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Reflections on Consumer information processing and Digital Identity in the Ontological Cyberspace.

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Reflections on Consumer information processing and Digital Identity in the Ontological Cyberspace.

Abstract

This essay draws on Heidegger's theory of space to introduce an ontological discussion of cyberspace. Challenging the objective, subjective and relational perspectives of space and place, the Heideggerian precognitive approach contends that “lived spaces” are constituted by an individual's purpose, objectives and aspirations. An existential analysis is carried out to show how a different kind of spatialization is achieved by human beings in cyberspace (“cyber-spatiality”) and how it affects the way they disclose themselves online. Heidegger's ground-breaking perspective proves itself useful to provide a deeper understanding of the consumers’ relation to online spaces and of the way they experientially process information online.

Key words

Cyberspace ; Heidegger ; self-disclosure ; digital identity ; information processing.

Introduction

Today, people dwell regularly in virtual worlds for many purposes : shopping, entertainment, social bonding, information searching or dating for instance. The nature of the space where our conscience is thrown in does not seem relevant to the way we experience reality. Navigation on the “cyberspace” (a term coined by the science fiction novelist William Gibson) has become commonplace in Western societies and changed the way we interact with the world and the way we construct our identity. Despite this, the way cyberspace and information technologies affect our dealings with the “real” remains obscure. The traditional perspectives of space, namely the objective, subjective and relational approaches of space, seem inadequate to explore the peculiar spatiality

characterizing cyberspace, that is, how people phenomenologically relate to their environment through technology and virtual interfaces.

Philosophical debates on the nature of space have been durably affected by the Cartesian perspective opposing the subject (conceptualized as a self-contained inner entity) to the object (the world “out there”). Consequently, space is often understood as an objective and immutable “container” or as a subjective representation produced by the human mind. Another perspective on space derived from Descartes’ dualism is the relational view which denies the independence of space from its constituents and merely considers it as a system of relations between objects. This perspective does not shed enough light on the way humans experience space, especially cyberspace. Dualism would also oppose reality and illusion, causing cyberspace to be at best considered as a tool for human communication, instead of being regarded as a “lived space” where human conscience can be completely immersed and transformed.

The lack of conceptual tools to understand the elusive nature of cyberspace is especially problematic in a time of frenetic technological development, where new spaces of human interaction flourish online. Thus, an important issue emerges concerning the spatial nature of these online spaces and their role in transforming identities and communities. The first objective of this essay is to introduce an ontological discussion of cyberspace relying on Richard Coyne's Heideggerian approach (1995). Martin Heidegger's groundbreaking perspective of space asserts that space must not be understood as something isolated from human consciousness, but rather as the result of a precognitive understanding of our environment (this point therefore links this conceptual framework to non-representational theories ; Hill, Canniford and Mol, 2014). Drawing on this perspective, this essay then provides an account of cyberspace as a “lived space” (Schatzki, 2007) and explains how Heidegger's concepts can contribute to understanding consumers' online self-disclosure. In a third section, the concept of cyber-spatiality is introduced in order to explain the very specific spatialization consumers experience in cyberspace, its influence on their online sociality and their information processing.

1. Discussing the nebulous nature of cyberspace

Although digital consumption has been the focus of many marketing papers, very few addressed the problem of the nature of cyberspace. There is no consensual definition of this concept neither in consumer research nor in computer sciences despite the wide use of the word. The few existing definitions are often descriptive and narrative and consequently lack scientific precision (Cicognani, 1998). Therefore, the word is becoming more and more meaningless (Strate, 1999). Nevertheless, many dimensions of cyberspace have been highlighted and explored, highlighting some important features of that fast-changing, elusive phenomenon. For instance, literature largely acknowledges the technological and physical dimensions of cyberspace. Cyberspace is in fact often seen as a network of interconnected electronic devices (e.g. Hemetsberger, 2005).

The emphasis is sometimes put on the informational dimension of cyberspace, as in Cicognani's definition, cyberspace as an “electronic fluxus of information” (1998, p.19). The social dimension of cyberspace has also been early identified by researchers and became an important point of focus for many researches (e.g. Venkatesh, Meamber and Firat, 1998 ; Kalay and Marx, 2001 ; Zhang and Jacob, 2012). One important particularity of cyberspace is that it allows a subject-decentered, fragmented and non-geographically bounded interaction (Venkatesh, Meamber and Firat, 1998), making it the most fertile ground for building and sustaining a postmodern *communitas*. The current development of social media suggests that social bonding is becoming the most crucial feature of cyberspace, rather than information exchange.

Whatever focus research chooses to understand what cyberspace is, one important issue is often overlooked: is cyberspace something “real” or some kind of “collective hallucination” (Gibson, 1984) ? Most researches suppose an opposition between an illusory cyberspace — the virtual — and a material world — the real. These researches seem to not fully appreciate the postmodern nature of cyberspace, which has penetrated every space of human existence, becoming “realer than real” (Venkatesh, Meamber and Firat, 1998). Some notable works discussed the possibility for cyberspace to being

compared to “real space”. But conclusions somehow differ. For example, Zhang and Jacob (2012) argue that even if the comparison between cyberspace and space/place is legitimate, « cyberspace is not a ‘space’ but a ‘place’. The ‘space’ in cyberspace is no more than a metaphor for a ‘place’ constituted of ‘place-like’ units » (p. 99). Like some others researchers, they conclude that cyberspace must be understood as a spatial metaphor and is not space *per se*. On the contrary, Coyne (1995) precisely describes how cyberspace may be understood as a world, a space or places. Moreover, he contends that cyberspace shares many common features with physical space in that it is a container, it is measurable space and enabling and constraining human interaction (1995, p.155). This point of view really questions the intuitive distinction that many researchers make between space and cyberspace. This distinction is even blurrier when it comes to considering broader conceptions of space, such as Lefebvre’s (1991). Henri Lefebvre developed an innovative conceptualization of space, different from the formerly widespread euclidian perspective, and reshaped the concept to be fruitfully used in social sciences. Lefebvre distinguishes three levels of space : physical, mental and social spaces. Physical space is related to nature (“the cosmos”) and mental space refers to the logical and abstract forms existing within the human mind. Social space, one of Lefebvre's most popular concepts, refers to social action and interaction. This type of space, which is the product of past events, covers every object in relation with human existence and defines possibilities of action as much as interdictions. According to him, these levels are deeply interconnected, relying on one another. Just like “real space”, cyberspace can be described according to the interconnection of these dimensions. Cyberspace is largely depending on its physical constituents : an expansion of the number of connected devices, visual interfaces and servers automatically means an expansion of cyberspace. Like urban space, cyberspace is built according to logical considerations on human needs and thus depends on mental space. Finally, as a formidable medium for social interaction, cyberspace can be understood in terms of social space. Cyberspace is the sum of numerous online places defined by their social utility and by their own implicit and explicit social rules : social media for self expression and communication, online multiplayer games for entertainment, community forums for socialization, educating oneself, etc.

From different theoretical perspectives, cyberspace is equivalent to “real”, offline space. Nevertheless, as Venkatesh, Meamber and Firat's work suggests, the latter allows biological life and the former does not. The latter is directly and naturally accessible to our senses and the former is technology-mediated. As essential as these specificities may be, we should not put aside the fact that cyberspace allows and significantly expands human existence. This idea is closely related to Don Ihde's postphenomenological perspective of technology (1993). According to Ihde, technology allows human beings to access to qualities and dimensions of reality that would be otherwise out of reach. In line with Heideggerian phenomenology, Ihde asserts that human beings develop relationships to reality in a precognitive fashion, before the theoretical constitution of the subject and of the object. Therefore, human beings and their world are always “mutually constitutive in their fundamental interrelation” (1993, p.3). Technology must not be regarded as a mere mediator, between the subject and the world, but rather as a constitutive element in the subject's relationship to reality. According to postphenomenology, virtual worlds (especially video games and cyberspace) must be apprehended as epistemological and ontological instruments (Gualeni, 2014). As opposed to traditional media (e.g. text, television, radio, etc.), digital media are characterized by an “ontological stability” in which lie the foundations of a cultural shift: instead of giving an “illusion of worlds”, they give “access to worlds”(Gualeni, 2014, p.185). Following this approach, in the remainder of this essay, cyberspace will be considered from an ontological standpoint and defined as an Internet-mediated¹ space of human existence.

In the next sections, it will be argued that despite its artificial nature, cyberspace has an existential value that questions its “inferiority” vis-à-vis the material world (Venkatesh, Meamber and Firat, 1998). To do this, this paper will rely on Heidegger's theory of space and Coyne's Heideggerian account of cyberspace (1995) in order to provide some insights on the existential importance of cyberspace.

2. Cyberspace as a “lived space”

In *Being and Time* (1962), Martin Heidegger introduces a novel perspective of space that is rooted in his philosophy of Being. His phenomenological perspective chal-

lenges the three traditional approaches of space (i.e. absolute, subjective and relational). In this section will briefly introduce Heidegger's theory of space through some of his main concepts. An analysis of cyberspace as a “lived space”, that is, a space of “experientially acting” (Schatzki, 2007) is provided.

2.1. *Dasein*.

Heidegger claimed that an important particularity of human beings is the natural understanding of Being. So, according to him, the first step to understand the meaning of Being was to analyze the human way of being, that he called *Dasein* (literally “being there”). *Dasein* is the only entity whose essence lies in its existence and not in specific propertiesⁱⁱ. More, overturning the influent Cartesian dualism, Heidegger does not conceptualize *Dasein* as an inner entity opposing an outer world : *Dasein* is “thrown-in-the-world”, referring to an awareness (tainted with moods, e.g. fear, excitement or anxiety) of dwelling in a somewhere bounded by physical, biological and social constraints. The main constitutive feature of human existence is Being-in-the-world, that is to say, *Dasein's* working out its self-understanding throughout existence. Therefore, there are many ways of Being-in-the-world. Heidegger also claimed that the primary way *Dasein* is Being-in is practical rather than cognitive. That means that people are primarily “busy” using “equipment” (*Zeug*, for instance a computer, files, softwares, etc.) rather than acquiring knowledge and theorizing about things. Indeed, Heidegger explains that the process of knowing (*Erkennen*) the world is based on a practical way of Being-in that consists in using things for defined purposes. The world unveiled by *Dasein* is not a collection of *res extensa*, objects existing out there, but rather a world-around (*Umwelt*, *Dasein's* surroundings, as opposed to the totality of beings) of available equipment. Objects encountered in everyday life are not neutral but always associated with *Dasein's* projects : these objects are “ready-to-hand”ⁱⁱⁱ. Heidegger's important point is that people spontaneously deal with things as equipment rather than spatially extended objects. These equipment appear to *Dasein* in what Heidegger calls the “clearing” (*Lichtung*). Just like the clearing in the woods, the “clearing” is the luminous

place where things are brought to light. This “light” is *Dasein's* intuitive understanding of Being. These few concepts are essential to grasp Heidegger's theory of space.

2.2. Heidegger's three types of space

Heidegger considers three types of space : the “world-space”, regions (*Gegend*) and *Dasein's* spatiality. The world-space is a concept close from the idea of absolute space discussed earlier in the section. This type of space is an abstraction from the primarily lived world-around and is constituted of present-at-hand objects that « *are of such a sort as to belong to entities whose kind of Being is not of the character of Dasein* » (Heidegger, 1962, p.79). The concept of regions refers to the phenomenological spaces occupied in our daily life. Regions are associated with specific ready-to-hand equipment and therefore have a teleologic structure. For example, a workroom and its associated tools form a region with an isotelic structure : that is to say, the room and tools are phenomenologically replaced within a teleologic chain oriented towards a purpose (building, repairing things, etc.). Finally, *Dasein's* spatiality refers to the fact that human beings dwell circumspectively in the world with a “concern” (*Besorgen* ; or “care”). This means that *Dasein's* concerned dealings are kept within an “lived environment”. “Care” allows *Dasein's* world to be coherent and meaningful. This paramount concept implies that *Dasein* is a Being which occupies space in a very specific way (in opposition to other beings such as animals or minerals) that is not bound by the extension of things^{iv}. Things in the world occupy “positions” (*Stelle*) whereas the distinctive space inhabited by *Dasein* must be understood as the spatiality of a “situation” (*Situation*) in the world.

Heidegger's account of space rejects both Cartesian and Kantian perspectives. According to him, space is neither grounded in the objective world nor in subjectivity but in Being-in-the-world. Space is constituted by the encounter of *Dasein's* « *concernful dealings* » (1962, p. 67) and a world determined by physical and social contexts.

2.3. The relevance of Heidegger's theory of space in the study of cyberspace

Heidegger's theory of space is very relevant to understand and analyze how cyberspace is apprehended by its users for two main reasons. First, the most important weakness of Heidegger's phenomenological account of space is the relative neglect of an essential dimension of the human spatialization of the world : the body (e.g. Franck, 1986). But the body is precisely absent from the spatialization that occurs on cyberspace. The incapacity of Heidegger's theory to describe the "real" in its entirety makes it utterly relevant to study human existence in the cyberspace. Second, Heidegger's theory goes beyond the traditional Cartesian dualism opposing subjective space (a world constituted by mental determinations, "a priori forms of intuition") to objective space (the world "out there", independent from humans). This phenomenological theory states that human beings are "thrown-in-the-world" and encounter things that are to be used (or not) as well as other (human) beings. People dwell in a world that is already there and make sense of their environment in order to achieve specific goals. Consequently, they form a "world-around" that is constituted of a nexus of "equipment". In this perspective, cyberspace can be regarded as "real", as a legitimate space of human existence, rather than a mere technological tool or an illusion. Today, considering the multiple developments of cyberspace, it seems legitimate to examine cyberspace as a "lived space", where consumers dwell circumspectively, aiming at realizing their projects, especially identity projects.

The notion of "lived space" comes from Schatzki's (2007) reading of Heidegger. This space of "experientially acting" refers to the idea that spaces within which human existence takes place are characterized by involvement. People are not just "in" the world (such as in the Newtonian perspective), they are in-volved in the world. Schatzki explains that « *by "experientially acting", I mean that people experience their carrying on in the world and that a person's experience occurs within the ken of his or her activity* » (2007, p. 36). He adds that (among other significations) lived space also means spaces of living, space with which human existence is involved. Therefore, cyberspace as a lived space is a world wherein people *are* and dwell purposively. There is no such thing as pointless browsing. Every online activity belongs to a teleologic chain and is

oriented toward a goal (self-expression, entertainment, education, socialization, etc.). People *are* “in-the-cyberspace” just like they *are* in-the-world. The human being's intuitive understanding of existence allow them to grasp that something (or someone) *exists* beyond the screen. That is the true meaning of the “clearing” : *Dasein* is able to illuminate the world with its light and provide meaning to things. People also understand that using cyber-equipment (applications, hyperlinks, files, buttons, etc.) in the cyberspace might have *real* consequences on other things and beings. Sending an hurtful e-mail to someone might cause the same aftermath than punching this person in the face. This is the reason why, from a phenomenological and hermeneutical standpoint, cyberspace must be fully regarded as a legitimate space of human existence. Pushing this argument even further, psychology research posits that people process imagery (pictures, videos, etc.) in the same way they process events happening in « the real world ». According to the Cognitive-Experiential Self Theory (CEST ; e.g. Epstein, 1991, 2003), the human mind, through its experiential system (his automatically and intuitively-driven thinking), apprehends imagery in a precognitive fashion that makes its processing similar to that of “real” events. According to CEST, humans should process information from virtual or real sources in the same way from the phenomenological and precognitive standpoint.

In the next section, I will further develop this analysis of cyberspace and interpret some online behaviors according to Heidegger's theory of space.

3. Implications of being in the cyberspace on the consumers' digital identity construction

In the previous section, it was argued that cyberspace must be treated as a lived space, a *real* space of human existence and experience. This space is illuminated by *Dasein*'s precognitive understanding of Being, as much as any other “real” space. Nevertheless, the nature of cyber-objects and of the structure of cyberspace is different from the material world, therefore the relation that *Dasein* forms with cyberspace should also be different. The objective of this section is to discuss that peculiar connection and how it affects the construction of a digital identity.

Cyberspace springs from technology that is created by humans for humans. Consequently, the technology and interface that support cyberspace are designed in an intelligible way for us : once the computer is turned on, the interface is supposed to make sense for the user. Indeed, even if *Dasein* has a spontaneous understanding of Being (for instance, one sees an insect and intuitively understands that something *is* there), it is inexorably bounded by the limited capacity of human subjectivity (one can not understand how the insect feels as an insect ; Nagel, 1974). Thus, cyberspace is generally apprehended as “real” space because this is the most intuitive way to understand it. For this reason, many space-evoking terms are used to describe various cyber-objects or cyber-actions : the computer's *desktop*, a (web) *site*, a (web) *domain*, a (web) *address*, a *home page*, a (web) *portal*, to *navigate* ... Cyberspace is underlain by an incalculable number of softwares that mimic features of human existence (Thrift, 2002), however its fundamentally Internet-mediated nature implies that *Dasein* does not relate to cyber-objects and cyber-sociality in the same way than in the material world.

Dasein is characterized by “de-severance“(*Ent-fernung*), which means that *Dasein* has a natural tendency to bring things close, to make them familiar and ready to use (no matter how far these things are situated). Consequently, de-severance tends to “bring closer“ and create familiarity with distant things such as virtual objects (forums, broadcasted events, online games, etc.) and people (online acquaintances, geographically distant friends). Moreover, as Heidegger suggests, media have the power to expand one's world-around by providing an increasing number of familiar, ready-to-hand objects. Human consciousness and knowledge of the world are especially enhanced by cyberspace as it allows people to grasp circumspectively and bring closer an infinity of scattered ready-to-hand objects related to their concernful dealings. Consequently, browsing in cyberspace is different from getting information through traditional media that impose their own concerns to their audience. Cyberspace therefore implies a broader and more fragmented relation to the world for *Dasein* characterized by “cyber-spatiality”. In cyberspace, knowledge is a ready-to-hand resource that changes the way people interact with their “real” and “virtual” environments. Cyberspace is structured to provide this readiness and actionability of knowledge in the more efficient way possible. That is why cyberspace can be characterized as a “teleotopia”. Teleotopic spaces are

phenomenologically constructed and structured according to specific projects and purposes. People use Internet navigator bookmarks because their browsing is teleologically structured (according to their concerned dealings) and because bookmarks allow a more spontaneous and automated cyber-spatiality.

A large literature on online behavior shows that people tend to conduct themselves somehow differently in cyberspace than in “real” world (Christopherson, 2007)^v. This difference may be explained by the peculiar spatialization people experience in cyber social spaces. Obviously, the non-physical presence and the relative anonymity characterizing online browsing — and therefore, cyber-spatiality — play an important part in the specificity of cyber-communication. These two factors influence the degree to which one frees himself from social norms and roles (Postmes and Spears, 2002). Cyber-spatiality is ubiquity : one can be present in different cyberplaces at the same time, but necessarily in an ephemeral and ghost-like way. Freedom and ubiquity in cyberspace allow people to easily express a multiplicity of identities online (Iteanu, 2008). People undertake an identity play in cyber social places implying the superposition or the interchangeability of these multiple identities (Pierre, ?). According to Pierre (200X), digital identities are constructed as representations as much for other people than for oneself. The construction of digital identities involves an introspection, a *cogito* that questions one’s true identity. For instance, the creation of a personal profile on a dating app leads to thinking about oneself and selecting scattered elements among many facets of one’s identity. The *de-severance* characterizing *Dasein* allows a person to bind to different online communities in order to fit in. This phenomenon is quite interesting when compared to that of online activism for differentiating oneself (Donath, 200X). Cyber-spatiality allows people

In the last section, the implications of these theoretical considerations for consumer research are discussed.

Conclusion : implications for consumer research

In this research, I introduced Heidegger's theory of space in order to bring to consumer research some new insights on cyberspace, a concept that remains unclear and

open to perpetual change. We can not predict how cyberspace and online practices will evolve in the next decades, and we can be sure that it is going to grow larger and more complex than it is today. We only have witnessed the very first results of the digital revolution. Therefore, many researches on cyberspace will prove themselves outdated in a few years. However, Heidegger's theoretical framework (as well as postphenomenology) may remain useful — even if we reach new levels of immersion and efficiency in cyberspace — to develop a deep perspective on how people relate to non-physical spaces of human existence and activity, such as video games or cyberspace. In this short section, I discuss some implications this research has for consumer research.

First, this research provides epistemological contributions. By shedding light on the ontological dimension of cyberspace, I argued that considerations on the “real” or “virtual” nature of cyberspace are not relevant anymore. From an Heideggerian standpoint, what really counts is *Dasein's* practical and precognitive mode of Being-in-the-world, not its subsequent understanding of “equipment” (is this material or immaterial ? Virtual or real ?). On this matter, his point of view converges with pragmatic philosophy, especially John Dewey's. Heidegger distinguishes *Dasein's* ways to relate to objects and people : but is cyberspace a collection of objects, a web of social relations or a complex permeation of both ? This research suggests the latter solution, and therefore argues that *Dasein* might not precognitively understand cyberspace as an illusion but as a genuine lived space. This ontology of cyberspace has important implications for consumer research. For instance, browsing should not be regarded as an activity (what most researches implicitly postulate) but as a technologically mediated way of Being-in. We are obviously busy when we are online but just as much as we may be busy doing anything : walking down the street, looking at people, getting on the bus ... According to Heidegger, busy concern is constitutive of *Dasein*, and just being busy *being* — *existing* — is the most unique feature of human nature. Consequently, connecting to Facebook before even getting out of bed (as related by Llamas and Belk, 2013) is not more surprising than gently telling your wife or husband “good morning” as you wake up. Being-in-cyberspace is not an activity, that it why cyberspace imbues every single part of our existence. It is just a way to *be*. This cyber-ontology also has theoretical implications about the identity of the digital consumer. The analysis of cyberspace according to

Heidegger's philosophy pretty much agrees with Kozinets' (2013) judicious point : the digital consumer that we have been looking for with much determination is not some kind of unfathomable entity, it is just *us*. Nevertheless, this point seems to underestimate the ontological value and influence of cyberspace. This paper argues that, in cyberspace, *Dasein* is characterized by cyber-spatiality. This means that the way we relate to our environment — the world-around — is necessarily altered by cyberspace. The cyber-spatialized consumer is an ontologically augmented person (Gualeni, 2014) because he has an almost unlimited and immediate access to “equipment”. But as Kozinets (2013) suggests it, we must not engage ourselves in some kind of post-humanist poetics and praising blindly the advent of a technologically transcended “cyborg”. As I argued earlier, cyberspace is a plan of human existence, and therefore a place of mistrust as much as a place for sharing. Many people see their lives enhanced by cyberspace but many get also scammed and cyberbullied in cyberspace (Moore et al. 2012). Cyber-spatiality makes us much more aware of the world ; but it can be for the worst. The concept of cyber-spatiality leads us to another potential contribution of this research : questioning the ontological foundations of netnography and the value of the information that this methodology generates. Netnography played a major role in the study of cyberspace by placing it *de facto* at the same level (of interest at least) than the material world. Kozinets' (2013) description of the fundamental principles of netnography asserts that cyberspace and material space are “parallel” and “comparable” and therefore suggests that they should be treated the same. The analysis developed in this paper emphasizes the importance of cyber-spatiality and thus recommends to not only transpose traditional ethnography to cyberspace, but rather to engage in a reflection about new means to understand cyberspace. Trying to go beyond the study of the cultural meaning of online communities might allow us to comprehend the paramount influence Internet has on our own Being, our identity, and on the progress of human societies. A corollary to Kozinets' claim that the digital consumer is us is that online communities are also us and are out there, influencing the offline society in many ways. We need to examine the many intersections of cyberspace and other spaces, rather than considering them as “parallel” worlds (Venkatesh, Meamber and Firat, 1998 ; Kozinets, 2013). For this, we definitely need to study online behavior but maybe also — less obviously — to concrete manipu-

lation of technology : how devices are integrated in everyday life or how browsing is carried out (pace, purposes, etc.) for instance. To do this, we might need to use methods such as introspection or consumer diaries. Finally, the Heideggerian approach of cyberspace is useful to depathologizing online behavior. Understanding cyberspace as a legitimate space of human existence makes some widespread online activities less subject to pathologization and moral judgments : online video gaming, online dating, trolling ... Every online practice, even the darker ones related to voyeurism and sadism, should be seriously examined and recontextualized according to the very specific nature and structure of cyberspace.

In conclusion, this essay aimed at showing that cyberspace can and should be regarded as a real space, a lived space where identity projects are carried out in a very peculiar way. We should embrace cyberspace as the important part of human existence that it is and leave behind the outdated question of its reality. By focusing on its growth as a legitimate plan of human existence and its very real influence on people's identities, we can hope for tremendous developments in our understanding of this fascinating phenomenon.

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Notes

ⁱ Here, Internet is understood in its most basic and technological sense : a network of interconnected devices. This definition implies that cyberspace and Internet are two different concepts, the latter referring to a technology and the former to the human usage of this technology.

ⁱⁱ For instance, an object such as a chair has specific properties making it intelligible as a chair (design, functionality, etc.). *Dasein's* essence “lies in its own existence” means that “its essence lies in having a self-understanding that is worked out by living it [...] In other words, who a given person is is fundamentally open and filled in by that person's leading a particular life. Whereas consequently, what something other than *Dasein*, for example, a rock or pencil, is does not vary among rocks or pencils, who a person is varies among persons according to their self-understanding and how these self-understandings are worked out through existing” (Schatzki, 2007, p. 16).

ⁱⁱⁱ In Heidegger's thought, “ready-to-hand equipment” is opposed to “present-at-hand” objects that are at distance from *Dasein*. These objects are “contemplated” from afar, can not be used for *Dasein's* projects and therefore need to be decontextualized and “deworlded” to be understood by *Dasein*.

^{iv} This point is extremely important to understand how Heidegger's *Dasein* differs from the Cartesian subject (which is non-spatial).

^v Christopherson (2007) explains that interpersonal interaction (which is one the most important function of cyberspace) is different online due for instance to a lack of visual and auditory cues when communicating, to an asynchronous communication or to the isolation from those that one is communicating with. It is worth to note that these remarks do not apply to videoconferencing and are arguable when it comes to instant messaging.