

Language and technology: maps, bridges, and pathways

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Received: 13 February 2015 / Accepted: 27 July 2015
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Abstract Contemporary philosophy of technology after the empirical turn has surprisingly little to say on the relation between language and technology. This essay describes this gap, offers a preliminary discussion of how language and technology may be related to show that there is a rich conceptual space to be gained, and begins to explore some ways in which the gap could be bridged by starting from within specific philosophical subfields and traditions. One route starts from philosophy of language (both “analytic” and “continental”: Searle and Heidegger) and discusses some potential implications for thinking about technology; another starts from artefact-oriented approaches in philosophy of technology and STS and shows that these approaches might helpfully be extended by theorizing relationships between language and technological artefacts. The essay concludes by suggesting a research agenda, which invites more work on the relation between language and technology.

Keywords Language · Technology · Social ontology · Phenomenology · Hermeneutics · Mediation · Heidegger · Searle · Ihde · Latour

1 Introduction: The gap

The reader of contemporary philosophy of technology encounters mainly artefacts, things, devices, and machines as objects of philosophical reflection, much less words,

symbols, discourse, and texts. This is understandable: since the end of the past century, much philosophy of technology has taken an “empirical turn” (Achterhuis 2001). More precisely: some people writing about technology never needed an empirical turn because they have always been working within the framework of naturalist and positivist science (consider, for example, contemporary AI theory and empirical psychology) or because they have always been practicing what Mitcham called an “engineering” philosophy of technology: an approach which does not start with trying to understand the human, as “humanities” philosophy of technologies does, but with “an analysis of the nature of technology itself”, aiming “to explain both the nonhuman and the human worlds in technological terms” (Mitcham 1994, p. 62). Others were influenced by the humanities and in particular hermeneutics’s interest in “the meaning of technology” (p. 62), but turned away from Heidegger, Ellul, and other classic philosophy of technology which they felt was “retreating” into the linguistic terrain (Achterhuis 2001, p. 4–5) and too distant from concrete, material technological artefacts and tools. They rejected Heidegger’s discourse about the essence and danger of modern “technology” and argued that this failed to address “concrete technological practices and developments” (p. 5), including much about our everyday use of artefacts. On the way they also rejected, though perhaps less explicitly, the entire post-structuralist and postmodern current of thinking which, influenced by Heidegger, focuses on discourse and text, thereby rendering philosophy so abstract and linguistic that technology disappeared. (Incidentally, its relation to postmodernism is a dimension of the empirical turn which remains until today severely undertheorized; perhaps one could even say that it has never received much attention at all from the core figures of the empirical turn mentioned here.) When

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empirically oriented philosophers of technology use Heidegger, then it is usually what we may call a Heidegger *light*. For example, Verbeek (2005) rejects Heidegger's view of technology in the later work (Heidegger 1977) but uses the ready-at-hand/present-at-hand distinction from *Being and Time*, without engaging with Heidegger's view of language. The empirical turn was therefore also a turn *from language to artefacts*: from words to things.

Thus, in order to give artefacts a voice, the empirical turn muted language. Whereas the first mentioned, naturalist category of researchers takes a naïve, conventional, and uncritical view of language (if seen from the perspective of transcendentalist philosophy as expressed by phenomenology and hermeneutics), the latter “empirical turn” researchers sometimes borrowed and even “expanded” a phenomenological–hermeneutical approach (Ihde 1998—see also below), but in their urge to turn to things threw out the baby with the bath water: when artefacts entered centre stage, language retreated to the background, to the point of *disappearing*. This meant, for instance, that the critical approach to language also largely disappeared: the transcendentalist approach which sees language as a condition of possibility of thinking. (Interestingly, social studies of science and technology (STS), which today inspires much empirically oriented philosophy of technology, fare slightly better when it comes to recognizing the role of language—for instance insofar as it is inspired by Latour and Akrich, who write about the “script” of technologies. But here the cost is that language itself becomes hardly recognizable as language. I have no space to develop this here, but my thought is that the “voice” of Latour's objects is so abstract and so removed from what we understand by “language” that it could as well be replaced by “political power” or a similar term.)

This situation may also be understood as resulting from the persistence of what Mitcham has called a gap between “humanities” philosophy of technology and “engineering” philosophy of technology (Mitcham 1994). The empirical turn, most prominent in the USA and in the Netherlands, was in the end mainly a move towards an “engineering” philosophy of technology, an approach which is naturally more artefact-oriented as opposed to language-oriented. Ihde and what has become the “postphenomenological” school must be credited for having done an original, influential, and partly successful attempt to bridge the gap between humanities and engineering approaches by, as Ihde called it, “expanding hermeneutics” (Ihde 1998). By moving towards a phenomenology and hermeneutics of human–technology (or human–technology–world) relations, Ihde has injected what is traditionally conceived of as a “humanities” approach into the study of science and technology. However, as Mitcham already suggested, Ihde's approach remains “an engineering philosophy of

technology” (Mitcham 1994, p. 78). In other words, Mitcham suggests that Ihde has failed to (completely) bridge the gap. It is not very clear in Mitcham's book why this is so; there are only a few suggestive sentences. In this essay, I propose to interpret this claim as meaning, among other things, that in the process of merging “humanities” and “engineering” something has been lost: *language*. Ironically, philosophy of language was and is central to phenomenology and hermeneutics, which Ihde and the “postphenomenological” school embrace. But contemporary philosophy of technology inspired by Ihde pays the price for stripping down this tradition and making language into a *tool* which sheds light on human–technology relations. The de-instrumentalization of technology (against Heidegger) has come at the cost of the instrumentalization of language (also against Heidegger). For all its merits, therefore, Ihde's “engineering” hermeneutics, and more generally contemporary philosophy understood as an “engineering” turn to the artefact, lacks a sufficient and developed understanding of the relationship between language and technology. Ihde presents a well-developed hermeneutical approach to technology and discusses authors such as Ricoeur and Rorty, but the question concerning the relation between technology and language is not systematically discussed. More generally, insofar as philosophy of technology after the empirical turn neglects this problem, it misses an important aspect of what it means to be human and technological (or human–technological) and indeed fails to be a good phenomenology.

Therefore, in response to this kind of philosophy of technology we need to ask the question concerning the relation between language and technology. In this essay, I ask this question and approach it from several directions. The first route aims at identifying and mapping a set of possible ways language and technology may be related, connecting these to specific philosophical traditions or authors but without going into detail about specific approaches and views. I believe this is useful to get a first sense of the landscape beyond the horizon of much current artefact-oriented philosophy of technology that does not ask the question concerning the relation between language and technology. What does current thinking about technology conceal? What remains hidden? Other routes I follow start from specific views of and approaches to *either* language *or* technology and then explore how we can move from there to saying something about the relation between language *and* technology. First I start from thinking about language: I will briefly discuss two approaches to language in philosophy of language (Searle and Heidegger) and explore how this discussion—if further developed—may inform and benefit philosophy of technology. Then, I start from thinking about technology: in response to Ihde's work on human–technology relations and mediation theory (see,

for example, Verbeek 2012), I propose to further develop this work in a way that includes human–language–technology relations. Although within the space of this essay this conceptual work will necessarily have to be of a preliminary nature, it will clearly point to possible new directions. At the end of my essay, I then suggest how the present research agenda in empirically oriented (post)phenomenological philosophy of technology could be usefully extended with thinking about language and technology.

In this essay, I take my main inspiration from Heideggerian phenomenology and hermeneutics (in philosophy of language and philosophy of technology), but take care to include both “analytic” and “continental” work in philosophy in my discussion, since my starting point is that both may have something to contribute when it comes to thinking about language. I have also tried to explain both Searle’s view and Heidegger’s view for readers who are not familiar with (one of) these thinkers (which in the case of Heidegger takes up a considerable amount of space but I could not see an “instant” or “shortcut” way to present and discuss his thinking about language). Moreover, although this introduction and problem definition was mainly directed at a specific approach and even “school” in philosophy of technology, I hope these reflections about language and technology are useful for other thinkers and researchers inside and outside philosophy of technology. Note, finally, that of course within the scope of an essay it is impossible to build a comprehensive conceptual framework of language–technology relations or to elaborate an extensive analysis of language and technology in, say, the work of Heidegger. My focus here is on the shortcomings and merits of *some* currents in philosophy of language and philosophy of technology and on mapping and showing *some* ways in which the question concerning language and technology can be approached; further work is needed to develop the suggestions made here.

2 Language and technology: some conceptual maps

In this section, I identify a number of ways in which the relation between language and technology—and by extension language, humans, and technology—might be conceived. This takes the form of short propositions and assertions without much explanation and is only a first exercise in mapping thinking about language and technology; some of the positions will be further developed and discussed in the next sections—these will become clearer—and others need further elaboration elsewhere.

Let me start with (very roughly) mapping three kinds of ways in which we can view the relations between humans, language, and technology:

1. humans speak
2. technology speaks
3. language speaks
1. *Humans speak*. A first way of thinking about language and technology is to say that there is no intrinsic connection between them. This could mean any or all of the following:
 - Discourse *about* technology: humans talk about technology, and we can talk about technology in different ways. Here technology appears as the object of language. This discourse and these narratives can be analysed, interpreted, and reflected upon. There are narratives at individual and collective level. For instance, Kaplan has suggested to use Ricoeur’s narrative theory of interpretation for “making sense of all the different ways that technologies figure into our lives” (Kaplan 2006, p. 50). The stress is on *humans and language*, and there is a gap to the material world, since material objects do not have language. Indeed, this approach assumes that *humans* speak. Technologies, artefacts, things, tools, etc. are mute. We talk *about* them. Of course, we can “let them speak” but this should only be understood purely metaphorically. In essence, it is the human who speaks. There is a (linguistic) subject and a (non-linguistic) object. Words and objects do not touch.
 - Humans, through the use of language as a tool, can confer meaning upon dead objects. They can name objects. They can also give a specific status to objects (see my interpretation of Searle below). But again there is an unbridgeable gap between subject and object, between culture/society and matter/physics/nature. The human speaks. The object is clothed with meaning, but language, meaning, and status originate in the human subject and remain entirely human.
 - We can use technology to speak *through*. Technology can mediate our message. We can use communication technologies such as letters, phones, and internet. But it is still the human who speaks. And—within this approach—it is assumed that the message is not changed by the technology. It is transmitted. The medium is considered to be neutral. The medium does not change the meaning of what is said, let alone that it would change the subject.
2. *Technology speaks*. A more intrinsic connection between language and technology, however, arises when we think of *technology* as speaking. What could this mean?

- The *medium* speaks. Consider McLuhan's phrase that the medium is the message (McLuhan 1964). McLuhan does share with many contemporary philosophers of technology a non-instrumental understanding of technology: there is no "neutral" medium; the medium and the technology always change the message and perhaps even the messenger: it changes how perceive the world, how we do things, how we live our lives, how we think of ourselves. However, in contrast to "empirical turn" type of thinking about technology, for McLuhan, language is still important and is very much connected to the human and to technology. For McLuhan, language is mediated by technology (e.g. writing technology) and technology is like language. In a sense, in this approach *technology speaks and language speaks* (see also below).
 - The *artefact* or object speaks. Here the human and language reside to the background. Artefacts have a script (Akrich and Latour, for instance Akrich 1992 and Latour 1992). Humans may still have some importance insofar as they delegate what they say (their "should", their prescription) to the artefact. For example, the task to keep the door closed is delegated to a hydraulic door closer (Latour 1992) which then has a script (and indeed mediates a prescription: "Close the door."). But sometimes artefacts make us do things without the prescription originating in the human, without any intention of the designer. For instance, a building may be difficult to enter by wheelchair users. This "script" was not delegated or intended, but the artefact has a specific kind of normativity and politics. (And when humans responsible for the building become aware of this, they regain their moral and political capacity; they become responsible for what the artefact "says". Then, there is again a situation of delegation.) Think also about Winner's (1980) famous example of the bridge which was (assumed to be) too low to leave through busses and thereby embodied and executed a specific political script (against lower social classes). Even if the empirical reality might have been different here, the point is clear: the artefact has a script; it speaks (and therefore has politics). So there are two versions of this view: the radical view "the artefact speaks" and the more conventional view "*the human speaks through the artefact*". In Latour, the conventional view is also present, but mainly the radical version: artefacts speaks, or—in his politics (Latour 2004)—the artefact *should* be given a voice. The latter idea is that if artefacts "say" and "do" things (see also Verbeek 2005) and if we have never been modern and always mixed humans and artefacts (Latour 1991), then it is problematic to maintain a strict separations between humans (morality, politics) and things (non-moral, non-political) and to deny things political representation, exclude them from the political realm. So this position entails that *humans speak and artefacts speak*. Here, artefacts are not mere mediators or do not always receive language from the human. They are made linguistic agents themselves (and therefore they can be moral and political agents).
 - Technology can be "read" like a text. Kaplan, for instance, proposes to use Ricoeur's work to do this: a technological device or system is then "what it is in relation to its use-context and broader cultural context" and technology is then "open to multiple, often conflicting, interpretations" (Kaplan 2006, p. 49). Technology itself then has a hermeneutical character (see also Ihde 1998).
3. *Language speaks*. A different view, which does not necessarily assume an intrinsic connection between technology and language, is that not humans speak but *language* speaks. Here, language is not a neutral medium through which we speak, but is itself the speaker. *Humans* are the medium through which language speaks. This view can then be combined with a neutral, instrumental view of technology *or* it can be combined with a far more "active" phenomenological–hermeneutical role of technology, which entails a more intrinsic connection between language and technology. As I will show below, Heidegger's later view of technology supports the latter view. We live in the house of language and technology shapes our way of thinking, shapes what we say. In this view, then, *language speaks and technology speaks*. If humans are muted, we arrive at the postmodern interpretation of Heidegger, which claims that there is only text and that only language speaks, not humans. If humans are not muted, however, then we have a chance to develop a view which gives humans, language, and technology more equal significance. Then we can start to further discuss their precise relations.
- Thus, based on this first mapping we have at least the following possible combinations of humans–language–technology relations (and hence philosophical positions regarding these relations):
1. *human speaking—language mute—technology mute*: This is a conventional view. More precisely: it is an instrumental view of language and a conventional,

instrumental view of technology. Language and technology are mere tools. This view, which is also held by much analytical philosophy, is questioned by contemporary philosophy of technology. Yet, for instance, Verbeek's claim that things "do" things *could* be interpreted as entailing a "mute" view of technology: the artefact *acts* (Verbeek 2005) but is itself mute; or at least its language is not explicitly considered (e.g. the "script" view of Akrich and Latour is borrowed without further discussion of the relation between language and technology).

2. *human speaking—language speaking—technology mute*: standard humanities philosophy: the human is central and the linguistic subject is central, whereas artefacts are taken to belong to a different, non-human, non-moral, and non-political realm. For instance, there is discourse and narrative *about* technology but both worlds remain separated. Only humans act and humans speak. Technology is essentially non-human and potentially dehumanizing. This view is questioned by contemporary philosophy of technology.
3. *human speaking—language speaking—technology speaking*: This is my interpretation of McLuhan and Heidegger (I will say more about Heidegger below). In this view, recognizing a central role for language does not mute the human and does not imply rejecting the message of contemporary philosophy that technology speaks. We speak, but *both* language and technology are conditions of possibility that shape what we (can) say, and in a sense both language and technologies can say things which we didn't tell them. They can surprise us. Like technology, they have unintended consequences and they provide unintended constraints to our thinking, of which we are usually unaware. In these senses, humans, language, and technologies all speak. This view attempts a (more successful) reconciliation of humanities and engineering philosophy of technology. I will articulate this view in the next sections by interpreting Heidegger's view of language and by starting to develop postphenomenological thinking about mediation in a direction that does justice to the role of language in shaping our world and our subjectivity.
4. *human speaking—language mute—technology speaking*: This is the position empirically oriented philosophy of technology and STS have achieved: Latour, Ihde, Verbeek, and others have moved from positions 1 and 2 to position 4, and on the way they have muted language. Moreover, for instance in Verbeek technology is not really speaking ("saying things", "naming things", etc.) but mainly acting ("doing things"); therefore, as far as language is concerned it tends to a conventional view, position 1.
5. *human mute—language mute—technology mute*: Perhaps this is the view of objectivist science (that is, science *insofar as* it is objectivist): humans and things are all objectified and muted; language is seen as belonging to a different realm and is seen as purely instrumental and/or as an object of scientific study. Heidegger criticized this view of language (see below).
6. *human mute—language speaking—technology speaking*: this is the determinist interpretation of the later Heidegger: language and technology speak, and humans are mere vehicles or receptors, waiting for whatever fate language and technology bring to them. Humans are vehicles of language and receivers of technology, tools language uses to speak and parts of the machine, but they do not themselves speak.
7. *human mute—language mute—technology speaking*: this is technological determinism, which is rightly rejected by both humanities philosophy and "empirical turn" type of philosophy of technology: technology determines us and language is a mere instrument. We are in what Weber called an "iron cage"; we are helpless victims of the system. The opposing view is that we have a voice and that technology indeed "speaks", but that we also depend on language as a condition of possibility (see view 3).
8. *human mute—language speaking—technology mute*: this is what we may call postmodernist humanities philosophy, which interprets Heidegger as meaning that there is nothing outside language. There are only text, discourse, words, and code. Humans and technologies are bracketed or deleted.

Let me now try the following routes to position 3, which I think is the better view:

- how to move from 1 to 3: starting from (philosophy of) language
- how to move from 4 to 3: starting from (philosophy of) technology

3 Constructing and receiving a bridge: Starting from language

Even if one starts from a conventional view which separates humans/language and objects, one can already describe some (extrinsic) relations between language and technology. Let me start from the work of Searle. As much analytic philosophy, it is very good in articulating philosophically and systematically how we conventionally think about things.

In *The Construction of Social Reality* (Searle 1995) and later work (Searle 2006), Searle attempts to answer what he

calls “the problem of social ontology”: how can we create a social reality? (Searle 2006, p. 13). He thinks that in contrast to physical facts “social facts” are not a reality that exists independent of us but instead “observer relative” (p. 13): they are created by us, humans. This then raises the question: *how* are social realities such as money, property, government, marriage, and indeed *language* created? His answer is that we use language to ascribe a status and function to things. For example, paper money performs its function “not in virtue of its *physical* structure” (p. 17) but because we collectively agree that paper has this status. Searle calls this a “status function”: we *declare* this piece of paper to have this status and function in a certain context, or in Searle’s words: “X counts as Y in context C” (Searle 2006, p. 18). Thus, according to Searle by means of declaration and status functions we create social reality. Social properties are ascribed to physical objects. Language itself is created and then used as a tool to create social reality.

One could then apply this view to technological artefacts¹: their social meaning and function is something we declare: they are physical things, but we ascribe a particular meaning and status to them and in this way they function within and constitute a social institution. For instance, paper money (to use Searle’s example again) can be seen as a financial technology used to make financial exchange work. In Searle’s view, we agree that we use paper in this way in this context (in other contexts paper may be used as a technology for writing for instance). Language, therefore, is a tool we use for the construction of social reality, which is itself constructed on top of physical reality. Moreover, language is itself something that is created by humans and is also a matter of agreement. Thus, we make and use things and words to construct the social world.

Searle’s view is thus based on at least the following assumptions:

1. There are two kinds of realities: (1) a physical reality, which is “really real”, not under discussion and given, and (2) a social reality which is a matter of agreement and which is constructed by humans. The social–human world is a (virtual?) layer on top of the physical world.
2. Language is therefore a technology of layering, dressing, and decorating. We use it to give social meaning to things, including technological artefacts.
3. Only humans give meaning to things. The social world is entirely of our own making.
4. Language is part of that social world. Language is created by us.

Searle’s view and assumptions support the conventional view of the relations between humans, language,

technology, and world. We use language and (other) things. But we humans are the only agent and the only speaker. There is a mute physical reality, which is dressed by us, speakers, by means of using language as a tool (which is itself mute and created by us).

If we go against and beyond the conventional view (view 1), however, we can try arriving at view 3. This can be done by interpreting Heidegger, in particular the later Heidegger. Heidegger’s view of language is of course research topic on its own, and this essay cannot do justice to the complexity of his work and the scholarship of its interpreters. Let me nevertheless attempt to briefly articulate my interpretation of his view of *language* and reflect on how it may enrich contemporary philosophy of technology with its approach to language.

Heidegger thought that we do not speak language; instead, *language speaks us*: “language is not a work of human beings: language speaks. Humans speak only insofar as they co-respond to language” (Heidegger 1967, p. 57). When we study language, we can only do so on the basis of our “experience of language”, that is, the everyday use of language which is already there (in particular our speech), which precedes our speaking and thinking: “Humans may be able to invent artificial speech constructions and signs, but they are able to do so only in reference to and from out of an already spoken language” (Heidegger 1967, p. 57). Language is given to us, and we respond to it and live in it. In that sense, there is no “outside” of language. Heidegger famously wrote that language is “the house of being”:

‘language is the house of being, which is appropriated by being and pervaded by being. ... the human being is not only a living creature who possesses language along with other capacities. Rather, language is the house of being in which the human being ek-sists by dwelling, in that he belongs to the truth of being, guarding it.’ (Heidegger 1967, p. 254)

To fully understand and interpret what Heidegger is saying here (if this aim makes sense at all), one would have to link his view of language to his view on Being (or being) and its relation to Dasein.² But let me focus here on language, and in particular on the difference with Searle’s

¹ Surprisingly, so far Searle’s social ontology has not been interpreted and used much in contemporary philosophy of technology.

² According to Heidegger, we take part in the history of Being and we must respond to Being. Against modern thinking and in line with theological thinking in this direction, Heidegger emphasizes the receptive dimension of human being (see also Coeckelbergh 2002) and thinks that there is a “call” from Being to which we must respond. He also interprets ancient Greek thinking about and writes about “fate”: we have a “destiny”. For language, this means that we must listen to the voice of Being and that Being speaks through us. Language is the language of Being. We are part of the advent and history of being and have to attune to Being (see also Bennett-Hunter 2007).

approach to language and more generally most analytic philosophy of language.

In analytic philosophy, language is assumed to be a (mere) tool, an instrument used by humans. Heidegger questions this instrumental view of language. He has contributed to overcoming “the traditional view of language as a mere instrument for the designation of independently existing entities” and recognized language as constitutive for our experience and understanding of the world (Lafont 1994, p. xi). Language is not merely a tool; rather (as I will show below) it is also a milieu and a medium. It is not so much something we use and something which is at our disposal. It is not a tool of communication but “constitutive of experience”; logical thinking and conceptual manipulation are “secondary and derivative” compared to language in “the authentic living context of primary articulation-understanding” (Deetz 1973, p. 44). To see it as a tool would belong to the instrumentalist, manipulative way of being in the world which Heidegger criticized. As Ziarek puts it, Heidegger sought a “transformation in our essentially metaphysical attitude to language as primarily human language, a differential system of signs and signification, an informational tool. The metaphysical beginning has captured us in the relation to language in which language increasingly and every more powerfully discloses itself as information, open to and in fact inviting manipulation” (Ziarek 2013, p. 111; see also Heidegger 1998 on technological language).³ Formalization and information belong to what Heidegger saw as a “technological” way of thinking. Heidegger therefore questions the objectification and externalization of language which analytic philosophy’s “philosophy of language” tends towards, and therefore, he is quite critical of (analytic) philosophy of language in *Being and Time*. Owens explains this:

‘One clear tendency among philosophers of language has been to objectify language, ... In the phrase “philosophy of language,” the “of” is ordinarily construed as an objective genitive. That is, language is taken as an already-constituted item or object to be interrogated philosophically.’ (Owens 1987, p. 50)

For Heidegger, language is not something that is independent of (our access to and knowledge of) the world. Language is rather a revealing; it already shows up the world in a particular way. He criticizes the very term “philosophy of language” because there is not a “something” we can do philosophy “of”. Language as object is only one way language can appear to us, and it is and can be so much more (and this more we cannot put into words—it is a mystery). Heidegger questions dualistic thinking about language versus world, mind versus world, and humans versus world (not only Cartesian dualism but also Husserl’s dichotomies such as ego versus world and language versus world). Instead, we can read Heidegger as saying that there is one world–language (in) which we live. There is being-in-the-world, which is linguistic and human existential at the same time. Heidegger “replaces the model of an observing subject confronting an observed set of objects with the model of an understanding Dasein that is in a symbolically structured world” (Okrent 2002, p. 195–96). There is human–language or language–human. The phrase “there is” is even inappropriate here. We need a verb: there is a *revealing* through language. Without language, things cannot show up. We can only ask questions about representation, for instance, *after* the world already shows up as meaningful. As Deetz put it:

‘Without language things are not significative. Living is in the flow of language-things which makes apparent how Worldly things are experienced before a subjectivity is posited to ask what the words represent. ... Logos originally means to uncover a possibility, bring forth possibility from concealment, to gather a Worldly stance. Only later was logos used to refer to discourse, speech, or reason ... language makes things into possibilities of experience... Heidegger contended that we do not speak or think a language, rather we speak and think from out of it. Language precedes existence.’ (Deetz 1973, p. 45–46)

Even the relation subject–object, which Husserl takes as his starting point, is a dichotomy which Heidegger tried to avoid since he thought it was one of the “misunderstandings” of phenomenology; instead, he understood subject and object, and the relation between them, as “embedded in the world as a universal medium of meaning” (Kusch 1989, p. 154–156; I will say more about this “medium” role below). Whether or not there is an “outside” to language is, according to Heidegger, the wrong question: he criticizes dualistic thinking in terms of “inside” and “outside”. When we speak we respond to language, and at the same time “what” we respond to is not something objective and external to us; in lived experience and use of language we are part of it, we are language. Usually we do

³ In cognitive science for instance Andy Clark has argued that language is an artefact or a tool, even a resource (Clark 1997; see also Wheeler 2004).

not notice this; language is *zuhanden* (ready-to-hand) rather than *vorhanden* (present-at-hand); it is (part of) how we live and exist.⁴

For the moral status of entities, for instance, this view means that before we discuss the moral status of entities, there is already a language given to us, which *already* co-constitutes their status (see also Coeckelbergh 2012). There is already an understanding of the being of entities which is constitutive for how we perceive, experience, and understand them, which—to use Lafont’s words—“provides the ontological framework for everything that can show up within the world” (Lafont 2002, p. 186). There is already an interpretation (or rather: interpretations). In Kusch’s words: “*Dasein* can relate to its world only by partly presupposing a pre-given interpretation of its world, and it can relate to meanings only by partly presupposing the whole or totality of meaning in which it lives. (...) This totality of meaning cannot itself become an object of explicit interpretation” (Kusch 1989, p. 162). We cannot just divorce ourselves from that whole.⁵

Heidegger’s view of language is thus very different from Searle’s: whereas for Searle we put language onto objects in the empirical (physical) world, Heidegger does not see “persons imposing language on the empirical world” (Deetz 1973, p. 47) but instead living language as a unity of experience, language and things, and as a process of revealing. We do not create a “social ontology”. The social ontology is already given to us in and through language. It is language, which is already social, which discloses things. Deetz writes: “Everyday understanding in language is possible not because our individual words stand for similar subjective experiences but rather in speaking and dialogue a Worldly perspective is

suggested to all by an already socially meaningful language such that what is said in language makes sense” (Deetz 1973, p. 49). There is already (social) meaning in the language–world.

If philosophy of technology needs to engage with philosophy of language, therefore, it should be clear that there are roughly two options in relation to which it must position itself: either an analytic approach which usually assumes that language is an external object and instrument (there may be exceptions), or a Heideggerian approach which sees language as what Kusch has called a “universal medium” as opposed to language as “calculus” (Kusch 1989):

‘Heidegger rejects the idea that world and language can be treated as objects. Rather, world and language form one universal medium of meaning, a medium that cannot be studied objectively from a vantage point outside it. Language can only be studied in a circular fashion by already presupposing it.’ (Kusch 1989, p. 9)

Indeed, for Heidegger language is what we could call a *milieu*. We are always already “in” language. (Perhaps language can also be a “medium” in another sense though, as I will explain in the next section when I analyse how postphenomenology and mediation theory might be expanded with thinking about language.)

If philosophy of technology goes with the Heideggerian current (and/or for instance Gadamer, whose work I will not discuss here), then this does not necessarily mean that humans are “muted”, to use the term I employed in my maps in the previous section. We can interpret the later Heidegger as saying that language speaks, but this does not mean that humans are silenced or are mere media: language is a constraint to our thinking, but it is at the same time something living, and it only lives through us humans (*Dasein*, Heidegger would say). When we are aware of language as a condition of possibility of thinking and doing, we are less determined by it and we can have a more “*gelassen*” relation to it (to use another term from Heidegger—see below).

Interestingly, this non-instrumentalist and anti-determinist gesture mirrors the move philosophy of technology has accomplished with regard to technology. First, philosophy of technology has argued against an instrumentalist and externalist interpretation of *technology*. Second, it can be interpreted as claiming that *technology* speaks, but this does not mean that technology determines us; rather, it shapes our way of thinking and doing but we can become aware of this and find a more *gelassen* and free relation to technology: we should “let go” in the sense that we should not reject technology but also not think that it is the ultimate end; at the same time, we should be aware of the how

⁴ Note that this view implies, among other things, that if we wanted to change “the world” and indeed change “the human” we would have to act differently but also speak differently; we would have to change things and change words. Heidegger wanted to think differently and therefore had to invent a new vocabulary. If ‘language itself is the vehicle of thought’, as Wittgenstein wrote in the *Philosophical Investigations*, (Wittgenstein 1953, §329, p. 113), then why can we not try to change the vehicle? At the same time, Heidegger warns this change can only *happen* in the form of a *response* to what is already there; otherwise, we would have a “technological” understanding of language again (language as a tool) and a “technological” understanding of change. So we have to respond to the (linguistically) given. For instance, Heidegger used Ancient Greek and Germanic etymology and was influenced by Hölderlin’s poetry. Language gives itself. It also gives us, and it gives the human. Language brings something present, lets appear something. We respond and co-respond. Heidegger seeks a transformation of language, but it is one we can neither compel nor invent (Heidegger quoted in Ziarek 2013).

⁵ Note that this does not necessarily entail an idealist position, as Lafont suggests, but rather one *beyond* realism versus idealism. Again, Heidegger tries to think beyond such dualisms. There is being-in-the-world.

it gives us a particular understanding of being.⁶ Now it is time that philosophers of technology apply the same reasoning to language and (1) first of all *consider* language in their thinking about technology and (2) shed their implicit since conventional instrumentalist, objectivist, and externalist assumptions about language. It may well be true, for instance, that morality and politics are also always a morality and politics of things, but at the same time morality and politics are a morality and politics of *language*. Thus, I think it is both possible and desirable that contemporary philosophers of technology after the empirical turn learn from, and position themselves towards, Heidegger's view of language, whatever they may think of his view of technology.⁷

In order to conceptualize this proposed move and think further about the relations between language and technology, take on board insights on language from the philosophical tradition, contribute to bringing part of the gap between philosophy of language and philosophy of technology, and maybe even initiating a (neo-⁸) linguistic turn in philosophy of technology, however, we must not only start our journey from *philosophy of language* but also from the other side of the gap: from existing *philosophy of technology*. Again there are of course various options, in this case various approaches to *technology* (rather than language). In this essay, I focus on philosophy of technology inspired by phenomenological–hermeneutical approaches, in particular Ihde's thinking about technology (e.g. Ihde 1990), and mediation theory inspired by Ihde (e.g. Verbeek 2012). Similar work could be done on Latour and similar approaches that also contributed to the empirical turn in philosophy of technology and which I mentioned in my maps; however, I have to limit the scope of this essay.

⁶ See Dreyfus, who interprets Heidegger as meaning that technological devices and efficiency are fine, as long as we do not think that they are absolutes and the only end, and open up to the 'mystery'. Once we become aware that technology is 'our latest understanding of being', we will even be 'grateful' for it. Again this is about receptivity: we did not make this understanding but receive it. And once we realize this, Dreyfus argues, we have stepped out of it already (Dreyfus 1995, p. 29).

⁷ The "they" here refers to the (post)phenomenological current in philosophy of technology. Of course, Heidegger's work can also be used to criticize the naturalist assumptions of those empirically oriented researchers in technology studies who use scientific methods. In this essay, however, I mainly respond to empirically oriented but phenomenological–hermeneutical philosophy of technology and focus on how underdeveloped work in this area is when it comes to understanding relations between humans, *language*, and technology.

⁸ I use "neo" here because arguably philosophers of technology *before* the empirical turn—the classic authors such as Heidegger but also later authors working in the "humanities" tradition—generally had more critical awareness of the role and significance of language, whatever the shortcomings of their work on technology might have been.

4 Building and modifying a bridge: starting from technology

In order to further articulate what I called philosophical position "3" in my map (one which gives not only a voice to technology but also to *language*—while not muting humans) and in order to contribute to bridging the gap between philosophy of language and philosophy of technology, we could start with Ihde's phenomenology and hermeneutics of human–technology relations and then expand this to a phenomenology and hermeneutics of relations between humans, technology, and *language*. Within the scope of this essay, I cannot accomplish such a project of course; here, I focus on the "mediating" role of *language* and how this could enrich a thinking which is already focused on the mediating role of *technology*. More precisely, I wish to explore if we can see language as "mediating", not only in the sense of being a milieu (see again Heidegger) but also as an "in between" that connects, shapes and constitutes the other terms.⁹ And I want to know how this mediation by language may be related to the mediation by technology.

In order to work out what this "mediating" role of language could mean, let me first briefly outline Ihde's work on human–technology relations, in particular human–technology–world relations. Although Ihde *does* comment on language in this work (he recognizes linguistic mediation and influenced by Ricoeur and others for example compares reading a text to reading an instrument), his focus is on technology and his view of language remains largely implicit. In *Technology and the Lifeworld* (1990), Ihde distinguishes between two different "human–technology–world" relations and explains the difference by using Heidegger:

Embodiment relation: (I-technology) → world
Hermeneutic relation: I → (technology world)
(Ihde 1990, p. 89)

We have an embodiment relation when we use the technology but are not aware of the technology as an object (Heidegger's ready-to-hand in *Being and Time*); in our experience, the technology is part of us and invisible. Think about someone who is used to wear glasses: (s)he not notice the glasses, they have become part of her/his

⁹ Indeed, "in between" should not be understood as meaning that the terms are pre-existing and fixed—this would be contrary to Heideggerian thinking and has rightly been rejected in postphenomenology by Verbeek: mediators help to constitute what is real for us (Verbeek 2012). Nevertheless, the term "in between" expresses that we have only access to reality "through" the medium, that our world is constituted by it and is revealed by it. In this sense, only it is an "in between". It should not be understood as a kind of "object" that stands between two fixed terms.

way of looking. But once we attend to the object, once the technology is revealed as an object, for example when it is broken, we have a hermeneutic relation to it (Heidegger's present-at-hand). But it need not be broken; reading a thermometer, for instance, displays a hermeneutic relation. Ihde is also more positive about this kind of relation to technology. Whereas Heidegger sees it as inauthentic, Ihde sees it as one way we can relate to technology. Later in the text, Ihde adds alterity relations (p. 97): here, we primarily have a relation to the technology, rather than to the world *through* the technology. For example, a robot may be perceived as a quasi-other, rather than as an instrument which we use. Thus, whereas embodiment and hermeneutic relations give technology a mediating role, alterity relations move technology from "in between" to the other.

This approach can now be used for thinking about the role of technology and *language* in shaping our relation to the world. In the following pages, I offer a very crude and preliminary map of some ways technology and language may appear to us (or may not appear to us) and may function as mediators (or not). This could be regarded as a proposal for a revision and an extension of postphenomenological mediation theory. Note that in my schemes I will use "–" rather than an arrow "→" in order to emphasize that we as subjects are as much shaped and *constituted* by objects and part of the world as we are directed *towards* objects and the world.

I can imagine at least the following possible human–language–technology–world relations, which are once again related to specific descriptive and normative views and approaches. They reflect various ways in which language plays a mediating role, both the sense of "in between" form and in the sense of "milieu" or "environment".

1. language as medium between *humans* and world (this is a well-known approach in the humanities): here, language mediates but technology is assumed not to play any role:
 - a. humans–language–world: *mediation* relation: language mediates our relation to the world. It mediates the way we perceive reality, relate to others, and act is made possible by, and constrained by, language. It thus has a *hermeneutic* role. Influenced by Heidegger we could say that language comes "before" perception.
 - b. (humans–language)–world: *embodiment* relation: language is used and remains in the background. This is the conventional experience of the world; we do not notice language as conditioning how we think and what we do.
 - c. humans–(language–world): from *hermeneutic* relation to *alterity* relation: language is an object

(this is what Heidegger argued against). Language appears here as part of the world; it is agent or even an other. (This experience may happen in postmodernist thinking/writing/reading when text is experienced as agent, author, etc.)

2. language as medium between humans and *technology* (and world)
 - a. (humans–language)–(technology–world): we speak about technology, but language is "active" in our discourse about technology without us noticing (embodiment): what we can say about technology is shaped by the language we use. Language is our medium, understood as "milieu", but here this is not visible.
 - b. humans–language–technology–world: Once we become aware of language as milieu or environment, we can have a more explicit, hermeneutic, and critical relation to it. Philosophy of technology as discourse about technology needs to become aware of this medium as "milieu" function of language in order to do its job in a more critical way.
 - c. humans–language–(technology–world): language is a medium, understood as "in between": once we become aware of how language shapes our linguistic *and* material relations to technology, we can study and influence language as medium between human/subject and technology/object. We understand that philosophy of technology needs—among other things—to include a philosophy of language. And an ethics and politics of technology will also necessarily have to be an ethics and politics of language.
 - d. humans–(language–technology)–world: this can mean either that (1) technology speaks, literally, or that it has a script. (Consider again Latour.) We need to study the language of technology. Or it can mean that (2) language is seen as a technology, which mediates our relation to the world. (This can mean that language is a mere tool or instead that language is a medium which also shapes the message, see again McLuhan's view.)
3. *language and technology* mediate our relation to the world
 - a. (humans–language–technology)–world: technologies and languages shape how we think and speak about the world and shape what our "world" "is", but usually we do not notice these embodied mediators: these in-betweens are ready-to-hand (embodiment). Their phenomenological–hermeneutical role can become present-at-hand, for example

when we study language–technology relations or when we encounter a technology that “speaks”:

- b. humans–(language–technology–world): language and technology appear to us as part of the world, perhaps even as a kind of alterity. For example, we may feel that technology speaks: literally, as when a robot/machine talks to us and acts as quasi-other, or metaphorically, when we have the impression for instance that technology talks a different language than us (e.g. the language of the “system”), or when it “invites” us to see things differently when we study it or in an experiment.
- c. (humans–language)–technology–world: language shapes how we relate to world when using and encountering technology, how we relate to the world through technology and to technology. But it is usually embodied, part of our point zero, we do not notice that it plays this role. For instance, the instrumental relation to technology is one that is already inscribed in, and prescribed by, our language. The discourse about technology often uses words that imply an instrumental relation such as “it”, “object”, “artefact”, tool”, “instrument”. Sometimes “you” or even “we” may be used, for instance, in relation to autonomous machines (Coeckelbergh 2010); this is a different way of speaking and makes possible a different relation to technology and to the world. If we want to open up different ways of relating to the world and to technology, we need not only different technology but also a different technology–language. Moreover, a different language about technology also means that we will understand ourselves in a different way (see examples below).
- d. humans–(language–technology)–world: the language of technology mediates our relation to the world (later Heidegger), and we can become aware of that. However, the language of technology is not necessarily the instrumental–technological language which Heidegger prompted to call technology “the danger”. Technologies can invite responses in different languages and hence mediate our relation to the world in different ways; they can be used in different ways; and they can also be “read” in different ways (hermeneutic relation). Moreover, one can also read “language–technology” here as meaning the “technology of language”: language itself is used as a technology. Language is also often mediated by technologies, for example writing and word processing. In all these cases, both language and technology are more than mere means, and more than media if medium is understood as “instrument”, an

“object” that is in between in the same way as a screen or other technology stands in between two other objects. The medium also speaks, already reveals the world in a particular way, and contains scripts that make us act in certain ways. We do not make the medium, the medium shapes us. This is very different from Searle’s view, for instance, and different from the conventional view of language.

Let me give some examples of how this scheme might help to reveal the mediating role of technology *and* language:

Think of an electric guitar. What the guitar “is” can be described in technical terms: it has a body, strings, a bridge, pickups, head, controls, etc. But this is only one way of looking at the guitar. There is also a discourse about specific types of guitars, narratives about persons in the history of music who have used this type of guitar, and there is an entire rock culture for instance of which guitar technology (and amplification technology) is part. Moreover, what the guitar “is” also depends on how I, as the guitarist, use it *and* on how I and other people talk about it. Maybe some people talk *to* it. The guitar also figures in movies, videos, paintings, etc. Thus, there is an entire cloud of uses, practices, exercises, and skills but also meanings, words, discourses, and narratives connected to it: there is no guitar-in-itself but always an object-word, a technology-text, a guitar-use, and a guitar-culture. We may “declare” the guitar to be this or that and agree about a particular meaning. But such declarations and agreements are only responses to worlds and meanings that are already there, to world–words and world–technologies that have a history. Moreover, in that history new technologies have always created new subjects. For example, the electric guitar has created not only new music (hence new culture, a new language, etc.) but also the figure of the rock guitar hero, the people who listen to rock music, and the culture and language that belongs to that. The guitar “object” (if we still must use these terms) is entangled with the guitar “subject”. Similarly, electronic music made with the help of computers and other electronic devices have created new music but also new cultures and new “techno” subjects. Social media such as Youtube create new practices and new, “Youtube” subjects. More generally, new technologies have created new music, new music cultures, and new music subjects. Important for my purpose is to emphasize that this was never “purely” the technologies who have done that kind of mediation; there is no such thing. Instead, the technologies were and are always already embedded in a particular understanding, a particular world. If an alien from another planet would visit us, so to speak, it (?) would not only fail to make sense of the electric guitar (at least in

any *human* sense) but it would not even see it as a guitar at all. It could not possibly appear to the alien as a guitar at all. The culture and tradition, the horizon that makes it possible that the guitar shows up as a guitar in the first place, would be lacking. (If the alien were very human-like it would have its own culture, in which case the guitar might appear in an entirely different way, through a culture, meaning, and appearance we might not be able to make sense of.) Thus, language is inseparable from technology; to the extent that contemporary philosophy of technology in the (post)phenomenological tradition focuses exclusively on the mediating role of technology without considering language it fails to be a good phenomenology.

Think also about word processing. Word processing is a technologically mediated activity that shapes a new subject: the human as word processor. My writing and my word processing are not entirely separate from my thinking, my experience, my subjectivity. Instead, both message and messenger are shaped by the medium. (Compare also: new social media create the blogger, the twitterer, etc.) It is true that many people active on social media like to see themselves as “writers”. But this is itself part of complex interplay of meanings–technologies and culture–technologies (e.g. a romantic writing culture) and the “politics” of these meanings–technologies. It is clear that terms such as “word processor” and “writer” are not neutral at all, but draw in an entire world and have normative angles. Here for example there is the world of “technology” and “computers” versus the world of “writing” as “authorship”, the world of humanities. Perhaps the two merge in the activity of “writing” using a “computer” and a “word processing programme”. Perhaps there is “hybridization”. Maybe there should be a hybridization. This is the “politics” at work. But the point is that what is happening here cannot be understood, cannot even appear, without the mediating role of language as a *milieu* and an in between understood as co-shaping what it mediates. We can only perceive, think, and capture what is happening in our experience by using language, which was already there before we thought and spoke. And not only technologies, but also words matter for how we understand ourselves and indeed for what we “are” (these two cannot be disentangled).

Another example: There is a discussion about using robots in health care in the (near?) future. Now the discourse about this vision of health care is mediated by language. It matters for instance if someone uses the word “robots” or “machines” as opposed to “assistive device”: the “machine” idea invites images of science fiction robots and sounds very “cold”, indeed mechanical care will be delivered. Heidegger’s modern technology dooms. Whereas “assistive device” sounds friendly, helpful, and lets the technology appear as a mere instrument rather than

an autonomous “terminator”. Again there is an entire politics implied here: what robots in health care should become depends also on how we name them. Now this is on the level of discourse, that is, from the third person perspective. But from the first person and second person perspective similar linguistic mediations of experience and appearance of technology are at play. For instance, if a nurse refers to the robot with a personal name (e.g. “This is Fred, he’s going to help you.”) the way the robot appears and its experience is likely to be different than if the nurse says “This is your machine.” And the way the patient or elderly person will talk *to* the robot will also be more than “mere” language. For instance, does the person address the robot with “you” or instead talk about the robot in the third person and non-personal (“it”)? In the former case, the robot is constructed as a quasi-other and will appear as such, whereas in the latter case the robot is revealed as an object (see also Coeckelbergh 2010; Ihde 1990). Just as the precise use and form of technology will shape the entire experience and “world” of the person, the precise use and form of *language* will shape the experience of technology and the world. Language will also already include prescriptions and normative stances towards what is happening. If I am given a “slave”, I will likely treat it as such; if I am presented with a “friend”, I will respond differently. There is no determinism here, but the normativity that is already in the technology *and* in the language is equally not something one can simply dismiss. We “have” to respond to the meanings that are already there. Moreover, the technology and the language will also co-constitute the person as subject: am I a “patient” or a “user”, a kind of “pet owner” or a “friend” of the robot? Again language is not a neutral tool or something external, but makes possible and constitutes world, experience, and subject. Technology plays a key role here as medium, but language also: *materiality speaks but language also matters*. Again, there is no determinism: we can change language (and technology). But for instance the words used the first time a technology is introduced to us are likely to matter to our experience and use of that technology, and the person using the technology is already confronted with a given to which (s)he must respond: a given technology, a given language, and a given world, or better: a given technology–language–world. And in our language, there is already a given meaning and use. Again, the word “robot” is connected with “slave” (etymological meaning) and with “metal” “machine”. To “hack” that morally loaded language requires work and is not necessarily successful. Language is not of our own making in the sense that we inherit it and are thrown into its milieu. At the same time we *are* language, we are using it and are living it; yet as individuals we have very little room for change or for influencing use by other language users. Note also that usually we are not

aware of these language issues. The words are embodied and/or they are part of the technology–world we live in. We do not think about them, just as we do not usually think of the mediating role of technology. But that does not mean it is not happening.¹⁰

Another example is computers. If we look at the history of computing, it is easy to see how the evolution of technology, the use of technology, and the use and meaning of words are all entangled. In the beginning of computer history, the computer was seen as a calculator (etymological meaning). But in the course of its history, the computer has changed into a much more “human” device: first it changed from a large mainframe used only by scientists to a “personal” computer. Then, the internet emerged and computers became nodes in a network and today all kinds of “personal” and “mobile” devices are used. We do no longer see a “computer” in our mobile phone; the device changed, the world changed, and the language changed. This also illustrates Heidegger’s point that we cannot differentiate between the Kantian *Ding an sich* (thing-in-itself) and the phenomena, between a noumenal world and a phenomenal world, between reality as it really is and reality as I experience it. There is one world–language and therefore also one technology–language. If someone says that a mobile phone “really” is a “computer”, then this is a specific perspective on it, but this perspective is always taken against the background of a given language–technology–world which has changed and which is at the same time human, social, and technological. Perhaps there is “declaration” (we can declare that this is no longer a “computer” or that this is no longer a “machine”), but then the subject of declaration is not 100 % human, let alone that there have been individuals agreeing to something. Language itself also speaks and declares. In German one could say: *Die Sprache macht mit*: language participates in the making of the world, language joins (in) the making of the world. At the same time, the language and the technology also make possible different subjects: are we still “users” of electronic devices or are we become more and more one with these devices? Are we becoming “cyborgs”? And when we use for instance social media, are we becoming our facebook? Are we becoming information? The making of the world is at the same time the making of humans, the making of language, and the making of technology.

¹⁰ When it comes to technologies, perhaps scientific and technological language even actively mutes meanings that do not fit into its framework—which would also explain why philosophy of technology in the “engineering” tradition (and of course in the naturalist tradition) has generally failed to engage with philosophy of language in its theories.

A further example is the self-driving car. Normally when I use my car as a skilled and experienced driver, the car is embodied: it is *zuhanden* (ready-to-hand). I do not notice the car. My skills¹¹ flow into the operation of the car and the car becomes a second skin, part of me-and-my-car moving on the street. There is me-car-moving. But when something brakes down, then the car becomes present-at-hand. Now once the car becomes self-driving, fully automated, my experience of the car is likely to change. The car might come to be experienced as a quasi-other; it is possible to have an alterity experience. This is already possible now (e.g. when we are angry at our car “Why don’t you start?”), but if automated this is likely to change. The changes in technology means language will also change. Perhaps more people will give a personal name to their car (assuming that there will mainly be private cars rather than public self-driving cars), talk to the car (“What are you doing now?”), etc. Every time a new technology enters the life world, we have to find a new relation to it. And part of finding a new relation to the car means: *finding a new language*. Both language and technology co-constitute at the same time what humans are here: are they still “drivers” or “operators”? Are they “clients” or “passengers”? Each of these words opens up and shapes a different world and constitutes different subjects (and indeed social relations).

Again the given-ness, receiving, and responding aspects of technological culture must be stressed. When children grow up in(to) this world, they do not only encounter humans (subjects) and things (objects). They are brought up into a world of humans-names, things-words, and technology-use-words. More precisely: their growth is a process of human-making and world-making, which includes technology-making and language-making. But this “making” is always a receiving and a responding to what is already there. There are already humans (significant humans such as the parents), there are already technologies and ways of using them, there is already a language, there is already a tradition, etc. The making of their world is connected with worlds that are already there and which change but which are also “given” to the child. To grow up

¹¹ For more on embodied skill, see for instance the work of Dreyfus. Note that Ratcliffe also uses the Heideggerian distinction between ready-to-hand and present-at-hand when he gives the example of using a pen: When I skilfully use a tool such as a pen, my experience does not make a clear distinction between me and it. The pen and my hand merge seamlessly in the context of practical activity. Understanding beings as ready-to-hand thus differs from present-at-hand contemplation in two important respects. First of all, ready-to-hand beings are not related to each other only insofar as they occupy positions in a common space–time; they knit together as a cohesive functional whole. Second, as we skilfully employ tools and become unreflectively absorbed in our activities, we do not cleanly distinguish ourselves from them’ (Ratcliffe 2008, p. 44).

is also to grow up *in (to)* language as the house of being. It is to breathe language and to respond to the world and to others through language. It is about speaking as much as it is about listening. There are already narratives and scripts (including prescriptions), and “individual” narratives and scripts have to weave into this existing web and draw on its materials. We are thrown into it, and we learn to swim. Or to use a metaphor Deetz uses: the child “‘gears’ into a language World of tradition, rather than learning labels or abstract rules” (Deetz 1973, p. 49). It is about “good listening” understood as “giving into the flow of language” (p. 50) in order to receive sense, understand.

Note again that this does *not* mean that we are determined by language—just as it does not mean that we are determined by technology, or anything else for that matter. (I stress this again in response to postphenomenological criticism of Heidegger.) Rather, there is “receptive creativity” (Bennett-Hunter 2007, p. 8). We still speak. But as we speak, we respond. Our speaking is a responding, but it is still a speaking. This means we are not mute entities. Heidegger’s point is that language “shapes and guides our understanding of ourselves and the world around us ‘before we are speaking’” (Wrathall 2005, p. 89). But we still speak and respond.

Note also that this provisional map of possible human–language–technology–world relations is not meant as a fixed categorization scheme which pretends to cover and illuminate all possible human experiences and practices, of course. It is neither a global map nor a map that is finished. But I hope it is a temporary tool that can be used by philosophers of technology to reflect on the roles language plays in how we relate to the world as technological *and* linguistic beings, how we are-in-the-world and how we experience and cope with the world using both technology and language, and how this shapes both our world and us. This map also illustrates *that* and *how* thinking about language can be connected to thinking about technology. In particular, it shows that the empirical turn is not necessarily incompatible with further thinking about language (“even” if this is inspired by Heidegger). On the contrary, it seems to me that to further develop our understanding in this area we need more, not less research that is responsive to the ways technologies are actually used, developed, talked about, etc. The difference is “merely” that I have been trying to convince the reader that attending to *language* should be a central part of this project.

Finally, this essay suggests that further engagement with Heidegger and the problems that occupied him might benefit postphenomenology and mediation theory, and more generally empirically oriented philosophy of technology. It is one thing to reject a particular conception of technology; it is quite another to neglect an entire tradition of thinking about language.

5 Pathways: Suggestions for a research programme

Although I have made some specific arguments in this paper and supported particular positions (pro a theory which considers both language and technology as mediators in various ways, and a Heideggerian view of language against a Searlean one), the main rationale of this paper was not so much to defend a particular view on the relation between language and technology but to bring the topic to the discussion in the first place. Furthermore, my claim was not the far too general one that this relation has not received enough attention by philosophers of technology; rather, my claim was that philosophy of technology after the empirical turn—including the postphenomenological current—needs to pay more attention to the role of language. By rejecting classic philosophical approaches to *technology* in order to accomplish the empirical turn, it has disregarded subtle and complex thinking about *language*—both in authors close to their philosophical background (Heidegger) and in philosophy of language more widely. More generally, I have criticized current trends in philosophy of technology that are too thin on language. By discussing some views on language and by exploring how we could start to conceptualize human–language–technology–world relations, I have tried to reveal what philosophers of technology who neglect language in the name of an empirical and material turn might be *missing* today. For sure, in this essay I have not been able to do justice to that subtlety and complexity in thinking about language (e.g. in Heidegger) and to the wide range of important thinking about language in philosophy. But I hope I have shown some ways in which empirically oriented philosophy of technology—in particular empirically oriented work in the phenomenological–hermeneutical tradition and perhaps also in work inspired by Latour—could take up the challenge to think technology *and* language. I have offered two possible starting points for such a project: we may start from analytic philosophy such as the work of Searle, for instance, or from Ihde’s influential attempt to bridge the gap between humanities (hermeneutics) and engineering.

With regard to the latter, let me emphasize that there is much more material in Ihde’s work that could be used to further develop views on technology and language. (Here I have only used a fraction of his work—albeit a rather influential one.) However, this exercise is likely to lead beyond Ihde. In particular, a fully developed view of language and technology inspired by Ihde requires further study of what, after all, is Ihde’s *hermeneutics*: an approach which was originally developed to deal with language. That is, those who take Ihde as a main source of inspiration may want to follow Ihde back to his starting point and to his

sources (Heidegger is of course one of them) and then bring this back to contemporary philosophy of technology. Part of what I have done in this essay may be interpreted as contributing to precisely that.

Of course, this is just one possible route. The maps and notes of guidance presented here are incomplete. They suggest some pathways based on my own research experience and philosophical travels; I have not been writing from the point of view of an all-knowing and all-seeing cartographer and I doubt if such an ambition would make sense, let alone if it could ever be successful.

Let me therefore end with a call for more travels into this territory. In empirically oriented philosophy of technology, we need more thinking about the precise ways language and technology can and do relate. This requires not a rejection of the empirical turn. On the contrary, it does not require less but *more* “empirical” work. For instance, we may do more research on how in specific practices hybrids of humans, *words*, and things emerge and transform. Contemporary philosophy of technology has done much to “bring together” humans and machines (cyborg metaphor), humans and things. There is also a lot of other interesting *thinking through technology* (to use an expression by Mitcham). But we also need to realize that this is also always a *thinking through words*. We must reflect on these words, explore through conceptual work how we can bring together words and technologies, and study how words, things, and humans¹² mix and are re-mixed in concrete practices—practices which are at the same time human, technological, and linguistic.

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¹² Incidentally, let us not forget *non-humans* such as animals and at least consider conceptualizing how *they* relate to language and technology. Many philosophers of language and many philosophers of technology of the past and present have failed to give them a voice or to hear them speak.