Devices of Engagement: On Borgmann's Philosophy of Information and Technology

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Albert Borgmann, *Holding on to Reality: The Nature of Information at the Turn of the Millennium*, University of Chicago Press, 2000.

Introduction[1]

How do information and communication technologies influence our culture and people's everyday lives? For the philosophy of technology, this will be one of the leading questions in the decades that lie ahead of us. In his recent study *Holding On to Reality: The Nature of Information at the Turn of the Millenium*, Albert Borgmann offers a framework for answering it. He gives a profound analysis of the various kinds of information that people are involved with, and of the role technology plays in this involvement. *Holding On to Reality* can be read as an elaboration of Borgmann's earlier *Technology and the Character of Contemporary Life* (1984) with respect to information and communication technology. After this earlier study on the cultural role of technology, Borgmann now focuses on the specific aspects of information technologies, and the way they help to shape people's engagement with reality.

Borgmann's book offers many new and relevant insights. Yet, his analysis is limited as well. In both studies, Borgmann's stress on the threatening aspects of technology keeps him from analyzing thoroughly all aspects of the way technology helps to shape people's relationships with reality. In this article, I will show that Borgmann's pessimistic diagnosis results from the specific way he conceptualizes technology. First, I will briefly introduce the main lines of thought in Borgmann's philosophy of technology, as laid down in *Technology and the Character of Contemporary Life* and *Holding On to Reality*. After this, I will critically analyze Borgmann's position, arguing that his diagnosis is troubled by an ambiguity in his concept of engagement. Having done that, I will challenge the idea that technology alienates humans from reality, by elaborating - in a phenomenological way - the concept of technological mediation. In this elaboration, Borgmann's concept of engagement will play an important role, albeit in a more differentiated way. The concept of mediation makes it possible to

do more justice to the actual presence of technological devices and information technologies in our everyday lives.

Devices and Engagement

Borgmann's work can be seen as a major renewal of classical philosophy of technology, in particular of Heidegger's position. Borgmann develops an approach to technology that starts from concrete technological artifacts, instead of taking 'Technology' as a substantive entity. Classical philosophy of technology approached technology in a transcendentalist way: it searched for the *conditions of its possibility*. Philosophers like Heidegger, for instance, were primarily interested in the ways of 'disclosing reality' that lie behind the making and using of technological devices. When speaking about technology, they in fact meant this technological way of disclosing instead of the technologies themselves. Borgmann's approach is not transcendental but – in his own words – 'paradigmatic' in nature. He understands technology in terms of a paradigm, a pattern in the way people live their lives, which comes about when they use technology. This 'device paradigm' is not a transcendental construction for understanding what makes technology possible. It is an empirical observation of the impact of technology, which serves as a starting point for philosophical analysis.

For Borgmann, the most important characteristic of technology is its disburdening character. Devices decrease the effort that is needed to accomplish things - that is why people use technologies. Devices do so by creating *availability*. For heating our houses, it is not necessary anymore to gather wood, chop it, et cetera. We simply adjust the thermostat, and heat is at our disposal. The effort that was needed in a pre-technological situation is now delegated to the machinery of a device, namely, a central heating system, which is only present at the background of our experience. In this way, heat becomes a commodity, which can be consumed without any involvement with the way in which it came about.

For Borgmann, this disburdening character is the key to the understanding of technology. In relieving people's efforts to accomplish things, technologies change the nature of people's involvement with reality. Devices invite an entirely different way of dealing with themselves than pre-technological 'things'. The effort people had to make to heat their houses created an intense form of engagement with reality: they had to chop wood, fill and clean the hearth, and sit

around it together. A hearth was, in Borgmann's terms a 'focal thing': it was the focus of people's attention. Heating their houses gave people an engaged way of interacting with their world. A central heating system takes away this engagement. Rather than engagement, it produces consumption of the commodity 'heat'.

By shaping people's interactions with reality, according to Borgmann, technologies create a pattern in the way people live their lives. The 'commanding presence of things' is increasingly replaced by the 'availability of commodities'. The manifold and engaging role 'things' play in people's everyday lives is reduced to one function, which is made available as commodity. Devices divide things into machineries and commodities. The inseparable connectedness with their context that characterizes 'things' is delegated to their machineries, in order to allow people to enjoy their commodities as unconcernedly as possible. People increasingly fill their lives with consumption instead of being engaged with reality. In this way, technology patterns people's lives: it stimulates the replacement of engaged practices with the consumption of commodities. This pattern of disengagement in people's everyday lives Borgmann calls the 'device paradigm'. His icon for explaining consumption as the technological way of taking up with reality is the 'couch potato' - a person passively watching television without being actively engaged with the reality that surrounds him or her.

According to Borgmann, this rise of consumption as a way of living forms the 'irony' of technology. Whereas technology promised to disburden and enrich people's lives, in fact it takes away people's engagement with reality. Technologies fulfill their promise of enrichment and disburdenment in such a way, that the disburdenment they offer impedes true enrichment.

Against this disengaging way of taking up with reality, Borgmann stresses the importance of 'focal practices', centered around 'focal things'. Borgmann does not want to return to a pre-technological situation, but to formulate a complement to the technological pattern in people's lives. Focal things are things that invite engaging ways of dealing with themselves. They ask people to be present in the fullness of their capacities. Borgmann's paradigmatic example of a focal practice is running. Running is an intensive way of being present in the environment one runs through; one is mentally and bodily engaged. Practices like this, according to Borgmann, can counterbalance the disengaging forms of consumption that have come about in our technological culture.

Borgmann's analysis of the relationship between technology and consumption can be criticized, however. But before I do this, I will first explain how his philosophy of the device paradigm informs his analysis of information and communication technologies in *Holding On to Reality*.

Information, Technology, and Reality

In *Holding On to Reality*, Borgmann develops a philosophical analysis of information. He understands information as a relationship between humans and reality. Information consists of signs, which, within a certain context, inform people about things in reality (Borgmann 1999, 22). A sign, therefore, is no thing, but 'the promise of some thing': it constitutes a relationship between humans and reality. Borgmann distinguishes three types of information: natural information, cultural information, and technological information. Each type in its own way shapes a connection between humans and reality.

Borgmann defines natural information as 'information *about* reality'. It consists of signs that tell us something about the world we live in, like smoke tells us there is a fire somewhere, and tracks on a road tell us that people or animals went there before us. Information about reality is conveyed by 'natural signs', like smoke, or tracks.

Natural information, one could say, is the way reality expresses itself to humans - it is what makes reality understandable and inhabitable for human beings. In Borgmann's words: 'a sign cannot contain a thing entire; but, given human intelligence, it can convey and provoke the impression a thing would leave on a person' (29). Of all signs, natural signs are closest to reality. Phrased in the vocabulary of *Technology and the Character of Contemporary Life*, natural signs are the medium of the eloquence of reality, and therefore they form the basis of engaging practices. His approach to information from the perspective of engagement with reality even brings Borgmann to a new definition of 'reference,' which he sees as 'the tie between signs and things' (59). 'When language informs us about reality,' Borgmann states, 'it does not picture what is remote in time, space, or conception, but reminds us of the eloquence of things or prompts us to imagine their voice' (73).

Not all signs are natural signs, though. Besides information *about* reality, Borgmann also discerns information *for* reality. This type of information he calls

cultural information. It consists of 'conventional signs': signs that cannot be found in reality itself, but that were created and distributed by humans, like letters and texts, musical notes and scores. Cultural information is no expression of reality, but an invitation to realize and shape it. Writing is perhaps the best example of cultural information. A text and a musical score are information *for* reality. They demand realization: a text has to be read, aloud or in silence, and a score has to be played.

The role of cultural information in people's engagement with reality is ambivalent. There is a delicate balance between signs and things. According to Borgmann, cultural signs can stimulate engagement with reality, but they can also be 'in the way of things'. Writing, he states, 'allows for an endless accumulation of information, and unchecked accumulation leads from perspicuity - the signal benefit of natural information - to confusion' (49). Conventional signs can give access to the 'commanding presence' of reality, but they can also conceal it by being confusing or distracting. Playing the piano and reading literature are examples of engaging practices that come about through cultural information, whereas reading an advertising brochure to pass the time is not.

Natural and cultural information form the background against which Borgmann's third form of information can be understood: technological information. This form of information is of more recent date. It is produced by technological devices. These devices do not provide information *about* or *for* reality. Information technologies provide information *as* reality. The information on a compact disc is not a report about a concert, nor does it contain instructions how to play the concert yourself. When a compact disc is played, the information it contains is realized as reality. When playing a CD, you listen to music.

The tie between signs and things, which played a crucial role in both natural and cultural information, is cut through in technological information. According to Borgmann, technological information is not capable of engaging humans with reality, for the simple reason that it does not contain any tie to actual things. It constitutes its own reality, which, in Borgmann's words, is 'hyperreal.' It is more real than reality itself, in that hyperreality is qualitatively superior to actual reality: it is present at our command, and it is so in a more perfect way. When playing a CD, one does not have to visit a concert to listen to Bach's cello suites, and the sound of the cello can be modified at will so that it can be experienced more clearly and richly than in a concert hall. As opposed to natural and cultural

information, technological information therefore does not give us *access* to reality anymore - it *replaces* reality.

Technological information, however, is fragile, Borgmann holds. The media that hold information can wear out, or become obsolete when new types of information storage are developed. Most LP records from the pre-CD era do not sound as perfect anymore as they did when they were new, and in a century from now probably nobody will have a device at his or her disposal to play them. (cf. 195) Moreover, information technology is culturally parasitic: it necessarily is a representation of the real world, and this representation is always limited.

The real danger of information technology, however, is not the fragility of technological information, but the risk that it will 'overflow and suffocate reality' (213). Technological information, according to Borgmann, increasingly substitutes for reality. But the virtual worlds in which we more and more often find ourselves, lack the eloquence and engaging power of actual reality. In the era of information technology, natural and cultural information, according to Borgmann, run the risk of becoming mere utilities for technological information. In that case, their disclosive and transformative power, which they have as media of the eloquence of reality, would get lost (219).

Borgmann notices the same ironic turn here that he described in *Technology and the Character of Contemporary Life*. 'The promise was that information theory would allow us to measure, control, and enhance information about reality and so enlarge and enrich the scope of human experience' (133), as Borgmann states. Information technology makes information 'pliable by digitizing it', 'abundantly available by collecting and storing astronomical amounts of it', and puts it 'at our disposal through powerful processing and display devices' (170-171). But information technology did not keep its promise. Instead of enlarging our engagement with reality, it creates a new 'reality' that is easier to experience and qualitatively superior, but that is parasitic on reality itself and fails to engage us. Technology makes information available, but strips it of its tie to reality.

This state of affairs challenges us to 'commensurate the fluidity of information technology with the stability of the things and practices that have served us well and we continue to depend on for our material and spiritual well-being' (201). The crucial task in the information era is 'righting the balance of information and reality' (221). 'Nothing so engages the fullness of human capabilities as a coherent and focused world of natural information' - and: 'Analogously, nothing

so concentrates human creativity and discipline as the austerity of cultural information, provided the latter again is of the highest order, consisting of the great literature of fiction, poetry, and music' (219-220).

Beyond Alienation

Borgmann's philosophy of technology thus centers around the concern for engagement with reality. Technology threatens this engagement by inviting a consumptive way of taking up with reality and by replacing reality with technological information. Many aspects of his philosophy are very illuminating, and his approach to technology in terms of concrete technological artifacts, instead of taking 'Technology' as a substantive entity, overcomes a major problem in classical philosophy of technology.

But in some respects, Borgmann's position is a continuation of classical philosophy of technology as well. The classical positions in the field, like those of Heidegger, Jaspers, and Ellul, all contained a variant of what can be called the 'thesis of alienation'. Each in its own way claimed that technology would alienate humans from what they 'really' are or what reality would 'really' be. Borgmann's approach is quite comparable to this. In his view, technologies estrange humans from reality, by replacing it with a hyperreality and by evoking consumptive instead of focal practices. In this way, technology does not enrich human life but reduces it. This thesis of alienation is highly problematic, not only because it romantically presupposes the existence of an 'authentic' way of existing and taking up with reality, but also because it makes an empirical claim that is at odds with empirical reality.

Borgmann's diagnosis, therefore, can and needs to be challenged. I will do this by showing that his concept of 'engagement' undergoes a shift in meaning during the development of his argument, which makes the impoverishment technology would effect in people's lives at least ambiguous. Next, I will make clear that Borgmann's exclusive association of engagement with non-technological 'things' and of consumption with technological devices is not entirely adequate. The pattern of technology that Borgmann sketches and his analysis of information technologies do not do justice to the manifold and ambivalent role technologies play in people's everyday existence.

the ambiguity of engagement

The first line of criticism I want to develop here, is the shift of meaning that occurs in Borgmann's concept of 'engagement'. Borgmann holds that devices reduce people's engagement with reality, because they only invite consumption. People heat their house by turning the button of the thermostat; instead of cooking they assemble an instant meal; and their ways of traveling – by car, train, or airplane – do not require any effort. The engagement that gets lost because of this can be regained, according to Borgmann, when people devote themselves to focal things and practices. But when the engagement that gets lost by using technology is compared to the engagement people get back in the form of focal things and practices, it becomes clear that these two differ strongly. The engagement with 'things' that gets lost by consuming commodities consists in the efforts people had to make in a pre-technological situation in order to accomplish something. Whereas the engagement that is to compensate for this loss consists in 'focal practices': practices centered around focal things, that are intrinsically valuable and constitute meaningfulness.

'Focal things' represent an entirely different class of objects than 'pre-technological things', and focal engagement is an entirely different form of engagement than the efforts and pains of which technology disburdens us. Non-technological 'things' demand engagement in the sense that people have to exert themselves in order to do something with them. A thing is no mere means, but always demands attention, both for itself and for its environment - like a hearth demands that wood be chopped, that it be filled, poked, and cleaned, et cetera. As opposed to technologies, pre-technological things did not offer people the shortest way to reach an end, but involved them in the realization of it. Work had to be done to realize the end in question. The engagement focal practices evoke is of an entirely different nature. Efforts and pains are not crucial here for Borgmann, but meaningfulness. He speaks about focal practices in terms of 'orienting one's life' and 'realizing one's aspirations;' focal things are 'eloquent reality' and possess a 'commanding presence.'

A dimension of meaningfulness no doubt was part of dealing with pre-technological things as well, but it would be all too romantic to hold that the disappearance of drawing water and gathering wood implies a loss of meaningfulness. People did not undertake such activities because of their

intrinsic value, but because they served clearly defined goals - goals that can be realized differently with the help of technology. The tap and the central heating system render the efforts to draw water and to gather wood unnecessary, and because of this also people's contact with the woods and with the people they met at the well. *Focal* practices, however, never serve specific goals. They require effort and exertion, but these are not 'useful' like drawing water or gathering wood. They are meaningful in themselves, like playing the piano is, or preparing a delicious meal and eating it together. Focal practices consist in an existential engagement with reality, which takes place for its own sake.

By distinguishing exertion and meaningfulness as two forms of engagement, I do not intend to contest the relevance or importance of a perspective in terms of meaningfulness. It is not the dimension of meaningfulness in Borgmann's analysis that is problematic, but the ambiguity that arises because of the twofold meaning of the term 'engagement'. There is a major difference between an approach to technology in terms of the reduction of exertion, on the one hand, and the possibilities people have to lead a meaningful life, on the other. In his sketch of the device paradigm, Borgmann gradually shifts from the first meaning to the second. Devices do not only reduce the exertion that is needed to accomplish something, as it initially seems, but at the same they discourage focal engagement. The television-watcher, Borgmann's icon for the device paradigm, is not so much disburdened from the exertion that would be needed without a television set, but is invited to take part in a consumptive practice, that occupies the space that could also have been taken by focal practices.

The distinction between these two forms of engagement makes clear that, on the basis of Borgmann's theory, technology primarily leads to a reduction of exertion and only indirectly threatens focal engagement. By using a device instead of a 'thing', people can do what they want to do with less effort. Transportation technologies relieve them of the need to walk long distances, and agricultural technologies relieve the cultivation of the land and the risk of starvation. For focal practices, using a device can never be an adequate alternative, for the simple reason that such a practice is never straightforwardly directed at the realization of a goal for which technology could provide more efficient means. People do not run to move, and do not practice the culture of the table to alleviate their hunger.

Within the context of Borgmann's theory, therefore, technology does not directly erode focal practices. Focal practices can only be pushed aside *indirectly* by the

device paradigm: if people give up focal practices, they do not do this because they use technological devices, but because they are entirely submerged in the consumptive attitude that has come about by using technology. It can be doubted, however, that such an attitude is actually as pervasive in people's everyday lives as Borgmann suggests, and that it can be derived from the way of acting which these devices invite. When we take a closer look, it becomes clear that technologies are very well able to evoke engagement, both in the form of exertion and of focal engagement.

engaging devices

Whereas technologies commonly reduce the amount of effort needed to accomplish something, their impact upon 'focal engagement' appears to be more ambivalent. Those who travel by car do not need to walk or bike; those who use a word processor do not need to retype a text completely in order to write a new version, and those who use a washing machine do not need to wash by hand. But the role of technologies in focal engagement is entirely different. An electronic piano, for example, can be as engaging as an acoustic piano. Certainly, it disburdens people. It does not need to be tuned twice a year, it is easier to move than an acoustic piano, and headphones can be connected to it, which makes it possible to play the piano without disturbing the neighbors. Although the quality of its sound is not as good as that of most acoustic pianos, and although current models are less able to react adequately to the subtleties of a player's touch, electronic pianos can allow a person to be intensively engaged with music. Thanks to the existence of devices like this, many students have been able to keep playing the piano during their studies. Because students move very often, and usually share a house with many others, an acoustic piano is simply not an option for them.

Even the CD player, one of Borgmann's examples of consumption-provoking technology, is in many respects more engaging than consumptive. Thanks to this device, one can be intensively engaged with Bach's Well-tempered Clavier, and even hear several interpretations of it, without the need to find a pianist to perform it. Without a CD player, people would not be able at all to be engaged with music as much as they are now: they would be entirely dependent on live performances - albeit that the latter do have a surplus value in comparison with recorded music.

Thanks to devices like the radio, the record player, the television and the CD player, music is not elitist anymore, but one of the most broadly enjoyed forms of art. Since music has become technologically available, it has become impossible to say that youth have no interest in cultural things. Young people form a very large group of music lovers, who even have their own radio- and television stations. And for them, music is much more than a 'device' to create a pleasant atmosphere that enables them to dance. Young people also listen to music and watch video clips 'for its own sake'. This enhancement of engagement with music was already visible when the record player was introduced: everywhere associations of record amateurs popped up, and music magazines were started with announcements of new records, reviews, technical articles et cetera (Baudet 1986, 64).

Even television, Borgmann's paradigmatic example of consumption-evoking technology, is able to engage humans. Television engages not so much with its machinery - except perhaps for hobbyists - as with the content of some programs. Not all programs, after all, aim at distraction and entertainment. Thanks to current affairs programs, for instance, people can be concerned with parts of the world where there is hunger and war, and contribute financially or otherwise to relief and improvement. Thanks to literary and art programs, people stay in touch with contemporary cultural developments. And television has made movies into a form of art that is affordable for everyone. (It should be admitted, though, that contextual differences play a role here. The content of many commercial television stations in the USA is quite different from what is broadcast by public television in Europe.)

Moreover, the idea that watching television is solely an individual and consumptive activity is not adequate. Anyone who has watched live soccer or baseball with a number of people knows why. And anyone who finds party games engaging cannot reasonably raise objections against most entertainment programs, even though these seem to be the first to deserve the predicate 'consumptive'. Many such programs are broadcast at prime time, which makes it possible to participate in the TV game family-wide. In some cases, people can even enter a competition via telephone or mail (De Meyer 1994, 65-67). Perhaps it is because I do not have a taste for party games, but I cannot discern a fundamental difference here with an evening of playing 'monopoly' or 'sorry'.

In some cases, technologies even enhance engagement in the sense of exertion. The microwave oven, for instance, in many situations stimulates a consumptive

relation with food: the heating of ready-made meals - which are usually enjoyed individually - becomes very easy. But it is not always used for preparing fast-food. In many cases, it is simply integrated in the ordinary cooking practice. And then, it influences people's cooking habits quite differently. It does not disburden the cook, but rather demands more work. In the pre-microwave era, one meal was prepared for everyone. The microwave makes it possible to prepare separate portions, one with extra pepper, and the other one without salt, et cetera (Cockburn and Ormrod 1993, 143). This situation resembles the 'law of preservation of traveling time'. Just as the development of faster means of transport does not lead to a reduction in time spent on traveling but to an increase in the distance people travel, a faster cooking instrument does not lead to a shorter cooking process, but expands it.

These counterexamples show that Borgmann's sketch of the pattern of technology needs to be challenged. Technology does not only create distracted consumption, but also new possibilities for engagement. The 'device paradigm' can only be discerned on the basis of an incomplete picture of the role of technology in engagement. Beside the reduction of engagement, Borgmann does not detect amplification. Borgmann only shows one aspect of the implications of technology for engagement with reality. In doing so, he neglects the ways technology can evoke new forms of engagement.

New forms of engagement do not always occur, just as there is not always disengaged consumption. But the amplification of engagement is as much part of using technology as its reduction. From the simple fact that something came about in a technological way it cannot be concluded that it can only be a disengaging commodity. When Bach's cello suites come from a CD player, one can still be engaged with them. Technologies make things available, but from the fact that the road towards something is not engaging it cannot be concluded that the destination is not engaging either. Reduction of one form of engagement usually goes hand in hand with amplification of another.

These considerations remove the sting of alienation from Borgmann's theory. His thesis that technology by definition is at odds with engagement and invites consumption cannot be maintained. Technology's role in the relationship between humans and reality is *ambivalent*. Borgmann's sketch of the 'device paradigm' does not do justice to the role of technology in people's existence. Traditional technical 'things' relieved people's existence but at the same time engaged them with reality; in the same way, the disburdening character of

modern technological devices does not exclude the creation of new forms of engagement.

Yet, the very fact that Borgmann approaches technology in terms of engagement is of great importance for the philosophy of technology. As I will elaborate later in this article, engagement - both in its 'exertion' and 'focal' mode - should be seen as a *dimension of technological mediation*, instead of something that should be saved from technology.

information and engagement

Borgmann's diagnosis of information technology, as we saw, follows the same lines as his analysis of the device paradigm: he considers it a threat for people's engagement with reality. But here, the threat has a different origin. It does not originate from technology's supposed invitation to a consumptive way of *taking up* with reality, but from its *substitution* of hyperrealities for reality. Natural information - information about reality - is close to reality: it is the medium by which reality can express itself. Cultural information - 'information for reality' - is ambivalent: it can keep people away from reality, but it can also invite the coming about of focal practices like reading literature and playing music. Technological information, against this, is not information *for* but *as* reality. Information technologies deliver realities as commodities. At the click of a mouse button, people can enter virtual worlds in which all limitations of the real world are overcome.

While the problematic aspect of Borgmann's theory of the device paradigm was the ambiguous meaning of the concept of engagement, the problem with his diagnosis of information technology is that he attributes too much power to technological information. Borgmann's fear that information technology will reduce people's engagement with reality - the reason for his 'Holding On to Reality' - implies that he supposes that hyperreality will increasingly become a substitute for actual reality. And this is problematic, since 'compared with the vividness and interactivity of actual reality, virtual reality turns out to be a pale and brittle world and is bound to remain so,' as Borgmann states (Borgmann 198).

What Borgmann fails to see here, however, is that the role information technology actually plays in our culture, does not consist in offering a *substitute* for reality, but in *mediating* our involvement with reality and with each other.

And instead of estranging people from each other, many information technologies rather enhance their contact.

Email and chat software make possible forms of communication that did not exist before. This communication is not virtual, as the commonly used term 'virtual communication' seems to express, but real. It might be considered virtual because it takes place in a non-physical space, but in this it does not differ from a telephone call. Cyberspace, in most cases, is no substitute for reality, but a complement to it. People buy things over the Internet to use them in the real world; it provides them with news about the real world; and they communicate over it with people from the real world. The virtual worlds in which we can buy things, learn about reality and meet people, is continuously connected with actual reality. Borgmann's appeal to 'right the balance between information and reality' – in which he is clearly not seeking an equilibrium, but trusts on the weight of 'things' - is based on the misunderstanding that technological information and reality are at odds with each other.

This is not to say that information technology does not have any implications for people's relationship with reality. Quite the contrary. But these implications cannot be adequately analyzed when information technologies are only thought to produce substitutes for reality. Like other technologies, information technologies *mediate* people's relationship with reality - even if they produce a hyperreality. Internet shops, information websites, and virtual meeting places help to shape people's daily lives. They enable them to buy specific products, and sometimes discourage them to buy other; they shape people's interpretations of the world and their communication with each other. This mediating role of devices and information technologies needs to be analyzed in order to do justice to the empirical reality of technology.

The technological mediation of engagement

In both *Technology and the Character of Contemporary Life* and *Holding On to Reality*, Borgmann focuses on the ways in which technology impedes engagement. In order to challenge this position, I would like to analyze the relationship between technology and reality here – without giving up Borgmann's perspective on engagement – in terms of *mediation*. In this section, I will do this for the mediating role of technological devices; in the next section, for information and communication technologies.

My approach in elaborating the concept of 'technological mediation' will be phenomenological in nature. In order to avoid the problematic connotations that got connected with phenomenology during the past decades, I will define phenomenology rather broadly here as the analysis of human-world relationships in their existential and hermeneutic dimensions (Verbeek 2000).

The core concept of phenomenology is intentionality. This concept indicates the fundamental connection between humans and their world. Humans always experience their world, and this world is the only place they have to realize their existence. Conversely, for humans, reality can only be what it is when humans disclose it – by experiencing and acting in it – as a 'world'. Humans and world co-constitute each other. Humans are what they are on the basis of their interactions with and experiences of their world, and their world is 'disclosed reality'. Apart from each other, they remain undisclosed and isolated.

This human-world relationship can be approached from two sides. From the human side, it can be understood in terms of the way humans can be present in their world. From the side of the world, the relationship appears in terms of the way reality can be present for human beings. The first perspective is existential: it concerns the ways in which humans realize their existence in their world. The second perspective is hermeneutic in nature, since it concerns human interpretations and experiences of reality.

Borgmann's concept of 'engagement' can play an important role in this phenomenological approach. It indicates a specific modus of intentionality, a specific form of contact between humans and their world. This modus can be localized in the existential dimension of human-world relationships, as it indicates an aspect of human action: it concerns the way in which humans realize their existence in reality. Engagement is no property of humans, not simply a 'state of mind', it is a modus of the contact between humans and reality.

The phenomenological approach opens a specific perspective on technology. The human-world relationship that is central in phenomenology, namely, can be mediated by technological artifacts. For humans, technologies are never simply present as instruments. When fulfilling their function, technological artifacts always are a medium between humans and reality. A car is not simply a means to move from A to B; it also mediates the way humans experience the surroundings they drive through. These experiences differ largely from what is experienced when travelling by bicycle or by plane. A computer is not simply a means to

write and compose texts in an easy way, and to gather information and exchange messages over the Internet. It also mediates the way people write their texts (Ihde 1990 14-143), and the way they have contact with other people and with the world around them. Technologies actively help shape the relationship between humans and their world.

Technological mediation can be localized in both dimensions of human-world relationships that are studied by phenomenology. Hermeneutically, technologies mediate human experiences and interpretations of reality; existentially, they mediate human actions and their ways of being involved with their world.

On the basis of this basic phenomenological framework, Borgmann's theory of the device paradigm can be reformulated. This reformulation allows one to analyze the role of technological devices in people's relationship with their world in terms of mediation rather than alienation. When artifacts are used, they help shape *how* they are used, and therefore they actively contribute to the constitution of a specific relationship between humans and reality. The existential dimension of this relationship consists of the way in which humans are present in reality by way of their actions. These actions, on their turn, help to shape the ways in which humans can be involved with reality: their involvement can have the form of 'engagement' or 'consumption'.

From this perspective, the task of philosophy of technology is to analyze how technological devices mediate the involvement of humans with reality. And when analyzing the technological mediation of human involvement with reality, three types of involvement - comprising both 'focal engagement' and 'exertion' - should be distinguished: involvement with technological artifacts themselves, with the environment of artifacts, and with what is made available by artifacts. The involvement connected with a piano differs strongly from that of a hearth or a CD-player. A piano asks for interaction with its 'machinery', whereas a hearth evokes interaction with its environment: it demands that wood be chopped, and that it is cleaned regularly. A CD-player, in its turn, enables people to be involved with the music it reproduces.

The involvement with artifacts themselves is usually reduced by technologies, because they subordinate their machineries to their commodities. Technologies function well when they demand as little attention for themselves as possible, since people, after all, use them to be disburdened. But devices surely are able to invite involvement with themselves, both in a 'focal' sense - like an electronic

piano – and in the sense of exertion – like the instruments of a dentist that continually need to be cleaned and disinfected.

With regard to involvement with the environment of artifacts, the same holds true: involvement can be reduced by technologies, but usually technologies evoke new forms of involvement as well. The multitude of activities people had to undertake to accomplish something with a pre-technological thing – like gathering wood to use a hearth or walking to a well to draw water – becomes unnecessary when using a device. But at the same time, devices make possible practices in which there is a lot of involvement with the environment of the artifact. The efforts of employees of the Public Gardens Department are mediated by motor mowers, and the focal engagement of a dedicated cook is mediated by microwave ovens and hand blenders.

The ambivalent character of technology is most clearly visible in the third variant of technologically mediated involvement: involvement with the 'commodities' (in Borgmann's terms) that devices procure. Even though technologies often discourage involvement with themselves and their surroundings, in many cases they, nevertheless, invite involvement with what they make available. People can be focally engaged with the music that comes from a CD-player, and word processors allow them to be intensely occupied with the what-you-see-is-what-you-get laid-out text they make available.

From the analysis above, it becomes clear that the mediation of people's involvement with reality does not necessarily have the form of a substitution of consumption for focal engagement. First, a distinction should be made between 'exertion' and 'focal engagement'. Second, both forms of engagement are not simply replaced with consumption. People's involvement with reality is *mediated* when they use technological artifacts. This mediation always has a structure of amplification and reduction - like the technological mediation of perception, as Don Ihde elaborated: telescopes and spectrographs amplify specific ways of experiencing reality and reduce others (Cf. Ihde, 1990; Verbeek, 2001). Engagement, therefore, is not simply made impossible by technologies: devices can be just as engaging as things.

From a phenomenological point of view, the way 'engaging devices' are present for people is remarkable. When artifacts are used, they normally are present in a way that Heidegger has called 'readiness to hand' (*Zuhandenheit*). They do not ask attention for themselves, but withdraw from the intentionality relationship

between humans and reality. When hammering a nail into the wall, one's attention is not directed at the hammer but at the nail. Only when a tool breaks down, according to Heidegger, does it ask attention for itself. It then becomes 'present at hand' (*vorhanden*). Its presence cannot be avoided then: it cannot submerge in people's involvement with reality anymore, and has to be repaired if it is to be used again. Borgmann's theory, as elaborated above, makes visible that artifacts can be ready-to-hand in two distinct ways: in an engaging way and a non-engaging way.

And precisely this connection between readiness-to-hand and engagement is noteworthy. From Heidegger's work, ready-to-hand artifacts typically do *not* invite involvement with themselves, but *withdraw* in order to make possible involvement with another part of reality. Borgmann himself formulates a similar thought as Heidegger, when he states that the machinery of devices finds itself as much as possible in the background, to make sure people only have to do with what these devices *do* for them. If the artifact in question does not withdraw, so seem to be Heidegger's and Borgmann's thoughts, it is impossible to use it. It cannot be functional when it asks attention for itself.

The existence of 'engaging devices' demands a modification of Heidegger's and Borgmann's analyses of the way in which devices are present for people. Some artifacts, like pianos, appear to be able to engage humans in their functioning. In these instances, the intriguing situation occurs that artifacts at the same time ask for attention and withdraw from people's attention. When playing the piano, one attends to the music and at the same time is intensively engaged with the piano itself. When the same piece of music is played on a CD-player, the artifact that mediates between humans and music is present in an entirely different way. The machinery of the CD player disappears into the background, making sure people are only engaged with the music and not with the infrastructure that produces it. A piano, on the contrary, is neither exclusively ready-to-hand nor present-at-hand. Its machinery does not find itself entirely in the background, and not in the foreground either. Apparently, readiness-to-hand and presence-at-hand should not be considered as two modi of human-artifact relationships, but as the ends of a continuum within which these relationships occur.

To make things more complex, not only Heidegger's binary opposition between readiness-to-hand and presence-at-hand needs to be relativized, but also his thought that artifacts have to be ready-to-hand in order to be used. Artifacts can also mediate human-world relationships from a present-at-hand position. This

can again be illustrated with Borgmann's example of the hearth. A hearth is not 'ready-to-hand' when it is used; a hearth has an entirely different place in a human being's relationship with the world than a pair of glasses. A hearth does mediate the relationship between humans and their world, but it does not do so from a withdrawn position. It remains present, asking attention for itself. It mediates human action because it demands specific forms of interaction with itself: filling and cleaning it, sitting around it, et cetera. From a present-at-hand position, a hearth helps to shape the involvement of humans both with the hearth itself and with its environment.

Information and Engagement

The approach of devices in terms of mediation that was set out above also offers a framework for understanding the role of *information technology* in the relationship between humans and reality. Borgmann considers information technology a threat for human engagement with reality, because he fears technological information ('information as reality') will replace reality itself. As indicated above, this fear finds its origin in an overestimation of the nature of the role of information technologies in our everyday lives. The hyperrealities produced by information technologies are no realities people can or want to live in. They are no substitutes for reality, but augmentations of it, that are always 'inhabited' in service of reality itself. Virtual realities like flight simulators are used to prepare people for interactions with the real world; email, chat, and videoconferencing software enable people to have contact with other – real – people. The Cyberspace of the Internet is no space to live in, but a space in which humans do things to enhance their contact with reality itself. The connection between reality and hyperreality only gets lost when playing computer games – but this only differs gradually from the virtual world one enters, for instance, when playing monopoly.

Borgmann's distinction between information about, for, and as reality is very clarifying. But his thought that 'information as reality' threatens reality itself is problematic. Rather, technological information *mediates* human engagement with reality. In order to analyze this mediation, a distinction should be made between information technologies like virtual reality and Cyberspace, on the one hand, and information technologies that concern communication, like email, chat, and videoconferencing, on the other. These two kinds of technologies, each in their own distinctive way, mediate the relationship between humans and reality.

mediation of communication

An important part of technological information is information that mediates communication between humans: the text on a screen that forms an email or chat message, the moving picture with sound on a computer screen that constitutes a videoconferencing session. In fact, the term 'technological information', in Borgmann's sense of 'information as reality', is not entirely adequate here. Unlike virtual reality or the Internet, communication software does not provide an alternative reality, but a mediation of people's contact with reality. When reading and answering an email message, the computer and software that people are using are not the *terminus* of their experiences and actions but *mediators* of it.

This, of course, is not to say that information technologies do not influence communication. But this influence should be understood in terms of mediation, not of substitution. Mediation by communication technologies can be understood along the same phenomenological lines as sketched out above. The only difference is that what is mediated here are not human-world relationships but human-human relationships. In technologically mediated communication, there is no mutual constitution of humans and world, but of communication partners. Communication mediating technologies help shape how humans can be present for each other.

This mediation as well has a structure of amplification and reduction. Specific aspects of face-to-face communication, which can be taken as a reference point, are enhanced, while others are sent to the background, like intonations of voice, expressions of the face, and the possibility of physical contact. Beside this, new aspects of communication can emerge in mediated communication that do not exist in a face-to-face situation. Email, for instance, reduces the presence of other people to mere text, leaving out all physical, auditive and visual contact. But, on the other hand, it offers communication partners a possibility they do not have in a face-to-face conversation: to communicate in thoroughly considered sentences.

Communication technologies do not only constitute ways of being present, however. They also establish new *spaces* in which humans can be present. These spaces are the only virtualities in virtual communication: humans can be present for each other in spaces that do not exist in actual reality - but that nevertheless do exist. These virtual spaces were already there with the invention of writing, however, and more clearly with the development of the telephone. When engaged in a (letter or email) correspondence or a telephone conversation, the

communication process takes place in a world in which no matter exists, only information.

This information, however, is not 'information as reality'. Information, like the words on the paper or the screen and the sounds in the telephone, is a *medium* here between the communication partners in question. Communicative signs do not form a hyperreality with which humans can interact as if it were actual reality. If that were the case, these signs would have to be experienced *as signs*, which they are not. The information that plays a role in communication technologies is, in a sense, ready-to-hand. Like devices in use, they withdraw from people's attention, making it possible that engagement between humans comes about *through* them.

Mediated communication, therefore, involves two kinds of mediators: a mediating technology, like a computer, and mediating information. The way humans are present for each other is determined by the technologies by means of which they communicate, and by the signs which convey their messages. The mediating technologies determine what signs can be used, and together they determine how people can experience each other and interact.

mediating realities

The role of information technologies like virtual reality and the Internet in the relationship between humans and reality is entirely different. Here, technological information does not withdraw from people's experience in order to establish a relationship between humans and reality. Instead of being absorbed, it remains explicitly present. People do not interact with reality *via* a hyperreality, they interact with the information on the Internet itself, or with the virtual entities in a virtual reality. Instead of being ready-to-hand, technological information is present-at-hand here.

Yet, as indicated above, hyperrealities should not be understood as substitutes for reality. They do not *replace* reality, but help to shape our relationship with it. Technologies that produce hyperrealities, too, therefore, can be understood in terms of mediation. Just like other technological devices, they mediate how people experience reality and interact with it.

Hyperrealities do this in quite a different way than other technological devices, however. As opposed to communication technologies, they do not directly but

indirectly constitute a relationship between humans and reality. Hyperrealities cannot be ready-to-hand, but necessarily remain present-at-hand. They do not 'link' humans to reality in the way an email message or a videoconferencing session does. Only the technologies that help to 'inhabit' hyperrealities, like mouses, keyboards, and VR glasses and gloves, are ready-to-hand.

Hyperrealities can either be a place to practice situations that can occur in actual reality (e.g. in virtual realities that are designed as simulations, like flight simulators) or a virtual place where people can learn things about reality or buy things they can use in real life (as is e.g. the case with surfing the Internet, distance learning, teleworking, and teleshopping). All interactions with hyperrealities, except playing computer games, are explicitly intended to add something to people's daily life in actual reality.

This indirect mediating role of technological information also has a structure of amplification and reduction. Specific interactions with the real world, like going to the bookstore, taking classes, or taking lessons in an airplane, are reduced. But this reduction is always accompanied by an amplification of other interactions: reading books, being able to find a job, flying an airplane. Hyperrealities do not estrange humans from reality. They are a detour, but always have actual reality as their final destination. 'Information as reality' does not constitute a reality humans can or even want to live in. It changes our relationship with reality, like any other technology. But it does not offer an alternative to it.

Conclusion

Borgmann's philosophy of technological devices and information technology opens an important perspective on technology. As opposed to the tradition in the philosophy of technology, it analyzes technology in terms of concrete, technological artifacts. This makes it possible to do more justice to the empirical reality of technology than the transcendentalist positions in classical philosophy of technology did. Moreover, Borgmann's concept of 'engagement with reality' is very useful in a phenomenologically oriented approach.

Yet, Borgmann does not fully exploit the potential of his approach. His diagnosis that technological devices impede engagement and that technological information threatens human interactions with reality, does not do enough justice to the actual role of technology in people's everyday lives. Many counterexamples illustrate

that his analysis is too one-sided. Besides, his concept of 'engagement' appears to be ambiguous and should be refined.

The unspoken bottom line of Borgmann's philosophy is the thesis that technology alienates humans from reality. By elaborating in a phenomenological way the concept of technological mediation, an alternative for the 'thesis of alienation' can be found. Borgmann's distinctions between things and devices, and between natural, cultural, and technological information perfectly fit in such an approach. So does his concept of 'engagement', which can be interpreted as a specific modus of the phenomenological concept of 'intentionality'.

When technological devices and information technologies are analyzed in terms of mediation, it becomes clear that technologies do not alienate humans from reality, but help shape their relationship with it. In doing so, they amplify specific forms of engagement with reality and reduce others. Technologies are the link between humans and their world. In our technological culture, they are the means *par excellence* for 'holding on to reality'.

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