Aesthetics of the Virtual Body

By "virtual body" I mean in the first place an interactive digital image,[1] the self-phenomenalization of an algorithm in binary format arising in its interaction with a user-consumer. It is a function of writing that, in its sensible appearance, at the same time exposes and conceals the translation project through which it is constituted in its computational operations. As apparition of a grammar, such a language-image [*immagine-linguaggio*] implies a peculiar spectrality that affects the visible-invisible relation and structures the modalities of its fruition. From this point of view, the digital image—which can be multisensory—is not simply image-of; it is not only a *mimesis* of that of which it is image,[2] identifiable or not, and is therefore not essentially simulacrum.[3] Nor, in any case, is it an icon[4] or original image. On the contrary, it is a genetic-relational form that belongs to a multiple system of translation. The digital image is not, one could say, properly "image," but image-body [*corpo-immagine*], since it is made of tidy sequences of binary units, or, in other words, strings of characters that develop at various levels of a syntax that constructs the coincidence between these strings and their sensible appearances, which currently are mostly sonorous or visual but in general are perceptible.[5] Now, we know that discrete sequences translate also undulating and continuous events. Therefore, as subtle body of a noncontinuous world, as discrete world of point-data that manifest themselves as fluidities and densities and saturate perception, and as (from a computer science or formal perspective) programming language, the virtual body is certainly an electronic body and therefore an atomic aggregate (to use another metaphor). The process of digitalization renders it peculiarly light, though: as a complex made up of a sometimes remarkable amount of data transmissible with

extraordinary speed (the greatest speed that is possible given physical limitations), it is open to multiple embodiments that are at the same time structurally identical and phenomenally diverse insofar as the virtual body is a hybrid entity, an image-body. Its appearance, its existence-as image, is in essence interactive. This is a delicate point we shall have to return to, but which at least for now allows us to exclude from the notion of "virtual body" those simply photo-graphic or tele-visual digital images that allow for a passive action not affecting the properties of their appearing and that above all, at a different level of the meaning of "virtual body," do not permit a retroactive interaction with the structure of the computer memory, that is, do not permit an incision into the matrix.[6] Obviously, the degrees of interactive operativity are numerous, and so is the sense of the notion of "virtual body." Going deeper into the matter, we will now approach the robust notion of virtual body, which is of interest here due to the novelty of its ontological status.

From a simple, comprehensive, and primary point of view, "virtual body" is, for example, any visible image-object [*oggetto-immagine*] that is actually and most commonly visible on a computer screen and that allows for an interaction that can modify it, at least in the sense of activating it, of constituting it as a specific event. In most instances, the case is that of a certain type of graphic entity that, when related to another entity of the same kind, builds an environment with which the user can interact. It would be opportune to produce a phenomenology of such image-objects, which should presumably begin with a taxonomy of sites, understood as organizers of screenshots equipped with various purposes, and thus with specific problems. We are dealing here with a broad and growing field of research in which computer graphics, multimedia programming, and aesthetics of reception might collaborate. A rather interesting object in this field is the avatar,[7] that is, the representation of a non-generic human body in a Networked Virtual Environment (NVE). The case here is that of the representation of a user and his or her behaviors, of his or her virtual alter ego. I, as a consumer of this specific environment, take shape within it and appear on the screen as a graphical representation of myself. In such an environment I act, and by means of appropriate instruments, my representation/virtual body carries out the tasks I command. What the avatar does has an impact on the virtual environment, and modifies it. Such an environment is connective; participating in it are various

avatars capable of interaction.[8] Especially interesting is the study of the proxemics of avatars and, in general, the attempts to reproduce the limits of the human body in a digital representation that, because of its nature, can do, within its own environment, (almost) everything (it can see or pass through objects, immediately move from one place to another, and so forth). For example, what "sense" of space can an avatar have (or, can I have through my avatar)? The human body does not have a homogeneous or merely geometrical sense of space, established only through measurable distances. Space for us is non-homogeneous, dense, and, like time, always qualitative. For programmers, this is a problem.[9]

Still in the attempt to come closer to a hard concept of virtual reality, a second exemplification of virtual body is offered by so-called immaterial sculptures. They are not digital images visible on a computer screen, but rather space-environments that take form in interaction with users, that is, virtual robots that appear in 3-D as holographic and holophonic organisms *almost* capable of "learning" data that are supplied by users and of changing in relation to them. The possibility of interaction is given through the construction of a virtual space V, resulting from the mapping of a highly singular external space E such that, through video cameras and sensors, any physical change in E can modify the state of V. A virtual sculpture is therefore perceptible as a tridimensional form luminous and sonorous in movement, and mutating in relation to the users' gestures; it can, for example, turn itself over, change direction, and disappear.[10] Such relations of mutation become more and more complex, giving rise to a metamorphosis of the virtual sculpture, to the possibility that it assumes different perceptible forms relative not only to consumers' movements, but also to their emotional states. Conceptually, the problem of an interactive metamorphosis concerns neither the possibility of registering psychophysical mutations in users (which would depend on both the quality of the sensors and a basic reductionist hypothesis), nor even the management on the part of a computer of a data bank of morphologies connectable to them. Instead, it concerns the type of relations that are instituted between the alterations of users and the generation of visible and sonorous forms. It is possible to plan, through an outline of interfaces, a system of precise translation that gives rise to a system of variation/substitution of the sculpture-configuration. Organizing a system capable of making the forms of a work evolve in relation to

the interactions of users is more difficult: there is a clear divide between a type of interaction that develops within the prefixed limits of an already given materiality, in our case a data bank of remarkable dimensions, and an interaction that can shape (sculptural metaphor) the programmed matter, causing it to evolve into new, unpredictable states. Such a clear divide opens up a space in which various mediations are possible, mediations which the development of technologies and, in particular, research in evolutionary electronics, are concerned with inspecting.[11]

We can now come even closer to an approximation of the specific notion of "virtual body" by first clarifying preliminarily the qualities of the experience of the virtual, then by defining the concept of "virtuality," and finally the concept of "virtual reality." First of all, the experience of virtual reality is multimedial and interactive,[12] where "multimediality"[13] indicates a peculiar "representational wealth of a mediated environment,"[14] thinkable in its turn as constituted out of two factors: amplitude (quantity: number of senses simultaneously involved) and profundity (quality of perceptions, or sensorial information). Interactivity designates "the users' level of participation in modifying the form and content of a mediated environment,"[15] and can itself be specified in (at least) three factors: velocity (the time that it takes every datum to be assimilated into the mediated environment); range (the number of possible actions in a given environment); control ("the ability of a system to verify its own controls within a mediated environment in a natural and predictable way").[16] There exist, therefore, varying levels of multimediality and interactivity, and the experience of virtual reality will be more *immersive* depending upon the depth of such levels. One can thus maintain with Oliver Grau that "virtual realities . . . are in essence immersive"[17] while considering at the same time, however, the paradoxicality of such an affirmation insofar as physical and mental immersiveness, which implies the suspension of disbelief, and the identification of the body with the medium do not coincide with, and indeed in certain aspects stand opposed to simulation. In other words, I claim that insofar as it is immersive, "virtual reality" should not and cannot be confused with a basically perfect simulation of reality, with a simulation that annuls similarity in identity (and therefore cancels itself as such), or with a teleologically definitive transparency of medium. Immersiveness can occur, and does occur, but as quality of an experience that cannot be confused with that which we hold to

be "real." To justify this position, one can examine the same question from the genetic-constituent point of view: the generation of "virtual reality" means the generation of the possibility of the experience of an environment (characterized as "environment" by a set of "virtual bodies" that are not bodies of the environment or in the environment but coincide with it) capable of producing perceptual experiences in its users. By "generator of virtual reality" we can therefore mean a machine capable of making users have the experience of such an environment, of translating an environment into a situation. Thus, a generator of virtual reality *could be* conceivable as a generator of possible sense perceptions, and, more precisely, as a generator of sense perceptions[18] (visual, auditory, tactile, olfactive, and so on) capable of simulating an environment/situation that pre-philosophically we would define as "real," as having sufficient faithfulness [*fedeltà*].[19] In short, a generator of virtual reality would simulate that "perceptual belief" seemingly presupposed in our everyday commerce with the world. I think, however, that what we have here provided is a restrictive and, all things considered, minimally interesting definition of environment and, therefore, of the virtual body, insofar as it tends to equate virtual reality and simulated reality, and therefore considers the virtual as an aspect of simulation or of a mimetic project. I think this for the following reasons: an environment that is defined as "virtual" because of its capacity to simulate a real situation results in being faithful [*fedele*] insofar as it is capable of responding in the desired way to every possible action of a user; therefore, its faithfulness does not depend only on the experiences that the users actually have, but also on those that they *could* have.[20] Now, the valuation of the "sufficiency" of faithfulness is problematic: Is it possible to simulate a reality without variation, or to construct a "perfect illusion"? Supposing that the user has the possibility of making free choices in the sense of a freedom of indifference, the simulation is impossible because such choices are not computable. Limiting ourselves to other metaphysical hypotheses, that is, assuming for simplicity's sake that the choices are the result of a causally infinite series (where the same idea of series is reductive and inadequate), the simulation of reality will be that much more efficacious the more the processor is able both to calculate the possible actions and reactions of the user and, consequently, to preconstitute the potential interactions on the part of the virtual body-environment.[21] Therefore, the virtual environment will simulate the real environment to the extent that such calculations

stretch infinitely and, consequently, to the extent that such algorithms will be phenomenalizable. From this point of view, the virtual environment is an imperfect Spinozian machine, that is, an apparatus of relations that constitute a tendential coincidence between freedom and necessity, a coincidence that would be actualized only in a causal network of infinite thickness, essentially incomputable.[22] It follows that the virtual environment tends to produce the experience of an immersion pervasive and persuasive but at the same time relatively aware of its own particular ontological status: it appears as a tendential simulation and not as a perfect reproduction. In my opinion, it is this limit, this void, and this lack that open up the artistically relevant possibilities of the virtualization of the imaginary.[23]

An obvious characteristic of the virtual body, one that distinguishes it with respect to the generation of other types of digital images, is its special kind of interactivity: the virtual body is an entity that is phenomenalized through interaction. Interactivity is in certain aspects a characteristic that the virtual body has in common with any other body, but is in other respects a peculiar condition. In order to comprehend such peculiarity, that is, in order to bring oneself closer to the ontology of the virtual, it is necessary to reflect on the concept of the virtual and on the difference between the virtual and the possible. Certainly, in fact, in a general sense "the virtual is a state of the real and not the contrary of the real. There is something virtual within the real: the essences, the forms, the hidden causes, the aims that will be realized, and so on. The virtual is the active principle, the discloser of the hidden potential of the real. It is that which is at work in the real."[24] Still more in general, the "virtual" set can be considered without a doubt part of the "real" set; in fact, we use without difficulty the expression, "virtual reality."[25] However, the concept of the virtual can be better defined by means of its difference with respect to the concept of the "possible": unlike the possible, conceivable as a constituted entity that waits to be realized, the virtual is configured as a problematic complex, a node of tendencies that imposes a process of actualization. Clearly, from this point of view, the virtual-actual process is not identical with the process of realization of the possible, if the latter is conceived of as the mere bestowal of matter upon a preexistent form, and, on these lines, as constitution of substance, however dynamic it may be. On this matter, Pierre Lévy writes: "The real, substance, the thing, *subsists* or resists. The possible harbors nonmanifest forms that remain dormant: Hidden

within, these determinations *insist*. The virtual . . . is a way out, an exit: it exists. The actual, however, as the manifestation of an event, *arrives*, its fundamental operation is *occurrence*."[26]

Now, the opposition to the (albeit trivialized) notion of the possible allows us to clarify the interactive quality of the virtual. To the extent that the virtual environment develops in the interactivity of its consumers, the virtual signifies a dynamic configuration of forces that have an intrinsic tendency to actualize themselves in not entirely pre-constituted forms.[27]

The virtual environment in question, with its complex of perceptible qualities (color, sound, density, tactility, and so forth), that is, the environment in which I have the feeling of being immersed, is nothing else than the actualization of the content of a digital memory, the staging of an algorithm processed in a binary system.[28] This presses the question concerning the relation between *aisthesis* and *noesis*. We find ourselves in fact confronted with the possibility of a reduction of *aisthesis* (as sense perception) to computational terms, a reduction which however implies neither the reduction of secondary qualities to primary qualities nor even the possibility of reducing the world to number.[29] Rather, it speaks of an original and reversible solidarity between *aisthesis* and *noesis* that expresses itself in an operational arc one of whose extremes is constituted by a digital description in computer memory and the other by a body endowed with technological prostheses, with nonorganic extensions of the senses. The body of the user in a virtual environment is a complex structure, a subject-object resulting from a technological project; it is a quasi-cyborg body,[30] similar to what is thought of and experimented with by some artists,[31] a body that translates itself into an eminently active spectral entity.[32] A lively debate is taking place on these matters among the theorists of the virtual,[33] for a virtual environment can be known, in a certain sense, only sensibly, through an eminently corporeal gaze,[34] but at the same time [such an environment] is, as we said, a mathematization of space, and its images are the actualization of algorithms. We are here faced with a paradoxical situation: the user's very identity, the user's very I is simultaneously disembodied and hypersensitized: in order to encounter a "subtle" body, one needs to equip oneself with a "heavy" body, that is, one needs to emphasize technologically the capacities of the organic body. In this way, in my opinion, the transparency of the medium is made opaque:

> In most programs, a user experiences VR through a disem-
> bodied gaze—a floating moving "perspective"—that mimes
> the movement of a disembodied camera eye. This is a familiar
> aspect of what may be called a filmic phenomenology where
> the camera simulates the movement of a perspective that rarely
> includes a self-referential visual inspection of the body as the
> vehicle of that perspective.[35]

To my mind, however, precisely this heaviness of the disembodiment
enables us not to reduce the perspective of the virtual vision to a sub-
jective, cinematographic process directed by oneself, and also, once
again, not to reduce immersiveness to simulation. The human body/
virtual body relation does not carry out a repression of corporeality
thereby giving rise to a disembodied mind-eye capable of experiencing
mental products that appear as sensible only by means of technological
prostheses. On the contrary, virtual environments, with their "heavy"
bodies related to "subtle" bodies, basically exalt the difference and the
knowledge of the difference between them and usual body-environ-
ment relations. The user is thus aware of perceiving an imaginary space;
the user does not have the impression of experiencing a dematerialized
reality, but rather a reality perceived as "other," different, and in a cer-
tain measure similar to a product of the imagination. The possibility of
manipulating one's own perspective, of turning it into the very place
of experience, is combined with the possibility of learning by means of
immersion[36] up to the point of allowing, at various degrees, other users'
points of view to become one's own. This entails, radically and gener-
ally, a crisis in the stability and capacities of one's own body and their
redefinition through the relations between technological prostheses
and virtual bodies. In perspective,[37] this provokes the conceptualization
of a mutable embodiment of the self, sensitive to the evolution of tech-
nology and the language of programming: that is, a rethinking of the
figure of the self as a marking of its movements, of its residual integrity
as medium of its transformations, of its possible boundaries within the
pathways of actions that constitute the virtual space.[38]

This presses toward a further analysis of the ontological nature of
the virtual, recalling with Philippe Quéau that, "the techniques of vir-
tual representation are essentially numerical. Unlike fundamentally an-
alogical techniques, numerical images do not participate in the real."[39]
Numerical images participate in it indirectly through the process of

digitalization, which is circularly made possible by those same techniques. Therefore, virtual bodies should not be understood as representations of reality, but rather as realities that are constructed in a way essentially different from those [realities] coming out of the circular engagement of a living body with the world, a world that, thanks to the vision-perception, intersects the body and becomes gesture, namely, bodily movement, is perhaps mediated by instruments of analogical reproduction, and thereby becomes image. Virtual bodies are instead "artificial windows that grant access to an intermediary world."[40] Now, in what sense is a "body" a window, in other words, a place of passage between the interior and the exterior? Perhaps the window metaphor can function if it is not understood in too banal a fashion. The issue is not that of a passage through a window of Albertian memory, because the virtual environment is not (is not only, is not essentially) a simulated reproduction of the real. Instead, the virtual body is a window-environment [*ambiente-finestra*], a peculiar place in which the internal-external relation changes according to various parameters and thereby acquires a revealing power. I will return shortly to the issue from an ontological point of view, but for now let us take our cue from a celebrated affirmation by Kandinsky: "Every phenomenon can be experienced in two different ways. These two ways are not arbitrary, but are bound up with the phenomenon—developing out of its nature and characteristics, from two of its properties: Externally-or-inwardly."[41]

This has meaning, as we know, in the first place for our own body, but also for what appears to us as to the way in which it becomes manifest: a phenomenon can be experienced in some way at a distance, it can be perceived as other, it can be world, but the very same phenomenon can nevertheless become part of our life, can carve itself into it, can occur as its *pathos* and thus manifest its invisibility in its visibility.[42] All of this corresponds to common experiences, which are as selective as they are average: something that we perceive is recorded in both memory and affectivity, entering to constitute primary and indemonstrable interiority, and eventually returning to the light of the common world through practices of various type; the mass of perceived phenomena, at least those that are consciously perceived, is nothing else. Kandinsky, however, claims not only that a phenomenon can be experienced in two different ways, internally and externally, but also that this is possible inasmuch as external and internal are properties *of* the phenomenon, of the same *phenomenon*: because it belongs to

the nature of the phenomenon to be both external and internal, the phenomenon can be experienced as either world or *pathos*. Now, I do not know if this position is sustainable in relation to what we regard as "reality" in general, but it functions well with respect to virtual bodies. In a virtual body-environment, in which space is the result of an interaction, the world happens not in the manner of a distance-taking, but rather in that of a sense-feeling [*senso-sentimento*] of immersion. The body, insofar as it is perceived as other, takes on a sense of its own reality, of its own effectuality, as an imaginary and pathic [*patica*] incision, as production of emotions and desire, to the point that the sensation of reality that is transmitted from the virtual environment depends in large part on the effectiveness with which it provokes emotions in the user.[43] From this point of view, "virtual reality can produce an experience capable of self-identification,"[44] but precisely as reality, that is, as alterity with respect to users, as environment in which one can act, as bodies that can be manipulated. Thus, the virtual body-environment is intermediary not only between computer model and sensible image, but primarily it is an intermediary between inside and outside. It is a strange place in which the border becomes territory, and whose ontological structure must be quickly articulated.

One of the most debated questions in contemporary ontology is, notoriously, the distinction between thing and event, and, relatedly, the distinction between concrete and abstract.[45] In virtual environments, what a user perceives as a thing is in reality an event, the temporary actualization of a virtuality existing only, in its present state, as a function of an interactive relation. This presses us to reflect on the necessity of considering in an articulate way the concept of "relation," and of reconsidering the notions of "thing" and "event" as relational nodes, without implying thereby any kind of drift, for the virtual in any case possesses an actuality of its own beyond that of the interaction (it is "real" precisely in being virtual). The issue is to articulate, at least briefly, the question of the object-event relation, to point out an ontological trait typical of the virtual body as defined here. Such an object-event relation has mostly been thought (if we decide for the sake of simplicity to neglect dialectical and neo-idealistic positions) as a form of relation between two values: the event is an object (or objects) that changes. Ontologies that admit of events often think of them as changes in an object, thing, or substance that is endowed with some form of permanence; then they conceptualize the event as relative to such becoming

even when the object that undergoes becoming is not clearly identifiable. This is, after all, an outgrowth of Aristotelian ontology, which conceives of substance, with its intrinsic dynamism, as the principal category. From this presupposition the question arises of the symmetry between event and object and of the possible, conceptual dependence of the category of "event" on that of "object," even when one concludes that the two categories are not conceivable in separation. Now, the virtual body, while not reducible to representation, does not exist as body except in interactivity, *is* an interaction, an event-object [*oggetto-evento*]: an action (relation of interactivity) that is a body (virtual body) inasmuch as it possesses the characteristics usually attributed to bodies. The virtual body sustains itself in time throughout its changes of position, dimension, form, and color, but only under certain conditions related to its interactive nature, so that virtual bodies (as perhaps all bodies *simpliciter*) are (relatively) monotonous events—this is so precisely given certain conditions, though. Reflecting on such conditions leads, within the area that interests us, to the transformation of questions of the type, "Do things such as changes exist?" into questions of the type, "What are the conditions for the possibility of changes that are things?" [Such a reflection] therefore invites an analysis of the peculiarity [*tipicità*] of the virtual body (omitting for the time being the question of the ontological difference between virtual bodies and so-called real bodies). In the case of the virtual body, the event is an unrepeatable particular, a *concrete, yet subtle individual* (that is, an integrated system), constituted out of the interaction of a human body (thus a complex mind-body) endowed with technological prostheses, and an electronic processor implemented by an algorithm (in turn translated into a programming language). Now, does such a concrete though subtle individual occupy a single place? And if so, which place? Certain parts of my technological prostheses? Certain sensitive areas of my body? A certain part of my brain? A computer memory? It is, in any case, a body that admits other bodies into its place; it admits, for example, to having been traversed by my body, and if a virtual environment is a virtual body qualifiable as a structured set of navigable virtual bodies, then a virtual body can contain other virtual bodies within its own body: bodies that are within bodies, interpenetrating, like shadows, beams of light, angels, ghosts . . . [46] A virtual body occupies, assuming that these words have an intuitive sense, a certain portion of time-space, but not exclusively, as the virtual body happens within the

time-space of a non-virtual body. Its temporal forms, moreover, are multiplied: what is its time? It certainly happens in the moment of interaction, but among its conditions of possibility, in its being a real body, there is the fact of having been previously written or recorded in a material support, in a memory.

Thus, a virtual body is and is not itself in time and place, as its self-eventuation, its becoming-event depends upon the interaction with a user. Now, can it be argued that reality is interactive *in the same way*? To this end, David Deutsch writes:

> What may not be so obvious is that our "direct" experience of the world through our senses is virtual reality too. For our external experience is never direct; nor do we even experience the signals in our nerves directly—we would not know what to make of the streams of electrical crackles that they carry. What we experience directly is a virtual-reality rendering, conveniently generated for us by our unconscious minds from sensory data plus complex inborn and acquired theories (i.e. programs) about how to interpret them.[47]

Deutsch's assertion is nothing but a form of transcendentalization of the empirical: what we *are* psychophysically conditions our "direct" experience of reality, that is, the constitution of a sensed [*sensato*] environment. Addressing the question would of course imply the positing of a theory of knowledge and an ontology. What is relevant here to emphasize is only that the virtual body *appears* to possess at least one quality that differs from those of the bodies that we usually call (on both the commonsense level and in the language of theory) "real." I would say that reality is not interactive in the same way as virtual reality is, and that "real" bodies are not events in the same way that virtual bodies are, inasmuch as the virtual body *more clearly* escapes the external-internal dichotomy than do bodies we consider real. Due to its discrete and interactive nature, the virtual body coincides with its history and is a process; yet it is not only the sum of numerically different phases—since the texture of the body depends on the interaction, it takes place as a sensed action for a subject and acquires its identity from such interaction. This identity, however, is relative, and thus it fluctuates consequently. Certainly any body, insofar as it is perceived by my body, is in a situation of interaction; however, as an object and as external,

it appears as having the peculiar character of not being subjected to amendment; I cannot make it such that, *with a simple act of will,* an object is not in the way it is, that it is not what it is;[48] the external world would then be the non-amendable world, to which perceptual objects (which interest us here), but also those that are imperceptible, would belong. Now, from a theoretical point of view, the situation is different for the virtual body: even supposing that it is possible to separate a "simple volition"[49] from a movement or a perception, considering that virtual bodies would be, by means of sophisticated prostheses, directly connected to the sites of nerve impulses, there is nothing that would prevent a simple act of will from amending a virtual body. The question is, then, whether such an act is possible in its specificity only under the finite conditions included in the matrix, or whether it is possible to implement algorithms that allow a retroaction from the matrix, that is, a very powerful type of interactivity, and if so, in what sense: a program that learns, that modifies itself, and that develops within its relation to a user. Given the interactive nature of the virtual, I do not see why it would be theoretically impossible for this to come about, and therefore to produce a form of intersubjective communication mediated by computer memory, which would become, on the basis of a program, memory of experiences. Disregarding this possible development of the issue, it remains that if no-amendability is a necessary characteristic of the objects that belong to the external world, then the virtual body does not belong to that world. On the other hand, the virtual body is not a part of the internal world: the object-event of which it is constituted is neither my dream[50] nor my imagination, but an environment navigable by me and by others, a product of technology, and I remain aware of its difference with respect to what is usually called "reality" (which, as we have seen, cannot be perfectly simulated). In short, I would say that the virtual body is neither internal nor external, but is, if you will, an *outside-in* [*esterno-interno*], considering that this synthesis is not a mere sum, but is something else, that is, a testimony of the ontological novelty of the virtual body.

The virtual body, in its appearance, that is, as virtual, is its history, the history of its self-phenomenalization within a series of relations that constitute a virtual environment implying a human body endowed with certain prostheses. This pushes us to consider it as an event-object [*oggetto-evento*], which, in turn, can be interpreted at the level of ontology and with the related consequences either as a strange, relatively

monotonous event that allows other bodies into its time-space, or as an event-object that extends over time according to a four-dimensional concept, or (in a partially Spinozian way, inasmuch as it supposes that time is an institution of reason and that the relations between event-objects—not between objects *and* events—are a form of immanent causality)[51] as a succession of instant-entities [*enti-istanti*].[52] This last position is interesting because according to it the permanence of the object in its dynamism is a cognitive illusion; this leads one to suppose that virtual bodies can be understood, besides as being discrete in space, also as discrete in time, that is, as numerically diverse temporal segments, and that their diachronic identity is potentially discontinuous.