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The backgroundness of new media: A phenomenological account of information and communication technologies

ABSTRACT

A major part of our lives is now entangled with new media devices – mobile phones, laptops, iPods, blogs, twitters, SMS, e-mails, TV screens, etc. Our daily life happens in a cultural context where television, video, advertisement and computer images are more real to us than the non-media physical reality that surrounds us. In this article, within an ontological setting marked by Heidegger's notions of being-in-the-world and Ge-stell, we argue that information and communication technologies (ICT) would only essentially show up as what they are as long as they are experienced in-the-world where they are what they already have been for us. In this light, we submit that new media are essentially and paradoxically linked to instrumentality. On the one hand, within Ge-stell, the essence of ICT is shown to be far removed from its obvious toolness; yet, on the other, we submit that it is this very instrumentality that bounds new media that cannot be stripped out of what they most essentially are. At this point our article brings together earlier and later Heidegger, in a manner not done up to now, and that we claim is epistemologically consistent. The in-the-worldness of ICT, of its many devices but fundamentally of its revealing, that is, of the conditions of possibility for contemporary life

KEYWORDS

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background
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ontology

for being what it is – is achieved in the decisive entering of Ge-stell into language. Thus, we aim to show that new media essentially unfold as a background of action. We conclude the article by pointing out that this ontologically background is in full swing, letting beings be in accordance to what might be its deepest ontological hallmark, a human being capable of substituting backgrounds.

It is evident that information and communication technologies (ICT) are now a fundamental part of our lives. The indispensability of these technologies has increased considerably in the last decades. We live in a cultural space and time where television, film, advertisement and computer images are more *real* to us than the non-media physical reality that surrounds us (Baudrillard 2002). In this context, this article aims at fundamentally addressing the nature of ICT as a phenomenon deeply penetrating people's contemporary lives and societies at large. In so doing, we draw on Heidegger's phenomenologies of humanness (Heidegger 1962) and of technology (Heidegger 1977), and in a practice rather uncommon, consistently and legitimately, or so we hope, use them together. We analyse the ways in which in-the-world (Heidegger 1962) people engage with contemporary information and communication technological devices. We claim that the works of Heidegger (1962, 1977) unveil relevant and decisive complementarities when phenomenologically analysing ICT. The matching of these two bodies of theory and the application of a phenomenological approach to the issue provide us the ontological and epistemological grounds of the research.

The communicational aspect of ICT suggests *communication* as a decisive aspect of the new technology. Thus, this naming of the *new* technology can be said to follow the way in which people have been appropriating it, that is, not only for informational aspects *strictu sensu* but also for communicational purposes. Yet the expression information technology (IT) captures the history and foundation of this new technology, emphasizing its contrast with the precedent technology, that is, with industrial technology. In this article we also focus on this informational aspect of IT in order to arrive at a deeper understanding of its communicational underpinnings.

The article is structured in three core sections. First, very briefly we review the ontological grounds on which the investigation relies, Heidegger's (1962) phenomenology of being human. Then, taking into account this ontological setting we recover Heidegger's (1977) phenomenology of technology. Finally, relying on these two bodies of theory and bringing them together, we move into a phenomenological analysis of ICT, pointing out its ontological backgroundness.

ON IN-THE-WORLDNESS

In this article we cannot go beyond a very brief sketch of *Being and Time's* (Heidegger 1962) central ontological claims, the full implications of which will become clearer as we proceed. Heidegger (1962) pointed out that the human way of being, which he calls 'Dasein', is a being always and already involved in-the-world. In-the-world, being experts in acting, we, humans, are the kind of beings whose existence is an issue for us – our own existence is always already at stake, That my ongoing existence as an individual being matters consciously to me is the way of being human. Thus, we are essentially *ahead of ourselves*, always and already projecting possibilities for ourselves to be this

or that particular being in the world. In this projectedness we are revealed as beings already *thrown* into the world – already committed, compromised and busy with our existence as a project. Towards the future, in which we are to make something of ourselves, we find ourselves already with a past. As an already *having been-in-the-world*, projecting into the future, because things matter to us, we care: *things, beings, world* matter to us as possibilities for our existential project. Hence, Heidegger's fundamental insight is that our intentional relationship with the world is *not epistemic* but rather practical and ontological. For instance, we engage with the world not to know it but rather in already knowing it to *be* our life project. Whenever we find ourselves or take note of ourselves, we find ourselves *already engaged in practical everyday activity* in which things show up as 'possibilities for' our practical intentions. We do not tend to encounter computers 'as computers' but rather we tend to encounter them as 'possibilities for', such as 'a possibility for working' or 'for reaching other people' or 'for looking for data', and so forth. Furthermore, the computer is a 'possibility for' – what Heidegger calls an 'in-order-to' – only within an already present referential whole where other things refer to it, as a 'possibility for', and it refers to them. We should emphasize the fact that our human nature is always one in which the things we encounter *already matter* in some way or another – even if they matter only as useless, boring or irrelevant. This is what Heidegger means when he wrote that we are beings that always and already *care*. It is impossible for us, as always already immersed or 'thrown into' the world of humans, to take a wholly disinterested stance in and towards the world (Heidegger 1962: 176). Thus, *Dasein* dwells in the world, a world mostly familiar, which simply is always and already self-evidently there. Therefore our relation with the world is essentially ontological in as much as the world already shows up, or reveal itself to us as it already is, in and through our ongoing projectedness or comportments.

In-the-world a human is already somehow beyond itself, already dwelling in the world, within others, among things; not locked up in the privacy of its own consciousness as the representationist Cartesian picture assumes (Moran 2000: 42). Consciousness is always and already grounded in the ongoing practical activity in the world of everyday life. For Heidegger the transcendental domain is not the 'purified' consciousness but rather the ongoing, unfolding referential whole in which everything is what it is. To describe this radically extended transcendental domain, Heidegger uses the notion of *being-in-the-world*, using the hyphens to indicate the ongoing primary unity of self and world so that we would not slip back into a natural language in which we speak of the self without immediately implying also an already there meaningful world. Heidegger argues that humans exist in an ongoing openness towards the world in which the self and the world are always already a unity, a being-in-the-world.

When we encounter tools – computers, mobile phones, DVDs, etc. – they already matter in some way or another. However, these tools are tools *for this or that purpose* only in as much as they already refer to other tools, which also already refer to them as their transcendental condition for being this or that tool. Note that when using the notion 'refer' here, it is used in the sense of a *necessary relation* or *reference* for the tool to be what it already is *taken* to be when taken up in practical activity. The computer we are working on, to be a computer rather than a piece of assembled plastic and silicon, refers to our work, which refer to the application programs, which refer to operating systems, which refer to hardware, which refer to a power supply, all of which

refer to suppliers, which refer to maintenance services and so forth. Dreyfus (1991: 62) calls this necessary nexus of relations the *equipment whole*. When we take up these tools, as tools, we do not take them up for their own sake, we take them up with an already present reference to our projects within an always already there involvement whole. The equipment whole and the involvement whole refer to each other and sustain each other as an ongoing referential whole, horizon of meaning, which Heidegger calls 'the world'. The phenomenological meaning of a phenomenon, in the case of this article, of ICT, should be understood within this always already defining referential whole, i.e., the world itself.

We turn now to our understanding of Heidegger's (1977) phenomenological analysis of modern technology.

ON GE-STELL

Technology appears obviously as a means to an end, a tool. In the phenomenological sense, technology manifests itself as an appearance. Yet, it is precisely this way of showing up that 'we regard it [technology] as something neutral' (Heidegger 1977: 4) that makes us blind to its essence. To capture what a phenomenon is, the essential way in which it is what it is, one needs to go beyond appearances. Thus, Heidegger asks what *is* it to be a *tool*? 'What is the instrumental itself? Within what do such things as means and ends belong?' (Heidegger 1977: 6). An end is the result, the achieving of something aimed at. A means is the way by which the end is achieved. 'Whatever has an effect as its consequence is called a cause' (Heidegger 1977: 6). However, a cause can also be the end in view according to which the means to be used are determined.

The word cause comes from the Latin *causa*, which belongs to the verb *cadere*, 'to fall'. It means 'that which brings it about that something falls out as a result in such and such a way' (Heidegger 1977: 7). Thus, 'the four [Aristotelian] causes [*materialis*, *formalis*, *efficiens* and *finalis*] are the ways, all belonging at once to each other, of being responsible for something else' (Heidegger 1977: 7). This being responsible has the significance of a bringing of something into being. At this point Heidegger (1977) has left the instrumental view, which only considers as a cause the *causa efficiens*, that which affects something as a consequence.

This bringing forth is what Heidegger says that Plato in *Symposium* (n.205b) tells us: 'Every occasion for whatever passes over and goes forward into presencing from that which is not presencing is *poiesis*, is bringing-forth' (Heidegger 1977: 10). This *poiesis* is a bringing-forth, a coming to presence. The gathering of the four causes of a bringing forth is thus a revealing. That which is revealed is brought forth into unconcealment as it *endures/währen*. This revealing moves in the realm of truth – of *Wahrheit* (in German) – because it is a mode of bringing beings into presence. The way in which a being remains present is *its essential unfolding*, which for Heidegger is the meaning of *essence* itself (Lovitt in Heidegger 1977: 4, fn). Thus, essence shows up in revealing. *Revealing* is the English translation of the German verb *entbergen*, which, as a revealing, has the meaning of the ancient Greek word *alêtheia*, an uncovering of truth (Heidegger 1977: 11–12). Following this argument, Heidegger (1977: 13) concludes: 'Technology is therefore no mere means, Technology is a way of revealing' (Heidegger 1977: 12). 'Technology comes to presence in the real where revealing and unconcealment take place, where *alêtheia*, truth,

happens'. Technology as such is a revealing; its way of revealing is a fundamental one. It does not only concern the beings that come into presence, a craftwork or a machine, but it is the disclosure of *is-ness* itself (*Entbergen*), which first and decisively, shows the world as *what-to-be/what-to-do*. As such the technological revealing is primarily and foremostly the background against which appears that which is.

Modern technology changes decisively the coming into presence of humans, things, animals, tangibles and intangibles, of that which appears for man. A revealing not only reveals that which is differently but also reveals and conceals differently. Truth, meaningfulness, thus being-in-the-world, are differently grounded: '[All] tract of land is challenged into the putting out of coal and ore. The earth now reveals itself as a coal mining district, the soil as mineral deposit' (Heidegger 1977: 14). There is nothing metaphorical here. Modern technology changes substantively that which is decisive in-the-world. It lets unfold a whole conception of *is-ness*. Thus, the question is what is this conception of Being, this backgroundness, that modern technology is? How does the technological revealing first appear? It appears as a challenging – '[M]odern technology [...] puts to nature the [...] demand that it supply energy that can be extracted and stored as such' (Heidegger 1977: 14). 'The coal that has been hauled out in some mining district has not been supplied in order that it may simply be present somewhere or other. It is stockpiled; that is, it is on call, ready to deliver the sun's warmth that is stored in it' (Heidegger 1977: 15). What the river is now, namely, a water power supplier, derive from out of the source of the power station. '[T]he Rhine is still a river in the landscape, is it not? Perhaps. But how? In no other way than as an object on call for inspection by a tour group ordered there by the vacation industry' (Heidegger 1977: 16). Thus, the revealing of modern technology is a challenging – the soil of the field, the river, the wind are challenged in that they are faced with the demand to supply *resources* that can be stored as such:

The revealing that rules throughout modern technology has the character of a setting-upon, in the sense of a challenging-forth. That challenging happens in that the energy concealed in nature is unlocked, what is unlocked is transformed, what is transformed is stored up, what is stored up is, in turn, distributed, and what is distributed is switched about ever anew.

(Heidegger 1977: 16)

As a challenging-forth of nature, technology is always directed from the beginning 'toward driving on to the maximum yield at the minimum expense' (Heidegger 1977: 16) – this is an essential element of technology, its aim of efficiency.

Efficiently exposing and unlocking the energy of nature, technology reveals a world of resources. These resources belong to an already ongoing process, which is the content of the revealing itself: unlocking, transforming, storing, distributing, switching about, all these ways, efficiently and never coming to an end. 'Today all things are being swept together into a vast network in which their only meaning lies in their being available to serve some end that will itself also be directed toward getting everything under control' (Lovitt in Heidegger 1977: xxix). Man, himself, is ordered into the ordering process that the technological mode of revealing is – the 'current talk about human resources' (Heidegger 1977: 18) gives evidence of this. That which shows us

in-the-world already comes into being within this framework of beingness. This is for Heidegger what is most essential about technology. He calls it *Ge-stell*, Enframing in Lovitt's translation of Heidegger (1977).

In the ordinary usage *Gestell* means some kind of apparatus, frame, shelf or skeleton. Hyphenating the word – *Ge-stell* – Heidegger both wants to bring forward the gathering that the prefix *Ge-* denotes and to open us to the whole realms of meaning addressed by the family of verbs centred in the verb *stellen* and in the noun *Stell*. The noun means place, spot, location. The verb *stellen* means to place, to set, to put, to stand, to arrange, to regulate, to provide, to order, to furnish or to supply, and in a military context, to challenge or to engage (Lovitt in Heidegger 1977: 15, fn; Ciborra 1998: 318). Lovitt (in Heidegger 1977: 15, fn) notes that *stellen* embraces the meanings of a whole family of verbs: *bestellen*/to order, to command, to set in order; *vorstellen*/to represent; *sicherstellen*/to secure; *nachstellen*/to entrap; *verstellen*/to block or disguise; *herstellen*/to produce, to set here; *darstellen*/to present or exhibit and so on. *Ge-stell* denotes a gathering, which as such emphasizes the interplay of all these meanings.

Within a technological understanding, man and nature are together in a primary gathering that gathers the real.

Whoever builds a house or a ship or forges a sacrificial chalice reveals what is to be brought forth, according to the perspectives of the four modes of occasioning. This revealing gathers together in advance the aspect and the matter of the ship or house, with a view to the finished thing envisioned as complete, and from this gathering determines the manner of its construction.

(Heidegger 1977: 13)

This gathering is the challenging-forth within which each technological object always appears. That which is gathered shows up in the manner of the gathering itself. Heidegger presents two additional examples of this kind of gathering: 'That original gathering from which unfold the ways in which we have feelings of one kind or another we name *Gemüt'*, i.e., we call it disposition in the sense of the way in which something is given. 'That which primordially unfolds the mountains into mountain ranges and courses through them in their folded togetherness is the gathering that we call *Gebirg'*, i.e., mountain chain (Heidegger 1977: 19). *Ge-* in German is a prefix that indicates gathering, reunion, collecting or reassembling. Ciborra (1998: 318) adds as examples the words *Gesellschaft*//society and *Gemeinschaft*//community. With this meaning in mind we recover Heidegger's notion for the gathering that, in its essence, technology is: *Ge-stell*.

Ge-stell is translated by Lovitt (in Heidegger 1977: 15, fn) by *Enframing*, trying to suggest through the use of the prefix '*en-*' 'something of the active meaning that Heidegger gives to the German word' (in Heidegger 1977: 19, fn). 'This claim enframes in that it assembles and orders. It puts into a framework or configuration everything that it summons forth, through an ordering for use that it is forever restructuring anew' (Lovitt in Heidegger 1977: 19, fn).

ON BACKGROUNDS

Elsewhere Heidegger writes that Enframing is that which concerns us everywhere, immediately (Heidegger 1969: 35). We are immediately concerned by that which in everydayness always and already surrounds us. Within the

technological revealing the way in which everydayness essentially unfolds is in ordering and being ordered. Thus, ordering and being ordered is that within which we *fall* (Heidegger 1962) into the world. As such the world in which we always already are is revealed – which means it is – an ordering process. This process is one of ordering; ordering what? Ordering *is-ness* as such. Ordering everything in such a way that it is everything itself that only shows up within a previously ordering ground. That is, through ordering, that which appears as such.

In *the* technological man is challenged forth a revealing that, above all, concerns nature as the chief storehouse of the standing energy reserve (Heidegger 1977: 21). The way in which man directs himself to nature is the mathematical *physics*: '[M]an's ordering attitude and behaviour display themselves first in the rise of modern physics as an exact science. Modern science's way of representing pursues and entraps nature as a calculable coherence of forces' (Heidegger 1977: 21).

The real shows up as a calculable coherence of forces because previously to every questioning it was a priori mathematized, that is, orderly captured. Modern physics can proceed mathematically 'only because, in a deeper sense, it is already itself mathematical' (Heidegger 1977: 118). We must not misinterpret technology 'as the mere application of modern mathematical physical science to praxis' (Heidegger 1977: 116). Modern technology, as Enframing, 'is itself an autonomous transformation of praxis, a type of transformation wherein praxis first demands the employment of mathematical physical science' (Heidegger 1977: 116). In mathematical physical science, the opening up of a previous ground plan in which beings appear is the way in which the essence of modern technology comes to presence. Only because the essence of modern technology lies in Enframing does modern technology use exact physical science.

That contemporary technology, that is, ICT, has renounced traditional physics, employing a new kind of science, quantum physics, which in its turn is itself a result of the application of technology, supports this fundamental supremacy of Enframing over exact science. Despite mathematical physics having arrived almost two centuries before modern technology, seeing the manner in which they both belong to Enframing leads us to the essential understanding that it is mathematical physics that is put to use by modern technology, by *Ge-Stell* to be rigorous, and not the reverse.

From a Heideggerian perspective (Heidegger 1962), we can point information as the making present of the sense of distinctions within the referential whole in which we always already are. This making present is the informing of us. Information is action that informs. This *action* informs; that is, action itself is transparently taken as obvious. Information is the action that informs because, evidently, action, that is, the worlding of the world, is taken a priori as ground. As a making present, a realization by me, information is linked to action already unfolding. Concerning Heidegger's analysis of modern technology (Heidegger 1977), we should ask: is ICT a revealing? Is Enframing the essence of ICT as well? What is specific about ICT as a technology?

The enquiry into the relationships between industrial and ICT is something that has not fully been done up to now. Key contemporary investigations into the nature of IT (e.g. Feenberg 1999; Borgmann 1984; Ihde 1990) do not clearly distinguish the two phenomena, assuming some common nature in the two technologies. Yet, that ICT, possibly, has something in its nature that is unique in the very suggestion of its name – in fact, the novelty of the name is precisely the word 'new': *new* technology. This expression, *new*

technology, is used as equivalent to ICT, pointing ICT both as *new* and as *technology*. Thus, its novelty relies on what shares the place with the *new*: information and communication. As something new, as ICT is recognized as ICT, it must evidently rely on an essence; otherwise, it will be no phenomenon at all, i.e., nothing for us to recognize as ICT.

In describing ICT we notice that, in-the-world, ICT devices deliver relevance. ICT shows up relating to us and we as such relate to it. ICT is a collection of devices that informs and acts upon us, and with which we inform and act upon others and the world, in-the-world. We experience ICT as we transparently use it going on as we are in the world. As ready-to-hand entities (Heidegger 1962), delivering relevance into our continuous acting in the world, ICT devices belong to the realms of language, that is, of communication as foundational phenomenon.

Performing the phenomenological *reduction* (on this technique see, e.g., Spiegelberg 1994; Husserl 1995) upon ICT we came to the conclusion that the entanglement between ICT devices and being-in-the-world is the reduced phenomenon of ICT. As a revealing, the reduced phenomenon of ICT is its entanglement in being-in-the-world: it is some kind of a technological unveil of our always and already being with others, in-the-world.

How does information, its nature as the making present of meaning and the essence of technology participate in the new phenomenon of ICT or IT? Formally, the content of IT is evidently information and technology. Either IT refers to technologies as they are related to information or it refers to information as it is related to technologies, or, indeed, the expression refers to both aspects. How do these two phenomena merge in a new one? Does ICT refer to information *through* technology or to technology *through* information? Does ICT, or do ICT devices, involve or refer to meaning? Do ICT devices inform us? Do they present us differences that guide and influence us? Is ICT included in a worldly unfolding in which we face distinctions? Is ICT related to our activities in the world? Does ICT withdraw into the background as we act in-order-to a towards which for-the-sake-of-something-else? (Heidegger 1962). Is ICT included in an unfolding based upon a revealing of the real? Do ICT devices suggest some kind of a *framework* for the matters to which it relates? Does ICT participate in some kind of an ordering process of our activities in the world? Does ICT support efficiency? Does ICT help beings to be addressed within a *stand-by-ness*? Can beings *be called* by ICT?

We submit that the answer to all of these questions is *yes*. ICT is related both to the essence of technology, to the nature of information, and to human essential being-with. Yet, ICT does not show itself as diverse phenomena, but rather as one. In itself ICT is not only or essentially either information or technology, but something different. We recall that information is essentially the making present of the sense of distinctions within the referential whole in which we always already are. In its turn, modern technology is essentially a setting of the real in the mode of ordering. This ontological ordering is not some a posteriori interpretation that discloses the meanings of entities that appear, but it is rather an a priori disclosing that lets that which is appear in particular modes.

How should we join the notions of *making present of meaning* with a *setting of the real in the mode of ordering*? In ICT are we facing *meaning about order* and/or *order about meaning*? How do we essentially relate order and meaning? Order is a setting of meaning. Once something is ordered, the meaning is set. Order is a 'condition in which every part, unit, etc. is in its right *place*' (OPDT

1997: 522, emphasis added). Once ordered, the places are set and beings show up in their meaningfulness. Order is a notion that embodies a previous revealing on the basis of which order itself can unfold because only that which already shows as orderable can be ordered. Order points to the concealment of that which does not show in orderability. Thus, order, as a revealing, much in the sense in which Heidegger (1984) points out *alêtheia* as the simultaneous concealing/revealing on the grounds of truth, is a closing of possibilities.

Meaning, on the contrary, is a notion that points to an opening up of possibilities. Intuitively, meaning suggests questioning. Meaning is an addressing of the place of the thing in the referential whole. It concerns the references that something has in order to be what it is. These references, that is, that towards which the thing is pointing and that which is pointing to it, are the recognition of something *as something*. This *as something* is the meaning (Heidegger 1962).

Order and meaning have fundamentally different contours: order, contours of answering and closing; meaning, contours of questioning and opening up. Nonetheless, ICT brings together these two notions. How do these two apparently contradictory notions join together, and essentially, in the new phenomenon of ICT? Our answer: in information; order and meaning join *as* information. Heidegger's (1977) notion of the essence of technology, a challenging mode of revealing, allows everything to show up as ready-to-hand beings, ordered in function of a further ordering. In this light, information is the ordering of meaning. It is the technological emerging of human experience.

In-the-world, ICT devices are technologies that relate to information – they are technologies *of* information, that is, *informational technologies*. At an essential level ICT is order (technologies) relating to meaning (information). The ground of meaning is that which characterizes the kind of ordering that ICT is. Informational technologies or technologies of information essentially are ordering and meaning. As this ordering and meaning refer to one specific phenomenon – ICT – and are together in an essential realm, they cannot be addressed as two different entities but rather as one. Thus the phenomenon, in itself, should be taken as *ordering meaning* or/and *meaning ordered*. This relationship, in itself, shows the essential *orderable* nature of information, that is, the essential technological nature of information.

Acting on information, ICT *technologizes* information. In and with ICT, information becomes technological – 'technological information [...] [is] the object of information technology' (Borgmann 1999: 166). The kind of information that ICT renders is thus ordered information. ICT has ordered information as its object. Hence, informational technologies render technological information, which means that *ordering meaning* renders *meaning ordered* – this is a logical conclusion of the reasoning under way; as long as *ordering meaning* orders meaning it will evidently accomplish *meaning ordered*.

In ICT order refers to meaning *as* ordering meaning, which, in itself, already includes meaning ordered. In its turn, meaning ordered is the mode in which meaning refers to order, including in itself ordering meaning as well. This relationship *is* the meaning of ICT itself. The way in which the essence of technology and the nature of information mutually refer to each other, i.e., the kind of *as something* they disclose, is what ICT essentially is.

In *ordering meaning* rendering *meaning ordered* what is indicated is the essential unfolding in which ICT presences: an ordering meaning that renders meaning ordered. What is pointed here is the way in which the essential

elements of ICT are related. Yet, for these elements to be related, there must be something essential uniting them. What unites them from the beginning? What is foreseen in the unfolding of these essential elements of ICT?

Ordering meaning is the way in which meaning is related to order and meaning ordered is the way in which order is related to meaning. Ordering meaning points to an ongoing process in which order unfolds into/onto meaning. Order reaches, comes, gets, attains, arrives, spreads, stretches, extends and expands into meaning. Order is the very technological nature of ICT, in that it is the holding sway of *Ge-stell*. ICT endorses its essential belonging to *Ge-stell* precisely because it is order about meaning; that is, meaning is *dominated* by order. But one should ask: how can meaning be dominated? The answer has been given: ICT dominates meaning in that it is an ontological background; it is the technological *technê* as bringing-forth. This domination is a kind of revealing in which beings show up in the mode of ordering. The ordering element of the essence of ICT is thus a revealing of the real (Heidegger 1977: 20, 24 and 27). ICT is that against which the real shows. Because that which *dominates* meaning is not ICT deviceness but an ontological revealing – the technological understanding of Being (Heidegger 1977, 1966, 1969) – ICT not only necessarily conceals other ways of revealing but it also conceals revealing itself. This is precisely its character of domination. Domination is achieved in that ICT conceals its own *revealingness*. ICT does not show up as a whole within the real, but quite the reverse: the real shows up as a totality within ICT. In ICT, ordering meaning *is* the systematic way of making present meaning. This equals saying that ICT shows up as *technology of information*. The orderability of meaning comes from *Ge-stell*, that is, from technology. Within ICT nature remains orderable, i.e., in order to be kept under the essential revealing of Enframing.

As a systematic way of making present meaning – as a system of information – ICT changes the perception of the real, which is equal to say that it changes reality. Within an informational background the real is revealed. Being is bound together constructively in a system, presenting itself as something clear, and thus requiring no further justification (Heidegger 1962: 60). As an ontological rendering, comments Manuel Castells – an author not particularly close to phenomenological analysis – ICT

is a system in which reality itself (that is, people material symbolic existence) is entirely captured, fully immersed in a virtual image setting, in a world of make believe, in which appearances are not just on the screen through which experience is communicated, but they become the experience. All messages of all kinds become enclosed in the medium because the medium has become so comprehensive, so diversified, so malleable that it absorbs in the same multimedia text the whole of human experience, past, present, and future.

(2000: 404, original emphasis)

As we are in-the-world, entities advance to the foreground and recede to the background, against which everything always and already is within the references that provide the meaning of that which is what it is. ICT reveals entities *as* something; for example, working as computing, people as e-mail interlocutors, locations as always reachable, companies as calculating entities, watching TV as being informed about the world, world as the globe and so forth. Against a background that reveals beings, beings matter to us (Heidegger

1962). It is precisely this concealed backgroundness of ICT that makes us discover ICT devices as tools; this is precisely what happens within traditional Cartesian-based approaches to ICT.

Yet, any background whatsoever, as long as it is *in the background*, cannot be fully articulated and explicated – by necessity it lies at the background of our understanding (Dreyfus 1991). As a background that is gaining its place ICT shapes action and mirrors world because its unfolding is a *worlding* of the world. ICT worlds as world. As such, any kind of material, cultural or spiritual reservations anyone may have towards ICT will add up to nothing at all. ‘Technology isn’t just something man has acquired as an accessory. Right now it is what he *is*’ (Stambaugh 1969: 13, original emphasis). As background ICT is a challenge, it replaces reality – essentially ICT is an ontological background. ‘Information gets more and more detached from reality and in the end is offered as something that rivals and replaces reality’ (Borgmann 1999: 182). ‘All computer or information technology is always, is essentially *ersatz*’ (Babich 1999: 115). ‘The new media [that is, ICT] are not bridges between man and nature; they are nature’, they ‘are not ways of relating us to the old *real* world; they are the real world’ (McLuhan 1995: 272). This detachment of information from, so to speak, *natural* nature, is achieved in that technological ‘information holds on its own its self-realising’ (Borgmann 1999: 182), by referring to and being referred to signs within the technological information and communication situation. Technological information typically refers to technological information within a totality that grounds its own meaningfulness on its claim for being itself the worlding of the world. This is the challenging nature of technology, *Ge-stell*, marking in a non-neutral way the backgroundness of ICT.

From any Internet-connected computer, tablet or mobile phone on earth a professional can check his or her e-mail. In-the-world he or she does not thematically bring to his or her attention this possibility but rather relies on his or her own activity as a professional on that possibility and on many other ICT-related possibilities as well. He or she reads the report on the last sales figures, and replies with some instructions intended to affect the next sales figures. He or she already takes into account the figures of the competition as they have just been shown on TV. He or she checks the macroeconomic indicators, spots the differences from *what* he or she has expected and writes down some new report while re-checking more tables, graphs and charts. He or she sends his or her report to the staff through the company’s network. A press release is prepared to the media. Next he or she takes the mobile phone and checks information on how the NASDAQ, a physically non-located entity, is doing. The flow of information, within a communicational and technological infrastructure, is always running feeding its own movement, showing as the environment in which that which matters appears for this professional. He or she lives within technological information that for him or her is much more real than what is actually going on store A or store B. What the company’s store nearby actually is doing or not is almost meaningless for him or her. In order for it to become relevant it must be ICTized, contextualized, shown against the background on grounds of which it would gain its own meaning – it must be what he or she was or was not *expecting* within an understanding already *enframed*, that is, within *Ge-stell*.

ICT is what it is as we operate in society relying on the equipmentability of the devices of this new technology. Because these devices are equipment, they withdraw, recede into the background, escaping our attention. Moreover,

in-the-world we encounter ICT within 'the they', in the mode of ready-to-hand beings, as part of the equipment whole we find in action and we do not thematize. Thus, we cannot thematically and intuitively grasp what they affect the most. The 'they' play a primordial role in the way in which ICT shows up in-the-world. The averageness of 'the they', which establishes what equipment is, is not a statistical notion but the very tendency in *Dasein's* being-alongside-with-others to conform to norms. Norms announce averageness, which is the way in which things are supposed to be done in a particular context. Their function is opening up a world that is the background against which beings can get their readiness-to-hand. '[I]n each culture there are equipmental norms and thus an average way to do things. There must be, for without such averageness there could be no equipmental whole' (Dreyfus 1991: 153). The referential whole in which ICT shows up relies on a background of averageness in which a PC, a TV, a mobile phone and so forth are to be *normally* used. For ICT equipment to work, how 'the they' uses it must be determined in advance. The functioning of the ready-to-hand is dependent on the averageness of 'the they'. Thus, this averageness lets unfold a world, which is precisely what is never explicitly revealed because it is the basis on which the ready-to-hand is what it is, never showing up itself as a present-at-hand entity. Thus, ICT readiness-to-hand, i.e., the way in which we are in-the-world with, within or without ICT, reveals a world. This world comes into being as a way of doing what is supposed to be done, which by the lenses of the ontology on which this investigation is based, means that, as foundational action, ICT aims at a foundational background.

In-the-world we live-with-and-in-TCT, that is, *within* ICT as a non-media, that is, within ICT as a background, the real itself. We *know* ICT in its equipmentability as a totality – as reality. As beings are ICTized they enter a new reality. For instance, a CD is not a representation of music; it is music, in many cases strangely but commonly considered *more perfect than reality itself*. This kind of feeling that many of us have experienced is an aspect of a revealing of the real, which sometimes assumes the mode of some kind of a disburdenment.

A background is what unfolds and pervades in as all of the appearances of ICT. Entities and world itself appear in contemporaneity against a background of ordering meaning, which, in its turn, is fore-sighted in that it is a background or ordered meaning. As a background, ICT lets the world to showing up within ICTness. Introna (1997: 184–85) addresses this issue, uncovering the way in which Taylorist thinking, that is, technological management, makes ICT *the* reality itself:

In the hyper-real representation, representation becomes an end in itself. This sense of information as generated by computerized information systems is already current. Taylorist managers often believe the computer generated report to be more correct (more real) than reality itself. The models in the decision support system are more real than the opinions of others. The system is taken to be objective and real. For Taylorist managers there is a one-to-one mapping between the representations and the reality, even to the degree that the model *is* the reality. For them the computer is an objective and value-free mirror of the reality.

(Introna 1997: 184–85)

To a great extent we are all Cartesians now. It is mainly within a Cartesian implicit understanding of reality that ICT unfolds – 'technological information

holds the promise that, if properly linked with reality on the input side, the rigor of its algebra will faithfully preserve and process meaning and yield reliable information on the output side' (Borgmann 1999: 166). Controlling information that has a one-to-one correspondence to reality, it is reality itself that is controlled.

ON LANGUAGE GROUNDS

Holding in its nature the essence of ICT, Enframing clarifies itself in ICT because it enters a *rationale* of totalization, instead of the *rationale* of fragmentation within which it moves in industrial technology (e.g., Castells 2000; McLuhan 1994). In ICT, Enframing emerges in the domain of communication, that is, of language as human essential grounds. The changing of the name of the phenomenon, from IT to ICT (e.g., Avgerou et al. 2004), is deeply elucidative of the foundational realms in which this background moves. Language is what couples, adjusts, balances ourselves towards and within environment and others, making us the kind of beings we are (e.g., Heidegger 1962; Mead 1934; Barthes 1972; Maturana and Varela 1992). Heidegger pointed out that the typewriter reveals the intrusion of technology into the domain of language. It is not that the computer with *word processing* software has taken over the place of the typewriter, but yes that the technological information – oceans of sounds, pictures, graphs, video, texts, digitally produced, processed, transformed and distributed – has taken over the place of the hand written word world, of its linearity and sequentiality – and to some extent of its rationality (McLuhan 1994; Flusser [1992] 2010). Although, apparently, the typewriter and the PC mainly serve the same function – to write – they are very different mechanisms. Neither handwriting nor the typewriter provides the efficiency of the production of texts as successfully as the word *processor*. In *processing* words, language enters the ordering process of technology, that is, of *Ge-stell*.

Because information is an integral part of all human activity, all processes of our individual and collective existence are and will be directly shaped by the challenge of ICT (Castells 2000: 70). Affecting communication, ICT substantively affects us. Fundamentally acting in language, ICT is nowadays part of being-in-the-world, opening up a way – the most human of the human ways, to be precise – for the ontological decisiveness of the essence of technology, Enframing, further to unfold.

ICT is technology of a kind – a technology that acts on information and communication; more precisely, technology that unfolds within communication. This action that aims at an ordered meaning unfolds in and as computation. The computer, for its turn, the millennial machine of contemporary culture (Borgmann 1999: 154), computes. Now, computing, as ontological, is a *recomputing* because it discloses and counts on a previous unifying power of that which computing already is. As such it brings the disclosure of beings against a background of reckoning and calculation, that is, beings are a priori bound by a fundamental context of meaningfulness on grounds of control, comparison, mastering, usefulness and so on. Information, that is, the inward forming that reaches in and reaches out, comes to presence as calculation, reckoning, computing, framing, controlling. It is this *logos* of ICT that shows information as a reckoned, calculated, organized, planned and measured being. Whenever we plan, research and organize, we always reckon with conditions that are given. ICT is the conditions that are given; it is the gathering that shelters (Heidegger 1978). ICT is the ground for action as *logos* is

a *computare*; actually, *computare* is the oldest meaning of the ancient Greek word *logos* (Crane 2012). ICT substantively reveals thinking as calculation – calculative thinking computes (Heidegger 1978). Because this computing is ontological, that is, it is the basis on which action unfolds, thinking remains calculative thinking even if it neither works with numbers nor uses an adding machine or computer (Heidegger 1978). Thus, it is not ICT that appears as computation, but rather the real; the real appears as *computare*, against ICT as an ordering background. This ordering ‘detached from the notion of creation, can [...] be represented in a general and indefinite way as a world-order’ (Heidegger 1978: 119).

The way in which *Ge-stell* comes to pass in ICT is by addressing each and every kind of human action in the world. It affects, it enters, it moves within language. This is equal to saying that while industrial technology Enframes the real by addressing the onticity of beings, ICT Enframes, challenges, the real by directly addressing the very human essence: communicating in language.

Against ICT, the real appears intelligible as a system, a system of computation, that is, a computing information and communication system. As such, within a foundational already going action, it is action itself that is united, planetary – that is, globally and totally. As a background against which what is appears, ICT, an ontological *informing*, orders meaning in that it captures it in a system. This ontological ordering is the letting of Enframing in strengthening its path, towards a continuous growing efficiency.

These conclusions are not only consistent with the phenomenological work of Heidegger (1977) on the essence of technology, but also rely decisively on Heidegger’s (1962) *Being and Time*. A background, the essential nature of ICT as suggested in this article, draws as much on *Ge-stell* (Heidegger 1977) as it does on ready-to-hand and ‘the they’ (Heidegger 1962). Backgroundness of ICT, as its essence, brings consistently and coherently together early (Heidegger 1962) and later Heidegger (1977). It is because ICT devices are what they are within ‘the they’, having readiness-to-hand as their typical mode of being, and because we live within ICT in everydayness, that the Enframing of modern technology is revealed in ICT as a background.

The pervasiveness, both in depth and scope, of ICT devices in human activity and their readiness-to-hand are fundamental for Enframing to enter language becoming a background. In essential terms, it is because Enframing becomes ready-to-hand and is appropriated by ‘the they’ that ICT becomes a background. In these basic conditions ICT’s readiness-to-hand grounds our age.

The ready-to-hand of an epoch is that on the basis of which that same epoch is grounded. As the ready-to-hand grounds an age, ICT grounds our epoch, which, elucidatively has taken ICT for its name – the IT era, the information society, the digital society and so forth.

CONCLUDING REMARKS

Within a fundamental setting marked by Heidegger’s being-in-the-world (Heidegger 1962) and *Ge-stell* (Heidegger 1977), we argued that ICT would only essentially show up as what it is as long as it is experienced in-the-world in which it is what it already has been in-the-world. Unfolding within the mode of being of ready-to-hand, ICT is what it is in everydayness, i.e., within *the they*. Thus, as it is evident that ICT is formed by tools for human activities, this very toolness of its devices, in all its pervasiveness, should be noted phenomenologically in order to allow us to experience the essential unfolding

of the phenomenon ICT qua ICT. In this light, ICT appears paradoxically linked to instrumentality: on the one hand, in its essence, ICT was shown as something far removed from its obvious instrumentality; on the other, this very instrumentality cannot be stripped out of what is most essential for ICT, else we would not recognize ICT as ICT. This latter aspect was clarified by our phenomenologically working out the Heideggerian (1977) notion of *Ge-stell*, Enframing, the essence of modern technology, in realms of ICT. The in-the-worldness of ICT, not only of its many devices but also and more fundamentally of its revealing, that is, of its a priori union as an ontological phenomenon, is the decisive entering of *Ge-stell* into language, thus into the essence of man. This, on account of the ontological basis of this investigation, was shown to point at ICT as a background. Although grounded in the very readiness-to-hand of ICT devices, the replacing nature of *Ge-stell* surpasses it and shows its ontological contours precisely by disclosing its typical mode of being as a specific *letting be* of all modes of being.

The paradoxical nature of ICT, both as instruments and as background, appears to us all because ICT mirrors world. In-the-world, worlding as itself is, the essential unfolding of ICT departs from its obvious readiness-to-hand, entering worlding, rigorously, as world. ICT worlds by worlding as world. Hence, the worlding of ICT, not only of the readiness-to-hand of its devices, but also and more decisively the very readiness-to-hand of its essence, grounds our age in that it becomes the background against which that which is is.

Future researches should work out the possible implications of the findings of this article for diverse aspects of human experience. We would briefly like to point out two of those domains. First, in accepting the claims presented in here one needs to abandon, or to reframe, important frameworks used up to now for understanding technology, new media and society. In our view, functionalist approaches, the instrumental view and the social shaping of technology perspective should be questioned or reframed to strictly operational domains of human experience. Second, in accepting the arguments of this article one should acknowledge that new experiences and phenomena become intelligible or 'researchable'; human backgrounds and evolution; perception, global culture and identity, are obvious ones.

This article presented a questioning, a questioning for fundamental grounds within our involvement with ICT in a world always and already there. We do not claim to have articulated the phenomena of ICT in the only possible phenomenological way. We would have never embarked in such attempts. Moreover, our theoretical foundations and phenomenology itself dismiss this kind of assertion. What we claim is to have followed a phenomenological path that, we believe, opened up the phenomenon of ICT in new, useful and meaningful manners. We hope to have shown the ontological relevance of our engagement in-the-world with ICT. Our phenomenological notion of background, as the essence of ICT, brings together earlier and later Heidegger (1962, 1977), being-in-the-world and *Ge-stell*, which is something not fully done up to now. This work of ours, thus, also points out a way in which those two pieces of Heidegger's (1962, 1977) may enhance their potential in being used in the social sciences' fields of research.

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