

DIGITAL PRAXIS: NOTES ON A PHENOMENOLOGICAL SYNTHESIS ¹

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Abstract: This paper aims to provide a general phenomenological framework for the study of digital experiences as technological praxis. This approach is built through a synthesis of the categories proper to different currents of thought such as Merleau-Ponty's bodily phenomenology, the postphenomenology of Don Ihde and his school, hermeneutics and information theories. These notes develop a progressive analysis of the phenomenal dimensions that take place in the user-device interaction, from the stimulus base to virtual recreations. Through the intersubjective relationship with the machine, integrated to the user, the user produces and consumes the informative material that will become successive digital representations of himself and of reality as a whole.

Key Words: intentionality; instrumental praxis; representation; postphenomenology; embodiment relations; hermeneutic relations.

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Phenomenological perspectives on technics

Since early Greek geometry, a reflection about and through technique has been developed in philosophy. However, the first effective attempts to understand the essence of technology emerge from the phenomenological school.

Intentionality, as a category, already shows the will to overcome the Cartesian rupture between subject and object. The main property of consciousness is that of being intentional; to always be *consciousness of something* (Husserl, 1913/1962, p. 82). By intentionally plunging itself into and participating in its material environment, human subjectivity emerges as intersubjectivity. Our experiences (*Erfahrung*) are therefore lived events fully inserted in the world: *lived events of something*, that end up shaping horizons of experience and our whole *vital world* (*Lebenswelt*).

Much of intentionality is operative and is performed through tools with which humans transform, dominate and access reality. The concept of *technological praxis* alludes to the intentional projection that manifests itself in the world by the use of technics (Leocata, 2007, p. 175). Its very essence is one of practical application. Phenomenology of technics understands this kind of praxis as a fundamental and substantive action in configuring our daily experiences. It consists of a particular intersubjectivity flux by which user and tool need each other in the same praxis.

After an initial development with the works of Edmund Husserl, Martin Heidegger, and José Ortega y Gasset, the in-depth study of technics took a conceptual turn in the mid-twentieth century. The contribution of Maurice Merleau-Ponty in *Phénoménologie de la perception* (1945) constituted in the revindication of the bodily dimension as center of the intersubjective experience. Body — said the French philosopher — is our main medium for being in the world (Merleau-Ponty, 1971, p. 171). Overcoming the reduced analysis of pure consciousness, this framework brings forth a new phenomenology for physical perceptions. As in Aristotle's example of the axe as an extension of the hand (Aristotle, trad. 2000, 168a10-15, p. 62 y 632a10-15, p. 215), every instrument implies the extension of a corporal function, and thus it also can be a projection of our perceptive organs. Merleau-Ponty uses the example of the white cane used by a person who is blind in order to *see again*:

When the white cane becomes a familiar tool, the world of tactile objects goes backwards. It no longer begins in the hand's epidermis, but at the tip of the cane. [...] The cane is no longer an object perceived by the blind person, but a tool *with* which he/she perceives. It is a body appendix, an extension of the corporal synthesis (1971, pp. 177-178).

Our experiential field, as well as the possibilities of our senses, thus become plastic and modulable. This is the core reason by which consciousness and perception can be extended using technology. They share the same intentional nature.

After the first school of eminently Husserlian origin, and after its second development with French phenomenology, this tradition advances to a third development in the so-called post-phenomenology. Don Ihde, Peter-Paul Verbeek and their followers study instrumental experiences as the main paradigm of intersubjective human life. Breaking from the subjectivist positions, they link continental thought with elements of American pragmatism; in this way, the *everyday life world* (*Lifeworld*) is experimentally articulated through technologies.

Ihde proposes a whole taxonomy of his own for technological praxis as instrumental relations: *embodiment*, *hermeneutic*, *alterity* and *background*. Embodiment relations, following the view of Merleau-Ponty, make possible the physical integration of an artifact. More specifically, Ihde emphasizes their quality of being transparent: embodiment relations — as in the interaction between the white cane and its user — are non-reducible to the category of object and do conform to a whole intentional field experienced as one body, in one single corporal synthesis: (*I-technology*) – *world* (Ihde, 1990, p. 89).

Hermeneutic relations appear when using tools that provide an informative access to various regions of reality: “The artifact does not withdraw from our relation to the world but provides a representation of the world, which requires interpretation (the artifact must be ‘read’) (Verbeek, 2001, p. 127). Due to their giving-access-to by a representation, artifacts such as a watch or a chart are hermeneutical, representative. Hermeneutic relations are schematized as *I – (technology-world)*. Ihde notes their transparency using the example of the art of writing:

Writing is a technologically embedded form of language [...] If the object-correlate, the ‘text’ in the broadest sense, is a chart, as in the navigational examples, what is represented retains a representational isomorphism with the natural features of the landscape. [...] there is a kind of representational “transparency” (Ihde, 1990, p. 82).

The representation’s accuracy makes the reader perceive a pseudo-*presentiality* of the represented. The greater the level of isomorphism between reality and simulation, the more crystal clear its hermeneutical transparency.

This is the scheme of Information and Communication Technologies (ICT), towards which a part of contemporary phenomenological criticism has been directed. Examples of this hermeneutic and social analysis are works by Guy Debord’s like *La Société du Spectacle* (1967), Marshall McLuhan’s *Understanding Media* (1964) and Byung-Chul Han’s *Undigne* (2021) and *Infokratie* (2022) among many others. For such perspectives, post-industrial societies have generated a technical macrosystem based on machines that produce material representations, especially visual ones,

which mediatize the public and with which it maintains relations of recognition and alienation.

However, there is a phenomenological development separated from strict philosophy. It is the one conformed by disciplines related to physics, mathematics and biology sciences that have taken part in the analysis of technics. For them, the user-device interaction is characterized, in a broad sense, by a system-like performance and, therefore, it follows patterns and processes comparable to other systemic and holistic models. Thus appears an alternative vision of intersubjectivity for Systems Theories (ST), Information Theories (IT), and the Human-Computer Interaction (HCI) and for cognitive sciences as the neural computational theories.

The phenomenological developments presented in this section show structural differences and, at first glance, they also differ in their conclusions. However, it is possible to come to a general synthesis of their categories thanks to some common elements such as the following: 1. They are totally or partially heirs of the phenomenological thought; 2. Beyond the mere object, they analyze relations, mediations, and experiences; 3. They study technologies, especially those concerning information; 4. They differ from the subjectivist views by taking experimental and material bases.

Digital integration: embodiment and representation

The digital environment is a use-system and a technology experience at a global level. Its massive implementation is due to its ability to substitute goods, spaces, and times, synthetically accumulating the capabilities of previous techniques. With the corresponding exceptions, the main technological profile of the contemporary individual is that of a digital user.

By digital technologies we mean the set of tools, hardware and software, which use discrete numerical values to process and represent data. Those material supports that participate in digital processes are called *digital devices*: *Smartphone*, *Tablet*, *PC*, *Smartwatch*, *SmartTV*, etc. Through their connections, they add other technologies up to scales such as *Internet of Things* and *Smart City*. Digital devices also have different instrumental articulations: touch screen, alphanumeric tools, mouse: sound sensors, light and other sub-devices that capture information (*input devices*).

The main field of this hardware-software interaction has been called interface: a sub-device of digital processors that receives and sends information (Hansen, 2013, p. 158). This dual nature confronts the user with a certain form of sensibility in the machine. Using Ihde's expression, we can say that the digital device develops, thanks to the implications of the interface, an *instrumental "intentionality"* (Ihde, 1990, p.

32) projected to the user. The device interface manipulates information in the form of stimuli, of sensory excitations. Searches, notifications, and responses involve, as we shall see, a common language of *micro-perceptions* (Ihde, 1990, p. 30); interface language, which is at once haptic, visual, and auditory.

For Merleau-Ponty, the typewriter keyboard constituted one of the most astonishing cases of technological adaptation: “It is true, to the letter, that the subject who learns to type integrates the space of the keyboard into his bodily space” (Merleau-Ponty, 1971, p. 169). The same interpretation is proposed today for the digital artifact by postphenomenological authors such as Stacy Irwin (2016) and Luli Radfaher (2018). In short, we can demonstrate the physical user-device integration through two effects: *embodiment* and its transparency. Insofar as we experience the tool as a continuation of our operating organs, it is an extension in the manner of a physical prosthesis. Insofar as its language is that of clean and punctual sensations, sublimated and without roughness, it is also an extension as a focus of pure perceptions.

The second type of integration with the digital device is hermeneutic. This physical and perceptual prosthesis gives us access to parts of reality that were previously far from our vital field, processing their qualities, storing them, and representing them to the user. It translates phenomena into different informative units (bit, data, text-information) by means of the *amplification-reduction-selectivity* scheme (Ihde, 1979, p. 57). Because of this function, because of their multisensory language and their networked structure, digital technologies can record a large part of reality. They are the most effective artifact of universal representation.

While the corporal relation tends to stabilize itself, the hermeneutic relation may require a dynamic interpretative process by the user. An example of this is the process called browsing, especially developed on the Internet, and which has hypertext as the structure of the higher levels of information. The total hermeneutic integration implies a reading-route through hyperlinks linking blocks of interpretable content.

The user takes the keyboard, the screen, and the whole device as his own space where representations of reality emerge, and where he/she can interact with them. The digital phenomenon is, because of its technological efficiency of integration, difficult to perceive as foreign alien [ajeno]; difficult to submit to analytical parenthesis. As an embodied and hermeneutic extension, the device is perceived as one and the same praxis: (*I-technology-world*). This technology, which extends beyond temporal and spatial limits, makes almost the entire world of objects experienceable for us.

Prosumption and intersubjectivity flux

Digital experiences, in their elementary phenomenal level, consist of a flow of stimuli-information. We can describe them as minimal aesthetic impulses projected between the device and the user through the auditory, lectovisual and haptic language that they share thanks to the interface. In each click, in each movement of the screen through the scroll, and in each action an elementary unit of stimulus-information (*input*) is generated. On the same plane, the stimulus-information processed by the device (*output*) can be projected towards the user to excite his sensitivity.

The effectiveness of the outputs is based on the repetition of their aesthetic patterns. When a change in these patterns is perceived by a just-noticeable difference (JND) (Negroponte, 1995, p. 63), the user understands that he/she must react and fix his/her attention on new material and rhythmic patterns. The triggering element arises from this break with the previous pattern of simulating outputs. Therefore, the very novelty of the stimulus is its phenomenal vindication: it exists because it is new. In this quality of pure sensations, the outputs grant an instant of full perception, reducing the perception of the surrounding offline context.

The input-output scheme corresponds to the elementary linear system model: $y(t) - x(t)$ (Couch, 2013, p. 439). For information and systems theories, which are the foundation bases of computer science, digital experience must be understood in these categories. In the words of J. C. R. Licklider, one of the founders of modern computational science, human-computer symbiosis is a “subtype of mechanical systems” (Licklider, 1960, p. 4). Along with him, Information Systems (IS) theorists such as Claude Shannon and cybernetics theorists such as Norbert Wiener converge on a common thesis: human and computer are related through a flux of information and energy that generates a closed field of interaction, a system of its own. This field completely involves the nervous and muscular system in cyclical feedback (Wiener, 1985, p. 8): continuous in terms of its flow, discrete and discontinuous in terms of its stimulus units.

The user is characterized by this *informative radiation*: he/she provides the content of the system, which is returned to him/her or sent to other processors. Hypertextual browsing, for example, is a type of hermeneutic relation with a high information load. Each *user-selected-path*, each decision, generates new informative content, in addition to that which may have been provided previously. The systemic relation, fruit of the effectiveness of the other relations, makes the user a passive and active element of the system. A producer and a consumer of information, he/she produces by his/her own consumption the content that continues to nourish the system. The term prosumer, coined by McLuhan, can therefore be accurately applied here (McLuhan y Nevitt, 1970). The browser co-produces its browsing environment by contributing

data in its consumption and in its production (Radfahrer, 2018, p. 134). In the process, he/she determines his/her intentional preferences. As a cyclical and closed system, the *prosumptive* experience reinforces and reproduces itself.

The phenomenal might of the digital system is to be able to translate the intentionality of the user into a permanent source of information. The stimulating flow is an energetic manifestation of the intersubjectivity flux. The interface design itself mimics human intentionality, making the user-device a doubly intersubjective system. Human and machine behave as two processors of the same flowing ontic, a sensitive material.

Levels of informative representation

Beyond interpretations about the nature of information or pure data, from a general phenomenological perspective there is no signifying information per se, as a physical and natural property of objects. *Signifying information* exists only as *praxis* (πρᾶξις) and as *poiesis* (ποίησις); insofar as it arises from the action and production of a human function. The generation of meaning (*Sinngebung*) is instrumentally channeled in the representative technologies described above.

Digital content arises from the user's interaction with digital technology, and never otherwise. And although its fundamental phenomenal scheme is an input-output flux, *prosumption* can be analyzed from other fields. Even while passive and reductive, as we shall see, it is also active and synthetic. In this way, the intersubjective flow is projected towards a semantic complexity, towards *emergent* levels (Bates, 2005) of ever-increasing informational richness.

Unlike other technologies, digital ones are radically multistable (Irwin, 2016, p. 40-42). In the same embodiment relation (the position with respect to the device, its physical integration) the user can experience multiple hermeneutic relations: text reader, image viewer, video editor, software programmer, geolocated object, recognized voice or face, etc. Even if they share a part of the relational structure, the phenomenological analysis needs to understand each language and each field.

The content provided by the user is transformed at different emerging levels: from the strict stimulus-materiality (*stimulus-information; input-output*), to the binary digit levels (*bits*), to the datacratic level (*data*) and the hypertextual level (*reading-route* and *text-information*), to reach virtual reality levels (*Metaverse* and others). They are not, however, necessarily successive, and sequential, and they often occur simultaneously. At all levels, the same material is processed: the flux of the user-

device interaction. And yet, because of its particular ontic and cognitive consequences, each level has its own phenomenal analysis.

As we have pointed out, the hermeneutic value of information technologies is representation. They allow access to diverse parcels of reality through their translation, their recording and their iterable reproduction. The very ability to reproduce — notices Merleau-Ponty — already presupposes a possible recognition (1971, p. 473). In data, hypertext and virtual reality, the digital user is a prosumer of successive representations of the world and of himself.

Digital alienation

Every process of instrumental, informative and productive extension is possible thanks to a human faculty closely related to intentionality: estrangement.

In Aristotelian categories, action and production are plainly distinguishable. *Praxis* belongs to and remains in the operating subject, while the product, the *poiema*, is cast out into the world. Its future material development is uncertain, fully separate. In Hegelian categories, by contrast, the faculty of externalization (*Entäußerung*) is understood as a part of the development of consciousness in which it can recognize itself in what it has produced (Rae, 2021, p. 31).

From a phenomenological point of view, the body integrates the environment and *appropriates it* (Venebra, 2018, p. 123), an ability that allows it to extend itself into it. In doing so it also abandons itself, it intentionally throws itself into the perception of things. The estrangement of his/her senses allows the person who is blind to *dislocate* the touch to extend it through the white cane *and see again* with the “touch” of its tip. The same estrangement allows us to govern the landscape through a map or to measure time thanks to the mechanism of a watch. The functions that we increase using technologies are the fruit of these displaced perceptions thanks to the perceptual isomorphism of technique. Extending an intentional function implies dislocating it, estranging it in the tool in order to increase its potential.

This very capacity can, however, alter the intersubjective communication between human and instrumental extension. The ratio defined by Guy Debord, “The more they make their life an object, the more they are separated from their life” (1992, p. 32) builds on the principle formulated by Aristotle: “ὁ δὲ Βίος πρᾶξις, οὐ ποιήσις, ἐστίν; *life is action, not production*” (trad. 2006, I, 125a5-10, pp. 6-7). The estrangement that becomes intersubjective deprivation — that which production wrests from life so as not to give back as something lived — is what we can call *alienation*.

Technological praxis is shaped in an intentional tension between user and tool-product. Although instrumental intentionality is a projection of human intentionality,

the former can detach itself and be imposed on the latter that previously articulated it. In their interdependence arises the practical primacy of the materialized, separated, over the user. The operative subject can thus become another passive element in the technical system, and acts as a *technological other* (Irwin, 2006, pp. 453-467). Generic alienation consists in the inability to operate and recognize oneself in one's own extensions: the perceptual dislocation that becomes tearing and amputation.

The particular form of alienation that the digital user may experience corresponds to the emerging level of interaction: from the basic stimulus level to the presumption of the most elaborate information content. It is their effectiveness in integrating, both corporeally and hermeneutically, that makes digital technologies so potentially alienating.

The highest degree of integration comes from the interface, which aspires to match human sensibility. For example, perceptual isomorphism makes the index — the volitional organ par excellence — become confused with the cursor on the screen. Like the blind person who moves forward thinking not with his/her touch but with the dislocated touch at the tip of the white cane, the digital user articulates his/her index movements (with a screen, pen, mouse or other) in the location terms of the cursor movements. The physical context of the actions shifts from the user's here-body to the device's there-screen.

Bodily extension such as the cursor present a second perceptual dimension that relates them to hermeneutics: the displaced organ articulates itself physically; through movements, and symbolically; through its interpretation of the signals on the screen. It encounters a body on the other side, a disembodied carnality (*Unkörperliche Leiblichkeit*): this is the case of the virtual representation; an *other body of its own*. (Venebra, 2018, p. 122).

But the phenomenological analysis should not stop at the rupture of planes between the here-body and the there-screen; on the contrary, we must explore the implications of this second dimension. Embodiment and hermeneutic projections are constantly processed by an informational system. The digital device is a "second skin" that separates from us in order to reflect and *think (about) us*. As we have pointed out, digital intentionality implies that the device is able to see the user, listen to her; it perceives her and translates her into outputs, into data, into hypertextual reading and virtual representations. The user's body extends as continuously processed material through the networked system of the digital environment. All data are a processed extension that users consume and produce.

The alienating element lies in the constant need for interpretation and recognition in this objectified plane. The extension is processed, altered, so that it no longer demands from the human a recognition of himself in his/her acts, but an adequacy

with respect to a materialization detached, to a great extent, from his/her own action. The *self* adapts itself to the object created by the machine: data, images, recreation in a virtual body: this (I-technology-I) that we can call *Hyper-self*. A radically mediatized recognition that changes the intersubjective nature of the experience and extends towards the representation of the different parcels of reality accessed by the user. This generates the complete perceptual block (I-technology-world) to which the category of *Hyperreality* would correspond. Alienation forces a spurious recognition in the separate, constantly processed extension, which aspires to supplant the user's entire perceptual field. Thus emerges a new apodictic world, evident and necessary, contrary to all perceptual contingency.

Through the efficiency of integration, again, digital representation achieves a realism never available previously: "Virtual spaces become more real in terms of experience than the material environments they represent" (Radfahrer, 2018, p. 140). Between virtual representation and real reference there is a perceptual difference that goes beyond imitation and transparency. Digital aesthetic intensity, from the most elementary informational stimuli, forces the user to have a greater "sense of reality" in the hyperreal than in common, tepid, and non-mediatized perception.

Hyper-self and *Hyperreality* refer to an altered state of the same content — the interaction of the user and his/her world — but immersed in a high level of informative entropy. Digitalization translates everything real, increasing its sensitive impact, because it reduces, in the same process, its original ontic and epistemic complexity.

Conclusions

The notes developed in this paper aim to propose bases for an experimental and systematizable study of digital experiences. The phenomenologically inspired perspective, especially that centered on corporeality and technique, allows the detailed analysis of each dimension of its praxis (phenomenal foundation, emergent informative levels, production, alienating dynamics, etc.) and its theoretical synthesis in a general framework.

The digital experience is shown to us as a technological praxis hermeneutically and bodily integrated in the user, who produces and consumes, at emergent levels, different material representations of himself and his environment. The technological intentionality in each device and in the whole digital system translates, processes, and communicates the ontic and gnoseological material provided by the general interaction of the users. The digital experience is a primary and meaning-giving

experience that, simultaneously, is an object processed by machines: original cause and separate consequence of the same technical movement.

Attachment to their senses demonstrates a taste of truth in humans but does not guarantee its criterium. This can, however, be theoretically constructed through the same perceptual praxis. The potentially alienating nature of the digital environment corresponds to its particular ontological and gnoseological coordinates, marked by the radical integration between user and tool. Oblivious to their objective, to the ultimate direction of their navigation; oblivious to their final function as techniques by their own capacity to overcome finalities, digital technologies unlock for humans the most expansive representation of the world, wherein takes place this vivid and distanced re-encounter with reality.

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