FORMATS 3

Our ability to look rebels. An introduction to a phenomenology of interfaces

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Spectacles accumulate so much capital that they become images
Guy Debord

One feature of language is that the better the level of expression, the more forgotten it becomes
Maurice Merleau-Ponty

Some gestures are so utterly human that we must take considerable effort to separate them from the very nature that makes them insignificant, but such conflict is inevitable if we want to relocate them within the realm of human consciousness. I am referring to the act of placing something before our eyes, not to see it but rather to look at it.

At times when I lie down in bed to read, my cat follows me and tries to lie down on my chest, right between my eyes and the book I have just opened. Although it is clear that my cat knows nothing about reading, it is not so clear that she is equally ignorant about line of vision, as she belongs to a very inquisitive species. It may therefore seem surprising that she is unable to judge just how impertinent she is by breaking the line of vision between my eyes and the book in my hands. Yet the cat does not seem to be bothered at all by this problem; she goes to sleep as if looking at her were the same as reading my book. With her indifference, my cat represents the attitude of nature towards human constructs, in this case, our desire to observe and watch.

Placing a book before one's eyes is not so much an act of seeing as it is of looking. Whereas nature has foreseen the complicated mechanism of vision, it does not seem to be responsible for the complex exercise of looking. Thus, my cat, just like most animals, is an expert at seeing, but is totally ignorant when it comes to looking.

The animal sense of seeing is entirely passive: animals see everything within the field of vision, and when a specific element attracts their attention, another activity consisting of concentrating on the immediate center of attention comes into play. But in no case is there any looking. That is why it is absolutely unthinkable to conceive of

interrupting an animal's vision, no matter how intelligent the species may be. For that to occur, the act of seeing must be preceded by an intention, and then followed by an action, whether that be placing something before one's eyes or moving one's eyes towards something specifically with the idea of looking only at it. Looking is thus a complex construct consisting of an intention and an act that relates vision to a specific object that is deemed interesting before it is actually seen.

Dictionaries clearly distinguish between the two activities, as *see* is defined as "to perceive by the eye" whereas *look* is defined as "to exercise the power of vision upon;" i.e., the former is a passive act whereas the latter is active. The difference in the definitions provided by Merriam-Webster is minimal, however, and does not attempt to establish the limits of drastically different phenomena; rather, it attempts to distinguish between slightly different, practically contiguous acts. Seeing without paying attention, in order to immediately observe something interesting. The lexicographers have not detected the proud human construct entailed in looking and have paid attention to the simple act of seeing, which is shared by all animals. Yet to become aware of the singularity of looking, one only has to imagine what happens when someone or something prevents us from seeing what we want to look at. It is a feeling that is unknown in other realms of life, and it makes us realice that we are before a transcendental manifestation. Animals can follow something that is interesting with their eyes; they can even sort out an obstacle that comes between them and their focus of interest while their whole body is in motion, such as another animal they are following, but they never do so just to continue looking at it. The movement animals might take with all or parts of their bodies to leave something outside their field of vision in order to continue observing whatever catches their fancy is not truly looking, but rather is an extension of a bodily function: it is not sight that is being used to see, but rather an entire animal in possession of sight, in addition to other senses. Seeing in this case corresponds to the needs of the animal's body understood as a whole unit, and as such the animal accepts the fields of vision as they appear: they are the characteristics of those that determine the interest of seeing and not the other way around, which is what occurs with humans. Unlike in humans, therefore, in animals no dichotomy between a given visibility and a constructed visibility is possible. For an animal, obstacles are not just obstacles for its eyes, but rather for its entire body.

The originality of a gesture such as placing an object before one's eyes to specifically look at it, a gesture that converts our sight from an element of survival into an agent for acquiring knowledge. The gesture of placing an object in our line of vision must precede that of writing, and as such is partially dependent upon it. Before a hand can write on a surface, before reflection becomes objective, seeing has become looking and this process entails the delimitation of a visual field that can be inspected with one's eyes and can thus constitute a recipient for the signs expressed by thought.

If we consider this hypothesis into consideration, it seems that writing arises as a means to extend looking further, to a place that is different from that which the mimetic intention of images can offer. Zizek (2000: 31) confirms this when he speaks of the effect of the symbolic register on looking: the emergence of language opens up a hole

in reality, and this hope changes the axis of our look. In other words, writing, because it breaks the surface that reflects what is real, places the mechanisms of thought before us and attempts to put seeing on a par with thinking. Once human experience determined that sight could discriminate reality by looking (the sum of intention, gesture and seeing), the next step was to convert the elements in reality that were seen and assimilated into expression. Thus, languages tend to have an initial iconographic stage in which a parallel, controllable visual reality is constructed.

The truth is that Western civilization did not deny this identification between image and thought until a relatively late stage in its development. Specifically, it was not until the beginning of the 17th century when Kepler, in his dispute with Robert Fludd, established the difference between poetic images and didactic-illustrative images. This laid down the foundations for the subsequent understanding of images as corroborated by Cartesian philosophy. The fact that Kepler, supported by the subsequent development of science, has much more prestige today than Fludd, an Englishman belonging to the neo-Platonic esoteric current that was so popular in European culture after the Renaissance, is nothing more than a reflection of the situation in which both found themselves when their philosophies came into contact. Just as Kepler came closer to Fludd because he was fascinated by the images included in one of Fludd's works that he had come across by chance, it seems that at no point did the English philosopher detect the fact that he was defending a position, that of the hermeneutic validity of images, that was doomed to disappear. (1) Although Kepler accuses Fludd of creating poetic images in the sense of Aristotle's poetics, he does not deny their use although he does make a significant distinction between what he calls funny and objective images. It is only through objective images that the objects in the world are represented directly in the soul: sight is created by the image of the object seen that is formed on the concave surface of the retina (Westman). With this postulate, Kepler removed images from the field of looking and returned them to that of seeing, where they would stay for science up to contemporary times. Looking was to be reserved for texts, even though reading did not contemplate the complexity of looking, precisely because it attempted to establish itself as a bridge between truth and reason above what could be seen. In their respective times, Galileo changed the idea of truth from what could be perceived to the laws of physics and Descartes changed it to mathematical equations. An epistemological change that separated sight from knowledge thus occurred, and from then on it was clear that knowledge did not deal with what could be seen. But this occurred because images where considered the depository of the values of seeing and not those of looking. Science, nourished by Cartesian ideas, ignored the values of looking that Fludd, with his mistaken assumptions, had attempted to support, and turned to a harmless, unproductive sense of images that only repeats the inertia of reality.

The Return of Simulacra

Placing something before one's eyes to look at it, to carry out an hermeneutic process created by sight, cannot cease to amaze us when we pay attention to it. The most curious point is, if we recall our earlier comments about the unrest brought about by an

interruption in our gaze, that when we do something in order to look, for instance when we pick up a book, a painting or anything else and put it in front of us, what we are doing is precisely interrupting our line of sight.

Complying with a very post-modern pilgrimage and in order to provide support for his famous idea of simulacrum, Baudrillard referred to Borges, specifically to the allegory of the meticulous emperor who, in his obsessive idea to obtain the most detailed map possible of his empire, was ultimately able to have one of his cartographers produce a map that coincided exactly with his land, the contours of which were covered and eliminated by the representation itself. With this ontological prevalence of land as opposed to a map ruined with age, and its pieces strewn over the surface, people have tried to create an opinion about imperial powers, like a lesson about the importance that reality always acquires in the face of the inevitable levity (and lightness) of images. The parable allowed Baudrillard (1987: 10) to introduce us to the contemporary era in which the idea of territory no longer precedes nor outlasts maps; it is maps that precede and create territories. He goes on to state that if it were necessary to continue the fable, today it would be the shreds of the territory that would wallow slowly over the map's surface (1987: 10). The moral of the story is that a period in time that tolerates puppets while it allows titans to wallow away leaves much to be desired.

What at the time was considered an original, frightening view of a new Apocalypse was nothing more than the next-to-last version of claims against looking that are as old as the myth of Medusa, whose look turned men into stone, or that of Lot's wife, who was turned into salt because she looked back. With such a long tradition it is no surprise that Baudrillard continues with this line of criticism, stating that behind such baroque images there hides the grey eminence of politics, although we all know that no dictatorship has ever tried to stop anyone from seeing, even though all have prohibited looking.

Baudrillard's warning, as well as earlier admonitions by Marshall McLuhan and Daniel Boorstin (2) are victims of the very trick of the Western culture that has created them, a culture that has pushed aside the concept of image-look, which is tied to science, to allow a concept of image that is much closer to seeing. In other words, a concept of image that is harmless. This mimetic notion of images has been controlled by an artistic tradition that was emptied of ideology and epistemologic density by the postulates of Leone Battista Alberti. Not even the angry eruption of modern avant-garde movements was able to cut the umbilical cord that joined the perspectival dawn of the Italian Renaissance with the awakening of American Virtual Reality in the 21st century.

The issue is to know whether this gradual substitution of simulacra for reality is intrinsically harmful or if, conversely, it may turn out to be as beneficial as another no less famous trick—the substitution of text for reality. This latter game has always had its critics, among whom there are writers of the stature of Cervantes, who accused his own Don Quixote of paying too much attention to reading and as a result of losing sight of the real world. If in the end we have learned how to *see* with reason the books

that we place before our eyes, and our reading not only obscures our understanding of reality but rather improves it, there is nothing to prevent us form thinking that if we train ourselves to look well enough we can award pseudo-events the ability to add density to a world that by definition is lacking in attributes. When the world acquires social and historical characteristics, they are automatically negated by an aesthetics that is blind from too much seeing and too little looking.

Borges' emperor, then, was not so far off the track when he asked for maps that were so horrifying that they stamped out the territory, as their very existence depended upon the understanding of the territory. Once the map had spread over the empire, it was a crime that it was allowed to rot, because, as Baudrillard aptly notes, then there was nothing else but the map itself. This did not occur because of spurious replacement, but rather because the territory was fully intelligible for the first time because of the map. It was the moment of true conquest, which neither politics nor war would ever have achieved, yet nevertheless was reached by the always adverse actions of representation. The territory was visible at last, and blended into the map with all the metaphysical complexity of an apparently indifferent world. There would be no place for paradoxes like that proposed by Heinz von Foerster, in which one cannot see that one cannot see what cannot be seen. (3) In images, the proverbial invisibility of meaning succumbs to a fully intelligent act of looking.

Models for the mind

If, as Derrick de Kerckhove proposes, the structure of Greek theater was the first model of mental space in Western societies, there is no doubt that the second was the camera obscura and that both delimit a conceptual space where, from the Renaissance onward, began to fix the idea of subject that culminated and then fell into oblivion with Nietzsche and Freud. The comparison of both structures is illustrative. Whereas in Greek theater, if we take Epidauros' work as an example, the viewer as a part of a community contemplates a representation in the middle of spectators; in camera obscura, if we adopt the model of Athanasius Kircher, the spectacle has become private and it is an individual spectator that observes more distantly, albeit with a higher degree of focalization.

Greek theater came to formalize a relationship that started from an indiscriminate mixture of spectacle and audience, when the chorus mixed with the public and turned what had structurally been acoustic into something optical. In the theater, the spectacle was the same for everyone, although each person had an individual relationship with it by means of the type of identification defined by Aristotle. Identification was the psychological equivalent of the look that saved in the mind the physical distance that characterized the physical world. Passage from acoustic to optical entails a process of rationalization, structured by means of the look, in other words of an enriched vision that allowed identification with the hero and his tragedy. From Dionysius' irrationality we went to an Apollinian organization in which irrationality was moved to the subjective: chaos disappeared from reality, where it had existed, and was relegated to

semi-private movement.

Camera obscura, even more than Greek theater, was a metaphor of the mind, in this case a metaphor for empiricism, in which the paradoxical presence of an internal eye, capable of observing the image of the world that is reflected in its dark corners, prevails. When a spectator experienced camera obscura for the first time, it was as if he had locked himself in his own brain and was capable of contemplating the process of reception of images of the world. In this way, that spectator resolved one paradox with another, at the same time as he became increasingly self-involved. But the importance of looking was reduced in this way, because images, since they were projected on one of the walls, seemed to corroborate their strict independence from the observer while showing that they were directly related to the world through the flicker of light that entered. The separation between subject and object, which Greek theater had formalized, thus seemed to be based on the idea of a dark room, in spite of the fact that in this cass the entire process was carried out in a device that isolated the subject as well as the object from the outside world. In any event, the consolidation of this divorce required a rational connection of the subject with the object that would replace the empathetic relationship of Aristotelian theater, but curiously this connection arose from reducing the importance of looking as a relationship between both terms. In other words, the camera obscura was the foundation for the transcendental distinction between artistic view (based on emotions) and scientific vision (based on reason).

In this way all traces of the dialectic tensions between union and disassociation, between identification and separation, between looking and seeing that occurred in the first mental model disappeared, and Aristotelian theater attempted to solve in its own way. We had to wait for Brecht, at the beginning of the 20th century, to find someone to bury these tensions and attempt to resolve them from the opposite standpoint, with theater that precisely was non-Aristotelian. Yet that was more of adaptation to new times as opposed to an entirely new approach. Science, which at the time had established the limits of its territory by leaving art outside, now returned to take over everything. Brecht's view of theater, with its distancing (*Verfremdungseffekt*), was symmetrical to Aristote's identification and did not truly propose a new mental model but rather supported the assumptions of Descartes' model, at a time when the Cartesian model had already begun to decline, despite the proliferation of films that might seem to indicate otherwise. (4)

From this crisis of the second mental model a third model arises, and it does so in the world of computers, in the mid-20th century, when Douglas Engelbart decides to hook up a television monitor to one of those computers that up to then had been completely impenetrable, a black box of linear operation that executed its job in the interval between the input and the **output**. Apparently, the monitor allowed one to see an abstract operation for the first time, one that occurred between these two poles, but to do so it could not simply turn on Alberti's window device, capable of allowing us to see the scenery without being present. There is no doubt that the television screen was in a formal sense the successor to the Renaissance window, with a complex genealogy that had traveled through painting, theater and film, but this new window was no longer

connected, like its predecessor, to the visible surface of the world. Rather, it was connected, apparently for the first time, to the truth hidden behind it, that is with the rules of the language in which, according to Galileo, the book of the universe was written: mathematics. While the screen momentarily was covered with numerical landscapes, sponsoring hyperbolically an aesthetics related to the break that abstract art represented in relation to realism and by giving the impression that it was simply an exercise of *seeing*, the truth is that it was soon necessary to look, Metaphor took over; in other words, the act of looking was constructed, and that laid down the foundations of the third mental model which today is known as the interface.

The concept of interface, which at the beginning was understood as "the hardware and software through which human beings and computers communicate to one another; today it also includes cognitive and emotional aspects of the user's experience", (5) is as transcendental as Greek theater and later the camera obscura were at their times, and still maintains this generic relationship I mentioned above: all three are models of the mind and shape the imagination of a certain epistemology. Yet it would be a mistake to not understand the change represented by interfaces in terms of the earlier models, and believe that they are merely a prolongation of a structure of drama that aims to be so long that in the end it is considered ontological. Thus, Brenda Laurel, in her now classic essay in which she equates computers with the theatre, conceives of a certain immobile approach to imagination that is close to being pathetic due to its traditional framework:

Computers are theater. Interactive technology, like drama, offers a platform to represent rational realities in which certain agents execute actions with cognitive, emotional and productive qualities….Two thousand years of theory and practice in the theater have been devoted to an end that is remarkably similar to the incipient discipline of designing the interaction between human beings and computers: specifically, of creating artificial realities in which the potential for action is enriched cognitively, emotionally, and aesthetically. (6) [paraphrase of the Spanish translation of the English original]

Interfaces are the virtual spaces in which the computer meets the user. In this sense interfaces depend on Aristotelian devices of identification, because what occurs in the space of the interface is governed by visual metaphors and as such part of this operation refers to the emotional, subjective side of art. Yet this subjectivity is revealed in order to observe, and cries out for the action and not passive reception of users. Parallel to the empathetic communion that is produced by passive, spectacular observation of metaphoric play, interfaces also suggest a required distancing of a didactic nature, able to activate the user's look to act the nucleus of the machine. However, the exchange of equivalences does not end here, since interfaces also allow us to convert the basic passivity of identification into an active operation, which is usually only enjoyed in its cathartic culmination. At the same time it also produces the opposite operation that consists of diluting the irrationality of the cathartic moment in the spatial field of metaphorical visuality,. Catharsis no longer is an uncontrolled, moving resort for the spectator, but rather becomes a representation in constant

metamorphosis aimed at the user's power of observation. At the same time the distancing factor that this image suggests becomes tainted with the tension of identification because it does not resolve itself, it continues in constant effervescence. (7) This is a dialectic game between objectivity and subjectivity that already existed in the foundations of film aesthetics but now becomes operational and incurs in territories left unexplored by film.

There are two antagonistic words and two opposing theories of drama that come together in interfaces. They now can work together, in the same way that one of their most salient characteristics is that mathematical operations become an aesthetics and aesthetics are present in mathematical operations. We may conclude that interfaces are devices that can bring together two pairs of crucially important paradigms: on the one hand, art and science, the division between which has been the basis for much of contemporary culture, and on the other, the division between technology and humanism, which dialectic has fed both positively and negatively the imaginary of the 20th century. In this sense, interfaces constitute a tool of the future, capable of articulating not just practical operation but also providing the basis of an undoubtedly complex imaginary.

With interfaces the act of looking and all its devices becomes objective. This is a scene like that described by Laurel, but in no case can it be Aristotelian, as is to be expected, after a century of film drama and with the hidden work that advertising carries out on the contemporary imagination. In interfaces, the figure of the spectator succumbs to his or her own machinations, because spectators, as users, constantly construct themselves in the sense that their actions determine the world in which these actions are possible and operational. Benjamin had thought of this mechanism, when at the beginning of the era of the technology of masses, he explored surrealism as the last instance of European intelligence and reached the conclusion that he was forming a group of images that could no longer be measured contemplatively. (8) However, the instance that Benjamin understood as being final has in the end revealed itself to possess a paradoxical effort of the future:

Nature, which is organized in techniques, is only generated according to its political, objective reality in the field of images that profane illumination brings into our home. Each body and image penetrate each other so deeply that all revolutionary tension becomes collective corporal excitement and all collective corporal excitement has revolutionary discharge. Then and only then will reality have been overcome, as the Communist Manifesto demands. (9)

The paradox, the root of a series of chiaroscuros, lies in the fact that this revolutionary distillation has been produced in the end in the midst of uncontrolled multinational capitalism. Interfaces thus show themselves to be models that bring together trends that, if at one point seemed to be opposite, now seem to be indicative of major underground currents which in reality converge. It is not the purpose of this article to contemplate the social and political contradictions that this mental model, like its predecessors, uncovers when studied in detailed; in the end, the functions of any model

must be understood primarily as symptomatic and not apologetic. But it is also important to note that many contemporary social relationships acquire the basic shape of the interface, which only goes to prove its validity as a model. In a recent newspaper article, Jean-Paul Fitoussi, while discussion the characteristics of the new economy, states the following:

Finally the philosophical rock has been found in the form of the appearance of a new economic agent, a figure from the future inscribed in the present: the capitalist worker, a type of individualist synthesis between socialism and capitalism. In some ways, it is the interiorization of the conflict between classes, since there does not seem to be a third party exploiter. The resulting self-alienation would leave individuals the single liberty of giving the best of themselves. (10) [paraphrase of the Spanish translation of the original]

This perverse synthesis, which operates by following the formulations that interfaces are the image of, warns us that reality has left behind its proverbial simplicity, that which the camera obscura had tried to capture. Interfaces, in this sense, announce a much greater complexity, but this complexity disappears if we understand that the fit between the interface's devices and the characteristics of modernity (or postmodernity) is sufficient to ensure the total ethical foundation of both. At other times in history, for example, during the unidimensional view of the Enlightenment, the definition of the model was the foundation of the model itself as well as of what was being modeled: metaphor disappeared behind the optimal operation of one of its appearances, which was precisely aimed at occultation. But a time like ours that begins in the field of suspecting with Nietzsche, cannot allow itself the luxury of ignoring the doubts surrounding its own constructions, nor is it able to simply demonize them as Adorno would have liked, either. That is why, as the structures of Greek theatre and the camera obscura were able to provide us with a clear image of certain mental operations (which were social operations, too), the same thing does not happen with interfaces, whose visuality seems dispersed throughout the constant changing of the positions of its comprising elements. Perhaps we should finally accept that this clouded visuality is precisely the clearest icon of a mentality that has left behind the movement of mechanisms to enter into the complex, changing world of electronic flow. A new environment in which the rude conflict between opposing polarities steps aside for the spell that characterizes all combinations, which, of course, is not free from risk.

Next station, Lacan

With interfaces we enter into a true epistemology of looking that goes beyond the nuisance of its intrinsic voyeurism because it is immediately operative. Finally, the object that is proverbially located before our eyes keeps its distance, but not mentally as before, but rather by shaping a complex space in which optical-performative structures join paradramatic devices that are rooted in individuals' psychology and in the representations of society's imaginary.

One of the most salient characteristics of our culture is the realization of unconscious processes in the media. As Fredric Jameson (2000:22) noted, the eclipse of interior time means that we read our subjectivity in external things. The most recent polemic begun by Sloterdijk (2000:28), which has forced Habermas to bring out the Doomsday view for the umpteenth dozen time, refers precisely to this reality: the possible end, not just of humanism, but also of humanist thought on which Western societies are based, since maintaining telecommunications links between the inhabitants of today's society of masses is not enough. It is nonetheless silly to be worried about something that has changed after a century of technological and social changes that have created a new human landscape that is absolutely different from the previous one, which, despite its empirical disappearance, still seems to be the basis for a large part of the Western imaginary. Without entering into the polemic ourselves, nor subscribing to the anti-humanist turn proposed by Sloterdijk, we believe that it ought to be enough to detect the formulation of a new mental model in order to accept the need for a change, including a possible defense of humanism.

If they represent a mental model as I have suggested, interfaces must be able to present the most outstanding elements of the contemporary epistemological imaginary, as we have seen they did in the case of those social constructs that correspond to the hegemonic idea of social reality. (11) But their configuration also refers to the decisive and growing contemporary symbiosis between human beings and machines, from which the no less transcendental process of exteriorizing subjectivity is derived, which, in turn, shapes identity in our multimedia societies to a large extent.

The phenomenon was noted at the time by Lacan, whose supposed chatter has become true as we become aware of the complexity of the world we live in and of the need for tools to explain it. Lacan does not perceive things but rather, as Nasio (1994:27) suggests, images that once inscribed in him, once received by him, are going to turn into the substance of him. In other words, between Lacan and the world there is a single dimension, a single, continuous dimension with no breaks, and it shall be called the imaginary dimension. In other words, the space of the interface. Just as Zizek has shown the hermeneutic significance of Lacan, instead of considering the traditional task of explaining an object (in this case, popular culture) by means of a theory (Lacan's psychoanalysis), he does the reverse by explaining Lacan by means of popular culture; the fact that some of Lacan's assumptions agree with the configuration of the interface prove that in order to determine the match of both to the reality of contemporary society. Especially when we see that this imaginary dimension that joins images and oneself, and that the interface exteriorizes and as such makes images objectively operative. It corresponds to the domain of images that, as we stated above, Benjamin had noticed and in which distance and borders between subject and image are eliminated, in that the subject itself has penetrated the space of the image by participating in it with his own body (Weigel 1999:50). The entire group of symptoms that appears in the 20th century and, at some point takes shape in a techological device such as an interface, carves the phenomenology of contemporary subjects, which are inevitably made up of the qualities of the object, in the same way that the shape of the object cannot exist without the subject's reflections. And in the same way that the

metaphysics that arose from the camera obscura disappeared in the operative specificity of movie cameras (following the steps of an Aristotelian idealism that at the time fit the material nature of the camera obscura), the complex hermeneutics of our technological society, so criticized by English-speaking critics and their followers, (12) has become true in a technology that today seems unchallengeable. We may recall, nevertheless, that film was never the simple final goal of Cartesian subjects, based on the mechanics of the camera obscura, but rather that its phenomenology represented the start of subsequent complex phenomenologies, and as such the importance of interfaces should not be secondary to the fact that they simply materializes intuitions that precede them. In fact, our work has just begun.

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Notes:

(1) The text in question is *Utriusque Cosmi Maioris scilicet et Minoris Metaphysica, Physica Atque Technica Historia* (1617).

(2) Boorstin was responsible for the first alarm against the post-modernist warning of the feared world of images in his 1961 book *The Image: A Guide to Pseudo-Events in America*. For an introduction to the history of this view, see Durand, Gilbert. 2000. *Lo imaginario*. Barcelona: Ediciones del Bronce and Tomás, Facundio. 1998. *Escrito, pintado*. Madrid: Visor.

(3) Cited by Luhmann, Niklas. "¿Cómo se pueden observar estructuras latents?," in Watzlawick & Krieg (eds).1994. *El ojo observador*. Barcelona: Paidós.

(4) Addressing the phenomenological characteristics of film complicates the supposed

simplicity of camera obscura and as such will not be discussed in this article.

(5) Laurel, Brenda (ed.). 1994. *The art of human-computer interface design*. London: Addison-Wesley, p.XI.

(6) Laurel, Brenda. 1993. *Computers as* . London: Addison-Wesley Publishing Co.

(7) This dialectic is best seen in video games, whose apparent simplicity is nothing more than the prelude to subsequent complexities.

(8) Paraphrase of Benjamin, Walter, 1971, *Iluminaciones I*, Madrid, Taurus, p. 60.

(9) Paraphrase of Benjamin, Walter, 1971, *Iluminaciones I*, Madrid, Taurus, pp. 61-62.

(10) Fitoussi, Jean -Paul. 2000. "Cosas dischas de soslayo." *El País*, Oct. 31, p. 15.

(11) These hegemonic ideas, we must remember, are not really modern but rather float on truly innovative devices to preserve very old devices of power.

(12) I am referring to the polemic started by Alan Sokal and his *adlátere* Jacques Bricmont, which if it has shown anything is the intellectual misery of contemporary conservatism, of what these critics denounce. It tries to hide its stupidity behind a certain guise of progressiveness. It is quite symptomatic that his unfortunate, libellous book *Imposturas intelectuales* was quickly translated into many languages, and analyzed by all important critics, who do not seem to understand anything. In contrast, the response, *Imposturas científicas* (which belongs to a very different intellectual category), has not been able to transcend French circles.