *mediate* experiences of transcendence in the particular ways in which they cross boundaries and reveal boundaries in doing so. Recognizing that our encounters with the world are always technically mediated also challenges the idea of humans as autonomous beings who can detach themselves from their surroundings and hack and control the rules of life.

In the following two sections, we will further clarify this line of thought with the aid of two authors: St. Augustine and Karl Jaspers. A short digression on their views will make it possible to show that transcendence is not at odds with technology, but is rather mediated by it. Augustine’s analysis of desire shows how overcoming boundaries does not make experiences of transcendence impossible, but rather affirms it. And Jaspers’ perspective

makes it possible to investigate how transcendence, as a mode of being, is mediated by technologies rather than being ignored or neglected.

4.3 Augustine on desire as an index of transcendence

Augustine has argued that the things that human beings encounter in the world convey to them that they are not their own ground, but rather refer to something more fundamental. This, however, can only be recognized by someone who has managed to make him- or herself receptive to such experiences. Only someone with a receptive attitude will be able to recognize the transcendent in the immanent. In Augustine's words:

The creatures will not alter their voice – that is, their beauty of form – if one man simply sees what another both sees and questions, so that the world appears one way to this man and another to that. It appears the same way to both; but it is mute to this one and it speaks to that one. Indeed, it actually speaks to all, but only they understand it who compare the voice received from without with the truth within.
(Augustine, 2002, X, vi, 10)

For Augustine, desire is of crucial importance in this context: “rise, seek, sigh, pant with desire, and knock at what is shut” (Augustine, 1873, Tractate XVIII, 7) and “Longing is the very bosom of the heart. We shall attain, if with all our power we give way to our longing” (Augustine, 1873, Tractate XL, 10). Those who do not desire remain mute for God: “your deepest desire is indeed the desire for God” (Augustine, 1847, Psalm 127:9). Augustine specifies desire as a combination of hope and love. It is a craving for things that are absent in the present, but that we expect to see some day in the future.

This desire, however – and this is, as we shall see, crucial for our notion of transcendence – is not prompted by the suffering from which the human being wants to escape, nor from the idea that we should accept alleged absolute boundaries (determined by other people) and simply seek for the answers in an afterlife. For Augustine, the opposite is the case: this desire is instigated by the insatiable and endless love for life, by the recognition that there is a richness of possibilities that could be discovered. To capture ourselves in ourselves means that we deprive ourselves of this prospect. Being receptive for transcendence, in fact, invites us not to imprison ourselves in a realm of alleged absolute

boundaries. Because the human is, in contrast to other (living) creatures, a being that can rise above and point beyond him- or herself, the receptivity for transcendence is a fundamental dimension of being human. To deny this is, as aptly expressed by Rüdiger Safranski, betraying transcendence (Safranski 2005, 45).

Although not everybody would go as far as Augustine and ultimately embrace God, it is difficult to deny that desire is a central dimension of the human being and that this desire embodies an urge not to coincide with ourselves, but to anticipate what is beyond our limits. In desiring, we can also recognize aspects of our insufficiency. In Augustine's words, "For why shouldst thou desire to lay hold of the true, if thou hast the true already?" (Augustine, 1873, Tractate XXII, 3). In the attempt to rise above ourselves, we are necessarily confronted with the limits of what we can know and do. We cannot have it both ways: if we had everything within our control, there would be no desire. This proposition does not pretend to be a logical argument. Augustine asks his readers to reflect on feelings of desire in their own personal lives. Some might recognize this boundary experience in feelings of desire; others might not.

For Augustine, we answer the love of God by adequately responding to the things in which his love reverberates. Desire is not an activity that originates in us, but is rather characterized by being drawn by something outside of us and responding to structures and mechanisms that we cannot completely control and determine. While not everybody would endorse this theological interpretation of desire, many people would nonetheless acknowledge that going beyond our limits, discovering new possibilities, and finding solutions for problems requires an attentive, adequate disposition in which our place in and dependence on a bigger whole has to be taken into account. This is the case when our aim is to maintain a good marriage, but also when developing technologies to reduce carbon dioxide emissions.

Augustine's notion of desire indicates that technology does not have to be a threat to transcendence. It can even contribute to developing a larger receptivity to transcendence. The microscope does not reduce nature to completely controllable scientific entities, but has rather disclosed a hidden world which has instigated many new disciplines and has generated an immense variety of new insights. Many scientists and lay people have passionately indulged in the study of this new world. At the same time, scientists are continuously confronted with new problems and boundaries, and experience all the more

how much knowledge and how many skills they still lack. More knowledge does not necessarily eradicate the mysteries that surround us, but rather intensifies them. There remains, for example, an immense distance between knowing *that* something exists and understanding *how* it works, and fully grasping *why* it exists and *why* it works the way it does.

The phenomenological analysis of desire shows that in the technological attempt to overcome limits (transcendence type 2), those very limits are necessarily recognized and new frontiers are discovered (transcendence type 1). Transcendence, here, is not overshadowed or made impossible by technology. Rather, technology here mediates *how* transcendence can manifest itself to human beings. The idea that overcoming limits requires correctly responding to structures and mechanisms that we do not completely control also contains the third type of transcendence. This third type is also expressed by the view that desire essentially characterizes the human being: if desire is a fundamental dimension of being human, then the human being as such never fully coincides with itself, nor it completely fathom and control itself. It *is*, therefore, potentially always a movement of transcendence. This third type of transcendence can be further clarified with the help of Jaspers.

4.4 Jaspers on transcendence as a mode of being

In the work of Jaspers, the concept of “transcendence” indicates a specific mode of being, in addition to two other modes of being: “being-there” and “existence.” For Jaspers, nonhuman entities “are there” without having a relation to their being-there. This relation is characteristic for human existence: for human beings, their own existence is a challenge, a project, a task – it happens to them, but at the same time they are responsible for it. This implies that with human existence comes the recognition that we did not create our self-relation ourselves: we find ourselves in it, and have to deal with it. This reveals a dimension of transcendence: the fact *that* we exist is beyond our control and understanding.

It is crucial to mention that transcendence, for Jaspers, can never be defined as a deity – a divine entity. If this would be the case, we could reduce transcendence to a form of “being-there”: an entity among other entities – even though it then would be a very special entity. This would, in fact, fail to recognize the specific character of transcendence. A god whose existence can be proven, is no god.

From the perspective of Jaspers' analysis of transcendence, the fact that we can manipulate, make, and influence entities does not reduce or abolish the possibility of experiencing their transcendent dimension. Technology can never be an ultimate threat to transcendence, because it embodies a different mode of being. Even though technologies might seem to exert a form of power over reality that excludes any openness for transcendence, in fact, they make it intrinsically possible to experience transcendence in the very way in which they challenge it.

The fact that technologies function, after all, cannot be reduced to a result of human intervention. Only by understanding and cooperating with the specific workings of nature can human beings develop technologies. In *Die Geistige Situation der Zeit*, Jaspers asks himself how to understand experiences of the beauty of technological artifacts. He claims these experiences are not found in the pure efficiency of technological workings, nor in redundant ornamentations, but in "the solutions that lie in the things themselves, as if they were found in a quest for eternal, pre-given forms" – a Platonic image by which Jaspers describes the transcendent dimension of the "eureka" experience of having found a solution which one expected to be there (Jaspers 1955, 115 – our translation). In the same analysis, he states that technology can either "distance us from nature, to make room for using it thoughtlessly and mechanically" or "bring us in a new proximity to the investigated nature" (ibid.).

In these quotes, Jaspers expresses that technologies are always more than ways to exert power over nature. All power that human beings exert upon reality helps to reveal its transcendent character. Conceiving a child via IVF does not take away the transcendent character of the resulting pregnancy, because humans can only conceive of a child via IVF because "nature" apparently allows us to do that. The structures and laws we discover in nature, and that enable us to intervene in it, are not our own products; they have a transcendent dimension that has to be recognized in order to use them.

In Jaspers' terminology, technologies here take on the role of "Chiffren" (cyphers): they become "signs," "characters in the language of being," pointing towards being, without ever being able to embody being itself. If they would embody it, after all, transcendence would be reducible to entities that "are there" – and this would confuse two distinct and radically different modes of being: being-there and transcendence. The functioning of technologies always has a transcendent dimension: they can only function on a basis that is

beyond human control, and that human beings need to feed themselves into in order to let technologies function. Or, in the words of Francis Bacon: “Nature to be commanded must be obeyed” (Bacon 2000, Aphorism 3). The more technological power we develop, the more its transcendent character becomes visible. Technological power cannot exist without accepting a transcendent order in which one operates, which implies that technologies, in fact, *mediate* experiences of transcendence rather than rendering them impossible.

5 Conclusion

In this article we have analyzed and challenged several presuppositions and frameworks that claim that there is an antagonistic relation between religion and technology, in order to make room for an alternative and more constitutive view of that relation. We have outlined the contours of that alternative perspective by discussing the relations between technology and transcendence. Only *in so far as* transcendence is accepted as a necessary or at least an important ingredient of religion and religious experiences, will our findings also apply to religion and religious experiences.

Transcendence, we believe, should not be situated outside the realm of technology and technological developments. It rather can be experienced in the process of technologically overcoming (presumed absolute) limits (transcendence type 2). Moreover, in overcoming limits these limits are necessarily recognized and new limits are discovered (transcendence type 1). In this process, a more fundamental dimension is also disclosed: overcoming limits by virtue of technologies is only possible if the structures and laws that enable us to do this are recognized and to a certain extent obeyed, which indicates that overcoming limits is never completely our own doing. Being able to intervene in nature should, therefore, not be equated with being able to completely control nature, which implies that the usage of “control” in this context requires reinterpretation and refinement. This also indicates that our very human existence, which is characterized by various interactions in which we find ourselves, is to a great extent beyond our control, and, hence, transcendent.

This preliminary investigation of the relations between technology and religion requires further elaboration and expansion. Besides analyzing the transcendent dimension

of technology, it would also be possible to investigate the technological dimension of transcendence from the viewpoint that transcendence is often pursued by virtue of different technologies. Rituals such as prayer, chanting mantras, asceticism, abstinence, penance, the use of a thurible, ayahuasca shamanism, making signs of the cross, and various other sacraments and spiritual practices can be considered as technologies that are aimed at reaching a certain spiritual state. Technology intrinsically belongs to human existence, and this explicitly includes its transcendent dimensions – despite the fear of technology that some religious views tend to embody.

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