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New-Materialism and Reification in the Infoproduction Era

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Deleuze's works on cinema established a parallel between the evolution of cinematographic narrative spaces and the development of non-Euclidean geometries, and contributed to the overcoming of the structuralistic approach to the analysis of cinematographic narrative. From that point onwards, one starts to understand audiovisual narrative spaces as topologic spaces, namely, as spaces without a center in which the objects are highly flexible. In other words, in Deleuzian theory, the space is no longer understood as a holder or container of objects, but rather as an entity created by links, interactions, relations and proximities between objects. This centerless system also offers a new instrument for analyzing space, structures and nature, an instrument that establishes a new relationship between object and subject in which the object represents "un point de vue sur un site" in constant becoming.

This parallel established by Deleuze represents an interesting convergent point of many different phenomena that characterize the postmodern condition. Consider, for instance, the phenomenon of traduisibilité highlighted by Lyotard in La condition postmoderne. In addition, Deleuze's study offers an instrument of analysis able to generate a new understanding of the phenomenon of reification, which was analyzed in two different phases. The first is the Marxist theory of reification, which is similar to and converges with the concept of alienation. The second focuses on the phenomenon of convention that allows us to treat extra-linguistic objects, non-computable objects, aiming at producing a shared reality; in other words, to produce simulacra through mass media. This second phase of the understanding of the concept of reification converges also to the existentialist and phenomenological positions that started an interesting debate in the middle of the Marxist thought during the 60's.

This paper will investigate both phases taking into account the role played by technology, mainly the technology of visual media, in the alienation of reality through the production of simulacra. I will deal in particular with the transformation of the understanding of the concept of reification. I will analyze how during the second half of the last century, mass media, in order to defend the established reality, accentuated their focus on the creation

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of illusion, that in a successive stage, due to technological improvements, mainly the digital technology, became a media reification. This analysis will be developed by means of the study of some fundamental works such as Horkheimer's Zur Kritik der instrumentellen Vernunft, Horkheimer-Adorno's Dialektik der Aufkl√§rung and Marcuse's One Dimensional Man, among others, in order to go into Baudrillar's theories of illusion in depth aiming at analyzing the production of social illusion in our digital era. Having this analysis as framework, it will be possible to develop a new understanding of the concept of reification able to recognize some phenomena that characterize our infoproduction era – (e.g. the immateriality). In addition, through this concept of media reification it can be possible to re-elaborate and adapt some Deleuze's thoughts about the construction of space, narratives spaces, rhizomatic structures and the state of becoming of both object and subject.

Keywords: Reification, Praxis, non-Euclidean narrative spaces, infocapital

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This paper investigates how Deleuze's work on cinema represents a fundamental framework for understanding the production of value in the *infocapital* era. In the first part of this paper we will discuss the organization of audiovisual narrative spaces as a pure form of spatial organization, as proposed by Deleuze. Particular attention is given to the characteristic Deleuze granted to the cinematographic camera: the capacity to develop non-Euclidean spaces. I also focus my analysis on the importance of technological improvements in the development of new narrative spaces and in the move towards the creation of a multidimensional narrative space that clearly presents non-Euclidean characteristics. Having this analysis as the starting point, it will be possible to understand the new relationship established between mankind, technology and nature. Consequently, in the last part of this paper I propose a new analysis of the Marxist concepts of praxis and reification. In my opinion, these concepts represent key points in the development of a new-materialistic approach to the analysis of the mechanism of the production of value in our technological context.

The fractalization of the narrative space

Deleuze's works on cinema established a parallel between the evolution of cinematographic narrative spaces and the development of non-Euclidean geometries, and contributed to the overcoming of the structuralistic approach to the analysis of cinematographic narrative. In Deleuze's theorization, cinema creates a spatial organization that makes possible a new conception of space that does not adhere to a Euclidean *ordino*. For instance, he views the narrative space created by Bresson, La Nouvelle Vague and Neo-Realism as a Riemannian space, the narrative space developed by Robbe-Grillet as a Quantum Space, and Resnais's narrative space as a topologic space. From that point onwards, one starts to understand audiovisual narrative spaces as topologic spaces, namely, as spaces without a center in which the objects are highly flexible. In other words, in Deleuzian theory, the space is no longer understood as a holder or container of objects, but rather as an entity created by links, interactions, relations and proximities between objects.

With Deleuze, the audiovisual narrative space becomes a fractal space, a centerless space without coordinates created by the relationships between objects. These relationships, understood as reflections between objects, are ultimately related to the immutable entity represented by Time. Since the objects are related to time, the Whole is in continuous becoming. This centerless system also offers a new instrument for analyzing space, structures and nature, an instrument that establishes a new relationship between object and subject in which the subject represents "*un point de vue sur un site*" (a point of view on a site) in constant becoming. These theorizations of Deleuze are clearly influenced by Leibniz's theory of *Analisis Situs* as well as his theory of Monadology. Both works represent important bases for the

development of non-Euclidean geometries. However, I would like to draw your attention to Deleuze's thoughts about video and digital images.

In *Cinéma 2. L'image temps* Deleuze formulated the theory that recognizes film narrative space as a multidimensional space able to organize new dimensions. This phenomenon was enabled by some technological developments. Deleuze predicted to a degree the impact that the electronic image – video technology and television – and the digital one could have on cinema.[1] Indeed, when *Cinéma 2. L'image-temps* was published, it was difficult to foresee the radical change that digital technology could bring about in the organization of the audio-visual narrative space.[2] Deleuze granted a new nature to the image by pointing out that the absence of exteriority (of *hors-champ*) is the most important characteristic of the electronic image. This conclusion was clearly influenced by Bonitzer's analysis. According to Bonitzer, video technology leads to a metamorphosis of the nature of the image; he defined the electronic image as a *pure surface*. In addition, he suggested that in the video space, due to the 'lack of depth,' the *mise-en-scène* could be linked with the *mise en page* (page layout).[3] Bonitzer also stated that through video technology the image is released from perspective ("*l'image est libéré de la perspective*").[4] Hence, the spatial organization derived from video technology does not correspond to the same layered composition theorized by both Deleuze and Bonitzer with respect to the analog image.[5] According to Bonitzer, the image elaborated by means of video technology is an image that 'can be infinitely inlaid' (*incrustable à l'infinit*):

"*Tous les trous sont toujours bouchés par ce qui vient affleurer en surface, il n'y a pas de trou puisqu'il n'y a que des incrustations, des fleurs qui viennent éclore à la place des yeux, un nez qui émerge à même la bouche, un lapin dans le pavillon de l'oreille et le tout en musique, muzak*."[6]

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[1] Note that the birth of audio-visual is not represented by the technical possibility to include sound in the image. As posited by Deleuze, the audio-visual was born when sound acquired, in spatial terms, its place in the multidimensional space. This phenomenon was achieved by means of video technology. According to Spielmann, video technology allowed a new kind of 'audiovisuality' of the medium. See Yvonne Spielmann, *Video. Das reflexive Medium* (Frankfurt am Main: Suhrkamp, 2005), 17.

[2] The research on the interaction between the electronic image and the digital function of the algorithmic image was possible from the end of the 70s, and this possibility started to be popular some years later. See Spielmann, "Video."

[3] See, in general, Pascal Bonitzer, *Le champ aveugle* (Ligugé: Gallimard. 1982)

[4] Ibid. 41.

[5] Ibid. 40.

[6] Ibid. 42. [All holes are always filled up by what is outcroping in the surface, there is no hole because there are only inlays, there are flowers that open in the place of eyes, a nose that emerges from the mouth, a rabbit in the pinna, while music is playing, *muzak.*] (Translated by the author.)

Video technology broke the spatial organization of the image down to its minimal components (the points), which are only punctual in character; they represent an entity in continuous becoming. Video image is not defined by a spatial notion imposing the relationship frame – *hors-cadre* – but is defined by the temporality of its intervals and the method of its reproduction, that is, by its inner dynamics.[7] Further, the dimension of the video image is not able to contain elements like geometrical figures understood as objects. This dimension contains, in Engell's words, *Nicht-einfach-vorhanden-bleiben-können* elements (elements that cannot just continue to exist).[8] In other words, this dimension contains a continuum, a set of transformations. Further, video image can also create a flux of signals in the inner mechanism of the machine, and through this phenomenon it is possible to identify the process that radically modifies the way of representing nature through optic media. The electronic system of the camera allows not only a *re*-presentation, seen as an act of remembering an absent object by means of the image. In fact, the translation elaborated by means of the analog photographic medium establishes a direct relation between the framed object and its representation organized on the film surface. In other words, the objects of 'our reality' are directly translated into the Euclidean dimension of the analog photographic medium. Conversely, video technology, in order to translate the objects of 'our reality,' exerts an electrical translation of the optical input. The video camera represents a new instrument of translation (Cathode Ray Tube) included into a classical instrument (the camera obscura). Hence, it is possible to assume that the video camera realizes a translation into a non-dimensional space, or to a space in pure becoming. Thus, while the photographic image is defined as a **representation**, the electronic image is connoted as a **presentation**.[9]

The nature of the electronic image as described above makes the space developed by video technology a *space without space*. Further, the video image also represents a 'bridge' between the analog image and the digital one.[10] It does not represent a pure, symbolic 'space of data without *topos*' as that represented by the digital image, nor a localizable phenomenon as that represented by the analog image.[11]

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[7] Lorenz Engell, "Fernsehen mit Gilles Deleuze," in *Der Film bei Deleuze / Le cinéma selon Deleuze*, ed. Oliver Fahle and Lorenz Engell (Weimar: Bauhaus-Universität/Sorbonne Nouvelle, 1999), 470.

[8] Ibid. 470.

[9] See Edmond Couchot, "La question du temps dans les techniques électroniques et numériques de l'image," *3e semaine internationale de vidéo, Saint-Gervais Genève* novembre, 1989.

[10] See Yvonne Spielmann. "*Video.*"

[11] See Edmond Couchot, "Zwischen Reellem und Virtuellem: die Kunst der Hybridation," in *Cyberspace. Zum medialen Gesamtkunstwerk*, ed. Florian Rötzer and Peter Weibel (München: Boer, 1993).

A new continuous form with spatial notions

On the one hand, video technology represented a change to the interpretation of media as prostheses of human senses. On the other hand, the understanding of space in general – and by this I also mean the social space – completely changed. In fact, the technical possibility to create both images in enclosed circuits and images generated by electrical pulses gives another status to machines. The capacity of the machine to 'bring images which came from somewhere else,' as defined by Vasulka, exteriorized that mechanism of representation from human control. It was no longer the mechanical reproduction that Benjamin noted during the photographic era. Indeed, the mechanical reproduction started to become a video production, which, with the arrival of digital technology, became digital 'producibility' (*producibilità*).[12] This process was already noted by the Vasulkas, who were aware of the intervention of the machine in the production of images: "for *Artifacts* I mean that the machine contributes to the creative process as too many elements depend on it."[13] And Woody Vasulka also states: "I have to share the creative process with the machine."[14]

As noted above, the comprehension of the space totally changed with the appearance of video technology. In my opinion, this technology not only made possible the full understanding of the audiovisual narrative as a spatial organization that does not follow a Euclidean order, but it also created a new kind of continuum, a continuum that presents spatial notions.

With respect to this, it is possible to compare H. Grassmann's theories with Deleuze's ideas about the narrative space as a multidimensional space in continuous becoming. In 1844 Grassmann proposed a new relationship between mathematics and many other scientific fields. With this aim, he attempted to develop a basic concept of 'continuous' in which the notion of 'becoming' derives from a spatially continuous form.[15] This continuous form is characterized by three major phenomena: *Erzeugen* (generation), *Setzen* (positioning) and *Verknüpfen* (bonding). Through the concepts of *Setzen* and *Verknüpfen*, Grassmann assigns a spatial nature to the becoming. As long as we accept an infinite space created by means of Grassmann's continuous form,

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[12] See Caronia A et al., *L'arte nell'era della producibilità digitale* (Milano: Mimesis, 2006)

[13] Marco Maria Gazzano, "Sulle tracce del fuoco degli dei," in *Steina e Woody Vasulka. Video, media e nuove immagini nell'arte contemporanea*, ed. Marco Maria Gazzano (Roma: Fahrenheit 451, 1995), 14.

[14] Marita Sturken, "Exploring the phenomenology of the electronic image," in *Steina e Woody Vasulka. Video, media e nuove immagini nell'arte contemporanea*, ed. Marco Maria Gazzano (Roma: Fahrenheit 451, 1995), 28.

[15] Albert Crawford Lewis, , *An Historical Analysis of Grassmann's Ausdehnungslehre of 1844* (Austin: University of Texas, 1975), 98.

we are obliged to recognize the position (*Setzen*) of its elements and its direct relationship (*Verknüpfen*) with the whole set. Such recognition not only allows the creation of a topology or map of an infinite space (because it is in constant self-reproduction) but it also allows the analysis of the character of a given object in its relationship with the others in the set. In this new kind of space, objects are analyzed as sets without losing their unitary nature. Each object has a relationship with each of the other objects and with the Whole.

According to Grassmann, the process of continuous form characterizes the essence of all things that are created by human thought.[16] It is important to remember that Grassmann's work represents the first fundamental investigation into a multidimensional geometry. Deleuze's theories on film narrative space are similar to the ideas in Grassmann's *Die Ausdehnungslehre von 1844*, which proposes that geometry should no longer be considered as a mere study of physics or space perception, but as the study of independent structures or complex sets.

The analogies between Grassmann's and Deleuze's theories on multidimensional space allow a new knowledge of spatial construction as well as an analysis based on the concept of topology. In this construction, the physics – or objects as matter – and the space of perception start to be understood as a complex set in which the becoming or generation (*Erzeugen*), the position of the single spaces in the complex set (*Setzen*), and the links established between them (*Verknüpfen*) are the fundamental factors of this kind of spatial composition. In both conceptions of space the object becomes a dimension. Similarly, the spatial organization proposed by Deleuze is also a multidimensional space in which the infinite links create a 'structure' that cannot be represented either with a structural model or a genetic axis. His idea of spatial organization does not accept a structure that over-encodes or creates a hierarchical axis. In other words, it does not represent a structure in arborescence. An arborescent structure usually presents a hierarchical system where the links between the objects are subjected to a hierarchical chain and in which the object receives information only from a superior object in a direct line.[17] Deleuze theorizes a centerless system in which the communication is not hierarchical and many different signs are able to communicate. He also theorizes a space where the single object becomes a dimension, a vector, or a direction.[18] Consider, for instance, his concept of 'any space whatsoever.'

As noted above, the appearance of non-Euclidean geometries also transformed the understanding of the social space, and the character of the narrative space described by Deleuze can also be found in some theories about social

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[16] It is interesting to note that Vannevar Bush, in his attempt to develop the first hypertext, highlighted the same phenomenon.

[17] Gilles Deleuze and Félix Guattari, *Capitalisme et schizophrénie 2. Mille Plateaux* (Paris: Minuit, 1980), 25.

[18] Ibid. 31.

interactions. Consider, for instance, Simmel's understanding of society as not only developed into space – that is, the social space is not only a spatial manifestation or development – but that it also constructs a spatial organization that is perceptible. One started to think the space and not only to perceive it. We can also quote Foucault's words about the social space. For Foucault, the social space responds to some non-Euclidean characteristics, that is to say, it is a space built by the relationships between objects. In Foucault words:

"*L'espace dans lequel nous vivons, par lequel nous sommes attirés hors de nous-mêmes, dans lequel se déroule précisément l'érosion de notre vie, de notre temps et de notre histoire, cet espace qui nous ronge et nous ravine est en lui-même aussi un espace hétérogène. Autrement dit, nous ne vivons pas dans une sorte de vide, à l'intérieur duquel on pourrait situer des individus et des choses. Nous ne vivons pas à l'intérieur d'un vide qui se colorerait de différents chatoiement, nous vivons à l'intérieur d'un ensemble de relations qui définissent des emplacements irréductibles les uns aux autres et absolument non superposables*."[19]

Certainly, technology and geometry play a fundamental role in the construction of the social space. With respect to visual media, technology and geometry established an interesting relationship, almost a symbiosis.

As noted in the first part of this paper, Deleuze detached visual media from its Euclidean heritage, a legacy that started, on the one hand, during the Renaissance in the development and pictorial representation of perspective, and, on the other hand, through the study of some human physiological functions and its simulation, e.g. the camera obscura. Both phenomena completely transformed the relationship between mankind and nature. As it was the Renaissance's aim to develop a technique able to reproduce natural objects with a high degree of objectivity, perspective was perceived as a technique, almost a mechanism, that objectively translates nature. Thus, mankind started to prefer the representation to the real thing.[20] Perspective was perceived almost as a mechanism and as a mechanism it could be exerted by a device, by the camera obscura, a device that 'perfectly' simulates the human

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[19] Michel Foucault, "Des espaces autres", *Architecture, Mouvement, Continuité* 5 (octobre 1984): 47. [The space in which we live, which draws us out of ourselves, in which the erosion of our lives, our time and history takes place, that space, which claws and gnaws at us, is also in itself a heterogeneous space. It is to say, we do not live inside a void, in which we could place individuals and things. We do not live inside a void that could be colored with diverse shades of light, we live inside of a set of relations that delineates sites that are irreducible one each other and that are absolutely not superimposable.] (Translated by the author.)

[20] See Ernst Gombrich, *Art and Illusion. A Study in the Psychology of Pictorial Representation* (Hong Kong: Princeton University, 1960).

sense of sight. Further, technological improvements, by modifying the space – for example, modifying distances through technological improvements in transportation – modify social interactions.[21] Every technological improvement introduced a new concept of system, a new way to structure the environment, a new way to organize the knowledge and, thus, a new way of expressing ideas, a new way of relating events, and a new way of representing the world. In other words, it affected our cognitive processes.

Digital technology and immateriality. From the narrative space to the creation of realities

During the eighties, when Deleuze published his works about cinema, digital technology was only emerging from the scientific field. However, he showed particular interest in the radical change to the comprehension of the audiovisual narrative that the nature of the digital image could imply. For Deleuze, the digital image represents a new kind of object in a multidimensional space. More specifically, the new images created through digital technology do not present any exteriority or *hors-champ.* The fundamental change enabled by these new digital objects in the film narrative space is that they generate a perpetual reorganization, which allows the birth of a new image from any point of the image. Thus, Deleuze highlights new directions in the organization of narrative space. For example, he suggests that the digital image creates an omnidirectional space that continuously varies its angles and coordinates.[22] This new image transforms the screen into an information table, a surface where data are inscribed. The information in this space replaces nature, characters, objects and words. According to Deleuze, digital images (*l'image numérique naissante*) generate a constant reorganization of the space. In his words:

"*L'organisation de l'espace y perd ses directions privilégiées, et d'abord le privilège de la verticale dont témoigne encore la position de l'écran, au profit d'un espace omnidirectionnel qui ne cesse de varier ses angles et ses coordonnées, d'échanger la verticale et l'horizontale. Et l'écran lui-même, même s'il garde une position verticale par convection, ne semble plus renvoyer à la posture humaine, comme une fenêtre ou encore un tableau, mais constitue plutôt une table d'information, surface opaque sur laquelle s'inscrivent des «données», l'information remplaçant la Nature, et le cerveau-ville, le troisième œil, remplaçant les yeux de la Nature*." [23]

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[21] See Marshall McLuhan, *Understanding Media. The Extension of Man* (Corte Madera (CA): Gingko Press, 2003).

[22] See Edmond Couchot, "La mosaïque ordonnée ou l'écran saisi par le calcul," *Communications* 48 (1988): 79 - 87.

[23] Gilles Deleuze, *Cinéma 2. L'image-temps* (Paris: Minuit, 1985), 347-348. [The spatial organization loses its privileged directions, and at first, the privilege of the

The fundamental entity of the image, the point that in analog technology was represented by a silver grain, then transformed into a temporal entity. The 'point' of video technology became, with digital technology, a pixel, a point that manifests a fundamental non-Euclidean characteristic. As remarked by Deleuze, in a digital image, a new image can derive or be contained in any point of the image. We could therefore apply to audiovisual narrative the same phenomenon highlighted by Shapiro regarding non-Euclidean geometries. Shapiro posited that "we are accustomed, even today, to think of a line as a locus of points. However one can just as well think of a point as a locus of lines."[24] Paraphrased with regard to digital images, it could be possible to state that **we are accustomed, even today, to think of an image as a locus of points or grains. However, one can just as well think of a point as a locus of images.**

However, I would like to draw your attention to an important phenomenon highlighted by Deleuze in the quote above. According to Deleuze, the digital image made the screen an information table, a surface where data are inscribed. The information in this space replaces nature, characters, objects and words. This assertion not only responds to the new nature of the audiovisual narrative space. In fact, with this statement, Deleuze is placing the nature of the digital image, a completely immaterial entity, in the middle of the relationship between mankind and nature, between object and subject. Technology, and especially visual media, represents an instrument that mediates the relationship between a codified nature and human cognition.
Since the start of the Modern Age, science and technology have become key elements in the quest to get closer to God. In particular, technology has become the intermediary in the human-nature relationship. More specifically, technology is employed both to modify nature and to investigate it. And more importantly, technology plays the role of the translator of nature. It is technology that provides mankind with an image of reality. Consider, for instance, Francis Bacon's *Nuovum organum*, in which the phenomenon is clearly exemplified. In fact, for Bacon, science and technology represent the only means to reach truth, to reach God. But technology does not only represent an instrument, a prosthesis, for analyzing nature; it transforms it, codifies it. McLuhan clearly demonstrated this idea by examining technology as an extension of our body that codifies and transforms nature. However, as

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vertical position, which is still witnessed by the position of the screen, in favor of an omnidirectional space that continues to vary its angles and coordinates, exchanging the vertical and the horizontal one. And the screen itself, even though it retains the convection of its vertical position, no longer seems to refer to the human posture, like a window or a painting, rather the screen constitutes an information table, an opaque surface on which data are inscribed. Here information replaces Nature, and the *cerveau-ville*, the third eye, replaces the eyes of Nature.] (Translated by the author.)

[24] Stewart Shapiro, *Philosophy of Mathematics. Structure and Ontology* (New York: Oxford University Press, 1997), 148.

McLuhan's theories predate our digital era, the codification theorized by him could only be developed with respect to human cognition. There was a kind of anthropocentrism that understood the codification of nature, exerted by technology, as a codification that must be 'read' by the human intellect. In other words, the process of the continuous transformation of nature through technology produced a readable *text*, which represented an *in*-formation of nature understandable by mankind. From the codification of nature derived a sign that could be deciphered by humans. In Flusser's words, the world meant something to mankind.[25] This relationship changed when nature started to be codified through pixels, information bits in which the coordinates of the single unit and its relationship with the totality become the essence of the codification, become the creation of an intelligible space. Of course the textual character of the former codification was lost. According to Flusser, the structure of nature as derived by this new form is deprived of meaning: "Gleichgültig, ob es sich um Fotos, um Filme, um Videos oder Computerbilder handelt, sie haben die gleiche Bedeutung: dem Absurden einen Sinn zu geben."[26] At this point, mankind becomes submerged in pure information that must be conceptualized. In addition, the conceptualization of everything imposed upon mankind a relationship with a kind of *metaobject*, or reproductions without prototype. They can be described as communicative artifacts that, even though they exist in the communicative relationship between humans and also between man and nature, are not reproductions of existing things.[27] Baudrillard called these *metaobjects* 'simulacres'. In my opinion, these *metaobjects* clearly exemplify the phenomenon of reification.

Reality, Illusion, reification. The production of value in the *Infocapital*

Even before digital technology started being used for the production of value, Lyotard, in 1979, remarked on the human dependence upon technology and foresaw what Deleuze some years later described as the replacement of nature by data in the digital screen. In Lyotard's words: "*On peut donc en tirer la prévision que tout ce qui dans le savoir constitué n'est pas ainsi traduisible sera délaissé, et que l'orientation des recherches nouvelles se subordonnera à la condition de traduisibilité des résultats éventuels en langage de machine*."[28]

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[25] Vilém Flusser, *Ins universum der Technischen Bilder* (Göttingen: European Photography, 1996), 51.

[26] Ibid. 52. [Regardless of whether it is photos, films or computer images, they have the same meaning: give a sense of the absurd.] (Translated by the author).

[27] See German A. Duarte, *Reificación mediática* (Bucaramanga: Sic, 2011).

[28] Jean-François Lyotard, *La condition postmoderne* (Paris: Minuit, 1979), 13. [Therefore one can forecast that everything in the constituted knowledge that is not translatable will be abandoned, and also that the focus of new researches will be subordinated to the condition of translatability of the potential results into machine language.] (Translated by the author.)

According to Lyotard, what is not translatable into machine language will be excluded from the process of knowledge. Further, he claims that "*L'encyclopédie de demain, ce sont les banques de données. Elles excèdent la capacité de chaque utilisateur. Elle sont la « nature » pour l'homme postmoderne.*"[29] Thus, Lyotard accepted a completed transformation of the man-nature relationship and consequently a transformation of nature. This phenomenon requires a new analysis of some fundamental concepts that have guided the study of the production of value since the critique of Capital developed by Marx.
Before proposing an analysis of the concept of reification, which in my opinion becomes fundamental in our immaterial technological context, I would like to make a short digression to consider one of the fundamental Marxist concepts, that of praxis.

For Marx, the essence of man is 'activity,' while nature is understood as a kind of source of instruments and materials for work. According to Marx, the direct link between mankind and nature is established by action, by work. Thus, it is the fundamental condition of the existence of every form of society. Work is an eternal need of mankind, and through it mankind establishes an organic exchange with nature. Consequently, the man-nature relationship is completely mediated by praxis. Thus, technology represents a unique instrument that allows the organic exchange. However, the organic exchange is distorted by the development of the market. In fact, one theorized that in a pre-capitalistic society mankind establishes an organic exchange with nature in order to solve its natural needs, thus producing use values (*Gebrauchswerten*). Within a market system, the organic exchange is transformed because the praxis is focused on the creation of exchange values (*Tauschwert*). That is to say, the value of the use value, which satisfies human needs, is transformed by the acquisition of the capacity to be exchanged for other goods in accordance with the laws of the market. From this process derives the Marxist concept of reification (*Verdinglichung*), a concept that represents the change of technology from a means to an aim, that transforms the organic exchange and establishes a new system in which the thing – the product – establishes a new relationship with man and in turn reifies human relations and even man himself. But what happens when the production of value does not come from a system of material production but from a system of the production of immateriality?

In my opinion, in order to understand the change of the production of value, the transformation of the Capital into the infocapital, one needs to understand praxis – the work, our link to nature – not as a 'productive power'

[29] Ibid. 84-85. [The encyclopedia of tomorrow, are the databases. They exceed the capacity of every user. They are the "nature" for the post-modern man.] (Translated by the author.)

(*Produktivkraft*), as defined in a limited sense by the Marxist analysis, but as a medium, that is to say, as a force producing meaning, in Baudrillard's words, "[…] *comme forme et principe de toute une nouvelle génération du sens.*"[30] This new understanding of the production of value, of the activity, can be noted in some fundamental works developed during the second half of the last century. One can consider works such as Horkheimer's *Zur Kritik der instrumentellen Vernunft*, Horkheimer-Adorno's *Dialektik der Aufklärung* and Marcuse's *One Dimensional Man*. In fact, through these works, the concept of reification acquires a new dimension, a dimension placed in artistic expression and communication. Consider, for instance, some of Horkheimer's thoughts about the dissociation of art and reason in which the artwork is transformed into a cultural commodity. We can also consider Horkheimer and Adorno's analysis of the magic-mystic level of expressive activity under the reification of culture. According to Horkheimer, the magic-mystic level of thought dominates the conception of the world (*Weltbilder*) because it generates a phenomenon of superposition between the beliefs (*Glauben*) and the knowledge (*Wissen*). This important phenomenon can also be seen in Marcuse's theories about the one-dimensional discourse – or concepts isolated from criticism – which are used by mass media in order to defend the established reality. However, it is also important to consider that after McLuhan's works, the analysis and critique of social communication started to progressively move away from the fields of content and ideology, guided and transmitted by media, and started to be understood and developed following the framework of modulation, the transformation that media exert over reality, over language and over culture.

By considering work – the human activity – as a force of the production of meaning, one develops an interesting framework for the analysis of a society that bases its production of value on the generation of information, a society that bases its production on bits that are reified. In fact, in our technological context, research, expressiveness and communication become functions of the production of value.[31] This new system generates an interesting phenomenon that unifies production and enterprise, and gives to creativity an exchange value (*Tauschwert*). For these reasons, during the nineties – the period when digital technologies started to be strongly present in every social field – a new cartography of the social classes was drawn. The flow of capital started to focus on non-material production (the *infoproduction*), making the former struggle between bourgeoisie and proletariat meaningless. In my view, this does not mean, as many theories posit, that in the industrialized countries there are no longer social classes. It is just that the former bourgeoisie, the class that

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[30] Jean Baudrillard, *L'échange symbolique et la mort* (Paris: Gallimard, 1976), 86. [as form and principle of a new generation of meaning.] (Translated by the author.)

[31] Franco Berardi, *Neuromagma. Lavoro cognitivo e infoproduzione* (Roma: Castelvecchi, 1995), 25.

accumulated the wealth, the plus value produced by the proletariat and the means of production, can no longer be easily defined or no longer corresponds to the former class structure. As a result, there is no longer a well-defined division between the bourgeoisie and the producing class because in the *infoproduction* era the labor power is mental work and the product is the human mind.[32]

As noted above, digital technology engendered a new method of production that placed the production of information, of immaterialities, at the center of the production of value. And this phenomenon completely changed the social structure and the former social classes. To use McKenzie Wark's terms, it created a Hacker Class:

"*We are the hackers of abstraction. We produce new concepts, new perceptions, new sensations, hacked out or raw data. Whatever code we hack, be it programming language, poetic language, math or music, curves or colorings, we are the abstractors of new worlds. Whether we come to represent ourselves as researchers or authors, artist or biologist, chemists or musicians, philosophers or programmers, each of these subjectivities is but a fragment of a class still becoming, bit by bit, aware of itself as such.*"[33]

The Hacker Class focuses on social needs and responds to them by developing new technologies and new ways of social interaction, new ways of sharing information. The development of technologies became its wealth, the development of accessible technologies its strategy, and the reification of knowledge and information its limit. Information being its wealth, the Hacker Class developed a new social structure that is manifest in every social field. In my opinion, this social structure reflects the ideas about audiovisual narrative space Deleuze developed after the Second World War, that is to say, the non-Euclidean form of the narrative space. Consider, for instance, the indispensable information network established by the Hacker Class, a network that allows the free sharing of information. The P2P model started, at the end of the last millennium, to form a communicational fractal space without a center. This centerless space modified (and continues to modify) social communicational activity. An example of one interesting attempt towards a completely centerless communicational space is Indymedia, which started to modify the center of the structure of communication as well as the center of the narrative space. This was due to the presence of many communicational sources, embodied by the citizens participating in the information. Whereas the classical mass media established a hierarchical model that could be represented by a tree structure, alternative mass media and especially some

[32] Ibid. 25.
[33] McKenzie Wark. *A Hacker Manifesto* (Cambridge: Harvard University Press, 2004), § 002.

platforms for file sharing follow the network developed by the P2P system, which could be illustrated by a fractal object, deprived of any hierarchy, a new kind of 'forest.' As one can see, the spatial construction highlighted by Deleuze in his studies dealing with cinematographic works of the second half of the last century started to be 'projected' onto or materialized by some social dynamics. In fact, the centerless space theorized by Deleuze in the narrative space present clear analogies with the centerless spaces of social dynamics from which production of value derives. In this system of production, one can affirm that each person no longer represents an object, as theorized by the materialistic analysis of the phenomenon of reification. Through the decentralization of nature, mankind is also decentralized: mankind starts to live in a codified nature, or nature-database, which constitute the creation of knowledge. Mankind starts to represent a direction or vector that conducts, transforms and produces information.

As noted above, according to Lyotard and Deleuze, information replaces nature in the process of the creation of knowledge and in the process of the representation/creation of reality. Thus, it is possible to theorize that our vectorial condition represents what was once understood as the organic exchange. In other words, our being vectors of information places the subject again in direct connection to nature, only this time with a nature-database, but a nature-database that does not negate the existence of materiality, rather a nature-database that exemplifies a new relationship between materiality and immateriality. In fact, one of the fundamental concepts developed by Bergson, and adopted by Deleuze, is the nonexistence of isolated systems. Thus, following this framework, the nature-database becomes a concept that embodies the nonexistence of isolated systems, a concept that explains existence and reality not as a dualistic entity in which biological and non-biological are isolated entities. Thus, the nature-database can be understood as a new codification of 'reality' from which non-fix meaning derives and in which biological (material) and non-biological (technology and information) coexist and are in constant transformation. Further, the concept of the nature-database highlights the decentralization of mankind's environment, as highlighted by Deleuze through his analysis of non-Euclidean geometries, as well as the decentralization of mankind, through its condition as a vector, which in my opinion represents the core of a new-materialistic approach to the analysis of the relationship between mankind and nature.

As one can see, Deleuze's theories about audiovisual narrative not only represent a turning point in the formalist analysis of cinematic narrative. Deleuze offered an interesting framework for the analysis of the method of production in our infocapital era. As noted above, through the analysis of audiovisual narrative spaces, and their similarities with non-Euclidean geometries, Deleuze theorizes the narrative space as well as the social space not as a holder of objects but as an entity in becoming generated by links and

relationships between objects. Further, Deleuze theorized that this space, this entity in continuous becoming, was a centerless space. His theory becomes an interesting framework for analyzing not only narrative spaces, but also nature, social dynamics and, consequently, mankind. We noted how, through Deleuze's theories on cinematographic narrative spaces, it became possible to better comprehend the transformation of the well-defined relationship between object and subject, which became a relationship in which the subject is understood as a point of view on a site, that is, a point of view on an ongoing incarnation of events, a constant actualization of times and spaces. Deleuze's theories also highlighted the fundamental role played by technology in the transformation of the audiovisual narrative space. As noted above, technological improvements not only displaced mankind from the act of representing nature, but technology also generated a new perception of nature: it became a centerless space that in turn also decentralized mankind by transforming it into a vector. This phenomenon, which represents an important concept of new materialism, was analyzed in this paper through the transformation of the narrative space – from a Euclidean space to a non-Euclidean one. In addition, as noted above, this new analysis of the narrative space proposed by Deleuze, displaced the studies of audiovisual narrative from the field of linguistics – embodied by the structuralism trend – to the field of geometry, even to the field of informatics. The framework developed by Deleuze, by means of the analysis of audiovisual narrative and consequently through the creation of knowledge in a Lyotarian meaning, proposed an overtaking of the linear logic expressed through the deterministic chain of cause and effect inherited from the structuralism approach to the examination of narrative,[34] a linear logic that shaped the man-nature relationship through the Euclidean and Newtonian perception of a quantifiable and measurable nature: a nature that represented a kind of material, immutable and solid reality. As one can see, the shift proposed by Deleuze within the studies of audiovisual narrative converges in this point with another concept proposed by new materialism. Further, the absence of linearity, accentuated by the immateriality generated by digital technology, transformed the textual (lineal) character of the codification of nature exerted by other technologies. Digital technology, as noted above, generates a new relationship between mankind and nature in which both entities are decentralized and from which a non-fix relation (e.g. signifier-signified) derives. Following Flusser's ideas, mankind is submerged in pure information that must be conceptualized. Through this analysis we can see how a new concept of reification was possible, a new concept that in my opinion can represent the nucleus of a new-materialistic analysis. In fact, within a new-materialistic analysis, reification can no longer

[34] As noted by Lyotard, narrative generates knowledge (*savoir*) because knowledge consists of not only denotational statements but also includes efficiency criteria (e.g. technical qualification) as well as criteria of justice and/or happiness among others. See Lyotard, "*La condition postmoderne,*" 36.

be defined as the transformation from natural conditions to economic conditions, or the transformation of a pre-capitalistic society to a capitalistic society, as analyzed by Engels.[35] Nor can it be defined according to the Marxist analysis presented above. Reification must be a concept placed in the center of immaterial production and the system of communication derived from it. In other words, it must be applied to the relationship between mankind and *metaobjects,* or *simulacres*, as well as how these *metaobjects*, or copies without prototype, form part of the communicative relationship between humans. Further, through the new-materialistic understanding of reification, it could be possible to better analyze the mediated relationship between man and nature, the role played by technology in this relationship, and how the immateriality of digital technology changes human activity (mankind's essence according to Marx) and, consequently, the production of value. In my opinion, the new-materialistic approach to the phenomenon of reification will allow us to not only highlight the non-Euclidean nature of the social space and the constant reconfiguration of the man – technology – nature¦database relationship, but it will also allow us to redefine the struggle between classes, how classes are producing value, and how the vectors of production are shaping a new divided (but not separated) world: a world based on material production and a world in which the capital is produced through the flow of information.

[35] See Friedrich Engels, *Der Ursprung der Familie, des Privategeinthums und des Staats* (Kindle Edition, 1884).

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