

# The mirror and the virtual world. From hominisation to digitalization

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The ability to use signs, whether language, gesture, or pictures, seems to be an exclusively human capacity, perhaps only shared with some acculturated apes. The attainment of this important stage in the process of hominisation appears however to be endangered by some recent technological developments, which tend to make the distinction between signifier and signified more difficult to ascertain. Contrary to what has been suggested by Umberto Eco, this has nothing to do with the television images being a chain of mirrors; it has, however, everything to do with digitalization, which brings the sign, at the same time, further from the lifeworld, and close to confusion with it.

## **The advent of the sign function**

The psychologist Merlin Donald (1991, 2001) has pointed to several discontinuities in hominid evolution, all involving the acquirement of a distinct kind of memory, considered as a strategy for representing knowledge. Although Donald's model concerns phylogeny, parallels in ontogeny are readily suggested (cf. Zlatev 2002). This is a conception reminiscent of the Tartu school, which characterizes signs as memory devices and defines culture as collective memory. Lotman et al. (1975) claim material objects and information are similar to each other, and at the same time differ from other phenomena, in two ways: they can be accumulated, whereas for example, sleep and breathing cannot be accumulated, and they are not absorbed completely into the organism, unlike food, but remain separate objects after the reception.

According to Donald's conception, many mammals are already capable of *episodic memory*, which amounts to the representation of events in terms of their time and place of occurrence. The first transition, which antedates language and remains intact at its loss (and which Donald identifies with *Homo erectus*)

brings about *mimetic memory*, which is required for such abilities as the construction of tools, miming, imitation, coordinated hunting, a more complex social structure and simple rituals. This stage thus in part seems to correspond to what we have elsewhere called the attainment of the sign function (though Donald only notes this obliquely, in talking about the use of intentional systems of communication and the distinction of the referent).

Only the second transition, occurring with *Homo sapiens*, brings about language with its *semantic memory*, that is, a repertory of units that can be combined. This kind of memory permits the creation of narratives, that is, mythologies, and thus a completely new way of representing reality. Interestingly, however, Donald does not think semiotic development stops there, although further stages are no longer based on any biological changes. However, the third transition obviously would not have been possible without the attainment of the three earlier stages. What Donald calls theoretical culture presupposes the existence of *external memory*, that is, devices permitting the conservation and communication of knowledge independently of face-to-face interaction between human beings. The first apparition of theoretical culture coincides with the invention of drawing. For the first time, knowledge may be stored externally to the organism. The bias having been shifted to the visual modality, language is next transferred to writing. It is this possibility of conserving information externally to the organism that later gives rise to science (cf. Figure 1).

It should be noted already at this point that while all abilities subsumed in the second, mimetic, stage seem to depend on iconic relations (perceptions of similarity), only some of them are signs because they do not involve any asymmetric relation between an expression and the content for which it stands. This is for instance true of learning the use of tools, as well as of some other forms of imitation. Memory must be located in the subject's own body; at the same time, however, it can only function *as memory* to the extent that it is somehow separable from the body as such. The movement of the other must be seen as distinct from the body of the other *in its specificity*, so that it can be repeated by the self. This supposes a distinction between *token* and *type* (that is, relevance) preceding that of the sign function.

It thus seems that the sign function is something that emerges during the mimetic stage. Edmund Husserl (1939) has characterized the sign as something

consisting of an expression, which is directly perceived, but not in focus, and content, which is indirectly perceived while at the same time being the focus of the relation. According to Jean Piaget the *sign function* (which Piaget himself called first the *symbolic*, and then the *semiotic* function) is a capacity acquired by the child at an age of around 18 to 24 months, which enables him or her to imitate something or somebody outside the direct presence of the model, to use language, make drawings, play “symbolically”, and have access to mental imagery and memory. The common factor underlying all these phenomena, according to Piaget, is the ability to represent reality by means of a signifier, which is distinct from the signified. Indeed, Piaget argues that the child’s experience of meaning predates the sign function, but that such meaning does not suppose a differentiation of signifier and signified (see Piaget 1945, 1967, 1970). In several of the passages in which he refers to the sign function, Piaget goes on to point out that “indices” and “signals” are possible long before the age of 18 months, but only because they do not suppose any differentiation between expression and content. The signifier of the index, Piaget (1967: 134f) says, is “an objective aspect of the signified”; thus, for instance, the visible extremity of an object which is almost entirely hidden from view is the signifier of the entire object for the baby, just as the tracks in the snow stand for the prey to the hunter. But when the child uses a pebble to signify candy, he is well aware of the difference between them, which implies, as Piaget tells us, “a differentiation, from the subject’s own point of view, between the signifier and the signified” (ibid.).

It is important to note that, while the signifier of the index is said to be an *objective* aspect of the signified, we are told that in the sign and the “symbol” (i.e. in Piaget’s terminology, the conventional and the motivated variant of the sign function, respectively) expression and content are differentiated *from the point of view of the subject*. Curiously, this distinction between the subjective and objective points of view is something Piaget seems to lose track of in his further discussion. We can, however, imagine this same child that in Piaget’s example uses a pebble to stand for a piece of candy having recourse instead to a feather in order to represent a bird, or employ a pebble to stand for a rock, without therefore confusing the part and the whole: then the child would be employing a feature, which is *objectively* a part of the bird, or the rock, while differentiating the former from the latter *from his point of view*.

### **The mirror (image) as sign**

According to a theory first presented in Eco's (1984) dictionary entry on the mirror, and enlarged upon in his recent writings (1997, 1998, 1999), the mirror is no sign. In particular, Eco quotes seven reasons for denying the sign status of the mirror, which can be summarised as follows: 1) Instead of standing *for* something it stands *before* something (the mirror image is not present in the absence of its referent); 2) It is causally produced by its object; 3) It is not independent of the medium or the channel by means of which it is conveyed; 4) It cannot be used for lying; 5) It does not establish a relationship between tokens through the intermediary of types; 6) It does not suggest a content (or only a general one such as "human being"); 7) It cannot be interpreted further (only the object to which it refers can). I will deal with all these arguments in the following, though not exactly in the order in which they are presented. In fact, they cannot be discussed in the order given, since some of the affirmations turn out to be interconnected.

On Eco's account, then, the mirror is pre-semiotic. It is, according to Eco, an absolute icon, in Peirce's sense, and it would thus would have been a perfect iconic sign, if it had been a sign. This is certainly saying too much, since an absolute icon, in Peirce's view, can only exist for a fleeting moment, even in thought.<sup>1</sup> Eco goes on to say that the mirror is no index, because, unlike a letter containing personal pronouns such as "I", which continues to refer to the writer, a mirror sent by post ceases to indicate the sender and will now point to the receiver. It "is *not even* a Firstness in the Peircean sense" (my italics), Eco continues, because it is already a relation, and thus a Secondness. On this point, I can only agree with him, except for the wording: it would have been more proper to say that the mirror *is already more* than a Firstness. In fact, I have said the same thing, not only about the iconic sign, but about something more general which it supposes, the iconic ground: it is *already* a relation. In any case, if it is a relation, it is at least already Secondness, so why should it not be causal, as Secondness is in strict Peircean theory? Or, if we take causality to be a sufficient but no necessary criterion on Secondness (as I would prefer), then it might still be causal.

Before we proceed, it will be necessary to explain the notion of an *iconic ground*, which I have elsewhere derived from a discussion of Peirce's writings

(cf. Fig. 2. and Sonesson 1992a, 1998a, 2000a). The ground is that which picks out some properties of the object serving as expression and well as of the object serving as content by virtue of which they are connected to form a sign. It is a principle of relevance, or, as Peirce says, of abstraction: in the case of an icon, it is for instance the blackness of two black things. Thus, the ground serves to “motivate” the connection between expression and content: it is similarity in the icon, and contiguity or something of the kind in the index. Since iconicity is Firstness, it can only be a list of properties. The iconic ground adds a relationship between two such lists. It is thus already Secondness. The case of indexicality is different: since it concerns *contiguity* or the relationship between part and whole (henceforth *factorality*), it already as such involves relations, though the indexical ground may just be a subpart of these relations. However, the sign as such is also a relation (the semiotic function), which thus has to be combined with the iconic or indexical grounds. In this sense, the pictorial sign depends on the existence of a whole set of relations. But so does the mirror, as we shall see.

Let us start with the first argument, according to which the sign, but not the mirror, supposes the absence of the referent. In the case of many signs, the content (or rather the referent) is present together with the expression. Many signs function *in the way they function* only in presence of their referent: this is the case with those pictures of birds with the names of their species written below them which are attached to the bird case in the zoo. Indeed it is the case with much of our language use: for although the female personal pronoun, for instance, figures extensively in the absence of a possible referent, it does not tell us very much; and talking about the gorilla in front of it adds more than only shades of meaning (cf. Sonesson 2003).

Of course, bird pictures, and much of verbal language, function also in the absence of their referent, although they function differently. Other signs, however, are more radically dependant on their referents. Indeed, weathercocks, pointing fingers, cast shadows, and a lot of other signs cannot mean what they mean, if not in the presence of the object they refer to. Indeed, as we shall see, co-presence is a precondition at least for one kind of indexical sign. The sign character of these signs only endures as long as the object is in their presence, and such was no doubt originally the case also with personal pronouns such as “I”. The classical definition of the sign, which Eco here refers to, is wrong in

requiring the absence of the referent. *Differentiation*, which defines the sign, according to Piaget, must be distinguished from absence (cf. Sonesson 1992b: 2003).

There seems to be two possible interpretations of this conception: Differentiation may mean that the expression does not continuously go over into the content in time and/or space; or that expression and content are conceived as being of different nature. In both senses, the mirror is certainly as sign. The person or thing in front of the mirror is clearly differentiated from the image in the mirror. The kind of differentiation which does not obtain for animals and children is apparently not the one involving a discontinuity in time and/or space (they do not think the mirror image is part of themselves) but rather that concerned with the different nature of the two correlates (the cat takes the mirror image of a cat to be another cat).

We shall now have a look at the second argument, which says that the mirror image is causally produced by its object, which is not the case with the picture sign. Thus, causality is taken to exclude the sign character. This is curious, because one of Peirce's most currently quoted definitions of the index (which is a sign) says that it depends on a causal relation between expression and content. In fact, a lot of indices depend on causality, from the knock on the door (caused by the hand) to the cast shadow, the death mask and – something that is definitely also a picture – the photograph.

However, if we choose to define indices in terms of causality, then – following the “structural argument” which I have formulated elsewhere (cf. Sonesson 2000a) – it will be impossible to exhaust the domain of signs by means of only three sign types: indeed, many examples of indices given by Peirce are certainly not causal. “Real connection” (exemplified most notably by contiguity and factorality) is therefore a better definition of indexicality. Yet this means that there is no contradiction between causal production and the sign function. Even if causality does not define the sign function, nor even the peculiar kind of sign termed index, it is not incompatible with it.

Pronouns like “I” change their meaning each time they are used yet retain the meaning once they are written down (or, one might add, when the speech is recorded on tape). The mirror, Eco contends, continues to change its meaning for ever. However, the weathercock, one of Peirce's favourite examples of an index, behaves in all these respects more like the mirror than like the pronoun: if

sent as a message from the seasonal resort, it will indicate the direction of the wind at the place where the receiver lives, not that which the sender observed before putting the device into the parcel. This is not to say that the weathercock functions exactly as the mirror. The difference between the mirror, the pronoun and the weathercock has to do with the relative importance of the constant and variable element in the meaning, that is, with Eco's "content".

This thus brings us to the sixth argument, according to which the mirror does not suggest a content, or only a general one such as "human being". The difference between the pronoun, the mirror, and the weathercock depends on how far the constant elements of signification (Eco's "content") go in a sign. We know that "I" refers to the speaker or writer using a particular instance of the sign, and there are usually other ways of discovering who the speaker or writer is, or at least that he is not identical to ourselves. The constant element of the weathercock is the indication of the direction of the wind in the here and now. The constant element of the mirror is the rendering of something visible placed presently in front of it. The variable elements are too many ever to be retrievable; but it may yet be maintained that they all share a number of predicates, such as being visible, present in the here and now, and so on.

The opposition that Eco posits between mirrors and signs is seemingly the same as other thinkers (e.g. Gombrich) have always postulated as a difference between pictorial and verbal signs. It is often expressed as a difference between *singularity* and *generality*. A picture, it is said, can only show a individual person, not "a guard in general", but some very particular guard with individual features. As applied to pictures, these arguments are no doubt wrong. It is possible to construct very abstract or schematic pictures (children's drawings or logograms, for instance), which only convey very general facts. Indeed they are about "a woman in general", etc. But even a photograph with an abundance of individual detail will only signify to me something like "a young woman dressed in 1920ies apparel", if I do not happen to know the person in question. This also applies to mirrors: while looking at myself in the mirror, I may suddenly see some configuration, which I interpret, as "a man appearing behind my back". I do not have to recognise him as Frankenstein's monster to be frightened. In mirrors, as in pictures, singularity is not, in the last instance, in the sign, but in the use to which we put the sign.

At this point, it will be convenient to attend to a kind of generalisation of

the second argument: according to Eco, the mirror image is not an index for the person in front of the mirror, because we do not need it in order to know this fact; only the lack of an image when the Invisible Man or an vampire passes in front of the mirror could perhaps be admitted to be a symptom. Nor is a mark on the nose observed in a mirror an index, Eco says, because it is no different from the mark we observe directly on our hand. However, these observations are *irrelevant*. The fact that we may see an object, and know that it is there, without it having been pointed out to us, does not make the pointing finger less of a sign, and indeed an index. Nor does the weathercock cease being an index just because we may be able to discover the direction of the wind already from the impact it has on our body.

Curiously, Eco all the time talks *as if mirrors were only used to look at ourselves*. In fact, mirrors are not only used for seeing oneself but for seeing others and other things. Some mirror types are actually specialised for such purposes. The rear mirror of a car is used for discovering other cars coming from behind. A dentist uses a mirror to investigate the status of our teeth. Indeed, a woman may know very well that she has lips, and still use a mirror to ascertain that she is putting the lipstick on to her best advantage. Even supposing that Eco's argument would have some relevance, these mirrors are not used to show something that is known beforehand, as the presence of cars, teeth, or lips, but to investigate special properties of these objects. Thus, they are not "symptoms", if we take this word in the ordinary language sense of an indexical sign that is unintentionally emitted.

### **Photographs and mirrors**

We can now go back to the third argument, which claims that the mirror is not independent of the medium or channel by which it is conveyed. It is not clear whether Eco here means to speak about the different materials employed, or about the fact of transference being possible.<sup>2</sup> Historically, mirrors have been made out of different "substances", that is, different *materials*: once upon a time, they were made from metal sheets, which explains that Saint Paul could talk of us seeing "obscurely, as in a mirror". In this sense, the argument is historically wrong. On the other hand, if Eco means to say that a particular instance of mirroring is *not transferable* from one mirror to another, then something equivalent is true of many signs. If so, this criterion is hardly possible

to distinguish from the fifth one, according to which signs suppose types to be mediated by tokens.

Therefore, we now proceed to the fifth argument, which tells us that the mirror does not establish a relationship between tokens through the intermediary of types. We may certainly agree that mirrors do not comply with this criterion — but neither do paintings existing in one single copy (if we do not admit the reproductions as tokens, which most art historians would vehemently deny). Nor do *any momentary signs* comply with this criterion, from pointing fingers to weathercocks or cast shadows. For though the finger may endure, as does the mirror, the particular act of pointing, just as that of mirroring, does not repeat itself, nor does it admit a change of “substance”. Indeed, strictly speaking, it is not the mirror which is a sign, but the mirror image.

The notion of momentary signs does not appear to exist for Eco, and yet it is an important one. The problem seems to be that Eco thinks something that once is a sign must then always be one. However, if we exclude all signs that are only momentarily signs of something, most of the examples given by Peirce and others will not be eligible as signs. You do not have to cut off a finger and send it off by post for it to change completely its meaning; even in its natural position, the content to which it points is continuously changing. In fact, weathercocks, pointing fingers, and pronouns, seem to have functioned (and functioned as signs) much like the mirror, before different techniques for preserving tokens (as opposed to types) of signs were invented, a process which perhaps begun with writing and now has reached the state of computer memory. This is also the only reason Eco quotes for not recognising my suggestion (from Sonesson 1989a) that the mirror is a “hard icon” in Maldonado’s sense: the indexicality and iconicity of the mirror is only momentary. But this reason will not do, since it would force us to deny the sign status of numerous other signs.

“Hard icons” is a term coined by Tomas Maldonado (1974) to describe signs, which, in addition to bearing resemblance to that which they depict, are related to them as traces to that which produced them. Examples would be X-ray pictures, hand impressions on cave walls, ‘acoustic pictures’ made with the aid of ultrasound, silhouettes, configurations left on the ground by people who were out walking in Hiroshima at the moment of the explosion of the nuclear bomb, thermograms, pictures made with ‘invisible light’ to discover persons hiding in the woods – and ordinary photographs. The real contiguity between the picture

and its referent is here taken to guarantee the cognitive value of the picture. It is important to note that ‘hard icons’ cannot simply be signs which are both indexical and iconic, for that is true also of chirographs: there must be *coincidence* between their respective indexical and iconic grounds.

We will now turn to the fourth argument, according to which the mirror cannot be used for lying. Of course mirrors lie. The very business of the mirrors in the Fun House is to do just that (Vilchez 1983). They lie in a systematic way: there is always the same distance between the referent and the picture object, at least from a given position in front of the mirror, so there is actually a content (i.e. a type), which mediates between the subject and the mirror image. If distorting mirrors are possible, then all mirrors are no doubt somewhat distorting (as are all photographs), although we are too accustomed to them to realise it (Cf. Sonesson 1989b, 1999a, 2001). So the mirror image is also conveyed to us with the fidelity permitted by its particular channel. This all amounts to saying that, like the picture, the mirror has its “ground”, its principle of relevance.

In fact, there are no zero-degree mirrors: as people who use mirrors professionally, from dentists to sales clerks at the dressmakers, will readily point out to us, all mirrors are adapted to particular uses. Actually all mirrors lie, or, more precisely, they *interpret*: they are adapted to different professional uses, the “channel” having a particular fraction in the case of the dentist, a particular tint for the dressmakers, etc.

In some ways, mirrors or much like photographs (except for the latter not being momentary signs). Indeed, what Barthes (1964) claimed about the photograph is similar to what Eco says about the mirror: that expression and content cannot be distinguished. However, Barthes could be taken to suggest that drawing, but not photography, requires there to be a set of rules for mapping perceptual experience onto marks made with a pen on paper; and these rules imply a particular segmentation of the world as it is given to perception, picking up some (kinds of?) features for reproduction, while rejecting others, and perhaps emphasising some properties at the same time as others are underplayed; and all this takes place under given historical circumstances, which are responsible for varying the emphases and the exclusions.

This idea becomes more reasonable when expressed as a difference between the *kind* of mapping rules involved in photography and hand-made pictures, respectively. If we look upon the relationship between the pictorial

content and its referent in the outside world as a kind of indexicality, more in particular as a *factorality* (a relation of part to whole), we may interpret Barthes to claim that photography is able to pick up particular proper parts ('son sujet', 'son cadre') and perceptual angles of vision ('son angle') of the whole motive, but cannot chose to render just a few of its attributes. In some all too obvious ways this is false: for essential reasons, photography only transmits visual properties, and it only conveys such features as are present on the sides of the object fronting the camera. Also, depending on the distance between the camera and the motive, only features contained in a particular range of sizes may be included.

As long as no trick photography is involved, however, it seems to be true that, without recurring to later modification of the exposed material, *photography is merely able to pick up features, or restrict its selection of features, on the global level*, whereas in drawing, local decisions can be made for each single feature (cf. Sonesson 1989b:36ff; Dubois 1983:96f). This also applies to all other rules of photographic transposition listed by Ramírez (1981: 158ff) and Gubern (1974:50ff): abolition of the third dimension, the delimitation of space through the frame, the exclusion of movement, mono-focal and static vision, granular, discontinuous structure of the expression plane, abolition or distortion of colour, limitation to scenes having a certain range of luminosity, and abolition of non-visual stimuli.

Like the transformation rules of photography, those of the mirror image are global. The photograph, however, is different from the mirror image in not being a momentary sign. Elsewhere, I have contrasted the photograph with a more genuine index such as the footprint (cf. Sonesson 1999a; 2001). Although both arise at a particular point in time and space, the former, like a linguistic sign, retains a signification everywhere, whereas the latter only signifies in the manner of a trace when it remains in the same place as it was produced: only there can it tell us about the presence of the animal or person at that very place. Momentary signs, such as mirrors, shadows, and weathercocks, however, are different again: they can only signify what they signify at *the same time and place* when and where they are produced.

Eco's final argument, the seventh one, says that there is no chain of interpretants resulting from the mirror as in the case of the sign. The mirror cannot be interpreted further – only the object to which it refers can. But of

course the mirror may be the starting-point for a chain of interpretations, just as any feature of the common sense Lifeworld. That is what the dentist does, the woman applying her lipstick in front of the mirror, the driver who sees a car coming up behind him, the person seeing the monster (which is not a vampire) in the mirror, etc. Eco would say this amounts to interpreting the object, but this would only be true if we had accepted his other arguments. If mirrors are adapted to their particular uses, as we just saw, then it really is a question of interpreting the object *as it is given* in the mirror, roughly similar to the interpretation of objects through the intermediary of a picture.

I therefore conclude that Eco is wrong about the mirror, just as Barthes was wrong about the photograph. The mirror image is a sign, if anything is.

### **Television beyond the chain or mirrors**

It may seem of little interest to discuss the sign status of the mirror. To Eco, however, the argument against the sign character of the mirror merely serves as a preparation for claiming that the television image is like a chain of mirrors reproducing each other, with the proviso that instead of mirror reflections, there is an electronical signal connecting the separate instances. Television does not involve signs, he submits, but only a channel, just as the mirror, or, more generally, a prosthesis, which does not magnify, as the telescope, but gives access to places where we are not present. There is no expression plane separate from the content, just as was the case of the mirror, according to Eco. Just like a telescope or a mirror, the television image is experienced as a direct view of reality, which may be trusted to be true. It is my contention, however, that no matter what we conceive mirrors to be, television pictures are no more similar to mirrors than other pictures.

Even Eco admits that television is only "para-specular". This is to say that the analogy has limitations. It will only hold good as long as the camera is fixed and shows everything that goes on at a particular place, at the moment of occurrence. Also, the television image has a lower definition than the mirror. Again, the television image is smaller than the real objects reproduced, and it is not possible to peek sideways into it to discover new objects, as we can do in the mirror. But Eco contends that these limitations can be overcome: the picture can be made bigger, and the definition higher, as is already the case with the intestinal probe. And when the probe moves around, we can also see obliquely,

as in the mirror.

The first, and fundamental, retort one could make to this theory is that Eco is talking about a *ideal case*, which is ideal to the point of having almost no existence. In fact, today a very tiny part of what is seen on television is really transmitted directly. Moreover, modern computer techniques make it possible to manipulate even that which is directly transmitted. In any case, the television signal is already as such different from the reality it reproduces, for the same reasons that this can be said about photography: everything, from the light conditions, the nature of the camera and other equipment, the transmission signal, etc, introduce modifications between the referent and its image, quite comparable to those which exist in other pictures (Cf. Sonesson 1989b, 1999a, 2001).

Indeed, the effect of overcoming the limitations to which Eco points would rather be to bring the television image closer to the picture. Higher definition would make television more similar to ordinary pictures. Bigger size at least does nothing to distinguish television from pictures. The intestinal probe does not in any way permit us to peek into the image sideways, as the mirror does; it simply gives rise to new images, as it moves around, just as any camera would. Actually, the hologram, which Eco apparently still counts as a picture,<sup>3</sup> does make it possible, to a limited extent, to change perspectives within the picture, and so does, in a more impressive manner, the computer devices connected with “virtual reality”. But as I have shown elsewhere, even this is not enough to make either one indistinguishable from reality (cf. Sonesson 1997b, in press b).

Indeed, although both mirrors and pictures are sign, they are no doubt different in other ways: To begin with, the mirror, unlike the picture, really permits us to see new things on its surface, as it (or that which is in front of it) is moved, and none of these variations is more “true” than the others. This observation does not apply to pictures, not even to television pictures or pictures projected onto surfaces generally, because in those cases the variations are always accompanied by modifications to the surface projections. In the case of the mirror, there is really nothing which corresponds to the expression, for there are no lines, points or pixels (no “plastic language”), or anything which may be observed as such, independently of the depth projection to which they give rise. Thus, there is no “seeing in” or “resemantisation” in mirrors: no projection from the whole to the particularities of the parts (Cf. Sonesson 1989a; 1995).

If people believe in what they see on television, that is because they attribute authority to it, just as is the case of the radio, or certain trusted newspapers. This has nothing to do with the real sign character of television. If anything, this is a fact of sociosemiotics. Nothing shows this better than the recent vogue of “reality soaps”, whose paradoxical claim to having anything to do with reality does not in any way imply direct transmission. It does, however, like “performance”, as opposed to theatre, suppose onstage life to go on, or have consequences, for life outside the stage (cf. Sonesson 2000b).

Eco’s next step is to generalise what he has said so far about television to pictures in general: now he imagines the film, the photograph, the hyperrealistic painting etc. as “frozen” mirror images. The difference between these “frozen mirror images” and the real ones (as well as the not as yet refrigerated ones of television) is that expression now is separate from content and thus can survive the disappearance of the latter. Very little seems to be left for the conventionalist theory of pictures, which, in other passages, Eco seems willing to maintain, in spite of certain modifications. We are back where we started, before Eco’s first critique, at Barthes’ “message without a code”. And once again, iconicity appears as a complete mystery.

But we do not have to follow Eco into this mystification, because we have seen that there is no reason to think either that mirrors are no signs, or that television pictures are like mirrors. But in order for these two negative conclusions to produce a positive yield, it is important to see that pictures (including television pictures) are different from mirrors.

### **Digitalization and virtuality**

There are, I believe, entirely different reasons for thinking that the new media in general, and television in particular, may be about the change definitely they way in which the world is mediated to us – risking the loss of the very capacity for differentiation which was part and part of hominisation. In fact, there are two ways in which the sign character of the media signs seems to be disappearing: on the one hand, digitalization tends to blur the distinctions between token and type; and the other hand, the content of the sign and the referent becomes difficult to tell apart.

When, in 1936, Walter Benjamin qualified our time as the age of mechanical reproduction, his diagnosis was not radical enough: what he

described was the end of a period, rather than a beginning. He is talking about the end-point of a process which has been going on for a long time, at least since the European Middle Ages: the procedures for the reproduction of pictures which were successively developed, from xylography to copper engraving, and onto photography, each time made it possible to produce a greater amount of copies while conserving the similarity with the original. This process brought us ever closer to “the exactly repeatable pictorial statement” (Ivins 1953) – in our terms, to a type that can generate many indifferently substitutable copies.

By engendering ever new tokens, mechanical reproduction effectively reduces all tokens to their type, destroying the uniqueness of the characters of human history, and their infinitely ineffable creations, the nimbus of individual creation in its *hic et nunc*. Doing away with the “aura” of the work of art, it apparently only leaves the bare bones of categoricalness. Yet mechanical reproduction presupposes there to be an individual object to reproduce in the first place: a chirographic or photographic original, a first token that creates the type from which further tokens are derived. In verbal language, on the other hand, the type seemingly pre-exist to all its tokens, and this is also true, at least in some cases, of computer images: those which are combinations of standardised picture-elements, as well as those which are produced from mathematical algorithms. Elsewhere, I have used the term Typicality 1 for cases in which one type determines all tokens (e.g. phonemes, words, etc.), and Typicality 2 for those cases in which one token determines a type which regulates further tokens (e.g. a picture and its copies; cf. Figures 3 and 4 and Sonesson 1999a; 2001).

However, Benjamin’s thesis only concerns the reproduction of pictures – not their productions. Chirographically produced pictures may be mechanographically reproduced, as in the reproductions of paintings. Mechanographically produced pictures are more naturally mechanographically reproduced, as in the case of photography, cinema, video, etc. The computer can be a means of further mechanical reproduction – but it can also be used for digital production. Although it is based on a device (the computer), digital production allows for local transformations. It may function indexically (the scanner, the mouse) or purely symbolically (algorithms). Basically, it remains iconic. However, the very surface making up the sign is here difficult to determine: it is certainly not some material elements of the computer chips, nor

some combination of ones and zeros, because, like other constituents of signs, the surface of the computer picture must be an expression whose perception renders the content accessible. But we cannot decide whether the real picture is what is shown on the monitor or the one printed out – or, which monitor is showing it, in the case in which several monitors, let alone all monitors connected to the same internet site, show the same picture. Also, a fragment of a picture (or of a verbal text) may be reused as a part of new picture (or text), without ever being transformed into what the graphic programs call a “symbol” (an object which may be repeated). Thus, the distinction between type and token becomes singularly difficult to uphold.

At the other end, however, the sign, instead of substituting for reality tends to fuse with it. The hologram is already a problematic kind of picture. Unlike sculptures, dummies, wax figures, scarecrows, toys, etc. which are some kind of identity signs (cf. Sonesson 1989a: 137-146, 324-341), the hologram is without a doubt a picture; it provides a surface where a real scene of perception is “seen in” or “perceptually imagined” (cf. Sonesson 1989a: 163-173). The surface and the scene are at the same time present to perception, at the same time conscious, but experienced as excluding one another. On the contrary, the sculpture is an object by its own right that represents another object of which it lacks some characteristics. It is a solid object, whereas the hologram is made entirely out of light.

Consequently, the hologram is a picture. The difference is only that the illusion of the reality is much stronger, and that to some extent different perspectives on the same object are available according as the spectator moves around the picture, just as in true perceptual experience in the Lifeworld. Nevertheless, the illusion of the reality is never total; the picture character – and with it the sign character – is always given at the same time in the perception.

In some respects, virtual reality seems to go much further. The synthesised picture can be presented in such a way that it is the totality of the (apparent) surrounding world perceived by a person. At the same time, this person has the possibility of moving around or of manipulating objects in the environment, and these movements lead immediately to changes in the pictures that are shown to him. This is possible because a number of perspectives on the synthesised object are available to the computer. In this way one is now able to visit the house one wants to build before it is constructed, to walk through the corridors and to enter

rooms that do not yet exist, to try out the endurance of a staircase, the disposition of doors and windows, etc. In spite of its unequivocal picture character in the sense mentioned before, “virtual reality” shares many characteristics with the Lifeworld that forms the foundation for all signs. Husserl has observed that the perceptual worlds rests on the sensation that it is “always possible to go ahead”; to see objects from different angles, to come closer to the object in order to discover new characteristics, to investigate it in other circumstances. Virtual reality, just as the manifest world, has these characteristics. What makes it different, however, is the unwieldy character of the equipment needed.

When television and tape recorders were still more or less on the experimental stage, the novelist Adolfo Bioy Casares (1940) told a story about a man stranded on a “deserted” island where he observes a number of persons who are talking and acting just as in ordinary life, who, in the end, turns out to be the result of some kind of tape recordings. These recordings are three-dimensional projections and contain all the sensorial modalities. Thus, the only thing separating them from real life is the impossibility for the man of interacting with them. This, as it happens, is most unfortunate for him, since he falls in love with one of the women and is unable to communicate with her.

Today, the kind of recording imagined by Bioy Casares – or, at least something fairly close to it – has reached the experimental stage. Commenting in an earlier article on Bioy Casares’ invention, I characterised it as consisting in some kind of animated, computer-generated holograms, complete with odours and other sense modalities. Indeed, what is today described as 3D television is being developed using two different techniques: volumetric displays with moving or multiple flat screen; and holographic images which construct the objects piecemeal allowing you to walk around them partway. Only a little step seems to remain from doubling reality. In fact, between Bioy Casares’ invention and contemporary experimental television, there is still a big step, which goes beyond multisensoriality and interactivity. Like all holograms, the television pictures must fail the reality test contained in the etcetera principle: we can only walk halfway around them without discovering the trick. Not even this is true: the hologram may contain the “same” information as a walk halfway around the object – but it does not offer the same “qualia” (way of experiencing it), as they say in consciousness studies.

Let us imagine for a moment, however, that these difficulties could be overcome. Then 3D television (in direct transmission or not) would add a further twist: it would comply with the communication model of the mathematical theory of information. Sending a message would be some kind of transport – like sending a parcel by mail. This is remarkable, because, as I have argued elsewhere, the process by which messages are conveyed is ordinarily very different from the transference of an object from one place to another (cf. Sonesson 1999b). 3D television would be very similar to what is described in science fiction as “teleporting” or “dematerialisation”. Interestingly, however, the purpose of those (imaginary) processes is the transference of an individual object from one place to another. This is certainly not what television is for: no matter how confusingly close to reality products of 3D television would be, they would simply be tokens of a central message type. They would be transferred at the same time to numerous different places in the world. In this way, they are like contemporary television or like web pages.

The problem, then, would be one of a possible confusion. In 3D-television we would still have signs: things that represent reality, although they look identical to reality. There is still a sign relation, an asymmetrical relation between expression and content. The problem would be how to discover that. Today something may look like a real photograph without being one: it may have the granular structure which used to suggest it was a photograph without having the production history – being a trace left by the photons. Holographic television would not achieve that. If Bioy Casares’ invention became true, however, the case would be different: television messages would look like the real world, without having the same “production history”.

One is reminded of the “replicants” of cinematic fame: they latter, however, are not meant to be perceived as signs, and they only work as such if they are not discovered for what they are, which is the opposite of signs. The advent of a post-holographic television would oblige us to invent new interpretation strategies for separating real people from television messages. I have now doubt we would discover such strategies. After all, this is more important for human history to be able to go on than telling photographs and synthetic pictures apart.

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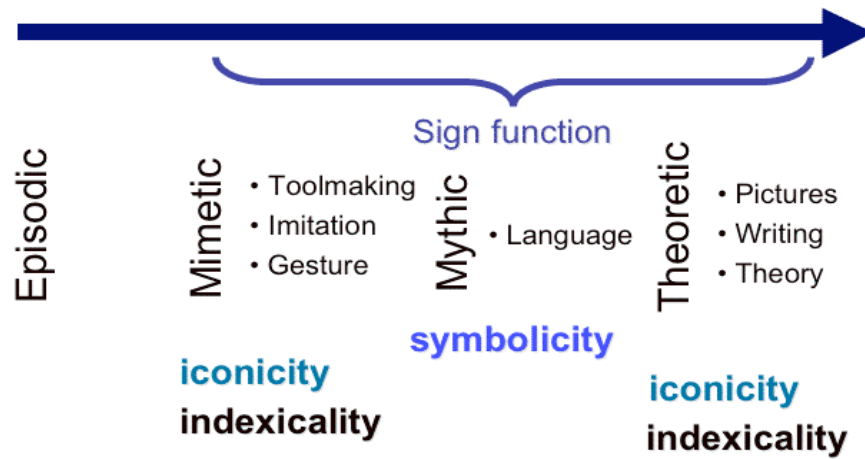
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<sup>1</sup> There are certainly some serious issues looming behind these interpretations, which cannot be dealt with here. See, however, Sonesson, in press a

<sup>2</sup> The first is the common interpretation of Hjelmslev’s distinction between form and substance, but the latter is closer to being the correct one.

<sup>33</sup> The hologram is mentioned in a note added to the English version (Eco 1999:427) but does not appear in the Italian original (Eco 1997)



**Figure 1.** Donald's model of evolution related to the notion of sign function.

	Firstness	Secondness	Thirdness
Principle	Iconicity	—	—
Ground	Iconic ground	Indexicality = indexical ground	—
Sign	Iconic sign (icon)	Indexical sign (index)	Symbolicity = symbolic ground = symbolic sign (symbol)

**Fig. 2.** The relationship between principles, grounds, and signs, from the point of view of Peirce

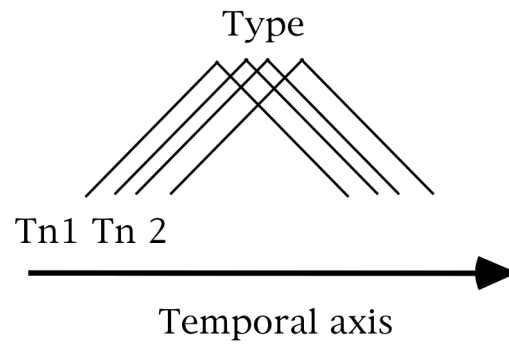


Fig. 3. Typicality 1 – or temporally free typicality

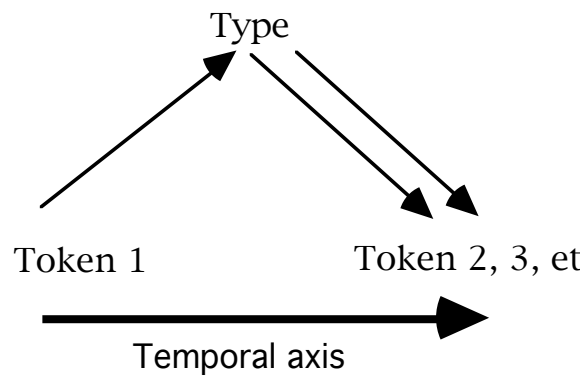


Fig. 4. Typicality 2 – or temporally bound typicality