togetherness

thinking

Andrej Božič (*Ed.*)

THINKING TOGETHERNESS

Phenomenology and Sociality

Dr. **Andrej Božič** is research fellow at the Institute Nova Revija for the Humanities (Inštitut Nove revije, zavod za humanistiko; Ljubljana, Slovenia).

Andrej Božič (*Ed.*)

THINKING TOGETHERNESS

Phenomenology and Sociality

INR INSTITUTE NOVA REVIJA
FOR THE HUMANITIES

Ljubljana 2023

Table of Contents

table of contents

7

TECHNOLOGIES AND CONTROVERSIES

Joaquim Braga

On Don Ihde's Concept of Technological Background Relations

Abstract: The paper has two main parts. In the first one, I expose Don Ihde's concept of background relations and show the phenomenological foundations inherent to its application in the technological domain. The second part is devoted to the review and expansion of the concept, having as its major reference the social-based principles involved in technological mediation processes. In order to make it more inclusive and decenter it from the individual sphere of technology users, the introduction of a third-person perspective in the analysis of technological relations, in general, is proposed.

Keywords: artifacts, focal perception, non-focal perception, sociality, technosphere.

1. Introduction

The idea that technological artifacts—especially those on digital inscription surfaces—trigger sensible experiences devoid of the relationships that we normally have with their materiality has been growing as a theoretical tendency. Such a tendency is manifestly evident in new media theory. Many of its assumptions are based on the metaphor of the material disappearance of media and the consequent suggestive fusion with the users' body to the point that mediation processes themselves become processes of "immediacy" (Bolter and Grusin 1999). The articulation of the discourse on immersion technologies with that of traditional picture theory—which almost always disregarded the material aspects of mediation in favor of the relationship between picture and

joaquim braga

the represented object—further reinforces the misleading conception that the core of technologically mediated relationships is restricted to the domain of representation and the effects it causes.

Don Ihde's vast philosophical work on technology is not centered on artifacts themselves or the way many of them represent phenomena, but rather on the typology of human–technology relations that through them occur and make possible the processes of technological mediation. In the spectrum of such relations, Ihde introduces a unique form of mediation, through which the technological devices themselves create the empirical context of human experiences. Namely, in *Technics and Praxis: A Philosophy of Technology* as well as in *Technology and the Lifeworld*, Ihde designates this phenomenon as "background relations," since, unlike other mediated relations, they do not imply a specific and direct involvement with the devices that support them. It is, rather, the very materiality of devices—such as, for instance, that of lighting, heating, and cooling systems—that engage human perception, regardless of the use given to them.

460 So, it can be inferred from this that background relations make a major contribution to evaluating the techno-myth of immediacy. Although current technologies try to be more transparent—that is, materially less visible—, background relations continue to be part of our empirical social contexts and influence the spheres of sociality. It is important, therefore, to think about how these technological dynamics are carried out and how they are inscribed in our social relations. Since what is implicit in the background relations is the possibility of decentralizing technology from the individual sphere and extending it to the social sphere. They are, in this sense, technological relations that go beyond the private use we make of artifacts, and shape the environment and the atmosphere of the environment as well as determine the constitution of public spaces for social interaction. With the enlargement of background relations to the sphere of social interactions it is intended, in turn, to go beyond the causal and essentialist Aristotelian model, by which it is only the technological function of artifacts that defines their use.

2. Focal and non-focal human–technology relations

Starting from the criticism of the *camera obscura* epistemological model, in which the Cartesian cogito of philosophy is still anchored, Don Ihde, with his notion of embodiment, tries to rescue the experience of the world and in the world from the perspective of subjective consciousness. This methodological step transforms, according to Ihde, the phenomenological analysis itself into a *post*phenomenology, since, although the concept of intentionality is not set aside, there it entails a replacement of the primacy of mind subjectivity by the embodiment relations (Ihde 2010, 42–43). Placing intentionality in straight articulation with materiality, embodiment relations are defined by him as "those human actions *through* technologies directed at some effect in our environing world" (ibid., 43). But this process of desubjectivation means, *ab initio*, that a new ontological approach has to be presupposed, namely, it is required, in Ihde's own words, "an 'ontological turn' towards an inter-relational ontology" (ibid., 65). The interactions that occur between humans and the world are, thus, inscribed in the world and embodied by humans, due to the effective role of materiality; and, theoretically, this fact indicates that materiality should be included "into the notion of intentionality itself" (ibid., 66).

461

Ihde uses the "figure–ground" nexus of Gestalt psychology and phenomenological analysis to formulate two levels of human–technology relations. The first level encompasses three types of focal human–technology relations—*embodiment relations*, *hermeneutic relations*, *and alterity relations*—, which result from the development of the perception of a foreground. To sustain the articulation of technological mediation processes with *embodiment relations*, Ihde presents, in most cases, schematic formulations based on visual perception and optical artifacts, such as the following: "I see—through the optical artifact—the world." (Ihde 1990, 72.) The more transparent the technological medium used, the greater the degree of embodiment. This means that, in the acquisition of transparency, there is an ongoing process of quasi-fusion of the user with the artifact, from which arises the "*doubled desire*" of "total transparency" and "total embodiment," and through which technology can "truly 'become me'" (ibid., 75).

In *hermeneutic relations*, perception is articulated by interpretation in the sense that the user plays the role of interpreter of the "text," through which the artifact becomes operative and the world "readable," as, for instance, in the case of the thermometer and other measuring instruments. Although they are, in many cases, inclusive—since there is no interpretation without a focal perception—, if in embodiment relations the quasi-fusion processes occur in the user's sphere, here, in the realm of hermeneutic relations, they tend to be given by the narrow coupling of world and technology.

The third type of human–technology relations arises with the concept of "technology-as-other" (ibid., 98), which Ihde designates as *alterity relations*. In fact, these relations are only evocative of the presence of the other, as in the case of interactions in video games and digital voice assistants. What they show is, above all, the anthropomorphic nature that tends to acquire the user's connection with the artifact, regardless of its reference to a world. Now, for Ihde, despite techno-fantasies have always fabulated the elimination of the human–machine interface and even though quasi-alterity is increasingly suggestive, there is never a total material and sensible disappearance of the technological medium—this one, on the contrary, remains "as a recognizable medium" (ibid., 106).

The triadic relationship user–artifact–world is, consequently, the theoretical core of the phenomenological analysis of technology proposed by Ihde. However, human–technology relations are not reduced to focal perception. Firstly, because, as Ihde refers to the formation of the visual field, "*there are no things-by-themselves in the realm of visual experience,*" and since, also, "*all items that appear do so in relation to a background and in strict relation with that background*" (Ihde 2012, 37). Inversely to focal relations, non-focal relations establish that technological level inherent in the background, and, therefore, are named by Ihde as *background relations*. Despite this, he finds a general tendency to overlook these relations, particularly in the way we analyze linguistic phenomena from an exclusively syntactic and semantic point of view. There, in the domain of spoken language, "the sonorous quality of speech" is undervalued—and this is justified, in large part, by the "tendency to forget backgrounds and to abstractly believe that one can attend to a thing-in-itself" (Ihde 2007, 138).

Bearing in mind the idea of focal attention, we can, therefore, assume as a distinguishing parameter between foreground and background relations the following main categories:

1. focal perception: *foreground relations*—▶transparency *vs.* opacity;
2. non-focal perception: *background relations*—▶presence *vs.* absence.

This parameter of distinction proposed by Ihde should not prevent us from seeing, between the two types of relations, inversion and overlapping occurrences. While, in foreground relations, stability in use and function dictates the transparency of the artifact and is only broken when, for dysfunction reasons, its opacity is required, in the case of background relations, the presence of the artifact can be reversed to foreground—even if only momentarily—, if there are also material problems with its functionality. In both cases, there are, as it were, technological effects of *material resonance* that modify the sense of the foreground–background order.

As with many technologies, automatic and semi-automatic devices— although they require a first handling and a certain control in their programming by the user—have a cybernetic operativity that allows the alienation of focal perception. This fact, however, does not mean that the user is indifferent to the environment generated by the artifact. Quite the contrary, the environment becomes an integral part of the user's empirical context. The best example of the relevance of the created environment is, precisely, given by those technologies whose main purpose is to impose a physical separation in space. When we build a house—and however much it can be designed according to ecological architectural criteria—, we are dividing the space into an internal and an external environment.

What is, however, certain is that Ihde reinforces the idea of embodiment relations through the establishment of a discreet empirical space, to which the material elements that allow technological mediation itself are allocated. Such discreet space—the one of background relations—is, therefore, also a consequence of the embodiment possibilities given by the use of artifacts. In other words, embodiment arouses the material invisibility of artifacts; an example of this are those truly comical cases, in which someone thinks he/she has lost

463

his/her glasses, when, in fact, he/she already has them on. Ihde describes this kind of invisibility of devices in the same way phenomenological analyses characterize the ambiguous ontological status of pictures—technology is, here, a *present absence* in the sense that it couples with the environment and is no more able to be fully individuated by human attention. Because they have such bipolar nature (presence and absence), background relations transform, with greater subtlety, the ways we perceive and act in the world. In our era, the growing automation of technological devices means that human intervention in their use is not continuous and, consequently, there is also no full conscious attention to the effects they may produce. Sometimes, it is only due to situations, in which technologies or their energy sources collapse, that we have a real perception of their inscription power in our environment.

3. Reduction, amplification, and perception

Using the epithet "phenomenological materialist" in the broad sense, Ihde seeks to conceive the embodiment relations according to "a phenomenological and multidimensioned sense of body" (Ihde 2010, III–IV). Hence, he has, also, always as a basic phenomenological presupposition the idea that, in the activities of perception, there are never isolated sensory modalities. Unlike traditional epistemology, which deals with the apprehension of phenomena according to the one-dimensional sensory order, this assumption shows us, above all, the impossibility of conceiving of an experience, technologically mediated or not, as being purely visual or purely auditory. However, when it comes to creating focal awareness, there is a kind of deceptive absence of sensory modalities that are not in the foreground. This fact is already part of the main perceptual effects of focal attention, that is, "the very ability to focus helps to enhance the quasi-illusion of a pure visual phenomenon by subduing the other sensory dimensions" (Ihde 2002, 38).

Notwithstanding such "quasi-illusion," Ihde claims that the multisensory feature of perceptual experience is never eliminated and remains always linked to the embodied relations with the environment, even in those contexts where there is a strong prevalence of the visual (ibid., 38–39). As in the case of silence and speech, focal perception does not eliminate what remains in

the background. The act of focusing presupposes a selection of what is in the observation field, but this, instead of being suppressed, is placed on a lower perceptual level (Ihde 1998, 73). To put it another way, the unselected possibilities configure a latency *locus* within what is the object of attention.

As in the paradigmatic case of the *camera obscura*, technologically mediated perception obeys the criteria of "reduction" and "amplification." The first that allows the second by selecting and unifying what is dispersed in our observation field. These two criteria can also be applied to certain background technologies, whose main function is, according to Ihde's terms, to "texturize" the cognitive environment in a different way, thus giving it an individualized technological configuration (Ihde 1990, 112). Many of the technological devices that operate simultaneously in the double field of background and foreground mark the rhythm of time experience and of technosphere itself—as if they would form a kind of music. According to Ihde, instead of disappearing completely and despite the distinctive nature of the phenomena, how one observes and experiences a non-technological environment remains untouchable and archetypical, even with the transition to the technological environment. What really changes are the entities that shape the relata. The "whir of the heating and air-conditioning machinery, the hum of the lighting, and the electronic whine of the technosphere" replace the winds and tides of the "wild world" (Ihde 2007, 87).

Furthermore, in *Existential Technics*, Ihde asserts that "for a technology to function well, it must itself become a kind of barely noticed background effect"; this happens, to a large extent, "so that human action which is embodied through technology can stand out" (Ihde 1983, 51). The elimination of noise caused by the presence of the artifact increases, according to him, the "transparency" effect of technology, since, as with communication devices, "the better it functions, the more likely it becomes that we may simply grow used to its functions and 'forget' that it is there and that it is a significant element in our mediated communication situation" (ibid., 52). However, instead of being just mere noises negatively determining focal attention, technosphere sounds generate "an auditory texture and background that provides an auditory stability to the world"; both the absence of this stability and the sudden change in its rhythmic nature can trigger several psychological effects, such as those

related to "human anxiety" (Ihde 2007, 87). When this rhythm is altered or no longer felt, there may even be significant changes in the perception of technological devices' effects, to the point their effectiveness is jeopardized. Ihde illustrates this fact—which constitutes a technological effect of material resonance—with the following expressive example:

> In Cambridge, Massachusetts, a number of years ago, a church installed a very advanced air conditioner. Yet the congregation continued to feel hot even though the temperature and humidity gauges indicated all was well. It was only after the engineer discovered that they couldn't hear the reassuring presence of the machinery that the problem was solved. An artificially produced fan noise soon made all feel comfortable, and the air conditioner was "felt" to be effective. (Ibid., 87.)

Because they have an extremely stable structure and are, therefore, subject to greater recurrence, technosphere sound rhythms provide identification patterns of time and space by standardizing and balancing what can be perceived and experienced (ibid., 87–88).

Taking into account the "dreams of totalization" (Ihde 1990, 119) that technology inscribes in our relations with the world, the background–foreground interchanges are equally applied, by Ihde, to nature and culture: if "nature is at best a background, often spectacular but not itself a force to be reckoned with," in the opposite pole "what is foreground is totalized culture" (Ihde 1983, 21). In an increasingly technologically mediated world, where the technosphere assumes both a macro-dimension and a micro-dimension—as in the case of the environment created by motorhomes—, this shift from large to small scale signals the emergence of "technological cocoons" and, with these, "the trajectory of our civilization to totality" (ibid.). Still, for Ihde, the dreams of totalization would be fully realized if there were an "inversion in which nature is itself taken into culture" (ibid., 22) through means, by which there is, for us, no longer a substantial difference between them. One of the artifacts' most immediate effects that have a great impact on our environment is, precisely, that the world itself becomes *a world of technology*.

In fact, as Ihde rightly asserts, "in an increasingly more complex technological society more and more human–machine relations take on 'atmospheric' characteristics in terms of the machine background" (Ihde 1979, 13). Such background relations, in turn, substantiate our environment as a true technosphere working as a sort of casing "in part the way technological artifacts do literally for astronauts and deep sea investigators" (ibid., 14). The desire for a technological cocoon on a global scale is, therefore, part of the effects of the desire for technological totalization as well as the atmosphere of fear that invades human beings' concerns, such as those related to disasters caused by war or climate changes. As mentioned by Ihde, "fears of breakdown on a large scale become fears of technologically textured societies"; the spread of these primary emotions actually represents "a subtle but clear replacement or at least equivalence of past threats largely from natural disasters" (Ihde 1990, 116).

However, we must see in this desire to artificially recreate the world a consequence of background relations, that is, of making them a process similar to that of embodiment relations, namely: the quasi-fusion of technology users is not just about artifacts but also about the world itself. It is also here, in the technological coupling of the background with the foreground, that human–technology relations—focal and non-focal—acquire new dynamics among themselves and, consequently, encourage the appearance of new technological mediation forms. The idea of a technological cocoon, in its several material shapes, already reveals such coupling and such new dynamics. What begins as a reduction of the macrocosm and transforms into an artificial microcosm, simultaneously enhances the idealization and conception of beings—such as the bionic ones—that easily adapt to the technological cocoons and, in turn, assert an absolute existential connection between life and technology (ibid., 116–117).

5. Expanding the concept of background relations

Later, Ihde will acknowledge that his conception of human–technology–world relations was first fully anchored in a "praxis-oriented analysis, although not sociological. It was instead phenomenological with an emphasis upon how

scientists and others were bodily-perceptually engaging a world through instruments" (Ihde 2015, XII). Although he has the merit of having introduced the concept of background relations to identify some significant parts of the technological universe that, without it, would not be conceptually intelligible, it is imperative, however, to overcome this "laboratory" point of view and broaden its theoretical scope. Despite trying to introduce new dynamic elements among technological relations, the criticisms that have been made to the conception proposed by Ihde are, for the most part, still centered on the use of artifacts (Verbeek 2008; Nørskov 2015).

Starting from the phenomenological analysis of the relationships between human beings and the world, as well as the phenomenological concept of intentionality, Ihde places technology at the center of both, which means, above all, that technological artifacts allow a particular mediation between "subject" and "world" that otherwise would not be possible. Peter-Paul Verbeek, however, draws attention to the important fact that Ihde's formulation "appears to suggest that he takes as a point of departure humans already given as such and a world already given as such, in between which one can find artifacts" (Verbeek 2005, 129). That is, although Ihde does not explain it as such, in an explicit and developed way, the concept of "mediation"; Verbeek states that it should be understood as "the mutual constitution of subject and object" (Verbeek 2005, 130) and not, on the contrary, as a simple connection process between two distinct and previously given entities.

Now, despite these improvements proposed by Verbeek, both the idea of "subject" as well as the idea of "world" is still reductive; essentially, because relations between humans and technology should not be restricted to those that directly occur with the use of technological artifacts. In order to go beyond this sphere of individual use, here we present, in the following steps, five key points that should serve to broaden the theoretical scope of background relations.

Firstly, Ihde positively evaluates background relations, not exposing the potential negative dimensions that they imply in the lives of both technological users and non-users. On the contrary, as can be read in the following passage, Ihde highlights, first and above all, the discreet nature of technological environments:

> As we live and move and engage with an immediate environment, much in the environment is unthematized and taken for granted. And, in any technologically saturated "world" this background includes innumerable technologies to which we most infrequently attend. Once the cold weather begins I turn up my thermostat and once started do not attend to it at all— unless it goes off or breaks down in the Heidegger "breakdown" mode. Once the lights are on, they can be taken for granted until bedtime. Technologies are simply part of our environment. (Ihde 2009, 43–44.)

This positive environmental conception of background relations is already present in the idea that, by being discreet and almost unobservable, they allow us to perceive the world without having to perceive the artifacts. However, if, for the formation of focal attention, background relations seem to be fundamental and place users in contexts of technological mediation, on the other hand, in the case of non-users, they can have the opposite effect and jeopardize the perception of the world. Ihde mentions the quasi-alterity features generated by technological mediation, but, as we have seen, they are only applied to the practical interactions between humans and artifacts. Now, as the theoretical approach to technological relations is, here, still based on *the first-person perspective*—that is, I–Artifact–World—, the enlargement of the concept of background relations implies, from the outset, the addition of *a third-person perspective*. To live up to this claim, a common principle of sociality then needs to be followed: the materiality of artifacts always exceeds the intentionality domain of their users and encompasses the observation domain of non-users.

Secondly, Ihde, by conceiving the idea of the technosphere in close analogy with the "naturesphere" experienced by human beings in some everyday situations, largely confines background relations to articulated and uniformed environmental contexts. In a direct experience of an urban scenario or a country scenario, there are, without a doubt, atmospheric qualities revealed and embodied. These constitute, strictly speaking, the most elementary level of our perception of the world. However, if in lower-mediated environments there persists a certain symbiotic articulation and continuity among atmospheric experiences, in the case of hyper-mediated environments, the same rarely happens. Conversely, what these typically urban scenarios reveal to us is a

broad cognitive contrast among atmospheres, which, although aroused by technological mediation, do not have the same aesthetic features, such as the degree of intensity, noise, and sensory saturation. The sound of a car does not aesthetically articulate with the sound of an airplane in the same way that the song of a bird harmonizes with the sound of trees being blown by the wind. As much as there is nowadays a growing tendency to apply ecological engineering principles in the construction of machines and technologically mediated environments, the technosphere remains full of background relations lacking a common and harmonious sensible order. Accordingly, relations generated among different artifacts, namely the material resonances exposed during their use, simultaneous or interspersed, can affect the formation processes of focal attention itself. Although one can be enclosed in one's own working space, without major external environmental disturbances, the "I-user" will always be subject to the relational occurrences among the artifacts he/she uses to carry out his/her tasks.

Thirdly, Ihde conceives background relations as the immediate and direct

effects aroused by technological artifacts. But if this conception can be perfectly applicable to all instruments whose material and operative nature is self-sufficient, the same cannot be said of those devices that, to function, depend on other technological sources and processes. For instance, a machine, supported by an electrical energy source, discloses references to indirect background relations, such as those that can be experienced in the context of the hydroelectric dam where the energy is produced. The acknowledgement of those elements that, although making the machine work, remain spatially and temporally far from it, means, in turn, not to reduce background relations to the visual model of the simultaneity of the foreground with the background. The latter does not always have to be constituted in close direct articulation with the former. Viewed in this way, we must not lose sight of the fact that the technosphere is full of machines whose main function is to be background technologies for other machines.

Fourthly, another relevant aspect we need to take into account concerns the cognitive changes that may arise with the focal inversion of the foreground–background relations. Ihde, in some passages of his books, acknowledges the relativity of such relations and the consequent possibility of their inversion, as

it happens in painting. But, as has been a practice reiterated in technological analysis in general—like, for instance, in Marshall McLuhan's media theory—, the theoretical emphasis is, above all, placed on the functional operativity and pragmatic purpose of artifacts. In order to understand the potential inversions in the foreground–background relations, it is also necessary to conceive the materiality of artifacts beyond the limits of technological intentionality and extend it to the aesthetic possibilities displayed by the artifacts themselves. This phenomenon tends to be fully visible, when the artifact, in addition to fulfilling its technological function, becomes an object of ostentation, enhancing feelings of possession, control, and social distinction. Both for its user and any observer there is a cognitive primacy of what is in the background over what is in the foreground. That such primacy may have as its main cause an assumption of power, it also inevitably means that background relations must be conceived not only as strictly perceptual relations, but also as power relations in the true Foucauldian sense of the term. This case, illustrated by ostentation, also yields a new meaning of articulation for the "presence–absence" polarity, insofar as, instead of becoming discreet or even imperceptible, the presence of the artifact, as a material object, is substantially reinforced.

Fifthly, and finally, when they are thought of from a third-person perspective, in which the use of artifacts is coupled with their social observation, background relations can undertake a generative technological profile. It is very common today, especially in large urban centers, to see people making massive use of certain portable devices just to mitigate and abstract themselves from the entropic effects caused by hyper-mediated environments. The best example of this is, perhaps, the growing use of headphones as a way to avoid the noise of car and airplane engines, ambulance sirens, and pneumatic hammers. One escapes, in a sense, from one technology with the help of another, replacing a harmful background presence with one more pleasant to our perception. Here, we can freely accept Peter-Paul Verbeek's formulation that "humans do not choose technology; rather, technology forms the background for their choices" (Verbeek 2005, 179).

In a third-person perspective, the world is not, consequently, a set of phenomena that, due to the mediation provided by technological artifacts, is reduced in order to be amplified; it is not a mere scientific laboratory where

technology and its effects are fully ordered and harmonized. The concept of "world" comprises more than that, insofar as it includes the observers themselves—as well as their social relations—who, directly or indirectly, are in contact with the effects of technological mediation.

6. Final remarks

Philosophy of technology has almost always conceived theoretical approaches to the intentional use of artifacts, thus omitting the observation level that non-use makes possible. As can be seen in Ihde's philosophy, even with the inclusion of technological mediation processes in human–world relations, the epistemological model of "subject–object" is not completely overcome. Both the human being and the world tend to be conceived from the one-dimensional cognitive point of view, which excludes the effects of technological relations in the lives of others, namely that of non-users. Of course, on the phenomenological level of the "I-user," as we have seen, focal attention tends to suppress the material presence of artifacts and their environmental consequences. The intentionality that typifies the use made of technology introduces, according to Ihde, a double process of amplification and reduction, divided into what one wants to see or do and what one does not want to see or do. In general, it seems to be acceptable evidence that focal attention implies an environmental abstraction. This issue, however, takes on another form with the entry into the scene of non-users—instead of being mere passive spectators, they are potential observers of the events that take place in their *milieu*.

472

It can be said, without any reservation, that, nowadays, in most cities in the world, where artifacts, in addition to their status as means, are already an integral part of urban scenarios, the most primary and immediate technological experience is given by background relations. They are as embodied by us as the glasses we wear to read a book; they allow us, for instance, to choose the steps we take to get around in a certain place and thus, by an authentic distance–proximity calculation, avoid or approach certain environments. Their importance is quite immeasurable, especially in a hypermediated era, in which, with the advent of portable micro-technologies and telecommunications, many of the new artifacts operate isolated from public spaces or inscribe in

them relational dynamics that are barely visible according to our traditional theoretical observation criteria. Without eliminating their fundamental role in understanding the technological universe and taking into account this last fact, it will always be a demanding theoretical task to identify the inscription power of background relations both in our environment and at the core of our social relations.

Bibliography

Bolter, Jay David, and Richard Grusin. 1999. *Remediation: Understanding New Media*. Cambridge, MA: The MIT Press.

Ihde, Don. 1979. *Technics and Praxis. A Philosophy of Technology*. Boston Studies in the Philosophy of Science. Vol. 24. Dordrecht: D. Reidel Publishing Company.

---. 1983. *Existential Technics*. New York: SUNY Press.

---. 1990. *Technology and the Lifeworld: From Garden to Earth*. Bloomington: Indiana University Press.

---. 1998. *Expanding Hermeneutics: Visualism in Science*. Illinois: Northwestern University Press.

---. 2002. *Bodies in Technology*. Minneapolis: University of Minnesota Press.

---. 2007. *Listening and Voice: Phenomenologies of Sound*. Second Edition. New York: SUNY Press.

---. 2009. *Postphenomenology and Technoscience: The Peking University Lectures*. New York: SUNY Press.

---. 2010. *Embodied Technics*. Automatic Press/VIP.

---. 2012. *Experimental Phenomenology: Multistabilities*. Second Edition. New York: SUNY Press.

---. 2015. "Preface: Positioning Postphenomenology." In *Postphenomenological Investigations: Essays on Human–Technology Relations*, ed. by R. Rosenberger and P.-P. Verbeek, VII–XVI. Lanham, Maryland: Lexington Books.

Nørskov, Marco. 2015. "Revisiting Ihde's Fourfold 'Technological Relationships': Application and Modification." *Philosophy and Technology* 28 (2): 189–207.

Verbeek, Peter-Paul. 2005. *What Things Do: Philosophical Reflections on Technology, Agency, and Design*. Trans. by R. P. Crease. University Park, Pennsylvania: Pennsylvania State University Press.

---. 2008. "Cyborg intentionality: Rethinking the phenomenology of human–technology relations." *Phenomenology and the Cognitive Sciences* 7 (3): 387–395.

473

thinking

togetherness

INR | **INSTITUTE** NOVA REVIJA
FOR THE **HUMANITIES**