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Original Paper

Re-thinking Borders in the Digital Space

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Abstract

On the basis of the arguments advanced by Imad Saleh, Nasreddine Bouhai, and Hakim Hachour (Saleh, Bouhai, & Hachour, 2014) concerning the impact of "digital borders" generated by the Internet on the dynamics of inter-disciplinary research, we have been led to blend disciplines in order to develop the following question: are representations in the digital space located in a borderless communication imagery? Here the humanities are called upon to look into the underpinnings of the meanings assigned to digital space, in its conception and its technological praxis. This question also provokes the following underlying reflections: how could we define the notion of borders in relation to a space that is non-territorialized at the level of human perceptions and where customs officials are not quite "in flesh and blood"? How does a border present itself? Does its representation influence conception and technological praxis? As a matter of priority we define what a border is in space for the purpose of confronting this definition with imagined borders in order to analyze the digital space in its continuum between openness and limits.

Keywords

borders, digital spaces, smooth and striated space, imagery, territorialization and de-territorialization

1. Introduction

The starting point of our reflection is the postulate according to which a complete dissociation between the cognitive world and the world of Internet practice is impossible. Put another way, there exists a powerful praxeological link between the cognition that we have of the Internet on the one hand, and the actual use that we make of it. Accordingly, the notion of territorialization seems to be important inasmuch as imagery cognition and practice are intrinsically linked. As users we may ask the following questions: "am I territoralizing? Is the Internet territorializing me? And if this be the case, what might

my limits be?"

We debate the effects of the digital on representations which produce a change in the way we think about the concept, the definitions, and the categories of frontiers. We situate these questions along the lines of the issues raised by Imad Saleh and Hakim Hachour: "SIC are at the crossroads of the main disciplinary fields; they are legitimate in their role as a pivot and 'translator' between the humanities and digital technologies" (Saleh & Hachour, 2012).

2. Literature Review

2.1 Relation between Space and Border

Defining a border from the vantage point of the humanities would not be possible without a compilation of the views that its sciences have formulated about the notions of context, framework and space, which are necessary to highlight them. Digital space has been assimilated with the Internet from the moment it started to be popularized and democratized thanks to access to high-debit Internet (Saleh & Hachour, 2012). In this articulation, swinging from one space to another, whether this be between the public sphere and the private one or the professional and the personal, the virtual or the real are determined by the sense given to them, by the interest shown by the user, and by the use he makes of them.

The strong tendency observed over the last few years reveals an evolution towards greater caution and even mistrust on the part of Internet users, compared with the enthusiasm and the openness shown in the early stages. This is seen notably in the steadily growing recourse to anonymity and the protection of personal data. Such swings seem to us to be more thought-out, less spontaneous, and more territorialized. In this respect, it seems fitting, in the first place, to reconsider the distinctions between context, frame, and space for a better comprehension and understanding of these transitions.

2.2 Distinction between Context, Frame, and Space

Explanatory sociology (Raynaud, 2005) does not study the individual, but rather the individual-in-context (Lewin, 1951). Context has no set limit or definite scale, or uniform depth/content; rather it is related to the individual's social network and often reduced to the individual's beliefs and to her/his subjective perception. In this sense, social networks are contexts. In the sociology of sciences, we attempt to define it as a network of actors in interaction, with the context creating the conditions underlying action. In contextual linguistics, context is one of the factors which impact on meaning and on its relation to the other parts of the message (Raynaud, 2005). In computing, context is the set of conditions under which a device is being utilized (Dey & Abowd, 2000). In anthropology, context is a set of events in time that are *archeologically* recorded (Bizien-Jaglin, 2005). In ethno-methodology, context refers to *all that which everyone knows* (Garfinkel, 1967/2007). This brings us to a consideration of descriptions of space given by actors, not so much as informative explanations of what has really happened or what they have seen from inside the space, but rather as localized interpretations which create another space—that of a narrative. Therefore, the notion of context sheds light on borders.

In fact, in sociology, sciences, digital practices, and even in anthropological approaches, context invites the idea of relation, movement, and not the idea of a demarcation or separating line. If there is a line in context, it is in between two actions, giving substance to or symbolizing a relation. In this sense, context may be grasped as a smooth space where it is possible to conceive of emerging trajectories inasmuch as the user is spurred to get out of his/her frame and referential space and take new paths. In a professional social network, I can interact within a new group by adopting new elements of language and new codes because of my interest in a business opportunity. Such permissiveness between several spaces is facilitated all the more by a hypertext cognitive organization—which is increasingly present in Internet usages.

As for the notion of **frame**, it was defined by Erving Goffman (1992) thus: "any definition of situation is built on the basis of the principles of organization which structure events—at least, those events that have a social character—and our own subjective engagement. The term "frame" refers to these basic elements" (Goffman, 1992, p. 19). Erving Goffman distinguishes between primary frames (the central element of an individual's culture) of the frame of a conversation and activities outside the ambit. Among the primary frames, he distinguishes between natural frames—the sun rises—and social ones which structure steered actions (not intentions), such as, for example: lowering the blinds to protect oneself from the glare of light, which is a manipulation of the natural world and the world where the actor is engaged. Accordingly, in this notion of frame, as is discussed here, what confers meaning to things are spatial limits and rules. The notion of frame, whether natural or social, makes it possible to consider a type of frontier which takes the form of spatial limits or a rule which gives meaning to that which is within the frame. A frame thus gives sense to things as in the editorial constraints of *Daily Motion* or limitative constraints, such as the limited number of letters allowed by Twitter messages (Ouvrard-Servanton & Agostinelli, 2012).

Space, on the other hand, includes notions of distance, surface, and duration. According to Gilles Deleuze and Felix Guattari, who find inspiration in Euclidian and Reimannian space, "space itself and that which occupies the space tend to identify with one another and to have the same power, in an inexact yet rigorous non-whole or numbering number (occupying without counting)" (Deleuze & Guattari, 1980, p. 609). More specifically, space is a set of passages and combinations in striating and smoothing operations (Deleuze & Guattari, 1980), which take into account not only the space but also who occupies it and how it is occupied. If we take the example of *LinkedIn*, we have all had the experience of being part of discussion groups (La Sorbonne, the United Nations). Owing to our previous professional experiences we were invited and we obliged. The space of exchange is really here, within reach. All one needs to do is to click on the "Accept" key. However the temporal space needed to effectively take part in the discussion groups is not here. We therefore (cognitively) start a sorting process: what meaning should be assigned to this participation and for what purpose? Sorting is at the same time a smooth and a striated space. The filter is a barrier/border, and interstices constitute smooth space.

2.3 Distinction between Striated and Smooth Spaces

The distinction between these two forms of space gives rise to the notion of border. Besides, this notional representation of what a border is, may be applied to the digital world.

Simply defined, **smooth** space may be represented in terms of a patchwork which is at the same time assembled *ad infinitum* with fabrics and does not seek to form either a center or homogeneity. It is a nomadic space, as opposed to sedentary space. On another note, smooth space may well not be an open space in all of its sides: "… Smooth space is controlled by these two sides which limit it and set themselves up in opposition to its development by assigning it the role of communication, as much as possible. However, it may turn against them, eating away from a forest on one side, and reclaiming cultivated lands on the other, and asserting its non-communication or deviation force—much like a wedge which digs itself" (Deleuze & Guattari, 1980, p. 477). The surrounding areas are fuzzy sets and represent vague stretches around a city. They belong into smooth space. The surroundings of the city are not contained; they overflow and sprawl, for they belong to the *nomos*. According to Gilles Deleuze and Felix Guattari, nomadic journeys distribute men (or beasts) in an open, indefinite, and non-communicating space" (Deleuze & Guattari, 1980, p. 472). For them this nomadic space is unshared, for it is limitless, borderless, and fenceless. However what do Gilles Deleuze and Felix Guattari really mean when they talk about non-communicating space? Of course, any human being living in the 21st century may potentially surf and navigate on the Internet, providing, of course, that he has a medium and a connection and that he can recognize signs—images and codifications.

If we refer to the following definition of communication: experience where humans and non-humans interchange via a language (Ouvrard-Servanton, 2010, p. 57), could we take Deleuze and Guattari to mean that in this space there would be no experiences, no exchanges, no meaning in action or a non-sense? Communication space may be limited without communication being limited. The opposite is true: we may not consider all digital space to be smooth space or *nomos*. By contrast, it is not uncommon to lose one's path or to err in this space. What practices and uses take place in the digital space correspond to smooth space or *nomos*, bearing in mind that in a smooth space, we are in a sensitive world, a world of sense, which is not reasoned—a space where sense matters less, providing that there is action. We might distinguish between smooth cyber, digital, and computing space and striated cyber, digital, and computing space.

For example, in our small research team, we speak, understand, and write in six languages (English, Arabic, Spanish, French, Italian, and Portuguese). Now let us assume that we want to make an overview of the notion of "digital borders", in the world. We would have difficulty accessing research carried out in Asia, unless the texts are (also) published in English. Otherwise, we would have to make use of translations (1st option) or, at best, establish relations with an Asian researcher (2nd option). In both cases, the border is the additional time we would need to devote to our search for information. The language barrier becomes a digital border. Regis Debray (Debray, 2012) raised the question of the difference between communication and transmission in his *Lecture et Medias* (Reading and the Media),

which is part of his book, *Modernes Catacombes* (Modern Catacombs), "communication as conveyance of information in space and transmission as transport of information in time". He underscored the "increasing asymmetry between the steadily operational means that are available to us in order to conquer space and the archaic and neglected means that we may still be using in a bid to control time. This time-thickness creates collective thickness".

In striated space, we are in a reasoned world, one that yields meaning. The striated space corresponds to sedentary space. Its simplest technological illustration is fabric that is delimited and where parallel elements intertwine. According to Gilles Deleuze and Felix Guattari, "smooth or nomadic space is located between striated spaces: that of the forest, with its vertical lines; and that of agriculture, with its generalized grid patterns and parallels, its arborescence that has grown independent, its art of felling trees and extracting wood from the forest" (Deleuze & Guattari, 1980, p. 477). It is in this way that actions emerge, as if we were moving from a striated space, where codes and signs are important, to a smooth and pragmatic space, made up of actions and passions. Communication, or the set of experiences, where humans and non-humans exchange through language, seems to have the movement of the smooth space and the speed of the striated space, because the movement is extensive and the speed is intensive. For both however, it is really a question of space, the actions or the activities that they engender are not the same.

The communicational intention of digital space-designers, which is still present in the words "navigate" or "surf" which describe an action in "a space where we can go wherever we may want", has built itself and materialized thanks to explicit borders (the rules of usage or utilization regulations) or implicit ones (some referencing modes pertaining to search engines).

2.4 Digital Space and Borders

Philip Hert considers that the Internet, as a boundary object, may serve as a "medium allowing for new exchanges, new interactions, and new links between groups with different perspectives" (Hert, 1998, p. 116), quite close to the actor-network approach. In this, he relies on "the notion of boundary-object, which is derived by interactional sociology as developed by Susan Leigh Star and James Griesemer" (Hert, 1998, p. 135). The boundary object places itself at the intersection of these different worlds in a bid to find common ground and to make collective action possible, as Star and Griesemer (1998, p. 393) explain: "boundary objects are, at the same time, sufficiently plastic to adapt to local requirements and the constraints of the parties which use them, and sufficiently robust to keep an identity through all these different sites". Put another way, "the boundary object allows pragmatic consensus by way of collaborative work undertaken, notwithstanding the diversity in points of view" (Hert, 1998).

Based on this definition of the boundary-object, social networks constitute an illuminating illustration of the intersections between several worlds, as discussed by Hert. In our view, switches between real and virtual life as made by social media users, mark the inflection points existing between formalized (or striated) spaces and (smooth) representation spaces. The study centered on the profiles of users in Morocco, which was conducted by Bensalem, Ksikes and Squalli (2013), establishes a continuum in

the differentiated practices of four profiles (namely: affective, communicative, mobilizing, and observer profiles), according to their patterns of behavior in real or virtual life. Above all, it shows that contexts define new limits, or conversely, create new action spaces. With regards to the notion of space, as we discuss it here, the study also evinces the porosity of the boundaries existing between the different profiles, as long as there are federating goals and consensuses.

In sum, the notion of context invites a definition of borders as something that situates itself solely between two actions or something that materializes or again symbolizes a relation, and thus a border, whether this be real or imaginary. However, the notion of context is closer to *nomos*, which is neither a law nor delimitation, but rather a space-creating entity, while a frame, natural or social, makes it possible to consider a type of frontier which takes the form of spatial limits or rules which give it meaning. In space, and more specifically in the distinction between striated semiotic space—where sign rules and code-setting are important—and smooth pragmatic space, made up of actions and passions, it becomes possible to spot that which—in the imaginary first, and in practices and usage thereafter—belongs to a given space, striated or smooth.

At this point, we may assert that the spectacular advances made by computing *physically* render means of access to digital space more and more *movable* and swifter, apart from mobility within this very space. Actual crossing of physical territorial borders may take place. Being multi-dimensional, the other spaces make any materialization of borders difficult. If, as Imad Saleh and Hakim Hachour posit, "the social, technological, and cognitive reconfiguration of societies by digital technologies re-specifies all types of borders: between languages, cultures, ideologies, the arts, species, machines, environments, (lay/expert) discourses, (public and private) spaces, local, national, and international laws, as well as electronic services and services" (Saleh & Hachour, 2012), then we may put forth the hypothesis that these evolutions stretch their roots and feed themselves from the representations and the imagery of these borders, in general, and from their relations with digital borders, in particular: "the idea of scaffolding between the *nomadisms* of the voice and new technologies at work in the circulation of speech and imageries" (Decours & Mayer, 2009).

This hypothesis entails a delimitation of the perimeters of the theoretical models of representations and the imaginary, and by way of consequence, a specification of the relations between them, as well as a characterization of the borders which set them apart. This discussion will thereafter lead us to look into the contents of these representations and the imagery of digital borders.

3. Recommended Methodology: Representations, Imageries and Their Borders

Social representations amount to "forms of knowledge that are socially constructed and shared. These forms of knowledge have a practical aim and concur in the construction of a reality that is common to a social whole" (Jodelet, 1997, p. 53). They constitute exchange universes; they are constructed within and by discourses, the production of writings, the creation of images, and social practices. They set themselves up as a construction apt to generate and structure social imagery. There arises the question

of borders between constitutive representations of imageries and the likely existence of thresholds (in the sense given to them by Rouet, 2013) between social imageries and their actual materialization.

Borders that are inherent to representations and inter-representational borders are studies (Abric, 1994) starting from the question of the central core and the peripheral system, as well as the relations between representations. However, "are borders so clear-cut?" (Soulages, 2013, p. 7). Concerning the meeting points of representations, various relations are put to the fore: antonymous, reciprocity, autonomous interlocking with non-autonomous, specific central system, without any distinct core. In this case, the borders between central and peripheral systems are relatively blurred and evolutionary. These evolutionary configurations are comparable to activist movements (cyber activism) in digital space, where borders between different groups steadily subside in order to form some unity (in this case, a common cause) despite the diversity of profiles. In this connection, the theory of "the strength of weak ties", (Granovetter, 1973) shows the dilution of a core within a centrifugal force, amplified and accelerated by ties which were not initially foreseen as being weak.

Furthermore, while the delimitation between the central system and the periphery constitutes a clear border when representations are formed, the more contextualized borders of the peripheral systems are permeable. They absorb emerging notions, information flows, and accessible knowledge. The latest trends observed on social networks illustrate these emergences. We witness an upsurge in partitioning activities in the accounts opened by increasingly distrustful users. The "territorialization" of users' "public spaces", which are open only to those who are authorized to travel to them, draws borders in the digital space, while absorbing new knowledge emanating from new filtered and targeted systems: "I restrict my space in order to better re-create it".

In summary, what can we say about the borders of representations and imageries? First of all when representational fields are in the process of structuring (Salesses & Romain, 2013), which was the case of Internet representation in the early years of 2000s (Salesses, 2005), the borders between the central core and the peripheral elements are ill defined, or, blurred. The subject-object border is divisive and separating (according to Soulages, 2013). However, when the objects of representation are structured and past the transformation phases—where contents and structures are morphing—borders become hermetic and clear from the inside—from the central core to the peripheral system. By contrast, they acquire inter-representational porosity and borders grow more articulatory and unifying (Soulages, 2013). It is precisely in this dynamic representational inter-dependency that imageries develop. Contrary to representations, imageries are not made up of rigid internal borders; they are rather non-circumscribed entities, according to Michaux, as cited by Milon (2005). Put another way, imageries cannot be reduced to an assemblage of representations; they correspond to an organised wholeness made up of multiplicities and blurred borders. Accordingly, representations of computing, new technologies, social networks, virtual world, digital space, technical progress, security intelligence, knowledge information, communication and electronic trade minimally populate Internet imagery. These diverse representations keep up relations among themselves and contribute to the effects of

borders.

3.1 Analysis of Digital Borders

Internet representational fields are traversed by two opposed ideologies, on which representations of digital borders are inscribed. For some, borders do or should exist as part of a future monitored and secured Internet. Conversely, for individuals who position themselves in the logic of the myth of origin, borders on the Internet, whatever their nature may well be, do not or ought not to exist. The Internet is represented as a free and egalitarian space. In the practice and usage of the Internet, however, we observe a common and marked pattern: a steady movement from total freedom to a growing awareness of a more constrained or even illusory freedom. The Anonymous movement has clearly and vividly shown such a rupture. This group has, for example, taken up and modified *The Digital Space Declaration of Independence* which consecrates freedom of expression (Note 1) in order to denounce the SOPA (Note 2) and ACTA (Note 3) on the observance of online copy rights, which were deemed contrary to freedom of expression. We can readily see how social networks are in fact a means to achieve a pragmatic consensus, which reinforces the idea of boundary-object in the notion of virtual environment.

However, while in digital space activities free themselves from territorial frontiers, distances, and temporal limits, there remain some uncrossed or hard-to-overcome barriers—such as language and cultural barriers or barriers relating to interests, ethical considerations, fears, etc. Similarly, the relation between the self (oneself) and self-monitoring—movement of the *quantified self*- (Note 4) and relations between the self and others with shared self-monitoring (Note 5), which go on to feed the Big Data, are likely to create symbolic borders (Arruabarrena, 2014) or ideological ones (Morozov, 2014).

While through the Internet the user comes up against economic, social, cultural, ethical, and technical discontinuities, s/he nevertheless steps into a dematerialized world. The digital world, essentially, expresses an abstract vision, or a digital mythology which borrows simultaneously from utopia and dystopia. It is the vector of an imagery of modernity with its declared catastrophes and belief in technological progress. It carries a communicational and cognitive model within a dual dynamic of universal accessibility and production. It is mainly the expression of a utilitarian vision, given the practicality of the tool, its instantaneous capacity, its virtual gratuity, and its universality. It likewise develops as media that is connected to the world and facilitates multi-leveled commercial, human, universal knowledge exchanges. Even so, it is part of the imagery of discontinuity inasmuch as usages which are not authorized or denied by Internet-users themselves constitute, in fact, objective borders, for some, or imagined ones, for others. By way of example, we may cite the unavailability of certain videos in certain countries.

Yet the Internet, as a network of networks, has been designed to be borderless, and as such, theoretically at least, it is expected to authorize universal communication. However, while in certain territories digital technology facilitates social and cultural exchanges, the existence of economic, legal, sociological and linguistic differences generates a number of restrictions. Despite a tendency towards

globalization, these limitations oppose objective frontiers to global communication (Cipriani, 2013, p. 221). The questions raised by many with regards to the control exercised by giant net companies over information of a private nature and the governance of the digital space abound in this connection. In fact, questions related to the control of the quasi totality of collective knowledge by *Google*; the supervision of the social life of one billion people by *Facebook*; or the emergence of *Twitter*, which has become the exclusive channel for rumors (Rifkin, 2014) are on the rise. Similarly, the digital circulation of private information raises questions regarding boundaries in the area of data security and privacy. To such questions relative to the limitations to be set up in order to guarantee the right to privacy and the protection of everyone, institutional answers have indeed been provided by the European Parliament. On March 2nd, 2014 (Note 6), the EP voted in favor of an update of the legislation bearing on the protection of data so as to ensure that citizens keep control over their personal information in the digital world.

In the meantime, on-going habitual connections to smart phones and social networks contribute to the creation of a generation that is wholly immersed in a connected world. Its life is online, shared as it is with everyone on *Facebook, Twitter, Instagram* and other sites. For these sites, private life has lost all meaning. Moreover, the swift development of the Internet of everything (Note 7) covering connected objects such as watches, bracelets, glasses, interactive cars, monitored homes, etc., as well as individuals who are continually connected and personal data which are being stored in cloud systems, is likely to attract the attention of a number of cybercriminals (Note 8). Information pertaining to cyber-crime is constitutive of Internet imagery and, in fact, serves to create cognitive and behavioral borders.

However, the global character of the Internet *de facto* incorporates a dimension of proximity, arising from usages, cultures, and different territories. Therefore, the notion of borders no longer represents the same reality on a global scale. While it is inexistent in the perception of certain Internet-users in certain contexts, it is very pressing and extensive for others. Besides, just as territorial, economic or sociological borders exist on the Internet, so do psychological frontiers serve to differentiate between uses being made of the Internet. In fact, at the center stage of the same territory and the same social group, relations to the object, for example, may vary considerably depending on the representation that the user has of the dangers besetting the Internet. Consequently, everything unfolds as if digital questions bespoke general, global, planetary, as well as individual and even intimate phenomena, all at the same time.

4. Conclusion

Therefore, in all likelihood there exists a quasi universal (albeit not quite universal) imagery of borderless communication—one which represents for some a vision of a lived world and for others an imagined or wished-for world. The gap between total and partial universality, finding its sources in practical and contextual disparities, generates differences in representations that are constitutive of

imageries. Thus, after the fashion of Star and Griesemer's "boundary object", representations and imageries are sufficiently elastic to adapt themselves to local requirements or constraints, however resistant enough to maintain a holistic structure. Along the lines of the same concept of space, Paolo Amaldi (2007) reminds us of the existence of a perpetual "tug of war", between the formalizations and subjective experiences of a subject attempting to re-invent the prospects of action, by means of a game of glances and gestures. The uncertain and erring status of the concept of space is, at the same time, an object produced by our practice of the world and a calling, or destiny to develop into some description or narration referential. In the final analysis, is space not an "I can" field, as the product of my action, as a construction in the making, and at the same time as a system of relations in which the time-reduction and perhaps even the reversibility rule prevails?

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Notes

Note 1. Jon Barlow, founder of EFF (or, the Electronic Frontier Foundation).

Note 2. The Stop Online Piracy Act.

Note 3. Agreement on Counterfeiting.

Note 4. See, Gary Wolf, "The Data-driven Life". *New York Times*, April 28, 2010.

Note 5. Daytum.com makes it possible to consult one's personal data, which are shared publicly even for Internet users that do not have a premium paying account.

Note 6. "*Le Parlement européen révise ses règles sur la protection des données pour protéger les citoyens*" (The European Parliament reviews its Protection of Data rules in order to protect citizens). *European Parliament*, March 17, 2014. Retrieved October 7, 2014, from http://www.europarl.europa.eu/news/fr/top-stories/content/20130901TST18405/html/Protection-des-donn%C3%A9es

Note 7. "The Internet of Everything", is a concept put forth by the American *Cisco* Group.

Note 8. Claude Fouquet, "*Avec le succès des objets connectés, Europol craint une vague de cyber-crimes, dont les meurtres*" (In the wake of the popularity of connected devices, Europol fears a wave of cybercrimes, including murder). *LesEchos.fr*. Retrieved October 7, 2014, from http://www.lesechos.fr/tech-medias/hightech/0203834329995-avec-le-succes-des-objets-connectes-europol-craint-une-vague-de-cybercrimes-dont-des-meurtres-1050846.php