Illusion and Ideology in the Vision Machine

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Published by the Miró Foundation, Barcelona, 1998

Illusion is the technique used to materialise emptiness, nothing, the impossible. However, illusion requires a whole set of time mechanisms in order to achieve its ends. Emptiness and these mechanisms thus suffer a vital paradox. Both have to deny each other in order to preserve their existence, even though they are closely related.

In the case therefore of an illusion and a secret, and with an audience out front, the social legitimation and codification of the illusion become a matter of urgency. A show or spectacle is defined by being consensually perceived, and there would seem to be three roads to this: through the scientific nature of mechanisms; by restricted access to machine resources, to secrets and recipes; and by taking the spectator into the illusory apparatus, as if it were a natural extension of him (or of oneself), compelled to perceive and often to act inside the illusion itself in an almost para-organic way.

What we are going to do here is see how the symbiotic development of illusionist technology and optical technology, whose origins and destinies are very closely linked, has influenced all this. Over the last two centuries, this symbiosis has supported one way of perceiving our seeing, and specifically during the 1990s, has led the current discussion on interactivity and Virtual Reality. In seventeenth-century Europe, we could already clearly see a continuous space in which the eye could not help feeling integrated in the surrounding architectural and urban scene. When certain scientific, political and cultural changes led to new models of communication during the Baroque period, the idea of a spectacle was

consolidated as a tool of the social powers in order to channel their integrationist policies and thus avoid critical interpretations by their audiences. The fact that they have been abolished is another matter, because much of what constitutes the idea of the modern illusory spectacle arose merely as a way of escaping from certain coercive policies, as for example, in their time, the Roman papacy or the policies of the industrial revolution.

Illusionism, as we perceive it today, began to acquire its current form in the seventeenth century too. In the world of Baroque art, the growing importance of visual tricks such as anamorphosis, trompe-l'oeil, infinite perspectives in architecture, etc. defined a new approach by artists to the idea of reality and subjective perception. These techniques are an inherent part of our concepts of social representation today.

With the break away from the centralist concept of perspective, new horizons opened up in which the traditional relationship between background and figure was blurred. It was not clear what was space and detail, what was artificial or natural. Later, too, nineteenth-century drama moved away from the confined space of the stage and encompassed the audience, as was to occur later in the great panoramic shows at the service of politics. Honoré de Balzac wrote of the new drama: "One is seen as much as one sees. The occupants of the boxes are more concerned with the audience than with the show. They are not content with merely trying to make out who is opposite them, but also tend to study the effect they themselves or their companions may be having on the other spectators. [...] The theatre consequently seems like a juxtaposition of private salons with everyone observing everyone else." Interaction can be considered as an ideological process of phagocytization, legitimised by the receiver's individualised response. Thus, interaction starts as a process induced by the

very nature of the psychophagous spectacle, created originally by the appearance throughout the nineteenth century of new technologies for the stage and for visual reproduction.

At the end of the twentieth century, Virtual Reality seems to be recovering these parameters between the observer and the observed, what the Russian formalists called the "estrangement effect", a phenomenon of de-automatization of perception that produces a surprising or unusual impression of the object in question. "By eliminating Virtual Reality," writes Roman Gubern, "the frame effect inevitably produces a perceptual effect of immersion in the visual reality proposed and abolishes the traditional differentiation and psychological distinction between subject and object, spectator and spectacle, observer and observed."

One would have to study more closely the visual culture of the nineteenth century in relation to machinery, in the same way as that of the eighteenth century in relation to Galileo's invention of the telescope. Since the Baroque, science and its instruments have formed part of the same perception. While Galileo, Kepler and others opened up a new space by redefining the concept of distance, the nineteenth century can be defined by its obsession with a definition of horizon that should conform to the technological revolution and enable the landscape to be captured from different perspectives, such as from a train or a balloon, and also be capable of reproducing that movement. In fact, the horizon became the new frontier, and the whole visual machinery moved towards this horizon. When the nineteenth-century spectator was aware of the horizon through his own experience, the challenge was to reproduce it artificially so that it could be corrected. Anamorphosis was the Baroque technique of optical correction. Kepler intuited relativity as a result of his studies of parallax, the science of fixing

the distance between the stars which, by the way, is the fundamental concept in TV programmes and VR, in the same way as it was in the Panoramas.

It is interesting to note, as some researchers have, that after managing to elucidate, through the new astronomy, what is beyond the horizon, the nineteenth-century bourgeoisie were excited by the idea of reconstructing "what is in the horizon",1 from our point of view, a singular point of view that was then beginning to be accepted by society. But the indus-trial revolution also created new patterns in the social conscious with respect to the necessary order in the community and the communion of overall values, which were basically nationalistic. This meant that "the point of view", while still legitimate, existed as a function of the other points of view since it formed part of a mechanical logic, of a well-lubricated machine, so that everyone had his own point of view. The State safeguarded these. Thus, politics, and science too, constructed a framework anchored in the idea of glue in the idea of "protocol", for those familiar with the language of the Internet. With this glue in the wheels, the community could be sure of not skidding on the corners.

Parallel to this, nineteenth-century politics established legislative secrecy, which, like administrative secrecy, has always tried to make proceedings secret. The results i.e. the laws, orders, regulations, etc. are public knowledge. What is important about secrecy is not so much what it conceals as its rhetorical force, its capacity for persuasion. It is in this persuasion that the importance of illusion lies, of the conculcation of public opinion by the use of seduction moralised through a policy of protection of individual desire; in other words, protection of democracy. Illusion becomes the glue on the scaffolding of social representation.

We only have to look at the phenomenal success of the Panorama, the painted circular structure with added light effects: in the centre was the spectator, in front of whose eyes there unrolled an infinite perspective, corrected so as to be observed as a whole. Oettermann, in his splendid study of this system, has written: “Panoramas became a medium for instruction about ways of seeing, an optical simulator in which an extreme sensorial impression, a new experience of sensations, could be tried out again and again, until it became routine. [...] Panoramic paintings became a pattern for organising visual experience.”

Intercepting the view with transparencies of vision meant that the visual mechanisms were no longer perceived as simulators, as in the traditional arts, but as substitutes, which was to lead to cinematic illusion. If there was no longer any simulation but only substitution, the true value of the image was reinforced and thus became socially legitimised in its interaction with the audience, by not ha-ving such an illusory quality.

The motion picture, and all the efforts to enlarge cinema screens and thus the field of perception from the Panoramas, Dioramas or Cycloramas of the nineteenth century to Cinemascope, Panavision or IMAX in the twentieth century expanded upon the old idea of enveloping the spectator in a total spectacle, forcing him to become a substantial part of it, to become the very legitimisation of the show. This absorption was not the result of any malevolent design, but because illusion and therefore the device (the machine) and its secret had become a substantial feature of the process of representation, and therefore certain states of confusion and fright were needed to distract from the “technical” side, which had developed to such an extent that it was now able to extend into infinity.

The technology created the illusion, and had therefore to be kept hidden. Thus, for instance, the Magic Lantern remained a secret almost right through the nineteenth century. Although invented in the previous century, and widely used throughout Europe, the general public had hardly ever seen one. It was not until the 1880s that it came to light as a result of being used to illustrate lectures. “To show publicly how mental images are formed, including their psychological and physiological characteristics,” said Paul Virilio, “ is to violate a state of almost military secrecy, since it unmasks ways of manipulating the
masses that are practically infallible.” Consequently, the “omnivision”, the totalitarian ambition of Western Europe, appeared as the formation of a complete image by the repression of the invisible, which is not illusion but the mechanisms that produce it.

It was to be the inventors of photography and the motion picture who put their faith in a spectacle that would be capable of transporting the spectator into a contnuous para-reality, so that he would merge into an illusion that went beyond simple observation and would become psycholo-gically part of this universe and feel that he controlled it.

The Diorama, for example, was co-invented and developed in 1822 by Daguerre before photography. But it was the Panorama, created at the end of the eighteenth century, that gave the spectator a sense of ubiquity, like a kind of teletransfer, thanks to the use of visual and virtual resources that offered an immediate interaction with the image. As the German inventor Hans Goetze, who between 1909 and 1913 improved the panoramic camera, wrote, “The cinematographic panorama can transport visitors into the bustle of traffic in a large metropolis, with vehicles and pedestrians converging from all points: it can take them to busy airports, where they can follow any movements by any type of

plane; it will show them bicycle, car and horse racing courses, football matches and sporting events of all kinds; it will allow them to see processions, festivals and exhibitions, and it will also let them have a general view of troop manoeuvres. The moving panorama can instantly take visitors to the bridge of a ship in battle to observe the manoeuvres of the fleet. The spectators will be able to board boats to visit beautiful lakes, inte-resting canals, busy ports and shipyards, and to travel through delightful landscapes as if they were in huge open carriages."

In 1898, the optician Louis Régnault opened the Mareorama in Paris: a simulated voyage by sea, with film projections at the sides close to the audience that incorporated the idea of a moving platform and included compressed air to produce the wind and waves, together with a hidden orchestra playing a symphony. The leaflet advertising the attraction stated that the intention as "to create an impact on all the senses at once and achieve the most completely realistic effect". Raoul Grimoin-Sanson reinvented the Cosmorama, converting it at the 1900 Paris Universal Exhibition into a Cineorama, the first panorama with mo-ving images, produced by simultaneous projections. In A trip to the moon, a Cyclorama shown on Coney Island, New York, in 1902, sixty passengers were immersed in a journey to the moon produced by a combination of compressed air, images and sound that gave a real impression of being in a spaceship and even went as far as to land with splendidly simulated movements, as described in contemporary reports.

Illusionism, magic and conjuring were fertile ground for the appearance and development of spectacular representational techniques such as photography and cinematography. In fact, most of the early experimental cinematographers were illusionists before they turned to motion pictures as the definitive device.

This fact has often been noted, but no special emphasis has been placed on the repercussions it was to have on the perception of the visual machinery that we have today.

The emergence of cinematographic machines was directly related to the devices used by magicians to perform their conjuring tricks. Nineteenth-century magicians were especially influenced by the gradual discoveries of science (mainly optics, chemistry and electromechanics), to the extent that in many instances they themselves became scientists or caused scientists to take a particular interest in illusionism. New tricks followed fast upon the new inventions. Science, illusionism and the cinema were to move hand in hand in such a way as to leave an indelible mark in the future on contemporary show business.

Cecil Hepworth, a pioneer of English motion pictures, used to spend hours in his youth observing magicians' conjuring tricks and optical illusions. The magician Carl Hertz saw the Cinematograph in March 1896 and considered it the ultimate illusion. He took it on a tour of South Africa, and that year was the first time the South Africans saw motion pictures and the Australians too. The magician Philip Anderson included cinema in his shows performed in southern Asia in 1896. The father of Indian cinema, Dada Saheb Phalke, had been a conjuror. In France, the magician Claude Grivolas was the key figure in the Pathé empire. Alexander Victor was a magician and illusionist who carried out the first proto-television experiments in 1910. Leopoldo Fregoli, an illusionist, invented the Animatograph in 1910, a machine that according to him, "promises to revolutionise the world of animated images, by allowing anyone to take pictures, develop them, print them and reproduce them at home on a screen for the family". G. W. Bitzer, a specialist in optical illusions for conjuring, was to become D. W. Griffith's future

cameraman as well as the inventor of the Mutoscope, a rival to Edison's Kinetoscope. The Egyptian Hall, London's palace of magic, was founded by John Nevil Maskelyne and Robert Houdin in 1873, and was managed from 1888 by Georges Méliès. Maskelyne was an inventor of conjuring and clock mechanisms, such as robots, etc. The first robot to perform in the Egyptian Hall was called "Psycho" and played card games. David Devant was to be the first illusionist to sell Cinematographs to his colleagues such as Hertz and Méliès. Emile and Vincent Isola, a pair of magicians who purchased the Folies-Bergère and also managed the Sarah Bernhardt Theatre, produced their own machine (the Isolatograph), with which Germany's first cinema was to open in Berlin in April 1896. Louis Lumière, after the triumphant début of the Cinematograph in Paris, arranged for his friend Felicien Trewey, a famous magician, to introduce the show in London.

In the field of what is considered pure science, mention should be made of the Messter family. Oskar Messter was one of those experimenting with the creation of motion pictures, although Lumière took the glory for it, who supplied microscopes and other apparatus to the medical profession and to whom illusionists of the period would go to have their equipment made. In 1832 Joseph Plateau invented the Fenakistoscope, and in 1834 William George Horner produced the Zoetrope both inventions being developed as part of scientific research into the permanence of visual images. These technologies have been considered critical in the development of modern vision, since they situated vision in the subjectivity of the observer. Finally, it was the American Robert Fulton, inventor of the steamboat, who signed the patent for the Panorama process in 1794.

Conjuring is based on the idea that the trick cannot be seen by the audience. This is the principal guarantee of its success. Furthermore, this idea is based in turn on the fact that if the spectator knows or discovers the trick, the whole spectacle is a flop. Conjuring reveals only results, never their source. The idea of spectacle depends on the public not being prepared to see the trick, not wanting to see it, otherwise there would be no show. The spectator is led to perceive himself as the guarantor of what he sees; and what he sees is an illusion, not the machinery by which it is produced. In this respect, the visual reproduction technology that appeared in the nineteenth century under the umbrella of illusionism and conjuring involved a social perception of it in terms of concealment and secrecy that has been maintained until today. Present-day digital technology takes this even further. Mechanical or analogue technology, such as a radio, a clock, a television or a toaster, can be relatively easily understood by the user, whereas knowledge of complex digital technology is only available to highly qualified technicians. As with illusio-nism, the result is visible but not comprehensible, and consequently a certain type of industrial interaction is required. Kodak's first box camera produced at the beginning of the century and Microsoft's Windows 95 software used practically the same slogan: "For those who don't want to be bothered with the machine. Just press the button and we'll do the rest."

For many film-makers/magicians2 the aim was to create a convincing world that would highlight the instantaneous effect on the viewer, the illusion of being there and seeing what happens; to take the spectator into the fascinating universe of a tangible illusion through a process of immersion. The key here is the experience of living it and feeling it, of talking about it "as if it had really happened".

In 1924, Paramount introduced the Magnascope, consisting of a circular screen and several projectors to give audience the impression of being surrounded by the action. In 1926, the French film director Abel Gance used Polyvision, a variation of the Magnascope, for his film Napoléon. In the late twenties Henri Chrétien developed the direct forerunner of Cinemascope; Fox acquired the rights to it in 1935. In 1938, an American expert in photography, Fred Waller, developed a system known as Vitarama, which consis-ted of 5 cameras and 5 projectors, as a training device for fighter pilots. After World War II, Waller tried to develop his system for commercial use, and by 1949 had already produced several short films. His goal was a screen with horizontal and vertical angles of vision of 160 and 75 respectively, and with loudspeakers placed so as to produce all-round sound. Due to the high production costs, it was not developed in depth nor did it become generally established, although audiences were absolutely entranced by the method. Other systems were the Circorama, produced by Walt Disney in 1958; and the Carousel and the Panrama presented in 1967. In 1971 the first Omnimax appeared.

Nevertheless, an important event was the appearance of Cinerama in 1956, one of the most spectacular wide-screen systems. Fox, Universal, Walt Disney, MGM, United Artists, Columbia and Allied Artists all announced productions using this new method, which was called “the modern miracle that can be seen without special glasses”, a slogan designed to compete with the 3D films produced during the fifties.

In Cinerama, three cameras were used for each scene, filming from slightly different angles. The film was then synchronised and projected on to three large screens that were curved on top and embraced the audience’s entire field of vision. Although, due to the high costs involved, this technology did not have an

enthusiastic reception among cinema proprietors, it certainly gave a boost to the theory of visual immersion until the appearance of Virtual Reality.

One person who was fascinated by this new technology was the American Morton Heilig. In 1958, he patented the Sensorama, which could be called the first more or less integral Virtual Reality machine, although it did not yet involve computer mathematics.

In an interview Heilig declared, “When watching television or a film, you are sitting in one reality and at the same time looking at another reality through an imaginary transparent wall. However, when you enlarge that window sufficiently, you get a visceral feeling of personal participation. You are feeling the experience, not just looking at it. I felt as if I had crossed that window,3 had taken a ride on the roller coaster myself instead of watching someone else do it. I felt dizzy. That was very significant for me. I thought about where the technology of the future might go, and I was instantly aware, sitting in the Cinerama in Broadway, that the future of motion pictures is in making films that create a total illusion of reality, just as you’re sitting here now opposite me, without anything framing us.”

The Sensorama was a large machine with stereo sound, 3D images, kinaesthetic response i.e. it activated physical movements in response to stimuli from the user and ambient smells. It was, according to its inventor, a “theatre of experience”, or as he also put it “an art of the conscious”. The first model simulated the experience of riding a motorbike through Brooklyn. You could smell the petrol and also the pizzas as it passed a pizza house. The Sensorama was the first simulator designed for entertainment. At the same time, Heilig experimented with multi-sensorial games machines, with new concepts of motion

pictures and with interactive theatre, which he called “participatory” theatre, in close parallel to the works of artists such as Judith Melina and Julian Beck of the Living Theatre, Robert Wilson, Peter Brook, Jerzy Grotowski and John Cage. It was not altogether by chance that Heilig was the first to invent the HMD (Head Mounted Display) or virtual helmet in 1962, which Ivan Sutherland, one of the fathers of the modern concept of interface, was to improve in 1968 by adding an computer system. Sutherland combined HMDs and TV technologies with computers programmed with three-dimensional models of landscapes and houses. Later, NASA and the US Defense Department expanded these experiments into flight simulators and training for handling tanks and submarines.

It was thus in the 1960s that illusionist perceptions began to have a significant effect on technology, highlighted by psychedelia and by experiments with drugs and certain techniques of lighting, movement and perception. The American Stewart Brand, for example, who in 1968 helped Douglas Engelbart to develop the present computer interface with screen and mouse, had been working some years earlier on “multimedia experiences of mental alteration”, also known as “Acid Tests”. But above all, he advocated a entirely experiential interpretation of viewing. It is perhaps not by chance that it was precisely in the 1960s that a further “raison de spectacle” acquired renewed force: individualised interaction, another of the aspects that take us straight back to the late-nineteenth century, when Dioramas and Zoetropes endorsed a “liberal” viewing of shows, i.e. silent, domestic, personalised viewing as a form of rejection of the collective perception that the cinema would later impose once and for all, when sound made its appearance in 1927 along with a critical verbosity that had not occurred with silent films, where the audience publicly expressed their opinions during the showing.

Back in the nineteenth century the new visual reproduction technologies had already opened the doors to subtle concepts of integration in the spectacle through the direct participation of the individual spectator, reconstructing social definitions of private space as against the mass "a public life," as Richard Sennett wrote, "in which the silent spectator has nobody in particular to look at and is protected by his right to be alone." As the nineteenth century wore on, certain models of viewing were increasingly reinforced, such as the collective Zoetropes or Kaiser William's famous Panorama in Germany. In this respect, certain phantasmagorias developed in the last century (as well as certain communications technologies such as the telegraph or telephone) clearly announced ideas and technologies very similar to those of the present day, as is the case with Internet, Virtual Reality or digital television à la carte.

The communications technologies that became established in society during the 1960s began to indicate new horizons with respect to a reconfiguration of the relationship between the show and the audience; i.e. to combine the idea of an anonymous mass audience with the existence of a mass of isolated individuals who through their links to a single common medium continue to see the show as a whole. The fact that collective viewing was to end up influencing most of the visual inventions of the late-nineteenth century, and throughout almost the entire twentieth century, was due to purely commercial reasons, given the higher imme-diate financial return on shows with collective audiences rather than individual ones, as shown by the commercial failure in France of Thomas Edison's Kinetoscope in 1894 which was a peep-show that could only be viewed by one person at a time, as compared with Lumière's Cinematograph, which would be seen by an infinite number of people or the lack of support for Heilig's Sensorama in 1962 shown by the Hollywood film industry, which was at the time more concerned with new research into enlarging the screen (Cinemascope, 3D,

etc.) as a means of recovering the audience lost to television, and its “made-to-measure screen”, as announced in an NBC spot in 1960.

Virtual Reality environments today represent the ultimate application of these technologies, not only in psychological but also in scientific terms, since one of the approaches to VR by mathematicians and programmers is through the reinterpretation of anamorphic techniques, i.e. centred on the abolition of the concept of “angle” or finite vision. Creating a world (termed “immersive” in the language of VR programmers) of which the spectator is an essential part, legitimising the function of the machine itself, seems to reproduce an institutional desire to incorporate the viewer (or user) in a dream that is not his, since it has been programmed in advance, in order to thereby follow certain patterns, external to the mechanical configuration and therefore able to be conver-ted into a moral discourse. With the appearance of the new all-round shows came the immediate interest shown by governments in using them for political speeches and propaganda purposes.

Instances of “public” use of the illusionist apparatus are innumerable. We shall mention just a few anecdotes, such as the fact that in 1646 the optical phantasmagoria of Athanasius Kircher’s Magic Lantern was accepted by the Vatican as a perfect machine at the service of the Faith and the catechism; that anamorphic techniques were used by the Jesuits in China in the eighteenth century as a means of propaganda; and that in 1810 Napoleon entered a panoramic dome in Paris and came out convinced of its use for propaganda purposes, to the point that he ordered eight panoramas of his most important battles to date. In the Cycloramas on Coney Island, the great event was the war against Spain in Cuba, a spectacle openly backed by the sensationalist press and the US government itself.

In this respect it is interesting to note that a large part of the simulation and visual reproduction technologies that we are using today reveal their military origins (and therefore secret origins, for the good of general security), where the relationship between machine and body was defined by a gradual adjustment of the latter to the former, as a way of legitimising the existence and goodness of an imperative technology, among other reasons. The research and experiments carried out by the Germans and Americans on fighter pilots,4 for example, fostered concepts of machine interactivity that have later given rise to certain social, political and cultural representations in the field of entertainment (cyborgs or video games) and also in the realm of artistic creation, such as the well-known case of the artist Stelarc.

The projection of current technology promotes the conception of it as if it were a social agent, seeking an identification of machine and user through an egalitarian perception of both, thus going further into the immersion of the audience in the universe of the spectacle itself. Research into language and interaction in the 1970s which was to lead later to the configurations of IT interfaces that we know today established that interactivity was one
of the fundamental elements when it came to encouraging the use of social relations: i.e. interactivity as the point at which an entity responds, based on multiple previous inputs rather than on one immediately previous input. The more a computer incorporates previous actions rather than possible real actions, the greater the likelihood of the computer being perceived socially, seriously limiting the perception of technology from a distance. Psycho-biological experiments carried out in the 1980s showed that the greater the relationship or symbiosis with virtual images the lesser the capacity for differentiating between a calculated world and personal experience. The ideology underlying the idea of

an interface that is “as naturalised as possible” conceals its full psychologically manipulative effect. Consequently, the technology that establishes social roles in turn projects social responses as a function of these, creating a need for them. The existence of this two-way parameter is in many cases the grounds for legitimisation of the technology, simply by being able to create a response in us, apart from the usefulness of the question or of its social and political derivations. Technology therefore needs a programmed background of multiple answers so as to be able to generate an interaction in any situation and when confronted with any deviation. This same generalised and therefore democratic capacity for auto-response is used by the powers that be to justify their interest in interactivity.

Present-day digital technology, with its many illusionist applications both in entertainment and in the simulation of reality for other purposes, has a surprising capacity for interpretation in the light of technovisual research prior or parallel to the invention of photography and motion pictures. But perhaps the most interesting aspect is the opportunity this gives for redefining the nature of that nineteenth-century pre-technology that gave birth to the viewing machines that we have seen during the twentieth century. To discover that most inventors of audiovisual reproduction media were illusionists, and that they started from premises directly linked to mass entertainment, allows us to retrace the foundations of our current technology, so totally influenced by its social perception.

NOTES

1- A curious parallel might be drawn between the concept of horizon in the illusionist apparatus of the mid-nineteenth century and in the special effects compu-ter technologies that appeared in the 1970s. Panoramas, Zoetropes, Dioramas, photography, etc. were from the outset a response to the perception of new spaces as the European colonial impetus and politico- scientific expeditions became consolidated. The vision offered by these optical devices was a larger area of perception than that offered by the human eye.

For its part, after man's landing on the moon and subsequent space research, the first computerized simulations of outer space appeared in feature films, news programmes and reports. These were characterised by their great mobility and in particular by their ability to offer 3600 vision shots. The horizon became a minor coordinate, subordinate to our control of the eye.

2- Live magic shows suffered a blow with the arrival of motion pictures, not because people were no longer interested but because they themselves were changing.

3- Leibniz said that the body was a room without windows. And that somehow it was necessary to re-create the windows in order to be able to communicate.
If the body has no windows, we can neither see nor be seen. The value of credibility, by having to represent us without being able to see our libretto, enclosed in the four walls of our sealed house, becomes the glue that communicates and links. That simulated space for reproducing ourselves to the world is "like a window in which the same thing can be seen from both sides". The world is in one of them, because in my window I see the same as those outside. A space for information and visual organisation. A communicational organisation at the service of a multiplicity of different contexts and relations,

therefore an organisation quickly able to adapt and quickly understood from outside. Leibniz was saying that he consi-dered the creation of interfaces to be ne-cessary.

However, certain Baroque philosophers thought that “the body is a necessity for the being”, because it is the only strategy whereby others can know where you are. Leibniz and others adapted the digital binary language. The digital world consists of representational constructions, façades built to locate real things, the things that no longer stand still. The Coyote could not bear the Scavenger, and therefore equipped himself with all the Acme technology possible. The façade of digital language has a surprising capacity to construct these strategies; in fact, so great a capacity that we make ourselves into strategic devices, ever ready to be in the right place and capture the best image. And to kill once and for all the repulsive Scavenger.

In 1960, Ivan Sutherland submitted a doctoral thesis on the subject of artificial intelligence that showed a new way of interacting with computers, which until then were no more than alphanumerical combinations, interminable strips of data on perforated tape or digits on a circular radar screen. Sutherland thought that screens and digital computers could provide a means of becoming familiar with concepts that were not perceptible in the physical world, “by placing a window, or piece of glass of some sort” in the marvellous mathematical world of a computer. Eight years later, Sutherland was to esta-blish the “definitive” model of the Head Mounted Display (HMD) incorporating computer technology. Later on, NASA and the US Defense Department expanded these experiments into flight simulators and in training for handling tanks and submarines.

In autumn 1968, at the Fall Joint Computer Conference held in the Civic Auditorium in San Francisco, Doug Engelbart presented a new model of relations with computers that was to revolutionize the IT world from top to bottom. It was in fact a new flight simulation system.

During the presentation, an electronic projector showed a high-definition image, twenty times life size, on a vast screen. Engelbart placed himself on a kind of platform with his back to the screen, seated and with his hands on a strange console, with a set of earphones and microphones on his head. The console had a small screen on it that enabled to see what was on the large screen, and a keyboard in the centre. On the left was a set of five nume-rical keys that he used for punching in commands, and on the right was a kind of box the size of a packet of cigarettes, with buttons on top and connected by a cable to the console. Engelbart moved it over the table with his right hand. It was the mouse.
"Imagine you're in a new kind of vehicle with an unlimited range in time and space," wrote Howard Rheingold in respect of Engelbart's experiments. "In this vehicle there is a magic window that allows you to choose between a wide variety of possible views and to quickly filter a vast field of possibilities, from the microscopic to the galactic, from a specific word in a specific book in a specific library to the summary of an entire field of know-ledge. [...] The territory you see through the enlarged window in your new vehicle is not the normal landscape of plains, trees and oceans but a landscape of information whose features are words, numbers, graphics, images, concepts, sentences, arguments, relations, formulae, diagrams, etc. The effect is dizzying at first. In Engelbart's words, 'All your old habits of organizing information have been dynamited by the presentation of a system modeled not on pencils and print but on the very way in which the human brain processes information.'"

What happens if I am blind only when I leave the room? How can I perceive what I have at home and on the other hand not see a single thing outside? The only possible solution would be to invite those outside to come in, and so be able to find out what they're like. But then, assuming that the others are experiencing the same thing as I am, when they leave their homes if they have managed to discover how to do so, which is highly doubtful they will be blind and won't be able to see me. So in fact we won't have gained anything. What, therefore, do we have to do in order to be able to see our backsides, to smell our breath and be sure that it is not our imagination but that other person really does give off the inevitable whiff of a garlic-flavoured meal? When Leibniz says that "this is the best of all possible worlds," should we understand that this is because it can be seen and therefore is possible? In other words, that it exists because it can be seen? And what is it that can be seen if it is not merely our own stuffy, windowless room? Or should we understand that it means that "it is the best of all possible worlds" because we cannot see what is beyond the wall? Because the only thing we can do is imagine it?

In the Renaissance, it was assumed that windows were transparent and walls opaque. Another fundamental assumption in Renaissance linear perspective was that a window was flat. To organize the world in such a way that it can be understood in two dimensions is rather pathetic. But that is not all. Why the devil do we have to think of the world in the same way as we see it, with foreground, middle-ground and background, asked Leibniz (Newton could not stand Leibniz when he started thinking about these things; this whole story finally came to a sudden end when the apple hit the ground with a thud and all the possible planes and strata were sent flying).

I think of the few windows I have at my disposal. The question of disposal normally leads one to think that someone has disposed it thus. But on the contrary, I would swear that they are there because they are my numbers that have come up in the occular lottery.

I think I remember them. I am thinking of the lens hood on my camera, of the lens hood on my video camera, should I ever have been given one for a birthday (I always get plants which, by the law of human gravity, i.e. aquatic forgetfulness, droop prematurely); I am thinking of my Mac, which doesn't ask for water, accustomed as it is to beverages of a higher voltage; I am thinking of the binoculars that allow me to see relatively, always fighting with my spectacles, and I am thinking of the little black dots that regularly and obstinately fill my field of vision. Individual consciousnesses, in themselves, are closed to each other; they can only communicate by signs that translate their inner states, wrote Emile Durkheim.

4- These experiments, carried out during the Second World War, were designed to make the pilot respond mechanically to the apparatus when he began to suffer from altitude sickness or in extremely low temperatures. The psychologists' aim was for the pilot, although in a semi-conscious state, to be able to handle the controls automatically, as a result of symbiotic psychological training with the machine (see studies on this subject by Laurence Rickels, "Psy Fi", Alphabet City, no. 4-5, Toronto, December 1995). While the Americans carried out their research within a "scientific" framework, the Germans liquidated dozens of Russian pilots in appalling experiments in concentration camps. In addition, advances in military technology led to a new type of integrated fighting unit. Aircraft, tanks and submarines were transformed into biomechanical organisms. Thus, communication "through technology" no longer had the sole aim

of linking soldiers and orders (through earphones, interphones, etc.) but at the same time established communication with the machine itself through dials, controls and sights. The machine performed the double function of vehicle and transmission terminal. (See Paul N. Edwards, The Closed World. Computers and the Politics of Discourse in Cold War America, The MIT Press, 1996).