

Why the mirror *is* a sign — and why the television picture is no mirror

Two episodes in the critique of the iconicity critique

Göran Sonesson,
Department of semiotics,
Lund University,
Sweden

Abstract: In his recent work, Eco abandons his conventionalist theory of pictures, which was heavily censored by, among others, the present author. In so doing, however, Eco now goes to the other extreme, claiming that television images are like mirrors, which are no signs. It is my contention that Eco fails to come up with a more acceptable theory of iconicity. Since Eco is one of the few semioticians concerned with the basic issues of semiotics, it is always useful to try to understand what is wrong with his conception. In this essay, we set out to show, against Eco, that the mirror has all the properties of a genuine sign, and that, independently of that conclusion, the television image remains different from the mirror, since it is not only a sign, but a pictorial sign.

Zusammenfassung: In seinen neueren Arbeiten gibt Eco seine konventionalistische Theorie der Abbildungen, die unter anderen vom Verfasser dieses Artikels ernsthaft kritisiert wurde, auf. Dabei geht Eco jedoch jetzt zur anderen Äußerlichkeit, indem er behauptet, dass Fernsehbilder den Spiegeln, die gar keine Zeichen seien, ähnelten. Damit ist es Eco meines Erachtens nicht gelungen eine Theorie über die Ikonizität, die annehmbarer wäre, auszuarbeiten. Da Eco einer der sehr wenigen Semiotiker ist, die sich mit den grundsätzlichen Fragen der Semiotik beschäftigen, ist es natürlich von großem Wert zu untersuchen, in welcher Hinsicht seine Auffassung fehlerhaft sein könnte. Ziel dieses Artikels ist es, entgegen Ecos Auffassung, zu beweisen, dass der Spiegel alle Eigenschaften eines echten Zeichens hat und dass, unabhängig davon, das Fernsehbild sich sehr vom Spiegel unterscheidet, da es nicht nur ein Zeichen ist, sondern sogar ein bildhaftes Zeichen.

It is a sad condition of our craft that when you tell people you are a semiotician, they often say, “So, you are a disciple of Umberto Eco”. My own answer to this is : On the contrary, I am in the business of criticising Eco. Obviously I have no

interest in finding faults with Eco for its own sake. It seems to me, however, that Eco is one out of a very small number of semioticians who are concerned to formulate the essential questions of semiotics. And then, I am afraid, he is in the habit of coming up with very bad answers to them. This is why finding out how Eco's proposals may not be so good as they seem is very useful for elucidating the central problems of semiotics.

A case in point is Eco's very influential critique of iconicity, which has by now gone through three versions: first, the conception presented in *La struttura assente* (1968) and in several other articles written at the time, in which Eco argued that iconic signs, and notably pictures, were just as conventional as the signs of language, and could just as well be divided into minimal units (in particular, having "double articulation"); then the theory offered in the *Theory of Semiotics* (1976), according to which iconic signs are still conventional but do not allow for any division into smaller units (similar to Goodman's earlier theory); and finally the ideas spelled out in and around *Kant and the Platypus* (1997; 1999), where iconicity seems to be returned to pre-critical innocence: indeed, although some part is still reserved for conventionality, most things we tend to think of as icons are now said really to be mirrors and thus no signs at all.

Although I was no doubt one of the fiercest critics of Eco's earlier conventionalist stance (cf. Sonesson 1989a, 1992a, c; 1994a, b; 1995, 1996, 1997a, 1998a, b, 2000, etc.), I am not at all happy about his recent turn-around. Explaining why this is so is a complicated task (cf. Sonesson in press a). In this essay, I will only have time to dwell on two points: I will show that, given explicit criteria for what a sign is, the mirror is certainly a sign; and I will demonstrate that, quite apart from the status of the mirror, the television picture is in no way similar to it.

First episode: Why the mirror *is* a 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.¹ 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 not a necessary criterion on Secondness (as I would prefer), then it might still be causal. However, I will leave these somewhat technical issues for another

occasion (cf. Sonesson in press a).

At this point, 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. 1. and Sonesson 1992a, 1998a, 2000). 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.

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 signs, must be distinguished from absence.

Neither Peirce nor Saussure have really defined the concept of sign, but simply take it for granted. I think we can spell out what is presupposed by the sign concept by making use of some ideas derived from Husserl and Piaget (cf. Sonesson 1992b). According to the former, the sign requires a difference in focus and mediation. The expression is *directly perceived* but is *not thematic*, and the content is *indirectly perceived* but *thematic*. But this criterion clearly applies to the mirror, just as well as to the picture. Something which is comparatively more direct and less thematic, the mirror image, stands for something which is less direct and more thematic, the object in front of the mirror.

Piaget’s criterion depends on the notion of differentiation. Expression and content are differentiated from the point of view of the subject. 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 depends on causality, from the knock on the door (caused by the hand) to the cast shadow, the death mask and – something which is definitely also a picture – the photograph.

However, if we choose to define indices in terms of causality, then – following the “structural argument” which is have formulated elsewhere (cf. Sonesson 2000) – 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 at 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 where 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 lip-stick on to her best advantage. Even supposing that Eco's argument would have some relevance, these mirrors are not used to show something which 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 which is unintentionally emitted.

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.² 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”.

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 which once is a sign must then always be one. However, if we exclude all signs which 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.

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, 1999, 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.

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's arguments are unacceptable. The mirror is a sign, if anything is.

Second episode: Why the television picture is no mirror

In the first part of this essay, I have shown that the mirror is indeed a sign. But now I would like to demonstrate that, no matter what we conceive mirrors to be, television pictures are no more similar to mirrors than other pictures.

As against this, Eco claims that the television image is not like a picture at all, but more 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.

Yet 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 which 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 makes 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, 1999, 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,³ 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).

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, it is a fact of sociosemiotics.

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 televisions 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.

Conclusion: Mirrors are different from (prototypical) pictures

There are several ways in which mirrors are different from pictures, although these have nothing to do with their being signs. Indeed, we are concerned with differences between mirrors and pictures, not mirrors and signs. 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 is not true of any picture, not even of 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.

The specificity of pictorial meaning can be illustrated by Magritte's familiar drawing, "Le viol" which may be seen either as a face or as a woman's trunk; it is precisely because of this double, contradictory, appresentation that it is instructive (cf. Fig. 2.). Beginning with the smallest elements, no particular meaning is suggested. But at least when putting the two half-circles containing two smaller circles side-by-side, we seem to be seeing two breasts. This interpretation is at its most determinate at the penultimate configurational level; but, at the highest one, when the hair is added, another interpretation, that of a face, gains the upper hand. Once we reach this level, some details which were present beforehand lend their support to it: the holes in the small circles, and their relative dimension, makes them look much more like pupils of eyes than nipples; indeed, the proportional location of the inner details are more nearly those of a face than of a trunk.

Now this points to the second property which is peculiar to pictorial meaning: the parts which are meaningless in isolation become carrier of particular portions of the overall meaning, once they are integrated into the whole. Like the phonemes /m/, /æ/, and /n/, forming the word /mæn/, the strokes and dots making up the picture of a man are in themselves meaningless even when considered in their particular spatial location; however after having been put together, the phonemes continue to be deprived of meaning as such, whereas the strokes and the dots begin to take on the aspects of different proper parts and attributes of the man they contribute to form. Put simply, the different parts and properties of the man are not distributed among the phonemes /m/, /æ/, and /n/, as they are among the strokes and dots forming the corresponding picture. This process, by which meanings accrues to pictorial features, may be termed *resemantisation*. It will be noted, then, that pictures do not have double articulation, as was once argued by Eco and Lindekens, nor do they lack elements without their own signification, as has been widely argued since. And this is precisely the property which is not found in mirrors; it is peculiar to

pictures.

The mirror, unlike the picture, will render all kinds of objects with the same ease, which is not true of pictures. In fact, we need much less information to see something as a face, a human shape, or even some other common object of the human Lifeworld, such as for instance a chair, than to see less common things. There are more “economical” ways of rendering such common things. The most extreme case may be the human face: we will even recognise it in a constellation of dots and lines proportionally corresponding to ordinary facial features, even if they are surrounded by a square. Such an hierarchy of Lifeworld things may be brought to bear on the mirror too, but the mirror does not change its way of representing these things.

More generally, the mirror cannot choose to render the world at different intensional levels, as the picture does; that is, it cannot render something as “a man”, “a car”, “a crossing” as traffic signs and similar “abstract” pictures do. We have seen that mirrors, just as pictures, may well convey information to us at very general levels (“a monster”, etc.), but they cannot adapt the expression plane to this purpose. Arguably, distorting mirrors, including the dentist’s and the dressmaker’s mirrors, do just that, but they are unable to attend to intensional levels in any systematic way.

We may therefore conclude that mirrors are indeed signs but no picture signs, and that televisions pictures are not only signs but genuine pictures. The real limiting cases, which are interesting to study, are such things as holograms and virtual reality. But that is another story.

Bibliography:

- Eco, Umberto, (1968) *La struttura assente*. Milan: Bompiani (quoted from the Swedish translation, *Den frånvarande strukturen*, Lund, Cavefors 1971)..
- (1976), *A theory of semiotics*. Bloomington: Indiana University Press.
- (1984). *Semiotics and the philosophy of language*. Bloomington: Indiana University Press.

- (1997) *Kant e l'ornitorinco*. Milan: Bompiani
- (1998) “Réflexions à propos du débat sur l’iconisme (1968-1998)”. In *Visio*, 3, 1, 9-32.
- (1999) *Kant and the platypus*. New York: Harcourt Brance & Co.
- Gombrich, E. H., (1963) *Meditations on a hobby horse*. London: Phaidon.
- (1982) *The image and the eye*. Oxford: Phaidon.
- Goodman, N. (1968). *Languages of art*. London: Oxford University Press.
- (1970) “Seven strictures on similarity”, in *Experience and Theory*, Foster, L., & Swanson, J.W., (eds.), Cambridge, MA: University of Massachussets Press 1970; pp. 19-29.
- Peirce, Charles Sanders, (1931-58) *Collected Papers I-VIII*. Hartshorne, C, Weiss, P, & Burks, A, (eds.). Cambridge, MA: Harvard University Press.
- Sonesson, Göran, (1989a). *Pictorial concepts. Inquiries into the semiotic heritage and its relevance for the analysis of the visual world*. Lund: Aris/Lund University Press.
- 1989b). *Semiotics of photography. On tracing the index*. Report from the Semiotics project. Lund: Lund University.
- (1992a) *Bildbetydelser. Inledning till bildsemiotiken som vetenskap*. Lund: Studentlitteratur.
- (1992b). “The semiotic function and the genesis of pictorial meaning”. In *Center/Periphery in representations and institutions. Proceedings from the Conference of The International Semiotics Institute, Imatra, Finland, July 16-21, 1990.*, Tarasti, Eero (ed.), 211-156. Imatra: Acta Semiotica Fennica.
- (1992c). “Comment le sens vient aux images. Un autre discours de la méthode”. In *De l’histoire de l’art à la sémiotique visuelle*. Carani, Marie(ed.), 29-84. Québec: Les éditions du Septentrion/CÉLAT.
- (1993). “Pictorial semiotics, Gestalt psychology, and the ecology of perception”. In *Semiotica* 99: 3/4, 319-399.
- (1994a). “Prolegomena to the semiotic analysis of prehistoric visual displays”. In *Semiotica*, 100: 3/, 267-332.
- (1994b) “Sémiotique visuelle et écologie sémiotique”, in *RSSI*, 14, 1-2, printemps 1994, pp. 31-48.
- (1995) “On pictorality. The impact of the perceptual model in the development of visual semiotics”, in *The semiotic web 1992/93: Advances in visual semiotics*, Sebeok, Th., & Umiker-Sebeok, J., eds., 67-108. Mouton de Gruyter, Berlin & New York.
- (1996) “An essay concerning images. From rhetoric to semiotics by way of ecological physics”. In *Semiotica*, 109-1/2, 41-140.
- (1997a) “The ecological foundations of iconicity”, in *Semiotics Around the World: Synthesis in Diversity. Proceedings of the Fifth International*

- Congress of the IASS, Berkeley, June 12-18, 1994*. Rauch, Irmgard, & Carr, Gerald F., eds., 739-742. Berlin & New York: Mouton de Gruyter.
- (1997b) “Semiótica cultural de la sociedad de la imagen”. In *Heterogénesis*, VI, 20, 16-37.
- (1998a) /Entries/ in *Encyclopaedia of Semiotics*. Bouissac, Paul, ed., New York & London: Oxford University Press.
- (1998b) “That there are many kinds of pictorial signs”, *Visio*, 3, 1, 33-54
- (1999) “Post-photography and beyond. From mechanical reproduction to digital production”. In *Visio* 4, 1, 11-36.
- (2000) “Iconicity in the ecology of semiosis”, in *In Iconicity - A Fundamental Problem in Semiotics*. Troels Deng Johansson, Martin Skov & Berit Brogaard (eds.), 59-80. Aarhus: NSU Press.
- (2001) “The pencils of nature and culture: New light on – and in – the Lifeworld”. In *Semiotica* 136-1/4, 27-53.
- (in press a) “Iconicity strikes back : the third generation — or why Eco still is wrong”. In *Actes du 6ème Congrès de l’Association internationale de sémiotique visuelle, Québec, octobre 2001*. Carani, Marie (ed.).
- (in press b) “De la reproducción mecánica a la producción digital en la semiótica de imágenes”, in *deSignis*.
- Vilchez, Lorenzo (1983) *La lectura de la imagen*. Barcelona: Paidós.

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

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

³ 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)