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Chapter 19
Semiotics of Photography: The State of the Art

Göran Sonesson

Semiotics studies the similarities and differences of different kinds of signs and meanings. Thus, it is important to know that the photograph is a kind of sign, that it is an iconical sign, perhaps also an indexical sign, and that, more specifically, it is a pictorial sign. For all those things photographs share with other signs, icons, indices, and pictures, we have to account when discussing these categories of meaning (cf. Sonesson 2010). Here, I will try to pinpoint those properties that are specific to photography. It does not follow, however, that the specificity of photography cannot derive, at least in part, from it being a peculiar kind of icon, or a peculiar kind of index, or perhaps both.

In earlier works (e.g. Sonesson 1988, 1992), I have distinguished three ways of categorizing picture signs: the *constructions types,* i.e. those picture categories which *differ in the way expression and content are related in the sign,* as, for instance, photographs using compact surfaces to stand for the parts of perceptual objects, and outline drawings using contours and pigments to represent the edges of objects in the perceptual world; the *means/ends categories,* which are *characterized by their (socially intended) effects,* as publicity pictures, news pictures, caricatures, pornographic pictures, and so on; and the *channel divisions,* which derive their identity criteria from *the social channels by means of which the pictures are circulated,* as, for instance, picture postcards, posters, graffiti, and so on. Of course, many real-world categories suppose a cumulating of such distinctions, as is notoriously the case with works of art. It should be noted that all these categories are functional, which is fairly obvious in the case of channel divisions and means/ends categories, which derive, in two different ways, from the places occupied by the classes of pictures in the social network. These are extrinsic functions; but from the Prague school point of view, there are also intrinsic functions, such as the sign function, on which our construction types are variations; and to Hjelmslev, the sign function is the essential function.

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The case of photography, however, is peculiar, since, unlike most other pictures categories (except perhaps comics), it has been thoroughly discussed within semiotics in its own right. Some early semioticians, like Barthes and Moles, still admitted a straightforward motivational link joining the two relata of the pictorial sign together, and thus felt the need to demonstrate the exceptionally strong character of this motivation in the case of photography. Eco, on the other hand, treated the case of photography as being on a par with other pictures, which, at the time, he claimed to be as arbitrary as verbal signs; and Lindekens formulated such an argument explicitly, even employing experiments to prove his case. More recently, a third movement has distinctly emerged, suggesting the peculiarly of the photograph to reside in its indexical nature. This is the argument of at least three excellent monographs on photographic semiotics, those of Vanlier, Dubois, and Schaeffer; and the same thesis is hinted at in the works of Rosalind Krauss, Delord, and others. In fact, even Peirce himself entertained this idea in some passages of his prolific but fragmentary work.

Indeed, this at first seems an exceptionally satisfactory solution, believing, as I do, that the photograph is a particular construction variant of the pictorial sign function: the photographic sign would differ from other picture signs, which are mainly grounded in icons, by being based on another one of the three elementary sign types, the index; and this would bring the issue of photography very much to the core of sign theory.

But if we take the idea as far as Vanlier and Dubois have done, we may wonder if there is still something left to account for the common picturehood of the two sign types; in fact, the photographic sign would not really be a variant of the picture sign, but of an altogether different nature. Moreover, even if, following Schaeffer, we take a somewhat more conciliatory stance, declaring the photograph to be an indexical icon, this solution may not really be one: for we are left to account for the differences between photographic indices and all the other indices of which the world is profused in, and of which some may happen to be picture signs other than photographs (cf. Sonesson 1989a, p. 49 ff., 1989b). In particular, if, as Krauss claims, postmodern painting transfers the indexical principle of photography to other arts, then we should have to explain why these works are so far from resembling photographs.

The first section of this essay on photographic semiotics contains a general survey of what has been accomplished so far in this domain. In the second section, I have pursued the question of the indexical nature of photography, as it has been studied in a number of outstanding monographs, which, in the end, I have suggested to be basically mistaken, as was already indicated in a number of my earlier publications.

19.1 A Short History of Photographic Semiotics

Like most other particular strains making up the history of pictorial semiotics, this one begins with Barthes. In fact, Barthes's earliest text treating of pictures (apart from the more casual glosses of Barthes 1957) is a short text (Barthes 1961) entitled “Le message photographique”. It is true, however, that already the first line of the article discloses its concern with press photographs more in particular. Also Barthes’s second article on pictorial semiotics, a real classic of the domain, “La rhétorique de l’image” (Barthes 1964a), is about a photograph, the one showing Panzani spaghetti and other kindred products offered for sale in the shape of a market goer’s still life (cf. Sonesson 1989a, p. 114 ff.).

19.1.1 Some Issues of Barthesian Semiotics

Both these articles introduce the Saussurean, or more exactly Hjelmslevian, framework of Barthesian semiology, the first being somewhat closer to the source, at least as far as the notion of connotation is concerned. While the first presents us with a series of rather general reflections, resulting from the attempt to apply the Hjelmslevian model of a two-layered semiotic system to pictures, the second is, at least apparently, a regular text analysis concerned with one particular photograph, defined both as to its means/ends category (publicity) and, somewhat more loosely, its channel division (magazine picture). Even the first of these texts (Barthes 1982, p. 11) proclaims the famous Barthesian paradox, according to which the photograph is a message deprived of a code (but the term “photographie” alternates in the same paragraph, as if this were the same thing, with the more general term “image”;[1] and this conception is formulated with reference to the more peculiar phenomenon “photographie de presse”; this being perhaps the only idea which Barthes would still accept in his last book (Barthes 1980), which is also concerned with photographs (but mostly with a more private photographic genre, family portraits) and which is no longer a book of semiotics (also cf. Delord 1986).

No ideas of Barthes’s have been more fateful than his total misunderstanding of the Hjelmslevian distinction between denotation and connotation. As I have shown elsewhere, Hjelmslev is really concerned with a kind of indirect meaning, or contextual implication, resulting from the choice of one expression for a content, when other would have been possible, or from a particular way of conveying such an expression, when others are available (cf. Sonesson 1989a, p. 113 ff.). Barthes, on the other hand, took this distinction to concern subjective versus objective meaning, and this can never be made operational, has been endemic to all of pictorial semiotics, including photographic semiotics, since then.

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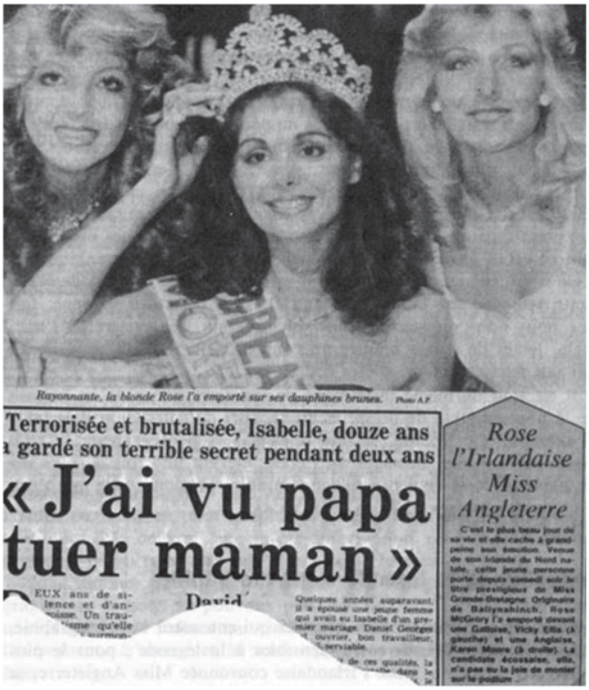
[1] In Barthes (1964a see Barthes 1982, p. 34 f.) photography, as a message without a code is actually opposed to drawing, which is supposedly three times coded. It is a curious fact that Barthes’s acceptance of a convention theory as far as (all?) pictures that are not photographs are concerned is never noted in the literature, where Barthes is often supposed to be a defender of naive analogism generally. Interestingly, convention is here not identified with the presence of features, double articulation, and the like, as even Eco (1968) initially thought necessary, only to retract himself later (Eco 1976), and as Lindekens (1971, 1976) continued to assume. We will return below to the three reasons Barthes adduces for the drawing being coded.



Rayonnante, la blonde Rose l'a emporté sur ses dauphines brunes. Photo A.P

Terrorisée et brutalisée, Isabelle, douze ans a gardé son terrible secret pendant deux ans

«J'ai vu papa tuer maman»

Rose l'Irlandaise Miss Angleterre

C'est le plus beau jour de sa vie et elle cache à grand-peine son émotion. Venue de son Irlande du Nord natale, cette jeune personne porte depuis samedi soir le titre prestigieux de Miss Grande-Bretagne. Originaire de Ballynahinch, Rose McGrory l'a emporté devant une Galloise, Vicky Ellis (à gauche) et une Anglaise, Karen Moore (à droite). La candidate écossaise, elle, n'a pas eu la joie de monter sur le podium ...

Fig. 19.1 News photograph from France Soir, taken from Lambert (1986, p. 44)

Another idea of Barthes's, which emerges in the second article (Barthes 1982, p. 30 f.), should be noted here: the idea that no picture contains information in itself or, alternatively, that it contains so much contradictory information that a verbal message is needed to fix its meaning (cf. Sonesson 1989a, p. 114 ff.). It has been suggested by Schaeffer (1987, p. 99) that it was because of his having mainly studied strongly organized communicational contexts, such as advertisements and press photographs, that Barthes became convinced of the leading part played by verbal language even in the understanding of pictures; but neither art photography nor scientific photographs would seem to be determined linguistically to a comparable extent, though their interpretation certainly require them to be inserted into some more general background frame, that it to say, assimilated to a selected set of interpretational schemes defined by the particular lifeworld (cf. Sonesson 1989a)[2]; but there is no need for these to be of a linguistic nature.

Interestingly, even a student of press photographs like Lambert (1986) has voiced his doubts on the subject of this kind of linguistic determination. In the case of one particular picture, he shows that it is really the text that is redundant given the picture, rather than the other way round. Indeed, although the caption of this picture (Fig. 19.1) informs us that one blond girl was elected Miss England, and that two dark-headed girls came out second and third at the election, the picture tells us otherwise; and even though the arrow points to the girl on the far right, we have no doubt that the winner is the girl in the middle (Lambert 1986, p. 43 ff.). How, then, does this happen?

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[2] Also cf. the notion of a "savoir latéral" according to Schaeffer (1987, p. 87 ff.) and passim.

According to Lambert (p. 45), "la photographie est trop précise, sa mise en scène trop parlante", but what does this mean? In fact, the dark-headed girl is placed at the centre, and she even stands a little in front of the other two, covering them partly with her shoulders and one arm which is lifted so as to touch her head. These are all gestural indications, present equally in the normal perceptual world. And then, of course, there is the fact of the dark-headed girl being the one who wears the crown. This is a traditional symbol, found also in our real sociocultural lifeworld. Again, the text may actually be of some help also, but in an curiously oblique way: the caption proclaims the girl having a differently coloured hair to be the winner, and on the photograph, there is actually only one individual of the species dark-haired, but two of the species blonds, however much the gentlemen that wrote the caption may prefer blonds, as the saying goes.

It should be remembered that Prieto (1975, p. 193 ff.) also objected to Barthes's peculiar brand of linguistic determinism in the Panzani article, pointing out that the Panzani picture was really much more informative than the verbal text (but then he included the depicted texts on the tin cans in the picture). Lambert (1986, p. 173 f.) later would seem to make a similar, general point, but in a rather confused way. It is certainly true, in any case, that pictures give us much less *linguistic* information than verbal texts, except in those cases in which the picture itself contains the reproduction of written messages; but the picture contains much more of that information, which, as suggested by our remarks on the Miss England photograph, could be assimilated to the kind of information present in the perceptual world. It is clear, however, that to Barthes and to many of his followers, information itself is conceived to be something that is verbal in nature. But this is not the kind of information intended by the psychologist Gibson, when he claims pictures permit us to pick up the same kind of information that is also present in the real perceptual world (cf. Sonesson 1989a, p. 251 ff.).

19.1.2 Some Uses of Photography: Publicity

The two aforementioned articles of Barthes's, and in particular the latter one, were at the origin of two diverging developments inside semiotics[3]: on the one hand, *pictorial semiotics,* at first mainly preoccupied with artworks, and notably paintings;

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[3] What I try to accomplish in this section is, as the title says, a *short* history of photographic semiotics. The only other such attempt I know of is found in Nöth (1985, pp. 427–428), and although the survey is well informed and well written like most parts of Nöth's handbook, it is extremely short, and it fails to note some of the important problems, and the contributions to their solution; but it is true that most of the latter were published fairly recently, at a time when Nöth had possibly finished editing his book. Indeed, the second edition (Nöth 2000) adds a little about indexicalist theories. Therefore, I will concentrate on writing the history here, and leave most of the comments for later sections. However, I will not abstain from pinpointing the methodological character of the works, as well as the models employed, since this will be of importance later.

and on the other hand, the *semiotics of publicity,* which, besides the pictorial aspects, also attends to verbal and other components of advertisements, but which has in fact been to an appreciable degree concerned with pictures, which, as it happens, are, most of the time, photographic pictures (for an excellent critical survey, cf. Tornero 1982). Until recently, pictorial semiotics has had little to say about photographs, but the semiotics of publicity has been at least obliquely concerned about them.

As a result, most of the analyses pertaining to concrete photographs must so far be searched for inside the domains of the semiotics of publicity, which has also, until this day, been largely derivative on Barthes's achievement, continuing to thrive on his somewhat fragile theoretical contribution. This constitutes a problem, for what is confused in Barthes's works tends to become even more so in that of his followers, and they also inherit his exclusive attention to the content side of the pictorial sign, or more exactly, the extra-signic referent and its ideological implications in the real world, even to the point of ignoring the way in which the latter are modulated in the sign. Much of this would be true of the contributions of, for instance, Dyer (1982), Fausing and Larsen (1980), Nordström (1975; Nordström 1983), Peninou (1966-68), Porcher (1976), Thibault-Laulan (1976), Vestergaard and Schrøder (1985), Hodge and Kress (1988), Kress and van Leeuwen (1996), as well as Beceyro (2003). Nevertheless, they should not all be put on the same level: the work of Peninou has the innocence of the early days; that of Porcher contains some important observations, which are unfortunately never developed (cf. Sonesson 1989a, pp. 60 ff. and 282 ff.); Dyer is suggestive, but superficial in his effort to list photographs corresponding each to a different rhetorical figure; and Beceyro (2003), finally, avoids the confusion, because he makes little use of the Barthesian terms; thus, he also avoids all theoretical work, finishing his little book with a eulogy to Barthes.

More original in their approach to publicity photographs are, in different ways, the works of Floch (1981; Floch 1986b), which attend very closely to the plastic organization of the picture plane, in addition to the usual ideological-narrative analysis; Langholz Leymore (1975), whose purely ideological analysis is inspired in a logically reviewed version of Lévi-Strauss's mythological model; Millum (1975), who gives scrupulous attention to all the minute details of the depicted world, including cloths, hairdo, and postures; Nöth (1975, 1977) who discovered the common publicity mechanism according to which contiguity is exchanged for similarity; and Williamson (1978, 1986) who offered many interesting examples demonstrating that also factoriality (the part–whole relationship) may be so exchanged. However, although this latter group steers free of at least part of the confusions of the Barthesian model, it remains a fact that the photographic nature of these pictures is never thematized; and to the extent that any generalized conclusions are drawn, we are left ignoring, just as in the case of Barthes's own work, if they are meant to apply to publicity generally, or to photographically mediated publicity only.

This same Barthesian model, largely extrapolated (and, in the case of connotation, sadly misinterpreted) from the work of Hjelmslev, also re-emerges in the publications of at least two writers more exclusively concerned with photography. In his remarkable exposition of the model, Burgin (1982) in some respects goes beyond Barthes to his sources, and so manages to be more correct in his interpretation than Barthes himself, at least in the sense of avoiding to slip into such nonsensical examples of connotation as are found in Barthes's articles. In one of his chapters, also Webster (1980) gives a good introduction to what Barthes, in his early work, conceived of as pictorial semiotics, but just as most of the writers quoted above, he introduces even more conceptual muddle in the Hjelmslevian terms. In any case, neither Burgin nor Webster has anything new to contribute, some 20 years after Barthes's articles were written, not even as far as the application of the model to concrete photographs are concerned. Also the works of Hodge and Kress (1988) and Kress and van Leeuwen (1996) are largely derived on the Barthesian heritage. Although many of their examples are photographs, they have nothing in particular to say about this pictorial genre. When it comes to the analysis of ideological aspects, which they rightly take to be fundamental, they are as lacking of a theory as Barthes and his other followers.

19.1.3 Some Uses of Photography: News Photographs

After Barthes pioneering, but rather abstract contribution, the first to direct his attention to the peculiar way in which daily events are reconstructed through the mediation of the photographs appearing in newspapers would seem to have been the Hall (1974), associated with the Birmingham group of cultural studies, who naturally adds a Marxist tinge to the Barthesian framework. Hartley (1982) summarizes much of this conception, while attending more closely to the verbal part of the news. More thorough attempts at analysing particular news photographs, so as to display their constructive mechanisms, are found in some passages by Fiske's (1982) introductions to communication studies; and by Gauthier (1979), who also includes the analyses of a few equally photographic advertisements and magazine covers. Both Fiske and Gauthier compare differently cut versions of a photograph representing the same event that has been published by different newspapers. The contributions of Nordström (1976) could have been very interesting, since it is a whole book concerned with the analysis of a single news photograph; unfortunately, Nordström wastes all this space telling us why he does not like the depicted persons, which he could have done much better if he had not insisted on embroiling himself in the Barthesian terminology. Gubern (1974) offers some acute observations on the nature of photography on the occasion of the publication of some news photographs. As for Hård af Segerstad (1974) who only refers to a few exponents of pictorial semiotics in a note, he develops his own theory of pictorial interpretation, which includes important observations, though the conceptual framework as a whole is difficult to grasp.

There are also a few more recent books, which go further in the sense of building a general theory, which partly goes beyond news photographs to attend to photographs and pictures generally. Lambert (1986) still is very dependant on Barthes's conception, but is convincing in his demonstrations of the ways in which photographs apparently depicting trivial daily events concomitantly function to convey the basic values of Occidental society and of the French nation. Defending the idea of a pictorial language against Barthes, Lambert claims photographs contain two levels of signification apart from their analogical surface: the "effets de réel", which contribute the illusion of reality, and the mythographic layer, which conveys enduring social values, by means of symbols, relations to other pictures (baptized "intericonicity"), or some simple rhetorical figures, like comparison and antithesis. Lambert's attempt to distribute these functions in relation to the signifier and the signified, and to connotation and denotation (for example p. 167 ff.), certainly changes completely the meanings even of the first couple of terms; but the model may be valid anyhow, as far as it goes, if we take it as is has been presented on earlier pages of the book.

Lambert's book derives all (or most) of its materials from the first pages of the French newspaper *France Soir,* but it is of course difficult to know how significative the news items discussed are for the bulk of first pages, let alone those of this single newspaper. Another first page is simulated in one of the advertisement for the cigarette brand "News", analysed in Floch (1981); and I have discussed elsewhere (cf. Sonesson 1989a, p. 159 ff.; Sonesson 1992) which particular features of the advertisement are responsible for inducing the reference to a first page of a newspaper, in particular to the renowned English newspaper *Times*. It is precisely to the first pages of this latter publication that Espe and Seiwert (1985) have turned in a more thoroughly controlled study of this hybrid pictorial and verbal genre.

The second important contribution is that of Vilches (1983a,b), who employs concepts taken over from Greimas, Lindekens, and many other semioticians in his efforts to come to terms with the ways in which everyday information is pictorially transmitted, in the press as well as in television; but his later book (Vilches 1987), which is more exclusively concerned with press photographs, looks to cognitive psychology and sociology for its theories and methods, and it also includes a number of empirical studies, of the type common in sociology, which treat, among other things, of the differing ways in which photographs are organized on the pages of some well-known Spanish newspapers.

19.1.4 From Propaganda to Pornography

Another important means/ends category in which photographs are prominent is that of propaganda, often manifested in the channel division known as posters, more particularly of the outdoor type, and also as review pictures, perhaps mainly masquerading as news photographs. Apart from the latter type, propaganda photographs have been largely ignored so far. Gubern (1987b, p. 180 ff.) is concerned with posters, but almost exclusively of the publicity kind, and the few political examples included are mostly drawings. Also Nordström (1986) wrote a book-length study of propaganda, which also includes photographic examples, which unfortunately does not contribute anything which goes beyond the generalities visible to any semiotically innocent eye, neither in the trivial remarks on Nazi propaganda, nor in the attempt to discover hidden propaganda in a news item concerned with the supposedly Russian submarines parading along the coasts of Sweden. In fact, propaganda, photographic or not, is a sadly neglected chapter of pictorial semiotics, and I have particular reasons to regret this, if, as I have suggested elsewhere (Sonesson 1987), propaganda, more than information, is the determining force of so-called information society.

Pornography, another social use to which photographs are commonly put, and certainly of the outmost importance for the understanding of some of the basic symbolic mechanisms regulating contemporary society, has received curiously sparse attention, no doubt because, as a pictorial genre, it is still considered "maudit", in spite of the fact that nobody can any longer avoid encountering at least its softer forms, in the shape of placards announcing men's magazines in the streets. That pornography, together with a few other "perverted" pictorial kinds, is more significative than most others for the understanding of contemporary ideology, is affirmed in Gubern's (1989) book on these genres; but unfortunately for us, the images actually considered in the book are mainly filmic images. There are some marginal remarks on pornography in Barthes's (1980) post-semiotical treatise of photography, but as may be expected of the Barthes of this late period, they are not of much consequence, for anyone beyond Barthes himself. A straightforward treatment of sexualist ideology as manifested in men's magazines, is found in the article by Casalis (1975), which, although it involves the Hjelmslevian connotational language in the usual misrepresented way, does contain some acute observations on the mechanisms of sexual thematization. Winship (1980; and to some extent Williamsson 1986) track(s) down sexual meanings as they are used in advertisements in order to transfer social attraction and value to commercial products which themselves may be deprived of them. Also the work of Orfali (1983) is relevant here, since it is as much concerned with Zucca's photographs as with Klossowski's drawings; in this respect, as in the others, I have already remarked elsewhere on its theoretical interest, as well as on its drawbacks (Sonesson 1988).

Another pictorial genre, which is of particular interest, since, contrary to most pictures, it involves a "syntax" (in the sense of Barthes 1961; also cf. Schaeffer 1987, p. 96) even at the level of immediately discernible units (which Mounin denies for pictures generally, even in the case of traffic signs) is the photo novella. Unfortunately, however, I can only note two contributions here, the first of which, Sempere (1976), is entirely absorbed into the narrative aspects of the genre, and the ideological values conveyed by the latter, and this to the point of treating the photographs (partly reproduced in the book) as completely transparent. As for the contribution of Chirollet (1983), it is certainly a much more systematic treatise, attending to the peculiarities of the photonovellistic temporality, to the ways in which it differs from the cinema, as well as to its artistic possibilities, but it is also curiously unmindful of the photographs themselves, to the point of containing no illustrations![4]

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[4] According to Ramírez (1981, p. 220 ff.), who treats the comic strip and the photo novella together, both these are multilayered *connotational systems,* in which the multiple expression planes are constituted out of the entire sign of each lower level. This is of course nonsense: Ramírez confuses the *compound sign* occurrence with connotational language, just as Larsen and Floch do when they identify Barthes's rhetoric with Panofsky's iconology (cf. Sonesson 1989a, p. 123 ff.), and analogously to the way in which Barthes, in a quite different context, takes the probabilistic organization of the medical symptom to indicate *double articulation* (cf. Sonesson 1989a, p. 17 ff.). A few brief, mainly historical remarks on the photo novella, may also be found in Gubern (1987a, p. 253 f.).

I have not, so far, mentioned all pictorial categories in which photographs are prominent, but I have probably listed all of which studies have been made. One single exception may be artistic works, which have apparently only been considered by Floch, to whose analyses we will turn further below. Many photographic kinds have thus been ignored: but this only exposes the tender age of photographic semiotics.

19.1.5 The Nature of Photography: Lindekens

Next to Barthes, the single most important figure in the semiotics of photography is (or has at least been until recently) Lindekens (1971, 1973, 1976, 1979), whose early death was an irreparable loss for pictorial semiotics. Although his first book (Lindekens 1971) is explicitly concerned with photography, whereas the second one (Lindekens 1976) claims to treat of visual semiotics generally, both really discuss questions pertaining to the basic structure of the pictorial sign as such (e.g. conventionality and double articulation), and both use photography as their privileged example. It is to demonstrate the conventionality of pictures, and the way they are structured into binary features, that Lindekens (1971, 1973) suggests on the basis of experimental facts (and common sense experience) the existence of a primary photographic opposition between the nuanced and the contrasted: indeed, as the nuances of a photographs are augmented, contrast diminishes, and vice versa; but the same publication (Lindekens 1971) also turns to experiments involving geometric drawings having the function of brand marks to discover the different plastic meanings (which Lindekens calls “intraiconic”) of elementary shapes. In fact, Lindekens would seem to argue for the same conventionalist and structuralist thesis as applied to pictures as the early Eco (1968), but while the latter tends to ignore the photograph as the most embarrassing apparent counter-example, Lindekens from the beginning attacks its frontally—though not necessarily with more success (cf. Dubois 1983, p. 31 ff. and, in particular Schaeffer 1987, p 32 ff.).

There are indeed good reasons (and we will return to some of them below) not to go along with most of Lindekens’s arguments, but his contributions have always been stimulating, and have posed important problems for later researchers to resolve. In at least two respects Lindekens is exemplary. He has employed all the three methods of semiotics which I have had occasion to distinguish in earlier works (Sonesson 1989b, 2010): philosophical reflections (“system analysis”) and experimental tests, which enter a fruitful symbiosis in his two books, but also the analysis of particular pictures (“text analysis”), although oddly enough, he appears never to have recurred to the latter method as far as photographs are concerned (with the exception of a few studies in publicity). In the second place, his theoretical baggage is complex: Hjelmslevian semiotics, of which he has a much more solid knowledge than Barthes, with just an inkling of the Greimas school approach, in spite of the fact that he wrote his thesis for Greimas; phenomenology, which unfortunately affected him in the subjectivist misinterpretation due to Sartre and the existentialists generally; and experimental psychology.

Most of Lindekens's basic tenets, on the other hand, may well turn out to be unjustified. Thus, for instance, the conventionality of pictures, and their structuring into binary features, is argued for by Lindekens (1971, 1973) mainly using the fact that in a photograph, nuance diminishes as contrast is augmented, and vice versa, so that one of the factors must always be untrue to reality; or, as it is put elsewhere (Lindekens 1971, p. 93, 1976, p. 29), the best rendering of contour and details is not obtained at the same time as the correct contrast. This certainly shows that, under present technological conditions, photographs will never be able to reproduce integrally the reality photographed, but that, anyhow, may not come as such a big surprise. There are two reasons, however, why this does not tell us anything about the binary structuring of photographs: first of all, Lindekens derives this observation from his considerations of the photographic substance, that is, as Lindekens understands it, the nature of the photographic emulsion, which means he is studying factors which are not pertinent, not part of the expression form of the picture. Of course, contrasts, details, and nuances are also perceptual facts, so perhaps the argument may be restated in terms of percepts, which are indeed pertinent factors. It remains untrue, however, that the kind of dimension thus erected is in any sense equivalent to the oppositions of the elementary units of linguistics: a phoneme is either voiced or unvoiced, but a picture, and in fact any single point of a photograph, must be nuanced to some degree and contrasted to some degree. Only the extremes would seem to exclude each other (cf. Sonesson 1989a, p. 159 ff.).[5]

As a matter of fact, Lindekens (1971, p. 178 ff.) also takes his experiment a little further, to show that the interpretation of a photograph is influenced by its having been made more or less contrasted or nuanced in the process of development. Interestingly, in quite different quarters (more precisely, in the group associated with the German architectural semiotician and psychologist Martin Krampen), Espe (1983a, b) has taken up the same study independently, showing interesting interactions between factors, but with the general result that an identical photograph may carry very different affective import for being differently contrasted. As a consequence, the evaluation is often projected onto the subject matter, so that the girl appears more or less beautiful, the landscape more or less melancholic, and so on. It seems probable that the common source for Lindekens's and Espe's experiments is the more casual comparison made by Gombrich (1960) of two differently contrasted photographs showing the same landscape that Constable painted in Wivenhoe Park, viewed from an identical vantage point.

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[5] The arguments against Lindekens presented by Schaeffer (1987, p. 41 ff.) are more anecdotal, as are also those of Lindekens's arguments he turns against. I have dealt with the contradictions of the ethnological and psychological evidence in Sonesson (1989a, p. 251 ff.). As for the points I have tried to make above, it should be noted that Lindekens (1976, p. 81 f.) later observes that the trait "nuancé/contrasté" is only a potential *iconeme,* as long as we are not acquainted with the entire pictorial system, which sounds as an advance criticism of the use to which the opposition is put in the work of Vilches (1983a,b, p. 45 ff.), which I have discussed in Sonesson (1989a), I.3.4. Unfortunately, Lindekens then goes on to claim that the extent of variation possible inside an iconeme can only be determined through the work of chemical and optical analysis; which is true as far as irrelevant variants are concerned, but a countersense if the determination of the *limits of variations* is meant—for, as Lindekens (1976, p. 76 f.) himself observes, we are concerned with the equivalents of *phonological,* not phonetic, traits!

Although apart from Lindekens's pioneering contributions, very few experimental studies have been made in pictorial semiotics, the little there is of it which concerns photographs should be recorded here. Espe is in fact responsible for most of it. Indeed, later studies of his (1984, 1985a, b) are concerned with the different semantic effects of black-and-white and colour photographs, and with the effect of viewing position on the interpretation of subject matter. The latter problem has been experimentally investigated independently by Bengtsson et al. (1988) in an unpublished study, which employs photographs taken from three different angles of vision but at an identical temporal phase of a variety of affective facial displays, and was conceived as a criticism of the rather naive use of photographs in the study of such displays, in, for example, the work of Ekman.

19.1.6 Photographic "Language" and the Barthesian Paradox

We will soon proceed to the appraisal of a more recent phase of photographic semiotics, which involves the capital contributions of Dubois, Vanlier, and Schaeffer. They are all concerned to establish the peculiar nature of photography, in opposition to other kinds of pictures, and thus tend to neglect the similarities joining all pictorial signs together and opposing them to all non-iconical signs as well as to non-pictorial iconical signs (cf. Sonesson 1989a). They all, together with Brög, Delord, Krauss, and Maldonado, argue for the essentially *indexical* nature of photographic signs, and in this respect, they hark back to some of the fundamental intuitions of Charles Sanders Peirce.

But when we now at last turn to works attentive to the *peculiarities* of the photographic sign, we must start from a very different way of conceiving these peculiarities, still heavily indebted to the Saussure/Hjelmslev/Barthes tradition, though taking exception to some of the basic assumptions contained in Barthes's work, while also trying to spell out the purportedly more radical implications of some other part of the same presuppositional frame. It will be remembered that although Barthes used a linguistic model in his two famous articles, he denied that photographs were arbitrarily contrived, unlike verbal language, even claiming that the photographic signifier and signified were mutually tautologous. This paradox posed for later researchers the question whether photography constituted a *language*.

A case in point is Lambert (1986, p. 165 f.), who tries to turn Barthes against himself, observing that although the latter through all his publications has denied the status of a language to photography, the simple fact of his having confronted it with the toolkit of semiotics has contributed to the impression that it is indeed a language. I shall not quarrel here over the exact import of the term "language" (even Metz's distinction between "langue" and "langage" may not be enough); what is at issue here is really Barthes's idea that photographic denotation does not need a code, whereas its connotations (which should, most of the time, actually be called ideological implications; cf. Sonesson 1989a, p 132 ff.) are culturally coded, that it to say, determined by social conventions. To all appearance, then, Lambert protests that also the Barthesian denotation is coded.

However, if we now review Lambert's own analyses, and the model of the press photographic sign he proposes, we will discover that he nowhere offers any real criticism of its analogical character (even the quotes from Eco and Lindekens on p. 166 f. are moderate in their iconoclasm), but in fact accepts it as a given, adding only a supplementary layer of illusionism ("effet de réel") and a set of mythographic implications, which, as I noted above, may derive (using his terms) from a symbol, a rhetorical figure, or an intericonicity. The character of illusionism remains unclear: in part, it may be caused by analogy itself, and perhaps stem from the tendency of man living in a photographically dominated society to exaggerate its fidelity to reality. As for mythography, it really only occurs in the world which is depicted (even in the case of intericonicity, since it is the depicted situation which is similar), i.e. not even, as far as Lambert's analyses goes, in the way the world is reflectively reproduced in the sign; thus, in the terms employed by Enel (quoted in Ramírez 1981, p. 189), it concerns the system of the real objects, not those of the picture or the verbal text—or, in other terms, it concerns Barthes's connotations, which, even to Barthes, are culturally coded.[6]

In fact, most semioticians after Barthes have criticized him for elaborating a rhetoric of the *referent,* not, as the title of his essay promises, a rhetoric of the picture (see, for instance, Lindekens 1971, p. 231 ff.). Since Costa (1977, 1981) certainly agrees with this criticism, he must rest his claim for a particular *language* of photography on different arguments, and indeed, he maintains (in Costa 1977, p. 69 f.) that the technical aspects of photography, susceptible of offering the elements of a lexicon, have been largely ignored so far. This is certainly not quite true, for even Barthes's original list of connotations would seem to include some technical effects.

Actually, the list of connotations which Barthes (1961, p. 14 ff.) proposed (trick photography; the pose; the object; photogeny, that is, blurring for space–time; aestheticism, i.e. the suggestion of artisticalness; and syntax, the putting together of various images) has been differently commented upon, to begin with by Barthes himself (1961, p. 14 ff.), who admits that only the last three are properly speaking connotations, since only these modify the sign instead of reality; and Lindekens (1971, p. 236 ff.) takes over this distinction, claiming the first three modifies the continuum, that is, perceived reality, whereas the last three intervenes in the discontinuous, which, in this case, is the code of analogy itself. According to Ramírez (1981, p. 175), none of them, except for trick photography and photogeny, are peculiar to photography, since they are found also in the theatre, paintings, the photo novella (!), the cinema, etc., but there are other specifically photographic effects, connected with the confection of the negative and its ulterior treatment, and with the details of the positive process (op. cit., 172 ff.). In fact, some of these effects *are* present in Barthes's model, for in the second essay (Barthes 1964a, p. 35), we are told that "les interventions de l'homme sur la photographie (cadrage, distance, lumière, flou, filé, etc.) apparentiennent toutes en effet au plan de connotation". Schaeffer (1987, p. 93 ff.) takes exception to most of Barthes's connotations: only one procedure is retained, aestheticism, which should, however, be taken in a wider sense, so that photogeny only becomes a variant of it. As for the Barthesian syntax, it depends on narrative and other extra-photographic codes.

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[6] Enel's model has been formulated for the analysis of publicity, which, most of the time, involves photographic elements. The distinction between the system of real objects and the system of the picture is undoubtedly much less straightforward in the case of paintings and drawings, but it does exist, as discussed in Sonesson (1989a, p. 209 ff.).

As far as this discussion (which is not really one, since most of the authors ignore each other) is couched in terms of connotation, it is certainly meaningless: for it is not only true, as Schaeffer (1987, p. 94) points out, that the first three procedures, not involving the photographic sign, cannot be connotations, but neither can the other three, or any other intervention pertaining to the photographic sign, at least if Barthes is right in his description of the structure of the latter. Indeed, according to Hjelmslev's definition, repeated by Barthes and all his followers, a connotational language is a language, the expression plane of which is another language; and a language, according to Hjelmslev, irreducibly involves two strata, the expression plane and the content plane. But Barthes claims the primary, analogous sign of photography does not depend on any code for its interpretation, and that signifier and signified are tautologous, which, according to Hjelmslev's criteria, would make them into one and the same, and photography into a symbol system, which, as far as Hjelmslev has thought about the matter, is not among those units capable of being the carrier of a secondary language (for a more explicit argument which involves many other aspects, cf. Sonesson 1989a, pp. 125 ff. and 179 ff.).

However, I will not insist on this argument here, for our authors are obviously the victims of an inadequate terminology. Of course, the argument is not unimportant: it implies that we cannot know what is really meant by claiming these photographic effects to be connotative. We may suspect, of course, from the kind of arguments used (some of which are quoted above) that connotative to some authors means that which is not directly involved in the identification of the object (perhaps of that particular type of object), to others that which carries ideological and/or emotional values, to a third group that which is intrinsically photographic, or, more generally, inherent in the sign character of the sign; and to some, I am afraid, it may even mean all this and a lot more at the same time (cf. Sonesson 1989a, p. 132 ff.).

Costa is of course not aware of all the comments quoted above, some of which were made after the composition of his texts. The signs of his specifically photographic language, which, as he rightly observes (Costa 1977, p. 77), are signs only to the extent that they are interpretable to the receiver, are such things as the geometrical shapes produced by the light directly entering the objective, the luminous stars caused by the headlights of a car, the rhythmic lines resulting from the movement of the camera, the decomposition of movement as made by Marey, perspectival deformations of the kind created by Brandt, chemigrams, negativization, photographism, and so on. (There is a long list in Costa 1977, p. 78 ff.) The list as such is not very new; what is original is the claim that these procedures constitute a language, to the extent that a photograph may contain both analogical and non-

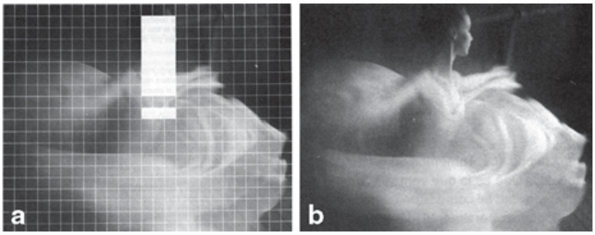

Fig. 19.2 **a** The connotative part of the ballerina photograph, according to Costa. **b** The picture analysed by Costa.

analogical signs, where those of the second type *are present in the photograph without being present in reality* (Costa 1981, p. 133 f.). Again, while the analogical signs are taken to be *denotative,* the second category of signs is assimilated to *connotation* (Costa 1977, p. 77).

There is a suggestion of this peculiar language already in Barthes (1961, p. 16 f.), who, under the title of photogeny, would like to include numerous techniques, which he feels are urgent to study, in order to establish the vocabulary of photographic language. It is to this suggestion, contained in a phrase, that Schaeffer (1987, p. 97 ff.) reacts, pointing out that no such lexicon could be found, for, to begin with, these procedures are few in number, and in addition, most of them (Barthes's example, the blur, being exceptional in that respect) do not convey any particular message, beyond the mere intentionality of the intervention (that is, "cette photo est telle parce que je l'ai voulue comme telle (donc: parce que je suis un bon photographe, un artiste)"). While Costa does not address any of these arguments, he tries to answer, avant la lettre, a variant of the first; for even if Schaeffer is right in thinking that there are very few photographic procedures, we may yet have to accept that they form a language of their own, if it can be shown that they occupy the greater part of the surface of the single photographic image.

Indeed, Costa (1977, p. 73 ff., 1981, p. 126 f.) presents a photograph (which he apparently takes to be representative of all photographs) divided into a series of small squares, which, according to his account, contains only 4.8 % of denotation, that is to say, picture squares permitting the identification of the object, and 95.2 % of free creativity (Fig. 19.2). Unfortunately, there are numerous problems with this argument. First of all, there is really nothing to assure us of the typicality of this photograph; in fact, we would naturally suspect most photographs to contain much less of free space for creativity. More importantly, it is certainly not true that in this particular photograph only the squares delimited by Costa serve the identification of the ballerina. No doubt, when these squares are left out, as in Fig. 19.2a, it is impossible, or almost impossible, to identify the motive of the photograph; but once they are replaced in their context, the interpretation that they suggest is transferred and confirmed by the rest of the shape. This is the procedure I called *resemanticization* in Sonesson (1989a, p. 295 ff.), where I illustrated in with drawings; it accounts for the nature of all pictorial parts being somewhere in between the nature of first and the second articulation found in verbal language (the level of phonemes and the level of words). In the present case, the squares marked out by Costa certainly are most heavily weighted semantically, as far as the identification of the person as a person and as a girl is concerned; but on the lower intentional level on which she is also a ballerina, the indication can only stem from the squares which, according to Costa, do not serve identification.

Interestingly, Espe's (1983a, 1983b) experimental tests were motivated by a desire to refute Barthes's conception of the photograph as having an expression plane which is tautologously related to its content plane, that is, as lacking a code. Experimental subjects were presented with three types of motives: things (teapot), landscapes (tree), and persons (a girl), in four degrees of brightness, and were asked to evaluate them on 24 scales. Four of these scales turned out to account for 48 % of the variation, viz: (a) antipathy, (b) calm versus tension (excitement), (c) lack of stimulation, and (d) potency versus weakness. Of particular interest is the fact that the same degree of brightness may have diverging effects on different motives: thus, the teapot and the landscape receive a more positive evaluation (more homely (*vertraut*) and clean, but also more sterile) in the light grey version than in the white one, but the opposite is true of the girl (more contaminated (*verseucht*), terrifying (*unheimlich*), and dirty; 1983a: 104 ff.). From his results, Espe concludes that there are rules of codification in photographs, although the units determined by these are not similar to phonemes, since the motive as such remains unmodified.

At this point, it is important to inquire into Espe's understanding of the distinction between denotation and connotation, and of his notion of motive. Actually, Espe (1983a, p. 93 f.) is explicit about his preoccupation being with "affective meanings", and this interest is also clearly embodied in the terms dominating his 24 scales (at least those mentioned in the article). In fact, however (as shown by Sonesson 1989a, pp. 113 ff. and 179 ff.), the Hjelmslevian notion of connotation, invoked by Barthes, does in no sense involve affective meanings, and although many of Barthes's so-called connotations are of doubtful legitimacy, they are not merely emotive reactions. In fact, connotation in Hjelmslev's sense is *a secondary content resulting from the choice of a particular expression, to the exclusion of all other possible ones, to stand for a given primary content, or of a particular variant, to the exclusion of all other possible variants, to realize the expression invariant* (cf. Sonesson 1989a, p. 114 ff.). Therefore, the selection of one degree of brightness among many possible ones may carry a connotation, which primarily simply says "choice of the degree × brightness", but which may in turn imply other values with which it has been culturally invested, or even, in a case like brightness, the different degrees of which are themselves "natural signs" (though of course not iconical signs), may refer to biologically grounded reactions.[7] However, such a connotation can only exist if the choice is seen to be one, that is, *if the secondary layer of content is perceived to be distinct from the first one.*

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[7] "Natural sign" should here be taken in the old meaning, as that which has not been culturally instituted, and which may have more affinities with what we would now call an indexical sign than with the iconical ones. Thus, Dégerando talks of the "natural sign" which consists in one animal observing the flight of another one of the same species and following the example. For discussion, see Sonesson (1989a, p. 213 ff.). The point here is that we may be "naturally disposed" to react in particular ways to differing degrees of brightness. The fact that different motives developed with the same degree of brightness are differently interpreted would seem to throw serious doubts on at least this simple variant of the "naturalistic" hypothesis, but there are of course ways in which it may be amended.

But this is precisely what Espe seems to claim: the motive, he tells us, remains unaltered in the process. But earlier, he has also informed us that his experimental subjects were not aware of the difference of brightness, the result being somewhat different when a direct evaluation was made.[8] This brings us to the question what Espe means by motive. No doubt the girl is always recognized as a girl, the tree as a tree, and the teapot as a teapot. But if, with the subtraction of one degree of brightness, the girl photograph receives higher values on the scale for contaminatedness, terrifyingness, and dirtiness, we may wonder if this does not mean (as Espe's own formulations seem to suggest) that it is the girl who is judged to be more contaminated, terrifying, and dirty. And in that case, the motive, from being a clean girl, is transformed into a dirty girl, and so on. The point may be made clearer by invoking our own study of angles of vision (Bengtsson et al. 1988): here, the motives were different emotions, and we did indeed discover that an identical moment of a facial expression was assigned to different emotions when presented from different vantage points. Thus, the perspective chosen on the actor could completely change the motive perceived, that is, the emotions believed to be expressed by the actor.

This shows that there is no connotation here, for the emotional values are projected directly onto the motive, and incorporated into the primary content. As for Espe's basic hypothesis, according to which photography is codified, in the sense of not reproducing tautologously the reality to which it refers, it is actually reinforced by our argument.

In fact, the error of the approaches considered so far would seem to be the attempt to locate the conventionality of photography in some particular part of its vocabulary, or of the photographic surface, when in fact it is the whole process by which the image is mediated which is conventionally overdetermined. Ramírez (1981, p. 170 ff.) and Gubern (1974, p. 50 ff.; Gubern 1987a, b, p. 156 ff.), when considering the factors by which the photograph differs from perceived reality, would seem to get closer to this essential insight into the conventional aspects of photography. We will return to consider these factors after first discussing the possible indexicality of the photograph.

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[8] In our own study (cf. Bengtsson et al. 1988), concerned with angles of vision, we also varied the experimental procedure somewhat, obtaining differently distinct results. In the first case, photographs depicting three different actors in the course of expressing four different emotions photographed at the identical moment from three angles of vision were shown in random order. In the second case, the three shots taken from different angles of vision at the same moment and extracted from the mimic sequence of one and the same actor were mounted together on a frame. The result was much clearer in the first case. This may be similar to the two procedures employed by Espe (though this remains somewhat uncertain), but I am not sure Espe is right in describing the latter experimental situation as being the most realistic one. In fact, most of the time, we perceive single photographs, maybe just one photograph published by a newspaper, which has been selected from an extensive series of pictures taken of the same event at the same occasion. It is indeed rare that we are called upon to compare different photographs, in particular those that show an identical object at an identical time and place.

19.1.7 The Photograph as an Indexical Sign

According to a different point of view, the photographic image may be taken to be essentially a trace left behind by the object appearing in the photograph. One of the pioneers of semiotics, Peirce (1931), already claimed that the photograph should be considered an indexical sign, rather than an iconical one, that is, a sign based on the contiguity subsisting between the expression and the content, not on their similarity.[9] At least, this is how he has often been read. But if we attend a little closer to his wordings, and if we make a benevolent reading of his works, we may find that he only claims that the photograph is an index *in one respect,* which apparently permits it to remain an icon when considered from other points of view. This is certainly how he has been understood by the orthodox Peirceans of the Stuttgart and Perpignan schools, and it is also, as we shall see, Schaeffer's interpretation.

In the work of such strict followers of the Stuttgart school as Brög (1976, 1978a, b, 1979b) and Schmalreide (1981), photographs are classified according to their different relationships to the object, as well with respect to the other two Peircean trichotomies. Unfortunately, it is difficult not to find this approach largely empty of content, not only because the Peircean trichotomies are based on such slippery notions to begin with but also because the assignations to different sign categories are not justified in the taxonomic discourses of the Stuttgart school. It must be recognized, however, that these authors have never doubted that the photograph, as well as other signs, may be iconical and indexical at the same time. Other, more recent, contributions to the Peircean consideration of photography, which do not seem to introduce any new aspects, may be found in Santaella and Nöth (2003), as well as in Jappy (2010, p. 189 ff.).

The first semiotician in recent times to insist on the indexical aspects of photography may well have been Maldonado (1974, 1979), who introduced the notion of "hard icon" in his argument against Eco's conventionalist theory of pictures, which he accused of being "idealistic", and of undermining science, which largely depends on certain kinds of pictures. In fact, "hard icons", according to Maldonado, are signs which, in addition to bearing resemblance to that which they depict, are related to them as traces to that which produced them, as are 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.

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[9] It should be noted that it is quite intentionally that I here avoid Peirce's own terms, representamen and object (to which a third one, the interpretant, should be added), in order not to introduce more confusion than is necessary. In any case, it is quite certain that the object is not the referent: that distinction would rather correspond to the one between the immediate and the dynamic object. Also, the interpretant is not the content, though it is more difficult to say what exactly it is (cf. discussion in Sonesson (1989a, p. 201 ff.)). On the adequate characterization of the index, see also op. cit., p. 30 ff., as well as most of the sections below. The formulation above only serves to introduce the issue.

Krauss (1982), in her analysis of Nadar's autobiography, tried to demonstrate that what holds together the anecdotes recounted there by the famous pioneer of photography is the fascination for the contiguity between the motive and the picture imposed by the very mechanism of photography. In other texts, however, she has argued that indexicality, introduced into the art world by photography, has continued to fascinate contemporary artist, from Duchamp onwards, and is characteristic of postmodernism. If so, of course, indexicality cannot be sufficient to characterize photography (which is an important point of which Krauss seems to be unaware—nor does Jappy 2010 mentions this conundrum in his comments to Krauss).

Delord's (1986) book is written in a rhapsodic style, recognizable from the later work of Derrida, which makes it difficult to know what he is really driving at. At times, however, he is certainly out to criticize Barthes's conception of photography, among other things, for its psychologism (p. 21 ff.)[10]; and at other moments, he clearly means to suggest that the photograph is semiotically speaking an index (p. 32 ff., p. 36 ff., p. 125 ff.), but at the same time (p. 128 f.), he also warns us from thinking that it is just that. But of course, Delord is already aware of the work of Dubois.

Indeed, it remains for us to consider the work of Dubois (1982b, 1983), as well as that of Schaeffer (1983a, b, 1986, 1987) and Vanlier (1982a, b, 1983), who more or less at the same time have focused in an explicit way on the specificity of the photographic sign, all concluding, more or less following the suggestion of Peirce, that it is essentially an index. There are important differences between these authors, however; and while they may well have began their studies independently, Dubois (1983) already comments critically on Vanlier's (1983) book, which he has read in manuscript; and Schaeffer (1987), while admitting to the coincidence of the general conceptions, marks his distance to numerous points made by the earlier writers.

Since most of the second section of this chapter is concerned with a detailed critique of the fundamental work accomplished by these three semioticians, it will not be necessary to enter more thoroughly into the body of these works here. Suffice it to indicate for now the principal differences between the texts and the conceptions. Thus, Vanlier's book has the character of a philosophical essay, with little indications of sources, and his notion of indexicality (split into the untranslatable opposition between "indice" and "index") is not strictly bound up with that of Peirce; indeed, the kind of "indice" which he discovers in photography is actually, in the most literal sense, a mere trace, and he usefully characterizes the peculiarities of the photographic trace. The book is illustrated with photographs of the artistic kind, but there is little, or very passing, commentary on these photographs in the text.

Also Dubois is exclusively concerned with art photography. His book, however, contains a scrutiny of a number of photographs, notably in the later chapters, but these photographs are hardly being *analysed*; in part, they are the subjects of a *text classification* (i.e. they are ordered into categories on the basis of some of their properties, rather than being exhaustively studied) according to the different kinds of indexicalities they contain. Contrary to Vanlier, Dubois is concerned to place himself within the recent history of photographic semiotics, which he differentiates into one iconical phase, a symbolic (in the sense of conventional) one, and then an indexical one, of which his own work is a part. He also is more preoccupied with stating his relationship to the Peircean tradition, though he does not seem to be all that immersed in its ambience. There is more of explicit arguments and discussion of earlier theories here than in Vanlier's essay, and Dubois also attends to some indexical qualities in painting, and, as I already noted, to indexicalities which are depicted in the sign, rather than going into its making.

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[10] To judge from the title, this is the exclusive subject matter of Delord's (1981) earlier book, which is unfortunately out of print.

The best, and most systematic, work is that of Schaeffer, but then it has also profited from the experience of the two earlier writers. Schaeffer takes a less extreme stance than Vanlier and Dubois, arguing that the photograph may be an indexical icon, or, in other cases, an iconical index. His book is organized into short passages, each concerned with a limited theme, and presents elaborated arguments, addressed to particular theoretical texts. It contains interesting critical observations on the writings of Barthes, Eco, and Lindekens, and also to some extent on the works of Vanlier and Dubois. Contrary to these latter writers, Schaeffer claims that a correct understanding of photography must result from a study, not of art photography, nor of photojournalism, but of scientific and documentary photography. He presents a characteristically system analytical taxonomy of photographic kinds, which is a cross-classification according to the relative indexicality or iconicity of the representamen, the relative temporality or spatiality of the interpretant, and the thing or state structure of the object (Schaeffer 1987, p. 72). His Peirce reception, like that of Dubois, is much more faithful than that of Vanlier, but some doubts on its correctness subsists, as we shall note later. Although Schaeffer's book contains the reproduction of 12 photographs, they do never enter essentially into the arguments. In fact, even the taxonomy mentioned above is purely system analytical, with no incursions into text classification.

19.1.8 Floch and the Case Against Photographic Specificity

The last writer I shall consider here has a curious position in our story, for while, on the one hand, he is more or less the only one to have accomplished real text analytical studies as applied to photographs, he at the same time denies the pertinence of the quest for photographic specificity. Floch (1986a, p. 11) rightly objects to the practice of using photographs simply as illustrations, which is characteristic of Vanlier's and Dubois's books, which instead get lost in the generalities of photographicity. But Floch's own alternative seems contradictory, and, on at least one interpretation, is seriously flawed. On the one hand, he states as his task to account for the particularities of a given photograph (Floch 1986a, p. 11); and on the other hand, he claims semiotics should define other categories which cross-cut socially accepted ones, such as "picture", "art", and "photography" (Floch 1984a, p. 11; Floch 1986a, p. 12 f.). Both these opposed alternatives to a study of photography and other socially accepted pictorial kinds are explicitly present in Floch's text, but it is not at all clear how they could be reconciled. And while the first interpretation seems to make nonsense of semiotics as a science, the second appears to opt for a positivistic approach of the most gratuitous kind.

Let us have a closer look at this conundrum then. Semiotics, according to Floch (1984a, p. 11), is incapable of telling us anything about sociocultural categories such as "photography". Instead we should attend to the particular properties of the given photograph. This is a legitimate claim as far as it is an argument tending to favour a text analytic method over those of system analysis and experiment. But if it means that a particular photograph should be not only the objected studied but also the object of study, of a semiotic investigation, it would seem to deprive the semiotic approach of its peculiarity, making it just another method which may be used inside art history, communications studies, and so on. That is, if the semiotic object of study is not specificity (of pictoriality, of pictorial kinds, or whatever), then semiotics itself will lose its specificity. We may still argue for semiotics on the grounds that it builds models, that it uses certain constellation of methods, etc. (cf. Sonesson 1989a, p. 15 ff.), but, in any case, its originality certainly comes out diminished.

According to the other interpretation, semiotics is admittedly geared to the study of general facts, but these facts are not of the kind designed by terms like "photography" (and "picture", "publicity", "art", etc.). These latter terms serve to label categorizations of semiotic resources which are *merely* sociocultural, that is, historical and relative ("le découpage socio-culturel donc relatif et historique des moyens d´expression"; Floch 1986a, p. 13); but if we want to understand how, in a particular photograph, meaning comes to be, we must instead apply ourselves to the development of a general theory of discourse, which includes all kinds of discourses, besides visual ones also architectural, linguistic, and so on (Floch 1986a, p. 13)

It is difficult to understand why "merely" sociocultural division blocks should be despised, for in all their historical relativity, they are probably the only ones we have.[11] Indeed, as I pointed out (in Sonesson 1989a, p. 90 ff.), following Prieto, who himself quoted Saussure, semiotic objects only exist for their users, that is, they have only the kind of existence that they are accorded by their use in a given social group; and thus, once we pretend to go beyond sociality, there is nothing left to study. It is true that Floch's master Greimas, following his master Hjelmslev, has argued that a semiotic theory should be arbitrary—but also adequate; and I have already (1989a, p. 90 ff.) noted the paradoxes of this pronouncement. There is a risk, then, that we are faced here with that kind of gratuitous thinking which makes Goodman substitute a picture concept of his own making for the one commonly employed because he finds the latter incoherent—when the real task is to account for the peculiar systematicity of the common lifeworld notion of a picture (cf. Sonesson 1989a, p. 251 ff.). But, as we shall see, there may actually be a somewhat more interesting sense to Floch's argument.

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[11] Floch (1986a, p. 12) even compares the study of semiotic specificity with the quarrel over the possibility of art in photography which raged in 1850s. But these are really very different questions, on two counts. First, the questions are different, because, in the first case, we only want to characterize a category ("photography"); in the second case, we are concerned to relate two socially given categories ("art" and "photography"). Second, "art" is a notoriously difficult category to define, because it is differently delimitated, through the ages, and in different social groups; but nothing of the sort is true of photography. When Floch (1986a, p. 13) claims that to describe these social division blocks is "au mieux, expliciter un système connotatif", this only goes to show that he does not know what connotations are, for only semiotic systems and their parts may connote, in Hjelmslev's sense (cf. Sonesson 1989a, p. 179 ff.).

Floch (1986a, p. 12) actually rejects the doctrine of signs in favour of another study, that of

> les formes signifiantes, les systèmes de relations qui font d'une photographie, comme de toute image ou de tout texte, un objet de sens. La sémiotique structurale qui est nôtre ne vise pas à élaborer une classfication des signes, ni selon les conditions de leur production, ni selon les rapports qu'ils entretiennent avec la 'réalité'./-—-/L´image photographique peut être techniquement une empreinte; mais qu´importe en l'occurrence: ce sont les formes de l´empreinte qui font d´elle un object de sens possible, et c'est à partir du moment où l'on s'interésse à ces formes qu'on ne peut se contenter de parler de la photographie en géneral.

There are a number of things to note here. First, we will not enter the quarrel over signs again (cf. Sonesson 1989a, p. 49 ff.), for if even Peirce admitted something could be an icon from one point of view, and an index from another, signs do not have to be atomic units, but may be relations, of which many are wont to go together, and the only requirement is that there is a distinction of content and expression. Second, it is curious that Floch should claim the old epithet "structural" for his (and Greimas's) conception of semiotics, for nothing could really be more contrary to the spirit of structuralism (that of Saussure and Hjelmslev, notably), than the idea, presupposed here and vindicated by Greimas, that content and expression may be freely combined, so that, in the present case, the same sense may be produced in different pictorial genres.[12] Third, however, there may really be a place in semiotics for a study of "significant forms" which cuts across the divisions of photography and painting, and even of visual and other discourses.[13]

There may actually exist *other* pictorial categories than those which are explicitly recognized in our culture; and there may thus be similarities, for instance, between a photograph and a painting; but it is not to be understood why we should study these at the expense of the former categories, which are certainly primary on a social level. The exceptional existence of such similarities does in no way diminish the importance of characterizing the socially received categories.

But, of course, the fundamental issue here is to find out what Floch is really doing in his text analyses, but this is not quite easy, for in actual fact, each one of Floch's studies appears to be somewhat different. Thus, there is his analysis of the advertisement for the cigarette brand "News", which basically involves a photograph, and which, in the only directly analysed variant, is a photograph *of* other photographs (Floch 1981); here, Floch himself claims to be using the same approach as employed beforehand on Kandinsky's semi-abstract painting *Composition IV,* and although there are in fact important differences between these two analyses, which we have noted elsewhere (see Sonesson 1989a, p. 150 ff.), the basic operations pertaining to expression and content of the iconic and the plastic layers are identical. However, the resulting similarities are so general that they could hardly be said to delimit any peculiar kind of discourse, which cuts across the divisions of abstract painting and photography. In both cases, as in many others, Floch discovers a plastic organization in terms of binary contrasts, in particular that between continuity and discontinuity, and mounted on the Lévi-Straussean proportionality.[14] If these are not properties of all discourses, as Floch perhaps thinks, then at least they do not seem capable of defining new categories of discourses, simply because they are too abstract.

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[12] In a structure, as I noted in Sonesson (1989a, p. 81 ff.), the parts interact and so mutually modify each other, or even create each other, as is the case of the phonological oppositions. Thus, if the semiotic function is structural, as it certainly was to Hjelmslev, content and expression cannot be freely exchanged and recombined, as the Greimaseans think.

[13] The latter is more doubtful, in any case. For instance, if we define iconicity as "un effet de sense de 'réalité'" (Floch 1984a, p. 12), we will easily find it also in verbal discourses; but by admitting this definition, we have already given up the peculiarity of iconicity, and we have deprived ourselves of the possibility of discovering that there is a peculiarity of pictoriality, inside that of iconicity (Cf. Sonesson 1989a, p. 201 ff.).

None of the other analyses, all concerned with what must, at least *post festum,* be qualified as artistic photography, are as complete as the "News" analysis in the range of methodological operations applied. Another analysis, which, however, comes close to account for a picture totally, though with much less explicit formalization, is the one concerned with Cartier-Bresson's "Les Arènes de Valence" (Floch 1984b). Yet this analysis would seem to ignore many important aspects of the photograph, in particular as far as the plastic layer is concerned (which is precisely why we have chosen to sketch our own analysis of this picture in Sonesson 1989b, 1992). Although Floch does point to the similarity that this photograph holds with a collage, which would make it into a false photomontage, he does nothing to establish this category as having its locus on a deeper level. Nor does he attend to the difference between the photograph and a collage.

The other photographic analyses are undoubtedly more heavily focused, for rather than aiming to account as completely as possible for one unique photograph, they are clearly designed to illustrate particular conceptual issues. Thus, when Floch (1982) occupies himself with Doisneau's "Fox-terrier sur le Pont des Arts", he is out to inform us about the meaning of "iconicity" to the Greimas school, which turns out to be a question of make-believe, and the analysis is consequently entirely on the iconical level, and, even more narrowly, purely narrative. As for Floch's (1984a, p. 21 ff.) study of Boubat's "Nu", it deals with the nature of contrasts, and it is thus of general interest to pictorial semiotics, rather than contributing to the establishment of any new demarcations between pictorial kinds. For, although unlike Lindekens's "contrasted versus nuanced", Floch's contrasts are not peculiarly photographic, they do not define categories.

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[14] In view of the question concerning the generalizability of binary contrasts, which I formulated in Sonesson (1989a, p. 132 ff.), is interesting to note that Floch (1986a, b, p. 26) actually claims that it is because visual messages are not naturally resolvable into discrete parts, that he has chosen to centre his interest on such pictures as are organized around binary contrasts of value, colour, shapes, and so on. This would seem to imply that Floch would recognize the existence of pictures that are not binarily built, but it does not answer the query whether those features, which are discovered by means of binary contrasts in some pictures, are then thought to be projectable to pictures lacking contrasts.

More to the point are two others analyses. In the first of these, Floch (1986a, p. 85 ff.) tries to convince us that one photograph by Stieglitz and one by Strand, taken to epitomize the respective *œuvres,* may be opposed to each other as are the baroque and the classical, according to the five terminological couples which Wölfflin applied to paintings. These comparisons are problematical for numerous reasons, both in themselves, as defined by Wölfflin, and as transposed to photography by Floch. It would take us too far, however, to consider these issues here. The second analysis is concerned with Brandt's "Nude" (Floch 1986a, p. 113 ff.), which Floch (p. 117) compares to Matisse's cut-outs, without pursuing the analogy any further.[15]

In conclusion, then, Floch's analyses fails to establish any new division blocks of visual discourses, nor do they seem to serve our purpose of defining socially received picture categories; but they do seem to contain some suggestive analogies, which may serve as a point of a departure for other analyses.

19.1.9 The Semiotics of Photography in Later Years

Already in my main *œuvre* (Sonesson 1989a), I discussed photography in connection with the notion of indexicality. While this work was still in the process of publication, I also (Sonesson 1987) entertained, in an internal working paper, the suggestion to divide picture categories according to three different principles of classification: the character of the *link between expression and content* (separating, for instance, painting and photography), the *socially intended effects* (caricature, advertising, and pornography being among those most clearly defined), and the *social channels of circulation* (separating the postcard from the poster and the illustration in the weekly review; cf. Sonesson 1992). Furthermore, in another internal working paper, I (Sonesson 1989b) wrote a critical exposition of the semiotics of photography, as propounded by Vanlier, Dubois, and Schaeffer, pinpointing the confusions of all these approaches, while trying at the same time to develop and specify their idea of photographic indexicality. The main result of this work, which has been extended in several later articles (Sonesson 1994, 1998, 1999b, 2000, 2001, 2003a, b, 2005), in particular in relation to television, holography, and virtual reality (Sonesson 2001, 2003a, b, 2005), is, on the one hand, to oppose the local mapping rules of chirography (handmade pictures) to the global rules of photography, and, on the other hand, to insist on the primacy of iconicity also in the photographic sign.[16]

Marner (1999) has written what is probably the only extant monography discussing the work of a single photographer, the Swede Christer Strömholm, using the methods of visual and cultural semiotics. Marner's 1999 dissertation bears the title, in translation, "Canned Feeling—Surrealism in the Photography of Christer Strömholm—A Semiotic Inquiry". Marner's thesis develops a model of rhetoric as consisting in making something more familiar or more estranged in relation to the I-here-now situation of the lifeworld. The model builds on the values of "high" and "low", and the figures of estrangement and familiarity, as directions, which goes to and from the I-here-now position. A model of a rhetoric of time is also employed. In relation to the I-here-now-position, retroactivity and reconstruction are seen as ways of construing the past, while on the other hand, anticipation versus contemporisation (the imposing of contemporary structures) are considered to be relations to the future. The rhetoric models have the ability of approaching or departing from a here and now while accounting for the history of (a) photograph(y). Marner views the rhetoric of time in the light of my distinction between a centripetal and centrifugal force, especially as evident in modernism's ambiguous tendency to include new media, but also to cultivate the isolation of art as art (cf. Sonesson 1999a). In this view, reconstruction and contemporisation become centripetal figures in their capacity of being capturing practices, while retroactivity and anticipation, to the extent that they focus on singular aspects, may be regarded as centrifugal. The essential contributions of Marner thus concern the surrealist rhetoric manifested in Strömholm's photographs, and the myth created by the artist around his personality (cf. Marner 1997, 2002). As far as the semiotic nature of photography goes, however, Marner simply makes my critical position into his own.

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[15] It so happens that I have elsewhere attempted an analysis of some aspects of Matisse's cut-out "Nu bleu IV" (cf. Sonesson 1989a, p. 310 ff.), and that I had independently been struck be the similarities between this cut-out and Brandt's "Nu"; this is why I have also studied the similarities and difference of these two pictorial kinds in Sonesson (1989b).

[16] The discussion of post-photographic images would take us too far in the present context, but two relatively recent contributions to this study, apart from our own work, must at least be mentioned here: Maldondo (1994) and Barboza (1996).

Nothing very new seems to have happened in the semiotics of photography in the past few decades. Among the most recent publications, with a distinct theoretical bent, are two books by Dondero and Bassi (2008, 2011), but it is not clear that they add anything to my conception.

19.2 Beyond Indexicalism in Photographic Semiotics[17]

According to Dubois (1983, p. 20 ff.), it will be remembered, the first semiotical theories tended to look upon the photograph as a mirror of reality, or, in Peircean terms, an *icon*; then came that most famous generation of iconoclasts who tried to demonstrate the conventionality of all signs, claiming even the photograph to present a coded version of reality, or, as Peirce (according to Dubois, at least) would have said, a symbol; and finally, the photograph was seen for what is really is, an *index*, a trace left behind be the referent itself. While there is no reason to subscribe to Dubois's unilineal story of progress, these distinctions do furnish us with a handy classification of the relevant epistemological attitudes, which will then serve as a background for the subsequent discussion.

The authorities quoted by Dubois from the first period are in fact largely presemiotical: Baudelaire, Taine, Benjamin, Bazin, but also Barthes. Most of the minor classics of semiotics are mustered for the part of the symbol-loving team: Metz,

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[17] The following discussion is a somewhat updated summary of the argument in Sonesson (1989b).

Eco, Barthes (once again!), Lindekens, Groupe μ, and so on. In the part of the daring moderns, we find, apart from Dubois himself, such writers as Bonitzer, Krauss, Vanlier, and Peirce, of course, but also already Barthes, Benjamin, and Bazin, when viewed from another angle of vision.

In the following, I intend to initiate an in-depth discussion of some of the theories pertaining more specifically to the nature of the photographic sign. I will follow Dubois in considering these theories under three divisions: such theories which take the photograph to be essentially an icon, those that claim it is as conventionally based as other pictures and/or as verbal signs, and those that claims its nature can only be derived from indexicality. But there are really no theories to discuss about the iconical nature of photography, in the sense that there are no arguments for this position; all through most of photographic history, it has simply been taken for granted. One exception may be Barthes's enumeration of the respects in which photography differ from drawing. Thus, I have considered this conception, together with the opposite, conventionalist argument, in my first subsection. Then, I have reviewed critically the claims for indexicality, as presented by Vanlier and Dubois. Although Schaeffer also defends an indexicalist position, though a somewhat more moderate variant of it, his theory will be considered under a separate heading, simply because I came to acquaint myself much later with his contribution. In fact, it will be seen that some of the critical observations I have directed at include: Vanlier and Dubois have been anticipated by Schaeffer; other, however, remain valid also for Schaeffer's theory.

Before we enter the discussion of photographic indexicality, it will be convenient to establish a rough categorization of the pictorial construction types, and to give photography a place in that taxonomy. Sonesson (1989a) followed the psychologist Gibson in admitting a primary distinction, among those signs which are markings on surfaces, between *photographic* and *chirographic* pictures, that is, literally, pictures produced by the workings of luminosity on the surface, and pictures the markings of which are made by hand. According to Espe (1983b), however, graphics, which comprises all kinds of manipulations of two-dimensional surfaces, is really of three kinds: *photographics, chirographics,* and *typographics*. Like the term photographics, that of typographics here retains is ordinary sense, but it could perhaps also be conceived to mean, more broadly, the production of markings on surfaces by the use of standardized implements.

This brings us in the cognitive neighbourhood of another classification, proposed by Gubern (1987b, p. 46 f.),[18] which distinguishes between *chirographic* pictures, such as drawings, and *technographic* pictures, which is a group comprising photography as well as pictures produced by the cinematographic camera and the video, and which could perhaps also be made to include what Gubern (1987a, p. 73 ff.) elsewhere terms synthetic pictures, that is, pictures produced by means of a computer.[19] It is not actually the same classification, however: in spite of not being hand produced, neither photographic nor cinematographic pictures, nor all synthetic pictures are created using standardized elements, as is the case with typography; indeed, it is one of the remarkable feats of desktop publishing that it de-standardizes type fonts, permitting them to vary along a number of dimensions (size, obliqueness, etc.), thus bringing them closer to being pictures.

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[18] This is only part of Gubern's classification, which also distinguishes pictures accordingly as they are autogenerated or exogenous, private or public, bidimensional or tridimensional, and fixed, sequential, or mobile. More to the point, for our present purposes, is Gubern's threefold division of all visual information into the *visible natural world,* the *visible cultural world,* and the *gestual system,* where then those parts of the visible cultural world that are specifically destined to visual communication are separated into *writing* (Espe's typographics), *pictures,* and other kinds of *signalling devices*. Gubern may be right, from a certain point of view, in letting the branch of typographics separate out earlier than the others, since they do not contain pictures in an ordinary sense, but our point of departure here is the more general category of markings on surfaces.

This breaking up of the association between that which is machine made and that which is standardized is a characteristic feature of information society (at least on the face of it), but it really already began with photography and the cinema. However, what is more remarkable, from our present point of view, is that synthetic pictures, which, as Moles (1981) notes, may look exactly like photographs, do not regulate themselves on anything like contiguity, but are rather (indirectly) mediated by similarity.[20] That is, traditionally all hand-produced pictures regulate themselves on similarity (they depend on what Gibson calls the hand–eye system),[21] whereas all machine-made pictures are indexically derived—until this simple organization is destroyed by computer graphics.

19.3 The Nature/Culture Debate in Photography

There has been a common understanding, from the inception of photography onwards, that the photograph, even more than any other kind of picture, constituted a natural sign par excellence—or, more exactly, it was taken to be so intimately associated with the object depicted, with no distance being involved, that it could not even be considered a sign. To Fox Talbot, photography was "the pencil of nature"; and those who denied to photography the capability of being art, thought the photographic plate was produced, for good or for worse, as a direct emanation of the motive itself (cf. Freund 1974; Gubern 1987b, p. 145 ff.; Ramírez 1981; Scharf 1968; Tausk 1977). Indeed, the idea of photography being an emanation detaching itself from the object's (or at least the subject's) soul was taken quite literally by Balzac, at least as his theory of spectres is recounted in Nadar's memoirs (cf. Krauss 1982).

However, Barthes may have been the first to state explicitly the respects in which the photograph could be supposed to be more close to its object than other pictorial kinds. Only photography, he claims (Barthes 1964a, p. 34 f.), is able to transmit a message, without using either discontinuous signs or rules of transformation. That a drawing, on the other hand, must be coded (that is, comparatively conventional) and appears, in his view, from three considerations. First, the rendering of the object in the drawing is dependant on historically variable, and systematic, rules of transposition. Second, no object can be transposed to the drawing without a selection having been made beforehand from all the properties possessed by the object in the real world, and this selection gives rise to style; whereas photography is unable to intervene in the internal details of the object it renders (and thus, Barthes would seem to say, it lacks style!). Third, drawing ability has to be learnt, as must the use of any other code (but photography, Barthes apparently implies, is innate!).

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[19] That is, at least some subgroup of computer-produced pictures, whereas another subgroup may, as far as its productive link is concerned, come closer to freehand drawing.

[20] Thus, if postmodernism is really epitomizing the indexicality character of photography, as Krauss would like us to believe, it is a latecomer to the game, for the most "revolutionary" images of today are not indexicality based!

[21] It includes hand-held tools. There is a problem, of course, in determining the limits between such tools and certain simpler kinds of machines.

These arguments, which may certainly appear somewhat naive, should not be rejected offhandedly, which is what Floch (1984a, p. 26) does. Instead, let us have a look at them in turn, beginning from the rear end. But it is interesting to note, before we go on, that the historical nature of drawing is doubly affirmed: both in the characterization of its working principles (first aspect), and when the necessity of their inculcation is claimed (third aspect). Actually, this historical character is again included in the second aspect, when it is said to produce style. And even more deep down, what is implied by all three aspects is really that drawing allows a choice, even if that choice is historically fixed: but even so, that may not really be the same thing as arbitrariness in the sense of Saussure, which to structural semiotics only makes something into a sign (and we will return to this issue below).

There is something true, of course, in the observation that the ability to draw has to be learnt, whereas photography may seem to be a possibility open to everyone without any preceding training. Gubern (1987b, p. 46) comments on the apparent paradox of chirographic agraphy being nowadays much more common than a technographic one. It is not clear what this means, however. Small children presumably always begin to draw, but we ignore it they would do it spontaneously, without incitement from parents or teachers (cf. Gardner 1973, 1980); but it is even less obvious that we should expect babies to start taking photographs all of their own. In fact, to the extent that a photograph may be produced, as the Kodak slogan goes, simply by pushing the button, the child should be able to discover the method; but on the other hand, the functionality of the camera would seem to be much less apparent than that of the pencil, and thus harder to detect. Of course, not even Barthes would argue that the ability to take photographs is really innate; but like the ability of decoding pictures generally, to acquire it may require experience of the world, rather than experience with pictures (cf. Sonesson 1989a).

On the other hand, if we take drawing ability to imply the capability of producing the illusion of a likeness, a lot of inculcation may be necessary for someone to gain this ability, and may not even be sufficient, as most of us have been trained to draw at school for years, and are yet unable to draw in this strong sense of the term. Indeed, it is possible that no children would proceed from the phase of making scribbles of a surface to intended depictions, unless guided on the way by the expectations of adults. But then again, if some stronger requirement than being able to push the button is put on photography, we should certainly discover that some degree of training is indispensable. However, it seems to be a fact than any one of us may pick up a camera, decide on a motive, and produce at least a rough likeness, while being unable to do the same thing using pen and paper.

If drawing ability requires training, and photography less so, then this is not a fact about the nature of drawing and photography, but a consequence of their different nature. That is to say, Barthes's third aspect is not really on the same level as the other two. So now we should inquire into the possibility of some of the other aspects being the requisite cause for the different need of training. Actually, we are not concerned with two independent phenomena: rather, what we have in the case of drawing, according to Barthes, could be paraphrased as 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 emphasizing 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* (cf. Sonesson 1989b). Stated in this way, the theory certainly seems feasible. The question is, would it not also be valid for photography?

Indeed, photography must suppose some rules of transposition, at least as far as the two-dimensional rendering of three-dimensional objects is concerned. Each two-dimensional dot on the photographic plate actually assembles the coordinates of a three-dimensional spot in space (and, of course, in time). These rules of transposition, whatever their origin, are built into the optical apparatus which is a part of the camera giving rise to the images, and are thus not mediated by the consciousness of the picture-producing subject. It is of little avail to determine to what extent the photographic perspective is a direct, historical descendant of Alberti's devices for transposing space into drawing (for that kind of argument, see, for instance, Ramírez 1981, p.16 1 ff.); for pictorial perspective, while it is not identical to real perceptual perspective, is certainly in no way arbitrary (cf. our discussion of perceptual psychology in Sonesson 1989a). Rather, the point is that *these rules, even if originally conventional, are incorporated into the apparatus, and thus not present to consciousness in the actual process of picture production,* but are pragmatical givens, prior to the inception of that process, just as is the subject matter itself.

Is it then true, as Barthes (1964a, p. 34 f.) suggests, that

> le dessin ne reproduit pas tout, et souvent même fort peu de choses, sans cesser cependant d'être un message fort, alors que la photographie, si elle peut choisir son sujet, son cadre et son angle, ne peut intervenir à l'intérieur de l'objet (sauf truquage)?

Of course, there is an obvious sense in which we must object that nor does the photograph render all of the object, and this is so in part for reasons that Barthes himself goes on to quote in the text above. Indeed, I have noted elsewhere three "intrinsic indexicalities of picturehood" (cf. Sonesson 1989a, p. 60 ff.):

> (IVa) A factoriality between the content and the referent, i.e. between what is seen in the picture and what is thought to be "there" in the world (between the picture object and the picture subject, in the terminology of part III.) The referent can probably never be rendered

> in its entirety in a picture: we will have to make a choice among the possible noemata, the possible attributes, or both, and maybe also among the proper parts, and obviously (if we exclude X-ray pictures, and so on), we are limited to attributes and noemata having the attribute visibility (cf. I.2.4.). (IVb) Protained continuities (cf. I.2.4.) from the expression plane of the picture to the expression plane (and thus the content) of other pictures, real or only possible ones. This indexicality type is often complementary to the first one. (IVc) A contiguity, more precisely an abrasion, between the expression and the second element, which may sometimes be the referent (as in photography, according to Peirce).

In fact, apart from the imprint of the object left on the photographic plate, which so much interests Dubois, Vanlier, and Schaeffer, and which is our last type of indexicality, there are at least two other kinds of indexicalities,[22] intrinsic to every picture, and thus also present in photography: the factoriality, or part/whole relationship between the content and the referent, which may be conceived in terms of attributes, proper parts, and/or perceptual perspectives, and the continuities extending from the lines of the expression plane interrupted by the border. These latter two types of indexicality confounded are also considered to be peculiar to photography by Dubois. This may be exaggerated, but they are certainly *present* in photographs, too (cf. Sonesson 1989b).

In terms of the factoriality between content and referent, however, Barthes may be taken to claim that photography is able to pick up particular proper parts ("son sujet", "son cadre") and perceptual perspectives ("son angle") of the whole motive, but cannot choose 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. So far, 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).

Now we know from cognitive psychology and brain research (see Gardner 1982, pp. 283 ff., 322 ff.; Gardner 1984, p. 173 ff., discussed in Sonesson 1989a, p. 97 ff.), that centres in both halves of the brain are involved in the production of an ordinary drawing, the right half contributing contours, configurations, and overall organization, and the left half determining the details and inner elements, and the richness of their variation. In Piagetean terms, both figurativity and operativity are required. But since the elaboration of a photograph seems to be consciously mediated merely on the global level, we should expect photography to be a much more exclusively figurative business. Put bluntly, photography does not require any real perceptual analysis on the part of the photographer.

Both Gubern (1974, p. 50 ff.; Gubern 1987b, p. 156 ff.) and Ramírez (1981, p. 158 ff.) have made lists of the various ways in which a photograph is different from that reality it is supposed to render. It seems that, in all these cases, we are confronted with modifications that are *globally* applied to the depicted percept. In the following, these rules of transposition are listed (those of Gubern are marked G, and those of Ramírez R), and I have tried to distinguish those which are valid for all pictures from those which affect photographs only, and those to which all photographs are subject from others which are largely optional (cf. Sonesson 1989b).

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[22] Indexicalities, as they are defined in Sonesson (1989a), are not indexical signs, because they fail to fulfil the requirements of having discontinuous parts, but under certain circumstances, they may be exploited for the building of signs.

(1a) The abolition of the third dimension applies to all pictures, but the possibility of modifying perspective by means of exchanging objectives is of course peculiar to photography (G); (1b) the projection of real-world three-dimensional space onto a surface of two dimensions, using perspectival grid, may apply to all pictures, but is obligatory in the case of photographs (with the exception of photograms; R). Perspectival systems, as used in photography, must be globally applied. In drawing and painting, if used, they are always locally modified, at least to adapt to common objects, whose shape is better known than seen. (2) The delimitation of space through the frame is something that applies to all pictures. However, only in the photograph can this delimitation be specified by the formula $f{:}h = d{:}c$, where the dimensions of the included space (c) depends on the focal distance (f) of the objective, the distance between the camera and the motive (d), and the size of the photo (h) (G). There is no formula for determining the corresponding dimensionalities of the drawing, since this cannot be globally determined.

(3) The *exclusion of movement* is also true of all pictures (that is, of all static pictures, and not, most notably, in the cinema; G). Gubern clearly thinks of the movement of the motive, but there is also a limitation of the gaze itself, as noted by Ramírez in point 4 below. (4). *Monofocal and static character of vision* ®. Most pictures are monofocal, that is, they depend on Cyclopean vision, although cubism and split representation are exceptions among chirographic pictures. More importantly, perhaps, the static character of vision means that in addition to the movement of the motive that of the subject is excluded. Of course, early photography, with its long times of exposition, really assembled information from the motive over a large period of time—but the result was very different from the perceptual syntheses of ordinary human vision.

(5) *Granular, discontinuous structure of the expression plane* (though largely irrelevant because of perceptual limitations of the human eye; G) is of course characteristic of photographs (though may be imitated by the filters of computer graphics programs). Curiously, even Vanlier and Dubois insist on this granular character of photographic representation, and Lindekens is of course intensely concerned with it. However, as Gubern suggests, this granular structure is largely irrelevant, and it has nothing to do with features of a linguistic kind, for the same reason that Eco's typographic screen has nothing to say about the nature of pictorial expression (cf. Sonesson 1989a, p. 241 ff.).

(6) The abolition of colour in black-and-white photography and the distortion of colour in colour photography; possibility to modify colours, their luminosity and saturation (G) exist to some extent in all pictures. Of course, "photographic colours", as Husserl (1980) put it, are unable to render the range of colour differences in perceived reality; but we know from perceptual psychology that this range

is even more diminished in painting, and even here largely on a global level. (7) Possibility to modify the scale of reproduction (G), this possibility (which is almost always taken advantage of) is present in all picture making, but only in photography is there a necessity for such a rescaling to apply globally.

(8) The *abolition of non-visual stimuli* clearly applies to all pictures (so far, at least; G). (9) Finally, three is the limitations to scenes having a certain range of luminosity ®—that is to say, since photography requires light, there are certain scenes, to which our eyes may be able to adapt sufficient to recognize at least some shapes, that cannot be rendered photographically.

Although Ramírez talks about photographic conventions, his rules do not go a long way to conventionalize photography, and Gubern does not even make that kind of claim. Lindekens, however, is actually out to establish the conventionalist character of photography, in a sense comparable to that in which verbal language is so considered. Putting together the accounts assembled from different texts, I believe that Lindekens, in addition to a rather unclear argument for double articulation, may be said to offer us essentially two phenomena for consideration. There is the mutual dependence of contrasts and nuances, which cannot both be true to reality, which we considered in the first section. And there is the possibility to redefine, by means of high contrast, the limits of real-world objects in the photograph. Both these factors really concern modifications of the referent as transposed into photography, but are they global changes?

We have already observed that Lindekens's opposition contrasted versus nuanced has nothing to do with a linguistic opposition, in spite of Lindekens's own claim to the contrary. But clearly, the dependence of contrasts on nuances is a restraint on the possibilities of transposing objects into photography, and as such it applies to the photograph as a whole, whereas in a drawing, contrasts and nuances are freely correlated. Also when high contrast is used to redefine the limits between objects, this contrast applies to the photograph overall. Since the photograph must be focused somewhere, it is clear that effects like these will not manifest themselves equally all over the photographic surface. However, this does not mean that local decisions become possible also in the elaboration of the photographic expression plane (this is only true of the subsequent treatment of the emulsion), but only that the global decisions have a thematic centre where they apply fully, the consequences being less determinate, or less developed, as we go from the centre.[23]

Even if, contrary to Barthes, I have admitted that even the photographic images obey certain rules of transposition, I have not thus far established the arbitrariness of photography, in the sense in which Saussure uses this term. Indeed, a rule of transposition supposes there to be some entity that is transposed, however changed, as a result of the process. Let us now consider the double sense of arbitrariness in the work of Saussure, and compare them to some of the ways in which convention enters photography (cf. Sonesson 1989a, p. 201 ff.). In the first sense, it is affirmed that there is nothing consubstantial to the thing designated and the sound used to indicate it, these sounds being different from one language to another. As compared to this, it is true that the photograph, as any picture, is a surface, while that which is depicted is most of the time a three-dimensional object; but both are visually characterized phenomena, creatures of light, so to speak, and they give rise to an impression of similarity.

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[23] See the discussions of Vanlier's "minceur de champs" in the following subsection!

In the second sense, it is claimed that the way in which verbal signs cut up and parcel out reality does not obey any rule intrinsic to reality itself, and so is arbitrary, and shifts from one language to another. However, even in the case of verbal language, this is only relatively true: first, it is certainly more plausible to think that the segmentation of the world accomplished by language follows the one laid down beforehand by the particular sociocultural lifeworld; and second, we have nowadays substantial evidence from cognitive psychology which tends to show that the differences in categorization are not so great, at least on elementary levels, as was once thought (cf. Sonesson 1989a, p. 65 ff.). Although photography, perhaps more than any other kind of picture, is able to detach things from their perceptual context, it does not offer a new segmentation of perceptual reality in a strong sense. Actually, photography can only be said to be arbitrary in a third and a fourth sense: in that it renders only some particular portions of perceptual reality (visual reality, under certain conditions of luminosity, etc.), and that it reproduces this reality as far as this is possible given the nature of its support (the emulsion, the optical device, etc.). This directly brings us to the issues treated in the next subsection.

Before we proceed to our discussion of indexicality, however, two other concerns will retain us briefly. First, there is Lindekens's belief that a double articulation, and thus conventionality, can be established in photography, since the latter theme has traditionally been linked to the former. I consider this argument ruled out by our general study of pictorial semiosis (in Sonesson 1989a, p. 251 ff.). If minimal units are to be considered, then Vanlier's observation that, whereas drawings use lines, those of photography are patches ("des plages"), is more to the point; still this leaves us with the question of how to differentiate, for instance, photographs and cut-outs.

Second, it should not go unmentioned here, that whereas photography, because of its lesser degree of conventionalism, may seem to stand further apart from the prototypical sign than chirographic pictures, it at the same time acquires for picturehood one of the other traits usually associated with the sign: repeatability, or *iterability*. Ivins (1953) early on insisted on the historical importance of the introduction of means for rendering the picture identically repeatable, the first of which were engravings, in particular as used in floras. But of course, engravings do not repeat indefinitely, each printing involves at least some small modifications, and, before the addition of photographic processes, later prints could only indirectly convey the facture of the original. As is well known, Benjamin (1974) thought only photography would make possible the reproducibility of the pictorial sign (or, more precisely, of the work of art). More recently, Ramírez (1981, p. 17 ff.) has conceived the whole development of a visual mass culture as a progressive iconographical densification, that is to say, an augmentation of pictures per inhabitant on the globe. When more closely scrutinized, this densification is actually seen to involve at least three different processes (not properly distinguished by Ramírez):

1. That the production of images having been made less costly, in particular in terms of what Moles calls the time-budget, the number of images-types have been increased.
2. That since the means of reproduction have been perfected, more and more adequate images-tokens may be made from each image-type.
3. That images that were at other times only accessible in a small number of spaces, such as churches and palaces, are now circulated more widely—and, if we think of such channels as television and reviews, more actively circulated, issued somewhat more explicitly as directed messages, thus being more similar to verbal messages. The Internet obviously permits an even wider circulation, but, on the whole, the message may appear to be less actively circulated (except in e-mails).

There is a final paradox to be considered, however. Ivins pinpointed the importance of repeatable reproduction for scientific work, in particular as used in biological treatises; and, according to my argument, repeatability of pictures is perfected by photography; and yet, even today, floras continue to use drawings rather than photographs. This is because in a flora, not only the original must be identically reproduced but also the former should reproduce the plant-type, not a unique plant, and for reasons of which Barthes was clearly aware, chirographic pictures more easily leave out irrelevant attributes than photograph (as discussed above). What this means, then, is that what photographs reproduce is, at least in a comparative sense, not the object-type, but singularity. This explains that, much later, when reflecting on photography, Barthes (1980, p. 21) would dream about a *mathesis singularis* (also cf. Delord 1986). Yet he fails to see, that although the production of photographs is singular, its sign function is not.

19.3.1 Introduction to a Theory of Traces: Aspects of Indexicality in the Work of Vanlier

Let us now have a fresh look at the nature of photography, considered this time from the point of view of indexicality. I will scrutinize the somewhat overlapping yet distinct theories on this matter that were developed more or less at the same time by Vanlier and Dubois. It should be clear from the beginning that in what follows, I can only pick out a few of the themes touched on by these authors. To familiarize oneself with their full theories, there is, as always, no other method than to read their books.

I shall have no quarrel with what, on the face of it, appears to be the essential issue: there is actually an indexical relation, in this case a contiguity, between the photographic expression plane, and one or more objects present in the real-world situation in which the photograph was produced. In terms of my earlier investigations, however, an *indexicality* is not yet a sign (cf. Sonesson 1989a, p. 30 ff.). Thus, we still have to inquire into the nature of that kind of indexicality which is present in photography, to see if it is susceptible of being the carrier of a sign relation; and then we have to investigate if in actual fact it does carry one, and if it always does. In my discussion of the work of Vanlier and Dubois, I in particular hope to address the first issue.

When photographs are said to be indexical, *contiguity* is always meant, and a particular kind of contiguity at that: a contiguity close enough for the referent to rub off on the expression plane of the sign, albeit not contemporaneous with the semiotical functioning of the sign, but more or less anterior to it.[24] Inspired by the parallel between Peirce's conception of indexicality and abduction, and Sherlock Holmes's famous method, which has been explored by Sebeok, Eco, and others, I have suggested elsewhere (in Sonesson 1989a, p. 30 ff.) to term *abrasion* an indexical relationship resulting from *the fact of what is to become the referent having entered into contact with, on some prior moment of time, and then detached itself from, what later is to become the expression plane of the sign, leaving on the surface of the latter some visible trace, however inconspicuous, of the event*.

At this point, it will be useful to attempt a more systematic description of abrasion, so as to locate it among other kinds of indices. In an earlier work (op. cit.), I have argued that there are essentially two kinds of indexical relationships, that of *factoriality,* by which term I refer to the relation from part to whole, or the inverse, and that of *contiguity*. In the case of abrasion, it is contiguity, not factoriality that is involved in the constitution of the indexical relation; in particular, it is direct contact, not mere contiguity that is so involved. Furthermore, the event producing this contact took place at a moment prior to the use of the sign as a sign, not at the same time, or before it; and it left some traces of its occurrence on the object presently functioning as the expression plane of the sign, so that the interpretation of the sign is not entirely given over to abductions based on historical knowledge. So far, all I have tried to do is to clarify the common-sense notion of abrasion, in particular so as to include among its number not only the "trifles" scrutinized by Sherlock Holmes but also the photographic picture. It must be left to the following discussion to find out if this conception is feasible, or if it has to be modified.

Now, let us have a look at Vanlier's interesting observations on the nature of photographic indexicality. He begins by making a host of distinctions, the first of which concerns what the photographic imprint is an imprint of, and which is very much to the point, which makes it all the more regrettable that he later forgets to make use of it himself, and the second of which implies, by the contrast of terms in introduction, that it is not really the Peircean notion of indexicality which is employed. Indeed, Vanlier remarks that the photograph must be taken to be a direct and certain imprint of the photons only, and merely an indirect and abstract one of the objects depicted. Thus

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[24] It is because Barthes always maintained, from his earliest to his last work on our theme, that the photograph conveys the idea, when observing the scene depicted, of "cela a été", that Dubois is able to muster him also among the supporters of indexicality. But this is of course a very indirect way of invoking indexicality, for it merely attends to the temporal aspect (on which see my discussion of Schaeffer below), not to the contiguity from which is may be taken to result, nor its particular modes. That is, Barthes reads indexicality on the purely ideological plane.

> Il ya donc eu un événement, l'événement photographique: la rencontre de ces photons et de cette pellicule. Cela a certainement été. Quant à savoir si à cet événement physico-chimique en a correspondu un autre, un spectacle d'objects et d'actions, dont les photons empreints seraient les singaux en tant qu'émis par eux, c'est beaucoup plus problématique et demande à être soigneusement précisé. (Vanlier 1983, p. 15)

One should expect, then, that Vanlier would find it necessary to problematize the requirement of similarity in photographs, that is, the obligatory correspondence of a photograph to a recognizable scene susceptible of taking place in the ordinary experimental world, but as a matter of fact, he never broaches the theme. Dubois does, however, as we shall see, for he selects as the typical instance of a photograph what has been variously termed a Rayogram, a Schaadogram, or a photogram: the direct impression by contact of the (more or less deformed and often unrecognizable) shapes of objects placed directly on the photographic plate, and subjected to a light ray taking its origin on the opposite side of the objects.[25]

We will have to judge this analysis on its own merits later, but we should already take notice of the curious fact that, only a few pages after having attributed all imprecisions of the theories of photography to the confusion between the photons and the objects (p. 15), Vanlier himself starts telling us that the indices signal their cause, which is the scene (“des indices, qui signalent leur cause, le spectacle”; p. 23; “renvoient à leur cause (à leur spectacle éventuel)”; p. 25), and then goes on all through the book contributing to the imprecisions he originally denounced!

There is, however, another problematical features of this approach, and that is that while we may certainly be on safer ground in claiming the contiguity relationship to hold between the plate and the photons, than when we attribute this same relation to the expression plane of the photograph and the objects depicted, there can be no doubt that, when the photograph is seen as a particular kind of pictorial sign, this is because it is taken to be a *sign of* the objects depicted and/or of the real-world scene in which the objects are present. *The contiguity relationship potentially characterizing an index does therefore not obtain between the same relata as the semiotic function, defining the sign as such, and there thus would not be any indexical sign present in this instance* (cf. Sonesson 1989b). In fact, even in the case of the photogram, the sign relation connects the photographic surface and the objects, not photons or light.[26]

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[25] It is interesting to note that Schaeffer (1987, p. 59 f.) explicitly rejects the photogram as a candidate for consideration, although he does not mention Dubois’s divergent opinion. However, it certainly seems clear that the photogram is not the first instance of a photograph we would think of, and thus not the one from which the properties of the prototypical photograph may be derived. Cf. discussion of Schaeffer in II.4. below!

[26] Schaeffer (1987, p. 59 f.) suggests we should distinguish scientific uses of the photogrammatic technique, as those of Fox Talbot, from the abstract compositions of Moholy-Nagy, and the surrealistic-figurative works of Man Ray. However, if the objects are recognizable or not, their presence in the confection of the photograph remains an essential definitional criteria of photograms, and they are thus involved in the sign relations characterizing the photograms as such. Similar shapes may equally be produced by applying some implement directly to the photographic emulsion, but the result is then no photogram.

This may not be too serious in the context of Vanlier's own theory, for the next distinction introduced will anyhow bring us out of the Peircean framework into a conceptual no man's land.[27] According to Vanlier, we should distinguish "des index" and "des indices", a proposition that is impossible to translate into English, since the first term employed there is merely to express the singular, while the second one is used only in the plural. Of course, if the distinction as such were found useful, it would be possible to find some alternative terms to do the same business. So let us have a look at the conceptual point that Vanlier (p. 22 ff.) is out to make.

Signs, in Vanlier's view, are intentional, conventional, and systematic. However, some signs, such as sculptures and paintings, are analogical, because there is a kind of proportion between them and that which they designate. Other signs, however, like words and digits, are digital, because they designate things by means of labelling them in terms of a system, which is reducible to a set of binary choices between one and zero.

Those things that Vanlier wants to term "des indices" are neither intentional, nor conventional, nor systematic: they are physical effects of a cause, which they indicate in an equally physical way.[28] The general category, of which these are a type, and which is opposed to signs, is termed signals by Vanlier. As against this, there are what Vanlier calls "des index", typified by the index finger and the arrow pointing to an object, and these are signs, because they are intentional, conventional, and systematic, although they are very elementary kinds of signs, for they do not designate anything, but they only indicate it. Interestingly, Vanlier (p. 23) apparently thinks photography importantly involves also this latter type of sign: it is present when, by means of the choice of film, lighting, or a particular type of frame, some part of the photograph is isolated for particular attention. Here we encounter, among others things, a number of effects that to Dubois are still indices, in the Peircean sense, and which I have qualified as depicted indices (cf. Sonesson 1989b, p. 213 ff.).

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[27] Vanlier's book is notorious for containing no references to the work of other thinkers in the domain, but it does contain a short appendix, in which the author marks his distances to, among others, Peirce. In particular, our author takes Peirce to task for confusing "l'index" and "l'indice", and he claims that the interesting things which Peirce says about his "index" really applies to what is ordinarily designated by the term "index" in French. Curiously, Dubois, who is much more of a real Peircean, rejects Vanlier's distinction offhandedly, but Schaeffer, who also claims to follow Peirce, adopts a favourable stance to it.

[28] There are two types of such "indices", but their difference never becomes very clear, at least not to me:

"Les indices ne sont pas des signes, ce sont des effets physiques d'une cause qui signalent physiquement cette cause, soit par monstration, comme l'empreinte de la patte du sanglier montre cette patte, soit par démonstration, quand un déplacement insolite d'objets démontre au détective le passage d'un voleur." (Vanlier 1983, p. 22 f.)

No doubt, the mark left by the horn of the wild boar is an imprint, resulting from abrasion in a very straightforward sense, but the modified arrangement of objects in a room, which is one of these trifles which were so informative to Sherlock Holmes and William of Baskerville, can perhaps only be decoded once the relationship between a number of perceptual units have been scrutinized, and employing a much richer encyclopaedia, but it is not obvious that this is the distinction which interests Vanlier. In any case, in Sonesson 1989a,60 ff., I have discussed a few cases from the work of the ethologists Ennion and Tinbergen, which would seem to bridge the gap between these two types of abrasion.

Now to return to the essential point, it would seem that to Vanlier, there are two principal types of meaning-bearing devices, *signs,* which are intentional, conventional, and systematic, and *signals,* which have neither of these properties. Perhaps we may take this to be a variant of the traditional distinction between instituted and natural signs, as found in the work of Dégerando and others (cf. discussion in Sonesson 1989a, p. 201 ff.). Signs are analogical or not; but the third group of signs are not easily integrated into this classification, since the capacity to indicate is quite another kind of property. On the other hand, there apparently are no other signals than those that are physical, that is, those which Vanlier terms "des indices".

There is no doubt much confusion in Peirce's notion of index, but Vanlier's contribution certainly goes a long way to augment it. However, Vanlier is right up to a point: *indicators,* if we may so term signs which are employed to single out an object or a portion of space for attention, are not necessarily indices in Peirce's sense, and they are, in any event, not sufficiently characterized by being so classified (we already hinted at this fact in Sonesson 1989a, p. 49 ff.; also see Sonesson 1994, 1998). Thus, certain indicators, as pointing fingers and arrows do, suppose a relation of contiguity with that which they point to; but this is not necessary, or even possible, in the case of many verbal indicators, most maps, and the options for making a photograph depending on film, lighting, and frame mentioned by Vanlier, in which case the indicative gesture is merely recreated at the level of content. It is also true that real indicators, such as fingers and arrows, are equally contiguous to a number of objects which they do not indicate; thus, mere indexicality will not do, but something more is required, in the case of the arrow, for instance, the forward thrust of the arrowhead as imagined in water, or the sentiment of its slipping from our hands, as Thom has suggested.[29]

The attitude, which we may take on these distinctions, in the end, depends on a more general issue, viz, the receivability of the opposition between signs and signals, reposing, as it does, on a threefold opposition of conventionality, intentionality, and systematicity. For reasons, which it would be too long to broach here, and which have been abundantly discussed in Sonesson (1989a), there can be no signification without a semiotic consciousness. All objects and parts of the universe interact, more or less, directly, and thus will physically affect each other, but most of these interactions are neither detected nor detectable by human beings (or animals). From a physical point of view, the production of a single photograph depends on an infinite list of factors, some of them stemming from the inception of the universe. Therefore, we can only be interested in those of these factors that somehow stand out to human consciousness, and thus carry signification. In this sense, Vanlier's notion of "indice" is conceptual nonsense, for either the physical effect is also a signification, or it is not merely physical.

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[29] To term certain signs "indicators" is, obviously, to make a categorization of signs on the basis of their functions, as seen in relationship to the overall scenes in which signs are produced. We should not expect this categorization to coincide with the one stemming from Peirce's classification, which depends on the nature of the relationship between the expression and the referent of the sign (or the content; both are contained in what Peirce's calls the object, in so far as this by now traditional distinction can be identified with the one made by Peirce between the immediate and the dynamical object). Of course, from this point of view, the term "index" is a misnomer, for although the finger known by this name may function as an index, it is not just that, as I said above. Unfortunately, Peirce certainly confused the two classifications, which explains his use of the term.

Of course, in becoming present to consciousness, the trace does not necessarily acquire any high degree of systematicity, but neither is it obvious that those signs which Vanlier terms "index" possess it. As for the conventionality of these significations, they possibly only derive from the fact of certain traces having been highlighted, while others are neglected, but something similar could be true of Vanlier's analogous signs. Again, they are of course not intentional *as traces,* but certainly as *significative* traces. Thus, while there may be differences between these significations and those present in, for example, verbal signs, it appears to me to be conceptually unsound to erect watertight bulkheads between them.

In spite of the doubtful nature of those of Vanlier's distinctions we have considered so far, we shall find that he has greatly contributed to the understanding of photography by attending to the peculiar nature of the photographic trace. Thus, let us now take up for discussion those different features that, according to Vanlier, make the difference between the photographic trace and other imprints.

The first of these properties is intimately connected with the fact that the photographic trace does not result from the objects themselves, but from the photons emitted by the objects. The photonic imprint lacks all weight, it does not have any impact, contrary to the horn of the wild boar leaving its mark in the mud, nor does it result from any enduring contact with a substance, as does the blotches found on fabrics. Indeed, Vanlier says, the photons can hardly be considered to form a substance. Suntan really transforms us into living photograms.

This is interesting on many counts. First of all, photography would seem to acquire for picturehood that immaterial quality which, according to Enlightenment semiotics, made the advantage of verbal language (cf. Sonesson 1988). This is of course not really true, for the photograph, as such, just like any picture, is a stubborn material fact, a piece of paper with markings on it; only slides go some way in the direction of material elusiveness, at least if the picture *seen* is that which counts, the projected illusion, and not that which makes it seeable, the slide itself (cf. Sonesson 1999b, 2001). In fact, what seems to be immaterial in photography is only the process by which the picture is produced, not the result.

More importantly, while there is certainly a physical contact between the photons and the photographic emulsion, in the sense of the natural sciences, there is actually nothing physical about this contact, if the term is given the sense it has in the lifeworld. There is no pressing of an object on another, as is the case is printing, engraving included, although the latter may not require much of an impact, nor any extended duration.

The second property to which Vanlier attends is not only the distal character of the imprint but also the particular modality of this distance. He observes that the photons projecting themselves on the photographic surface take their origin at different distances in space, that is, that they are defined by a volume; and, furthermore, that it is those photons which stem from the distance at which the camera has been focused that produce the best differentiation on the photographic surface, whereas distances situated before or beyond that point are less differentiated. As Vanlier himself remarks, this gives the imprint a doubly abstract character. And since it is really only a small layer of space that is adequately reproduced on the plate, he suggests we should talk about a “minceur de champ”, instead of the traditional term “profondeur de champ”.

This is of course one of those transpositions which we took up for consideration in the last section; and, as I said there, it really applies globally to the entire volume reproduced, so as to stratify its reproduction on the plate. It does give us the choice of attending particularly to a single portion of space, but then the rest of the scene is defined as a matter of course. We now see, however, that not only is a central point in space picked up from the device of framing but so is a particular layer in depth of the scene encompassed. Unlike what happens in natural perception, the perspectival adumbrations are doubly arrested.

The framing of the photographic imprint happens to be the third of the properties listed by Vanlier. There is nothing corresponding to the borderlines of the photograph in the activities of the photons, nor in the scene from which they stem. The shape of the lens, on the other hand, should make us expect a circular form, but instead a quadrangular one is imposed. Vanlier claims that this is very different from the way the frame was used by the ancient painter, as at network thrown on the scene, but his arguments really seem to suggest the opposite conclusion. As we shall see later, also Dubois thinks the frame takes on a very different function in photography than in painting, though again for rather obscure reasons.

The fourth property on Vanlier’s list is the isomorphic character of the imprint. This means that the photons give rise to rigorously calculable equations, which make it possible to situate exactly their origin in space, and which is used in geological and astronomical photography. However, being isomorphic in this sense, and in addition Cyclopean, the place of photography is no real place. Vanlier’s point does not become quite clear here, but certainly it points to the fact that photographic space is not actual, lived, space.

This would then be the same point as Vanlier then goes on to make, as far as time is concerned. Photographic time, he says, is physical time, not a time that may be experienced. No matter how long the time of exposure, the imprint itself is synchronic, for it is only the arrival of the last photon that may be calculated, to the exact milliardth of a second.

As we shall see when discussing Schaeffer’s theory, this may not be the only time of photography. However, we must investigate, at this point, to what degree these characteristics of time and space in photography make photographic imprints different from other kinds of traces. Unfortunately, the issue of space remains too obscure for us to make any profitable comparisons, so I will ignore it for the moment.

As far as time is concerned, we must distinguish two aspects. If we compare the photographic trace to, for instance, the imprint of a footstep, or a fingerprint, we will find that they also give us a synchronic record of what is actually a time-distributed process. Of course, like the photographic blur resulting from the camera having been moved during the exposure, the deviations of the borderlines from the canonical shape of a finger or a foot indicate to us that these have occupied different placements inside the limits of the trace, but the imprint only conserves for us the last phase of the process to inspect. On the other hand, there is no obvious way for us to calculate the time of arrival of the last foot or finger impression contributing to the formation of the imprint we are about to read. Again, other traces are time distributed, just as the processes they are traces of, though perhaps not to the same degree: such are, for instance, geological layers, and the annual rings found in a tree.[30]

Furthermore, since the photograph, as it is normally conceived, is in the positive, that is, it is the inversion of the image produced originally on the photographic film, we really have a negative of the negative. This explains that, in viewing a photograph, concave parts may take the place of convex ones, and vice versa. To us, the most interesting aspect of this, not particularly highlighted by Vanlier, is that this amounts to another stage of indirectness in the process of photographic impression.

The seventh property singled out by Vanlier is the fact that, although clearly analogical, the photographic imprint is also digital; that is to say, it may be analysed as a series of choices between points which are blackened and which are not, also describable as a collection of ones and zeros. In astronomical photography, points may actually be counted, instead of being perceived analogically. Even though it could be objected that this is not the ordinary use to which photographs are put, we must admit that, even in normal photographs, digital texture is as least a potentiality realized in enlargements. This is of course much more salient in pictures which have been mediated by computers.

We now come to the last property that Vanlier attributes to the photographic imprint, which is that it contains, at the same time, much less information than the real-world scene, and much more. A lot of information is lost, in particular as far as the colours are concerned, where a few dozen nuances are made to stand for the milliards found in reality, and also in relation to the lines, which are transformed into prolonged patches.[31] On the other hand, since the photograph is immobile and always at hand, we may easily discover new facts in it, which we would never had observed in passing by the motive every day (something which is reminiscent of Peirce's observation about pictures in general). All this is of course true, but there are two things we have to take note of. First, nothing of this really concerns the photograph as a trace (though it does point, somewhat obliquely, to some of its limitations, discussed already in the last subsection), but as a picture. Second, the paradox is only apparent, since it is the very reductionism of the photograph (at least in part), together with its frame, which, by introducing a principle of pertinence, makes us see features that had escaped our notice in the motive itself.

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[30] Incidentally, this may be a case in which the digital version of the record, that is, the variant which is separated into discontinuous units, appears truer to lived reality than the analogous one, in the sense of continuous inscription. Cf. our criticism of the conceptions defended by Goodman and Eco, in Sonesson (1989a, p. 220 ff.).

[31] This is a curious thing to say, since there really are no lines in reality, only edges which may be represented by lines, and thus no doubt also by prolonged patches. Cf. our discussion of perceptual psychology in Sonesson (1989a, p. 251) and many later articles.

It is a curious fact that Vanlier, who started out opposing the physical, and thus natural, character of the trace to the conventional means of indexicality, as the latter is understood by him, manages to build some of the artificial properties of photography into the trace itself, whereas Dubois, just as Barthes, limits the conventional aspects of photography to such interventions of the photographer as modify the arrangement of the motive, and thus *precede* the taking of the photograph, as well as to those manipulations which are applied to the photographic film *after* the picture having been taken (cf. Dubois 1983, p. 47).

Vanlier himself, however, would not seem to realize the consequences of these "abstract" properties of the photographic trace, for the overall impression gathered from his book is that of a defence and illustration of photographic naturalness, to the point of making the latter a simple physical effect. From the way his analysis has been reviewed and commented upon here, on the other hand, it should be clear that the motivated character of the photographic sign is very circumscribed. This conclusion follows from two considerations.

First of all, the photographic sign now appears to be merely an indirect imprint of its referent, and this in a double sense. It is indirect, because the positive, which is normally considered to be the picture itself, is an inversion of the negative, which is closer to being a real trace of the motive (but this chain of intermediary links may be further extended, on the lines suggested by Lindekens 1971, p. 86 ff.). Furthermore, it is also indirect, because even the negative is only a trace of the photons, not of the objects or the scene in any more precise sense.

If this is so, one may wonder whether the photographic image is really very different from the chirographic one, which may also be (though not necessarily) caused by its object, when this serves as a model to the draughtsman, in particular if we take into account the intermediary stage represented by the device called a physio-trace, which, when a lens is made to follow the contours of a body, guides a pencil which takes down the corresponding contours on a paper. The most important remaining difference may really be that, even when a physio-trace is used, there must be a person present who is required at each given moment of the creative process to attend to the motive (in the case of an ordinary drawing also to the drawing he is making), and to decide on how it should be rendered, whereas the production of a photographic picture depends on one single semiotic act, one decision—or, perhaps we should say on two acts, if we want to distinguish the onset and the termination of the time of exposure—even though a host of options (on where to focus, the light to be used, etc.) may have had to be taken, before the act could be accomplished.

The second consideration concerns the limitations imposed on the trace, not by the object, but by the support on which the trace is inscribed. Some of these are mentioned by Vanlier: the quadrangular shape of the photograph, its digital nature, the information it leaves out, its inability to record the temporal aspects of the process giving rise to the trace,[32] etc. But this may be restated by saying that *the photograph is not only the trace of the objects, or even the photons, but also of the properties of the film, of the lenses, of the photographic device generally, of the space travelled through by the photons, and so on.* As Ennion and Tinbergen point out in their study of animal traces, the same animal will leave different traces on different ground—and so will the same photographic motive, as we already observed in Sonesson (1989a, p. 60 ff.).

In the passage referred to above, we also extended Black's (1972, p. 101 ff.) argument against the "causal history" approach to pictures, according to which the picture results as much from the camera's focal aperture, its distance from the motive, the exposure time, and so on, as from the motive. Some of Peirce's definitions of the index claim it to be based on a relationship of cause and effect, and the same thing is true, as we remember, of Vanlier's notion of the "indice". Thus, Black's argument certainly applies here, but it could yet be objected that now that, with the help of Vanlier, we have isolated some peculiar properties of that kind of index or "indice", which is not only an effect of a cause but also a trace in a literal sense, we can claim that the motive is different from the other causes involved in producing the photographic effect, precisely in being a trace.

The first objection, which we would make to this objection, is that while Vanlier has gone a long way to specify what kind of trace the photograph is, he has done very little to elucidate the peculiarities of that index (or "indice", in his terms), which is a trace (though our analysis of "abrasion" above contributes a little to that task). There is a more fundamental rebuke to be made, however, which consists in observing that there is really no intrinsic reasons for considering the cause producing a trace (and even so, we have seen that many more causes than the motive may be held responsible for the trace) to be a more important type of cause than the others. Indeed, *we can only explain the importance of the motive, when we realize that a trace,* in the most central sense of the term, *contains not only indexical but also iconical aspects,* and if we begin by admitting that a photograph is a kind of pictorial sign, and that all such signs are first and foremost grounded in the illusion of similarity.

Before we return to this issue, however, we must consider some aspects of Dubois's indexical theory—first, the particularities he attributes to indices generally, and second, how he thinks photographic indices differ from other ones.

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[32] It is certainly true of most commonly made photographs, as Vanlier claims, that they constitute records only of the ultimate state resulting from the cumulated photonic imprints left by different temporal slices in which the object is present to the camera, that is, as Vanlier puts it, that they are defined by the arrival of the last photon. There are, however, certain kinds of photographs, such as "the impartial record of the finish of a horse race", which are made by a particular camera having no shutter, and which therefore produces a single picture showing the horses distributed in space in the way they were really ordered in time, that is, in the order in which they arrived at the finish line. In fact, to quote Snyder and Allen (1982, p. 77), from which I take this example, "every point in the photograph is the finishing line". This means that the photograph may be read as a record of different temporal layers, just as the annual rings of a tree; therefore, the property attributed by Vanlier to photography should really be ascribed to a particular kind of camera, which happens to be the most commonly used.

19.3.2 From the General Theory of Indexicality to the Photographic Index: A Critique of Dubois

Although in the general style of his exposition and his arguments, Dubois is far from being a follower of the rigidly taxonomic schools of Stuttgart and Perpignan, he turns out to be an orthodox Peircean as to the meaning he attributes to the index. According to this conception, every index is characterized, not only by there being a real, physical connection between the expression and the referent (or content), but also by manifesting the principles which Dubois (1983, pp. 48 f., 60 ff.) terms *singularity, designation,* and *attestation*. The question, then, is if all indexical signs must really embody these properties.

In order to answer this question, we would need a very clear-cut understanding of what an indexical sign is, but there is no easy way to acquire such an understanding. It is not obvious that there is any way of making all Peirce's different definitions of the index (or of other signs) agree with each other, as well as with all his examples. Furthermore, if we also want to include, in addition, each and every example adduced by later semioticians, the task will become even more difficult, but, surprisingly, it is not certain that these latter examples should be disqualified, even though they might not have been accepted by Peirce. And this is because there is, in Peirce's work, what we may well term a *structural* argument, which could just possibly be weightier than the details of his definitions, and that is that there are just three basic types of signs, so that something which we know to be a sign must be either an icon, an index, or a conventional (or "symbolic") sign—or some combination of these! Of course, Peirce may be wrong in thinking that there are just three types of signs, but if we take this assumption for granted, it is certain that any phenomenon which is a sign, and which is neither conventional nor iconical, must be indexical. So let us now ponder the plausibility of this hypothesis.

We can here only summarize, and somewhat rephrase, an argument which is given elsewhere (in Sonesson 1989a, pp. 137 ff. and 205 ff.). To begin with, we will take the potential index, or the indexical ground, to consists of two units connected by a relation which is not identical to the sign relation, but which are, in the actual index, joined together a second time, in such a way that one of the units serves as expression, and the other one serves as content or referent of the sign. Peirce often says that the relation in question should be real, existential, or physical (1.558; 3.361; 8.335), but it is not clear what this means, over and beyond the fact that this relation is not just the sign relation (as in the case of a conventional sign). In any case, we cannot take this to mean that the index must be based on a spatial relationship, and even less, that it must reproduce the relationship of cause and effect, for in this case, the three sign types will not exhaust the universe of signs.[33] However, it is possible to stipulate, more largely, that all relationships defining indices should be *topologically* describable, and, in that case, that they may all be subsumed under one of the categories described as *contiguity* and *factoriality* (part/whole relationship). Both these properties may then of course be further specified, in terms of more or less well-known topological relations. At this point, then, we have already established that not all indices can depend on *physical* connection (3.361), if this qualification is to be taken in a familiar sense.

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[33] Perhaps we should really say that, in this case, the index and the icon would not exhaust the universe of signs which are somehow *motivated,* for the Peircean "symbol" is anyhow a kind of residue category.

There is, however, a much more important distinction to be made among indexical signs, viz, that between what we shall call *abductive* indices, and another category which will be termed *performative* indices. If we pick out some of Peirce's own most common examples, we may say that deictic pronouns like "I", "you", "here", and "now", as well as an arrow or a finger pointing at an object, or pointing out a direction, are performative indices, whereas footprints and fingerprints, as well as the peculiar walk of the sailor, are indices of the abductive kind. In the former case, the contiguity or factoriality which motives the sign does not really pre-exist to the sign, but is created at the moment the sign is given, although these relations are as such distinct from the semiotic function itself: the pointing finger is really contiguous to the objects it points to, and the sound corresponding to the word "you" is really close to the person so designated, but this only happens at the same time as the signs are produced, and there are no sets of "pointed-out objects" or "yous" which are given beforehand.

The case is very different with the second group of examples. Here we will only be capable of concluding something from the sign, to the extent that we are informed about the existence of some regularities present in our lifeworld, which may be the basis of abductions, or tentative hypotheses, about the relationship between the expression of the sign and its content. This is true of the footprint and the fingerprint, when we may be able to conclude something about something taking place at some particular anterior moment; but it is also true of the sailor's way of walking, and, to add a few non-Peircean examples, of the cross standing for Christendom, the anchor standing for navigation, and so on, where we only seem to be able to conclude, in a very general sense, on the presence of some regular connection.[34]

Again, we should not confuse these elementary indexical signs with secondary signs, where the indexical relationships hold between objects that in themselves are signs already constituted in other ways. This latter relationship may exist between the respective contents of two signs, in which case we have something similar to an abductive relationship, which is the case in metonymy and synecdoche, in the traditional rhetorical sense; or it may obtain between the expressions of two or more signs, which results in a relationship which has certain similarities, but also differs in some ways, from that of performative indices, and which commonly appears in publicity pictures. There are also some other, in part intermediary cases, which we will not discuss here.

With all this in mind, can we really admit that all indices must refer to an singular instance, which is its referent (cf. Peirce 2.306)? This would seem to be true of all performative indices, and of some abductive ones. An imprint of a horse's hoof may make, if possible, for the interpreter to determine that a horse, as against a donkey, is the animal having passed by, but normally there would be nothing in the expression of this index itself, which permits him to determine the identity of the horse in question, although, if he knows, as Prieto's observes, that there is only one horse and one donkey inside the fence, he can draw a plausible conclusion as to which individual horse is involved (cf. Prieto 1966; for a graphic illustration, see Hervey 1982, p. 59 ff.). In fact, even in the story of Zadig, or that of the Serendippus brothers, or that of William of Baskerville, the identity of the animal is only ascertained when the observation of the traces is fitted together with certain extrinsic pieces of information (cf. Eco and Sebeok, eds. 1983). It might be argued, of course, that in all these cases, it was anyhow one particular animal which left the imprint; but as I have argued elsewhere (in Sonesson 1989a, p. 38 ff.), in the case of Peirce's own example of a knock on the door, although a particular person must do the knocking, the knock itself just means "there is someone outside the door", unless we possess additional information beforehand.

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[34] In fact, as I recognized in Sonesson (1989a, p. 49 ff.), there is also an abductive aspect to performative signs, since some, comparatively abstract, generalities must be presupposed.

Let us consider a very different example. The pretzel understood as a sign for a bakery is really an index two times over, one of them in the abductive sense, and the other performatively. As a part of the whole of such objects as are habitually produced in bakeries, the pretzel stands abductively for any and all bakeries; there is no singularity involved so far. On the other hand, in so far as it is placed close to a particular locale, it contributes to designating this locale performatively as being a bakery (though it is certainly not as creative ex nihilo as the performative indices we considered above, since it is based on a prior abduction).

It seems doubtful, then, that all indices must point to singular, unique occurrences. Even in the case of a photograph, if we take it to be an index, it is clear that it is not always meant to signify a unique individual. Thus, a photograph of an animal illustrating an article in an encyclopaedia treating of the corresponding species is rather a sign of the species than of the particular individual. The case is not as clear-cut as that of the horse's hooves or the knock on the door discussed above, for it is undoubtedly true that, under given circumstances, even the photograph illustrating the article in the encyclopaedia may serve to identify a unique individual of the species.

Next, let us ask ourselves if all indices must designate, if that is taken to mean that they point to something. No doubt Peirce affirmed that, and so does Dubois. However, we already argued above that the functional category of indicators merely overlap somewhat with the index category, which is defined from the point of view of its motivational link. The pretzel, for instance, does not point to all the other bakery wares, for which is stands, more than in the extremely general sense in which every sign may be said to point to that of which it is a sign. As for the photograph, it does not indicate either in the precise sense in which the arrow or the pointing finger does, but it may certainly be said to designate, in a somewhat less abstract sense than the pretzel. In fact, it does indicate, in the same way as all pictures does, but only *through the intermediary of its iconic layer:* if we recognize a landscape in a photograph, for instance, we may go looking in reality for some part of it to which the picture fits (as tourists are supposed to do). But the photograph is unable by itself to draw the attention to the object itself, as the pointing finger does, by blind compulsion, or otherwise (Peirce 2.306); and it does not say “there”, as an index should, according to Peirce (3.361), for it does not possess any spatio-temporal coordinates in itself. Speaking of the photograph as an indicator is thus at best a metaphor.

Nor can we claim, in general, that the index attests to the existence of something, in particular in the case in which no singular object is involved. This is obvious in the cases considered above, in connection with singularity. Even in the case of the photograph, we should be careful in accepting too readily this argument. Faked photographs may look exactly as authentic ones; indeed, so may synthetic pictures, entirely fabricated on computer with no real-world motive (cf. Moles 1981). Of course, the latter pictures are no photographs, and so no indices, but the point is, there is no way we can discover this from looking at them. Since Moles made this observation, the ability to make fake photograph has become available to everyone using computer software. We can, of course, have independent evidence for something being a “real” photograph (if that still has any sense), but then we would already be in the domain of symbolicity.

In particular, in the case of the photogram, which Dubois (p. 66) claims is really the prototypical photograph, it is not clear that there is anything, the existence of which can be testified, since often the objects are not recognizable as such, or the shapes are considered to stand for objects. Again, if we consider the many ways in which the motive may be transformed at will in the photographic process, as for example the deformations to which Brandt subjects his nudes, we must ask to what degree the properties the motives manifest in the photographs can be taken to be certified.

According to Dubois (pp. 49 f., 73 f.), all the semantics of photography may be resolved into its pragmatics, and the photograph functions similarly to a linguistic shifter. This affirmation and the comparison on which it is based are not in the least convincing. Consider in effect a typical linguistic shifter like the pronoun “I”. Depending on the point of view, it may be seen to be both more pragmatically dependant, and less so than a photograph. The shifter is produced and used at the same time, and each time it has another sense, namely that person who pronounces it. The photograph, however, has an identical sense each time it used, once is has been produced.[35] On the other hand, all uses of the pronoun may be paraphrased roughly by the phrase “the person who speaks here and now”; but there is no way to paraphrase together the meaning of all tokens of the abstract photograph-type.

But Dubois (p. 59) also claims that the photograph should be compared to such phenomena as smoke, dust, and ruins, as well as to sperm and sunburn, and to shadows and cicatrices. In our terms, all these indices, unlike shifters, can only be understood abductively, that is, in recurring to the assumption that this instance of smoke, just as other instances of the same matter with which we have been acquainted in precedent lifeworld experience, is related to some fire, that the ruins results from historical transformations of once intact buildings (which is not always true, however), and so on. It is important to note that, although smoke may only appear more or less at the same time as the corresponding flame, or a few instances afterwards, and although there can be no shadow, but at the precise moment that there is somebody or something around to cast it (except in Gothic novels), neither smoke nor shadows are performative indices, since both the units involved clearly pre-exist to the production of the sign, exactly as they appear in the sign.[36] The distinction between performative indices and abductive indices is thus not simply a question of temporal horizons.

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[35] In this sense, it is absurd to claim that the photograph “est par nature un object pragmatique, inséparable de sa situation référentielle” (Dubois 1983, p. 93). It is precisely because it is so easily separable from its circumstances of production that the photograph has proved so useful, to the point of creating its own pictorial society in our time. Indeed, unlike the shifter “I”, the photograph of a person may be detached from the scene of its production, and used to identify and characterize the individual in his absence. Cf. in this respect my criticism of Eco’s comparison between the shifter and the mirror, in Sonesson (1989a, p. 284 ff.)—now extended in Sonesson 2003a, b, 2005).

Dubois's various examples are of course different in many other respects, too. Thus, while the ruin is a material part of that of which it is a sign (if, with Dubois, we suppose it to stand for the building it once was), the smoke and the sperm are merely parts in a much looser sense of the total events, which they refer to. Dust does not only signify the passing of time, as Dubois says, but also, among other things, neglect, or perhaps rather, the conjunction of the two. The cicatrix and the ruin (and perhaps also dust) actually seem to stand for a whole temporal process, in the beginning of which there was a wound or a building, followed by a whole series of events, which end up in the terminal state which is also the expression part of the sign. The shadow and the sunburn, however, are not parts of what they signify (except perhaps in a very loose sense, as ingredients of an abstract process), but rather are produced by abrasion from some other object, and thus seem closer than the others to the photograph. On the other hand, unlike the photograph and the sunburn, the shadow does not leave any permanent trace of its object; and unlike the shadow, the footprint, and the photograph, the sunburn does not produce any likeness.

These considerations already bring us to Dubois's idea concerning which properties constitute the specificity of the photographic index, as opposed to other indices. These are the properties of being "séparée, plane, lumineuse et dis-continue" (p. 94). Let us follow Dubois in scrutinizing these properties one after the other.

To be *separated* is, apparently, to incorporate a *distance,* which is both *temporal* and *spatial*. Dubois rightly observes that such a temporal distance, however small, is even present in a Polaroid photograph, and, correlatively, he claims that there is a spatial distance even in a photogram. Both these distances, on the other hand, are said to be abolished in such indexical signs as the readymade, the happening, the performance, and body art, where the referent itself serves as a sign. Already at this point, the argument undoubtedly poses some problems. The temporal distance is of course there, and we have already commented on it. As for the spatial distance, it certainly seems minimal in the case of a photogram, if we think of the gap between the objects and the plate; but, as we know from Vanlier, the contact between the objects and the photograph must be mediated by the photons, which is sufficient to produce a distance. In any case, even this spatial contiguity is there only at the moment of production of the photograph, not when it is viewed as a picture, which is the essential moment. Therefore, it seems we should agree with Dubois.

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[36] Criticizing functional semiology, as instanced in the work of Jeanne Martinet, Hervey (1982, p. 180) points to the somewhat tenuous basis for describing some types of expressions and contents as being arbitrary or non-arbitrary in themselves. Whatever one may think of Martinet's typology, there is no reason to suspect such a criticism must carry over to the present approach. Although it is true that all signs "select (and in this way 'create') the domain of their referents", such creation is not only more complete in the case of performative indices than in the abductive ones but also made anew each time a token of the sign is produced, whereas in the abductive type, it is intrinsic to the semiotic system.

However, it turns out that our author is really thinking of something very different. As it emerges from the examples with which the photograph is contrasted, Dubois takes lack of distance to be the same thing as spatio-temporal coincidence. But it is not at all clear that we should qualify these signs as indexical: there is no two-term relation here, but a term bounded up with itself. More concretely, no contiguity or factoriality is involved. In fact, such signs as these would be called exemplifications by Goodman, and I have myself used that term, along with that of self-identifications (cf. Sonesson 1989a, p. 137 ff.). Even if we admit that there is something vaguely indexical about a whole standing for this very whole, or a part standing for the identical part, this relationship will in any case be abductive, and it does not involve any abrasion. Thus, the comparison does not appear to be very fruitful.

Nor is it really convincing when Dubois (p. 95) claims that the ruin is different from the photograph simply by implying a merely temporal distance. Apart from the observations made above, it should be added that there is no real spatial coincidence between the ruin and the building, since, at the very most, the former is only a part of the latter.

What, however, about the temporal and spatial distances in the photographic trace? Let us reconsider the question from another angle. In a later chapter, Dubois (p. 116) tells us about the inception of art out of the hand impressions made in Lascaux and other caves, and he recounts the story about the origin of painting, as told by Pliny, Quintilian, Plutarque, Vasari, and Alberti. According to the first version of this story, a girl who is sad because her lover is going to leave on a voyage, and who wishes to conserve his looks in memory, uses a piece of chalk to fill in the contours of his body as they are projected on the wall. Thus, there is a projection of light, just as in photography, and then there is the problem of fixation, which is differently resolved in this case than in the photograph. What is indexical, according to Dubois is, in both cases, the projection of light. And just as the filling in of the contours by means of a piece of chalk in the story, photographic development and fixation take time. It is accomplished later, in the fixation bath of the laboratory.[37]

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[37] There is another variant of the story, retold by Vasari, according to which a man who saw his own shadow cast on a wall filled in the contours of his body with a chalk. Dubois (p. 123 ff.) rightly observes that this is in fact an impossible thing to do, for in approaching the wall, and in using the hand to move the chalk along the contours, the man causes a continuous series of transformation of the shadow cast by his body. It is an interesting fact, as Dubois remarks, that this dream of being able to make an inscription of oneself in the act of making an inscription is realized by the photographic auto-portrait.

The point of retelling this story and Dubois's interpretation of it here is not so much to signal the incoherence of an approach which first claims the photographic index to be characterized by temporal distance, and then denies indexicality to the photograph we perceive, in order to reserve it for the projection of the object on the film taking place at the moment of total temporal coincidence. Rather, the question is what we shall think about an approach which, in comparing the photograph to the cast shadow, dissociates it from the footprint, with which, on the face of it, has at least a little more resemblance. For clearly, unlike the shadow and the mirror image, footprints and photographs are not constantly changing signs of new objects, but permanent traces of unique, temporally situated events. That is to say, at the instant of projection, the object is inscribed on the photographic plate, although only as a latent image, but nothing of the kind happens when a shadow is cast on a wall.

In fact, in the case of the photograph, the temporal distance is present only when the sign is read, not when it is enunciated, just as we saw before that the spatial distance is. Indeed, at the moment of its production, the photograph may appear to behave somewhat like a performative index (for instance a shifter), but it must be read abductively. However, no abductions could ever permit us to decode the faded images of mirrors and shadow-cast walls.

When it comes to the second trait that, according to Dubois, is characteristic of photographic indices, there is much less to be said, because we have already encountered the properties involved when discussing Vanlier's conception. When Dubois (p. 96) tells us that

> le second trait spécifique qui caractérise l'index photographique fait de celui-ci un object plan: à la fois plat, planaire et plaqué.

then he refers, in a metaphorical way, to the properties that Vanlier terms distalness of the imprint, Cyclopean vision, and isomorphism. What is interesting, however, is Dubois's idea, that when invoking the last of this traits, Vanlier means to refer, "confusingly", as he says, to the fact that, while each single stroke is premeditated by the draughtsman, and may be further changed, and even deleted, the act of the photographer is unique and global, that is, there is only one choice to be made, and everything contained in the photograph is given in the same scale, from the identical angle of vision, and so on. Indeed, this interpretation certainly seems justified from the fragments of Vanlier's prepublication quoted by Dubois (p. 97), but it does not seem to appear in the published version.

It will be noted that, in my earlier work, as a critique and elaboration of other conceptions of photography (Sonesson 1989a, p. 60 ff.), I had already come upon this idea, and I have even tried to show that all the transformations of reality worked out by photography are global in nature. It should be pointed out, however, that before this single act of execution can take place, there is really a whole series of global decisions which must be made, which determine the angle of vision, the focus, the luminosity, and so on.

There is hardly more to be said about the third and fourth properties attributed to photographic indices by Dubois: that they are traces of light, and that they are discontinuous. Unfortunately, Dubois has nothing particular to say about the way in which the photograph is a trace of light. In Sonesson 1989a, p. 60 ff., however, I commented on this property in the following way:

> Only the "photograms" and "rayograms" made by avant-garde photographers such as Moholy-Nagy, Man Ray, and Schaad and preceding the invention of the common photograph in the experimental work of Niepce and Talbot, are really comparable to the footprints left on the ground, light being the operating agent instead of mechanical pressure. When placed directly upon the photographic paper, without a camera obscura as an intermediary, two-dimensional objects will give rise to silhouettes, more similar to tactile noemata than to visual ones, which can be easily identified; but when three-dimensional objects are used and the source of light is moved, the configurations which result are due to complex interactions, not only between the contiguous part of the object and the emulsion, but between the position of the light source and the non-directly contiguous parts of the object. (p. 64).

And I concluded by pointing to the paradoxicality of the fact that it is a camera obscura, which diminishes the contiguity between the object and the expression plane of the pictorial sign, which is needed in order to obtain a configuration, which really suggests a visual perspective on the object, as against a tactile one, and which thus makes it possible to trace the configuration unambiguously back to its real-world source.

And what this suggests, in the end, is that it is some kind of conventionality that redeems photographic indexicality, and assigns to it an iconical function. To these issues, we turn to the next subsection.

19.3.3 The Imprint of a Likeness: Reflections on Schaeffer's Theory

Although, or rather precisely because Schaeffer's book is undoubtedly the best contribution made so far to photographic semiotics, I will have comparatively little to say about it. This is because I have found little to criticize, and also because much of the book is not concerned with the problem of photographic specificity, but with picturehood generally, and in particular with photographic picture types. However, two or three remarks on Schaeffer's conception will permit me to formulate a few remaining considerations, and thus to complete the discussion of photographic specificity.

Many of the points that I have been driving at all through my criticism of the theories of Lindekens, Vanlier, Dubois, and others are explicitly formulated by Schaeffer. Thus, for instance, he states (a) that photographs cannot be explained by conventionality, in the sense in which this term applies to verbal signs (Schaeffer 1987, p. 32 ff.); (b) that there are iconic, as well as indexical, elements in photography (p. 27 f.; p. 101 ff.); (c) that the photograph must be understood as a perceptual unit (p. 18) and, as such, contrary to the photonic image, it is not digital (p. 15; p. 74), nor does this conception admit of the photogram being considered the central instance of photography (p. 59 ff.); (d) that we can only apprehend the photograph as such when starting out from the assumption that it is an instance of the picture type known as photography (p. 41 ff.); and (e) that photography is essentially involved with time and space (p. 64 ff.). It is, however, in the precise way of conceiving these different issues that I will have to part company with Schaeffer, while returning to some of the themes of my former analysis of picturehood.

There is no need to repeat here my earlier arguments against conventionalist theories of pictorial signs (see Sonesson 1989a, p. 201 ff.). Nevertheless, there is one interesting aspect of Schaeffer's version of this critique, to which we will attend in the following: the fact that he (p. 32 ff.) turns against not only Eco's conventionalist theory of icons but also the parallel conception of indices. In Eco's view, also indices must be conventional, because otherwise they could not be interpreted so rapidly, as when upon seeing a puddle, we immediately conclude that there has recently been a shower. To this Schaeffer objects, first, that, since the puddle is only facultatively a sign, it may as well be apprehended as an obstacle; and second, that it does not obligatorily indicate rain, but may stem from a broken water conduit, or could have been produced by a street-cleaning machine. Thus to establish that there has really been a shower, we would not think of consulting some encyclopaedia to ascertain the interpretation, but we would rather look for confirmatory signs in the sky (cf. my discussion of the weathercock, in Sonesson 1989a, p. 205 ff.). Thus, there is no reason to think that we should be able to conclude so rapidly.

Schaeffer rightly observes that Eco, just as many others semioticians, erroneously identified conventionality with the necessity of something having been learnt, and with the presence of regularities. Learning may result from experience, that is, from having observed natural happenings, which often means the recurrence of certain events. So far there is no reason to object: if thee were not true, nothing could be learnt from living and from observing, and all teaching would be based on the transmission of arbitrarily stipulated affirmations. And yet, Eco seems to be justified in thinking that, on seeing a puddle, or at least a certain amount of puddles, we would first expect there to have been a rain, reaching for other explanations only as this first interpretation is counter-indicated.

No doubt we are concerned here with a kind of meaning which works probabilistically, rather than deterministically, that is to say, a symptom (cf. Sonesson 1989a, p. 17 ff.); and given such an expression as this, some contents seem more probable than others. Of course, in the present case, the probability connecting the relata of the sign may in fact be derived from the one observed to prevail between the corresponding objects in lived reality. But there could be something else involved too: a *lifeworld hierarchy of relative importance* (see Sonesson 1989a, p. 201 ff.), like the one which determines that in certain societies, as for instance our own, markings on paper are expected to be signs, and in others they are not. Such a lifeworld hierarchy may itself be conventional, for all we know, or it could be grounded in the common experience of a particular sociocultural lifeworld.

Now as I indicated above, to Schaeffer the photographic sign is an *indexical icon,* and an *iconical index,* particular instances tending more or less in one sense or the other (p. 101 ff.). There are, however, reasons to think that the photograph must really always be essentially an indexical icon, rather than the reverse, for it is really only because we discover a likeness, that is, a kind of picture, that the fact of the likeness having produced as an imprint begins to acquire importance. Actually, the photograph, like any other object, contains a number of other indices: it is thus an index of the angle from which the photograph was taken, of the lighting conditions at the moment of taking the photograph, of the film type used, and so on (cf. 1.3.3)—but we will naturally attend to these facts only later, after having read it as an index of that which it is a picture of. Indeed, pictoriality is primary in our lifeworld hierarchy. But before we enter more deeply into this argument, we must consider some of the ambiguities of Schaeffer's own position on the issue.

In fact, some parts of Schaeffer's argument would seem to go in my sense. Thus, he rejects some of the more extreme expressions of a pure trace theory, as found in the work of Vanlier and Dubois (p. 27 ff.). He locates the photogram, as well as the X-ray picture somewhere outside the proper domain of photography (p. 59 ff.), first because the photonic flux has to traverse the referent to get to the imprinted matter, while in the photograph the referent originates the flux, and because the flux is not relayed by any optical device, and thus not usable for analogical signification; and second, because what the photogram reflects are difference of volume and density, not such things as are seen by the human eye (p. 62; cf. my critique, in the same sense, of this and other "hard icons" of Maldonado's, in Sonesson 1989a, p. 60 ff.). He even affirms that the requirement of analogy introduces further constraints on the photographic trace, for while movements may give rise to markings on a photographic plate (as used in physical experiments), these are normally excluded from photography, because what is to the human eye a succession of states gets transformed into spatial extension on the plate (p. 18).

But, on the other hand, Schaeffer also seems to mark a certain distance to analogicalness. Thus, he notes that the camera may see things man is unable to perceive (p. 21 ff.; whereas I noted the inverse case above), although he immediately proceeds to argue that analogical objectives have determined an effort to modify the way in which the emulsion renders colours. However, he then goes on to reject the assumption that the photograph could be taken to be analogical to a vision of the object that the photograph is a picture of (p. 23 f.). Behind the latter idea, he discovers the remnants of the romantic conception of originary experience, which always tends to accord a privilege to vision, and he claims it is the confusion between the reproduction of a being and the reproduction of a vision that explains Heidegger's animosity to photography. There are many issues involved here, and some of them are certainly too vast, for us to go into them in the present context.

Schaeffer's rejection of originary experience of vision may be more or less justified, in the general case (although the dominance of vision would seem to be at least an anthropological fact), but it seems widely off the mark when discussing pictures. There are two parts to this argument. Philosophers, it is argued, tend to confuse the rendering of the thing itself, and of the thing as seen by a human eye (or, preferably, two). And they attribute to vision, rather than to the other senses, or even to pictures, the capacity to give us access to the truth of the thing. Against this, Schaeffer thinks that some pieces of knowledge about stars and about radioactivity have to be acquired through photographic pictures of them, which do not correspond to human vision, for human beings are unable to perceive them.

But if now, for a moment, we only attend to the first aspect, we will encounter it again, when Snyder and Allen (1982, p. 67 ff.) observe that the argument for photographic analogicity relies on two models, which are usually taken to be identical: the *visual* model, which postulates a similarity between the camera and the eye as optical systems, and posits that a photograph shows us "what we would have seen if we had been there ourselves"; and the *mechanical* model, according to which "a photograph may not show us a scene as we ourselves would have seen it, but it is a reliable index of what was".[38] Now it is certainly true, as Snyder and Allen (p. 70) goes on to argue, that the visual model will only hold when it is qualified into absurdity:

> A photograph shows us "what we would have seen" at a certain moment in time, from a certain vantage point if we kept our head immobile and closed one eye and if we saw with the equivalent of a 1500 mm or 24 mm lens and if we saw things in Agfacolor or in Tri-X developed in D-76 and printed on Kodabromide//3 paper.

This having been said, however, the comparison is not as absurd as that: for indeed, the whole point of photography is to offer us vicarious perceptual experience, that is, the illusion of having seen something without having been present at the scene, as Schaeffer later himself admits, when talking about the quasi-perceptual field of a photograph (p. 116 ff.). There are, of course, photographs, such as those mentioned by Schaeffer (and Maldonado's "hard icons"), which do not show us anything we could see, but which are truer to the essence of things, as the latter is conceived in natural science. But these are examples very far from the central core of photography, as the latter is colloquially understood.

And it is of course the other photographs that are true to experience, to perceptual experience, to be precise, as the latter takes place in the lifeworld. This truth is no doubt a relative one, as I have noted above (1.4.1–3.; also cf. Snyder and Allen 1982, p. 70), for whatever it is that is rendered, it is only conveyed to us in some of its aspects, parts, and attributes; and it is not directly perceived, only, as Husserl said about pictures generally (cf. Sonesson 1989a, p. 270 ff.), perceptually imagined.

In the end, then, it seems that the photograph can only be a trace once it is seen to be a likeness.

And this brings us to another of Schaeffer's points. Contrary to Vanlier and Dubois, though he never pinpoints the difference, he insists that in order to see a photograph *as* a photograph, we must know it to have been produced in the manner of a photograph; we must possess, in his terms, knowledge of the *arché* (p. 41 ff.). His reason for introducing this requirement is that there are no morphological criteria permitting us to differentiate a painting from, for example, a photograph having been modified by the techniques of the pictorialists, in particular if the latter is seen in reproduction (p. 45 f.**)**. But there may be even more serious problems than this.

In Schaeffer's example, we look at something that appears to be a painting, and we wonder if in actual fact it could be a photograph by a pictorialist. But then there are cases in which we do not know which parts, if any, of something that looks like a photograph, have really been photographically produced. Thus, by means of gum bichromate details may have been added to the scene directly on the emulsion, whereas other details may have been suppressed with the help of bromoil (the illustration of a classical handbook, quoted by Snyder and Allen 1982, p. 82 f., is accompanied by the text "excess sheep removed", but without this caption, we could not know that it had been modified). But there is something which is more serious yet, and that is that we do now possess pictures, which do exactly look like photographs, but which have in no parts been photographically produced; these are synthetic, or computer-composed pictures (see examples reproduced in Moles 1971, 1981). In fact, since this was pointed out by Moles, the case has become trivial: we can all produce these pictures at our home computer. Although Schaeffer does mention the existence of such synthetic images in passing (see his note 6, p. 65), he takes no particular notice of their importance for impeding the identification of photographs.

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[38] There is no reason to believe that Snyder and Allen use the term index here in the technical sense given by Peirce, but it certainly corresponds, in this instance, to the general idea defended by Vanlier, Dubois, and, to a certain extent, Schaeffer.

In a sense, all that Schaeffer's knowledge of the *arché* amounts to is the recognition that the photographic index must be what we have earlier termed an *abductive,* rather than a *performative* index, that is, an index that functions only because we take for granted that certain regularities which are commonly supposed to prevail do indeed do that (cf. 1.3.3).[39] But even an abductive index may be more or less so: thus, in a somewhat loose sense, Golgotha may be considered an index for Christ, if we think the latter was once present there, but then the link must be entirely reconstructed from abductions; whereas, in the case of footsteps and photographs, there are, so to speak, some remains on which to lean when making a start at the construction of abductive meanings. To put the point in another way, if Christ's sweaty face had not left an imprint of St. Veronica's napkin, it would still have been an index of his face, for those who knew about the event, but much more (and less intersubjective) abductions would be needed to reconstruct the sign.

But when we hesitate to qualify a picture as a photograph, a painting, a synthetic picture, or some combination, the problem is no longer to establish what it is a sign of. We know that the napkin of St. Veronica is a sign depicting the face of a man, and that the man it shows is Christ (according to one or other of the canons for representing Christ with which we are familiar), but, exactly as in the case of a possible photograph, we do not know if this likeness of a face was really imprinted on the napkin by means of a pressure applied to it by the referent itself. But what kind of question is this? Consider, for instance, the elementary situation in which the emission of a sign takes place, as studied by Prieto (1966, p. 15 ff.; cf. Hervey 1982, p. 63 ff.) in the example of a horse's hoof prints. There is what Prieto would have called the "significative indication", which tells us that there is a horse around. There is not, in this case, as there would be in a linguistic sign (and presumably in a pictorial sign) any “notificative indication”, which would convey to use the idea “attention! This is intended to convey a message”.[40] But where, then, is there an indication that these signs are really hoof prints, and not just fake impressions?

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[39] Schaeffer (1987, pp. 87 ff., 105 ff.) takes our background knowledge to be important for our interpretation of photographs also in another way (and more so than in the case of verbal language, which is at least doubtful); it is only because we recognize our grandfather, that we are able to learn from the photograph that he was in the habit of going out fishing. What is involved here, however, is only the necessity of possessing more, and more detailed schemes, in order to be able to interpret pictures, and perceptual reality, at lower intensional levels (cf. Sonesson 1988, 1989b).

What this shows is that, from our point of view (but we should not forget that Prieto is really up to very different matters), this analysis is seriously amiss, or at least incomplete. For if the significative indication of the hoof prints is that there is (or was) a horse around, then what is the difference of meaning between real hoof prints and fake ones? Let us suppose there is something in common between the real and false hoof prints, which is a significative indication and which amount to something like “horse here”, and then there is some other part of the meaning, which, for the sake of the argument, we shall baptize with the rather barbarian term “indicative indication”, which is only present in the real hoof prints, and which says as much as “caused by the application of some part of a real horse to the ground”. Thus, although the real hoof prints do not have any notificative indication, they do possess an indicative indication, along with the significative one.

We should really distinguish two cases, however (and maybe more). The hoof prints may be faked, in the sense that someone, who was not a horse, applied horseshoes to the ground, creating markings which falsely tend to suggest that there has been a horse around. In this case, we are quite right in believing in the indicative indication which informs us that the imprints we see were created by the pressure of horseshoes to the ground, and what is mistaken is the assumption that there was also a factorial relationship between the horseshoe and a horse’s foot and leg, and between the latter and the entire horse (we could think of intermediary cases, in which a real horse’s leg, severed from the body, has been used). But the hoof prints may be faked also in the second sense that there never was any horseshoe which was applied to the ground, but the semblance of a hoof print was instead created by a human being, who sketched out the contours of a horse’s foot in the soil using some kind of writing implement or the like. In the latter case, there was not only no horseshoe present at any time but also no ready-made mould at all was pressed to the ground; instead, the shape was created by a procedure which should remind us of that involved in the production of chirographic pictures.

In both these cases, there is both a notificative and an indicative indication, in addition to the significative one (although it is possible, and even probable, that the notificative indication tends to disguise itself into a merely indicative one). But it is only in the latter case that the indicative indication is of the kind that is connected with real hoof prints, that is, a kind of abrasion.

Now suppose that, like Zadig, the Serendippus brothers, or William of Baskerville, we observe on the soil markings that are similar in shape to the imprints left by a horse, a camel, or what have you. Rather than taking account of all these eventualities, and a lot more, we will certainly suppose them to be imprints of the animal in question, until there emerges some particular reason for believing them not to be so.

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[40] Prieto uses the term “indice” here, but this has nothing to do with the Peircean index, although the example would suggest so. Actually, “indice” would seem to be the most general term of functional semiotics, corresponding to what I would call “sign”.

Indeed, the case is parallel to the one described by Searle, where we find something which looks like writing in the desert sand, and where, according to Searle (1969), we must first impute to someone the intention of conveying to us some meaning through writing, before we can interpret the message in the sand, that is, we must ascribe to the writing a notificative intention. As I argued elsewhere (in Sonesson 1979), this notificative intention is normally ascribed to the writing as a matter of course, even if that means taking it to be a message from God or some playful spirits, as long as the markings in the sand look sufficiently similar to what would normally be letters of the alphabet. This is just an example of the way things are taken for granted in the ordinary lifeworld, which is the locus of all our experience.

The case is similar with photography. Just like the hoof print, the photograph carries with it an indicative indication, along with the significative one, but, in addition, it also embodies a notificative intention.[41] But neither of these indications must be intentionally ascribed to the photograph; they are attributed to it as a matter of course, as long as it looks similar to what would normally, and as far as our experience goes, be a photograph. It is not important, therefore, that there are no trustworthy criteria for telling a photograph from another kind of picture, neither as a whole, nor in its particular parts, for we do have a clearly characterized notion of what a photograph looks like, and as long as there is no resistance on the part of the sign, we will attribute photographicalness to it without hesitation.

There are two corollaries to this. Firstly, it is clear that, if in the future synthetic pictures become more common, and are even more indistinguishable from photographs, we shall have to give up this idea of photographicalness. Secondly, this conception will not permit us to give too much importance to the testimonial function of photography. Photographicalness is merely a connotation, that is, the way in which the photographic sign designates itself as such, and the existence postulate (logically developed by Schaeffer 1987, p. 122 ff.) is a contextual implication following from this connotation (cf. Sonesson 1989a, pp. 119 ff. and 179 ff.); and just as it is possible to connote French while speaking English, other pictorial kinds are perfectly capable of connoting photographicalness. Of course, as long as we believe we are in our right to take a picture to be a real photograph, we will also consider it probable that it depicts a real particular. Indeed, the photograph may seem to tell us that "cela a été", in Barthes's words, that is, that there was before (and may still be) some particular being, but it cannot tell us exactly how it was (for in the photograph, it is not the same), what further properties it had, how it look from other angles, or some seconds before or afterwards, together with what else it was present, and so on. Thus, that particular that was, and which still is in the photograph, remains as a mere vestige—which may explain why it has to be filled up with sentiments, as Barthes is so good at doing. And it also points to some further indexical properties of photographs, which are very different from abrasion.

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[41] Schaeffer (1987, pp. 52 ff., 78 ff.) in fact denies intentionality to photographic signs, but he can only do this because he confuses a number of levels. If we expect the interventions on the plate after the shot has been made, there is of course no possibility of conveying *local* decisions, but there is a host of *global* decisions which must be made before each photograph is taken, even if the camera is then left to record the scene on its own.

This is a convenient point to turn to Schaeffer's considerations on temporality and spatiality, before concluding on the indexicality issue. Time and space are taken into account essentially in two ways: first, in order to justify the introduction of the *arché,* and then as a means of classifying photographic types. We will start from the first aspect.

According to Schaeffer (p. 64 ff.), time is not rendered iconically in the photograph, as it is in the cinema,[42] but has to be supplied from the knowledge about photography possessed by the receiver; and in the same way, the photograph is spatially anchored, not by perspective alone, but again by our knowledge of the photographic *arché,* which follows from the fact that while a subjective standpoint is immediately ascribed to the photograph, only intricate and laborious devices as those present in *Las Meninas,* or in the *Arnolfinis,* are capable of introducing it into painting. However perspicacious these observations may seem, they are, I believe, somewhat off the mark, because their author fails to distinguish temporality and spatiality as categorical facts from particular occurrences in space and time.

Just as any other action, that which is reproduced in a photograph may be seen as a part of a greater whole, to the extent that it can be integrated into one or other of the schemes taken over from our common lifeworld existence, and from this point of view, the photographic scene does not differ in any way from the painted one, nor from a tableau vivant, as practised in the social life of the eighteenth century, nor even from our experience of stepping out in the glade and seeing the Weberian wood-feller at work (cf. Sonesson 1989a, p. 49 ff.). This is exactly Lessing's problem, and it thus antedates photography, as it indeed antedates Lessing himself (cf. Sonesson 1988).[43] It is true, of course, that this temporality is not present in the picture itself, but is somehow introduced by the receiver, but there is nothing peculiarly photographic to this abduction. No doubt, the photograph is inapt to present a synthesis of several moments of the act (without using double exposure, or something of the sort),[44] whereas the chirographic picture may do it, and usually did so, before the invention of photography. But although this difference caused people to be shocked on seeing the first photographs, of horses galloping, to choose a classic example, it is hardly noticed nowadays.

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[42] It is not at all clear that cinematographic time can be described as generally being iconic. Firstly, montage, of the kinds considered by Metz in his macro-syntagmatics, does away with the uninterrupted flow of natural time. Secondly, and more importantly, time is hardly ever the subject of filmic signs, but rather something, which accompanies the action sequence as well as the projection, without being directly signified. On the other hand, some montage types do serve to represent time, but that is exactly were similarity wears off!

[43] In this respect, it is interesting to note that Schaeffer, without referring to Lessing or the Laocoon tradition, conceives of the problem in identical psychological terms, but opts for another solution: in his view, it is the picture of the climactic moment which should be chosen, because it points both forwards and backwards with the uttermost tension (p. 143).

[44] It should be noted, however, that this is only true of photography as it is commonly used, although this is a use which is built into most cameras; it would not apply, for instance, to that picture of the horses arriving at the end of the race, mentioned by Snyder and Allen, and commented upon in note 32 above.

On the other hand, only a photograph gives us at least the illusion that what we see is a phase of an action taking place at some particular moment of clock time.

In a similar way, spatiality is categorically present in the photograph, just as in any picture, and this in several ways. Firstly, we know, from our experience in the perceptual lifeworld, that reality goes on continuously; thus, there must be something beyond the frame of the picture, if it is a photograph or a chirograph. Secondly, we also know, as Gurwitch puts it (cf. Sonesson 1989a, p. 39 ff.), that every perception of reality is a partial view, susceptible of being complemented in perceptual experience, but, it may be added, petrified for ever in a picture, which is to say that every picture transforms a subjective view on an object into an object of its own. But all this is either taken for granted in every conceivable lifeworld, or in such sociocultural lifeworlds as possess pictures.

Again, it might be noted that, unlike the chirographic picture, the photograph is unable to subsume in one image several points of views, without having to recur to special procedures like double exposure (and this, like the unity of time, depends on the global character of photography, that is, on Vanlier's and Dubois's homogeneity). Furthermore, only the photograph makes us expect there to be a unique place in the world, the coordinates of which may at least potentially be given, from which this view is to be had. When painting a real landscape, even the painter must of course sit somewhere, but he may change his place many times, and he may even adapt what he sees when transposing it to the canvas.[45]

The other way in which time and space enter Schaeffer's discussion is, we said, in his classification of photographic types (p. 72, pp. 128 ff.). Photographs differ, Schaeffer contends, as far as their representamen, object, and interpretant are concerned; for the first may be rather more indexical, or rather more iconical; the second either represents an entity or a state of things; and the third is either predominantly temporal, or more to the spatial side. We shall not go into the details of this classification here; it seems anyhow difficult to reconcile with the little that is certain about the Peircean relata of the sign. Thus, indexicality and iconicity are not, in Peirce's view, properties of the representamen, but of the relation between representamen and object; and the interpretant concerns a relation between three terms, and thus does not seem to be involved with time and space.

In any case, while it may be true that certain photographs are more indexical, or more iconical, than others, it seems certain that the photograph is essentially an indexical icon, and not the reverse, that is, that it is first and foremost iconical, like any picture. To see this, we shall consider another way in which photographs are involved with time and space.

There is a kind of temporality in that very indexical relation which attaches the photograph to its referent, which is also at least one of its causes. As Barthes said, the photograph tells us that "cela a été", and Dubois rightly considered him to be something of an indexicalist on this merit only. The photograph, then, is an index

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[45] Here, as always, there is of course the problem of knowing how far we may go in excluding "tricks", without thereby pleading for some particular conception of what photography should be like.

		Expression	
		(Time and) space dependent	Time and space independent
Content	Time- and space dependent	Foot prints Hoof prints	Photographs
	Time and space independent	?	Verbal signs

Fig. 19.3 Time and space in different sign types compared

of something that *was,* not (other than by accident) of something which *is.* In this respect, I said (in 1.3.3.), the photograph is similar to footsteps and tracks generally, but not to cast shadows and mirror images. Well considered, however, this similarity may not go as far as we had expected. For while both the photograph and the trace stand for a bygone referent, the signifier of the former sign continues to occupy the place that was that of the referent, and it still remains temporally dated, whereas the photographic signifier, like that of the verbal sign, is omnitemporal and omnispatial, while tokens of its type may be instantiated in any time and place (although only *after* the referential event and the time needed for development). Thus, if, for the sake of simplicity, we only attend to the temporal aspects here, the following table can be constructed (Fig. 19.3):[46]

That is to say, in the case of a footstep, a hoof print, or what have you, both the expression and the content are located at a particular time and place; in verbal language, none of them are; and in the case of photography, it is only the content (or, strictly speaking, the referent) which is bound up with spatio-temporality. Thus, the hoof prints, present where before the horse was present, tell us something like "horse here before"; but the photograph of a horse, which most likely is not where the horse ever was, only tells us "horse", and *then* we may start reconstructing the time and the place.[47]

In fact, we may now take this analysis a little further. Elsewhere, I have argued against Eco that the mirror is really a sign, because it is a member of a common class of signs which only work temporary, such as the weathercock, the pointing finger, the cast shadow, and the personal pronouns as used in oral language: they

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[46] That is to say, verbal signs are omnitemporal when considered as types; however, each time they are instantiated in a concrete situation, they appear as token, or replica, as Peirce would have said, and then they carry additional meanings as tokens. Of course, each hoof print may also be considered as a token, the type of which is the general idea of a horseshoe, or a particular horseshoe (of a particular leg of a particular horse). Nevertheless, the difference remains, for in the case of the trace, the essential information is conveyed by the particular imprinting of the horseshoe, at a particular occasion.

[47] Therefore, Schaeffer (p. 57 f.) makes too much of the undoubtedly authentically Peircean idea that the photograph, as an index, is a sign of existence, while other pictures, because of being icons, are signs of essence. As I pointed out when criticizing Dubois's idea of the photograph as being an indicator, the photograph does not in any sense designate the *locus* of its production.

Expression

Content

	Space coincidence	Time and space coincidence	Time and space independent
Space coincidence	Foot prints Hoof prints		
Time- and space coincidence		Mirror, weathercock, gesture of pointing, etc.	Photographs
Time and space independent	?		Verbal signs

Fig. 19.4. Extended comparison of time and space in different sign types

only mean what they mean when in presence of their referent (cf. Sonesson 2003a, b, 2005). Presence here would seem to mean co-occurrence in both time and space. This is different from the case of hoof prints, which only require coincidence of space, not of time. The figure could therefore be redesigned as in Fig. 19.4.[48]

At this point, it may seem that we could say that, whereas the hoof print is first and foremost an index, the photograph must originally be seen as an icon, before its indexical properties can be discovered. In fact, however, things may be still more complicated. Schaeffer (p. 56) is of course right in pointing out, against Peirce, that not all indices involve some iconic aspect, but it so happens that the hoof prints, just like all other imprints and traces, in the narrow sense of these terms, also convey a partial similarity with the objects for which they stand. We have to recognize the hoof print as such, that is, differentiate it from the traces of a man's feet, or of a donkey's, as well as from fake hoof prints (in the sense discussed above), and from accidental formations worked by the wind in the sand. Only then can we interpret the hoof prints indexically. It remains true, however, that the essential meaning of the hoof prints is embodied in indexicality: they tell us the whereabouts of the animal.

In the case of a photograph, on the other hand, we do not need to conceive of it indexically to be able to grasp its meaning. It will continue to convey significations to us, whether we are certain that it is a photograph or not. Indexicality, in photographs, really is a question of second thoughts and peculiar circumstances.

Therefore, we may conclude that indexicality cannot be the primary sign relation of photographs, although it is an open potentiality present in their constitution, and exploited in certain cases. First and foremost, the photograph is an iconical sign.

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[48] What then about the case of temporal coincidence, without a spatial one? An example would no doubt be television as imagined by Eco (2000), that is, as direct transmission. A better example might be surveillance cameras.

19.4 Conclusions

The semiotics of photography is a very young enterprise. It was started by Barthes, who from the onset deprived it of a subject matter by claiming the photographic sign to be tautologous. Though he did not realized it himself, Barthes obliquely pointed to one essential difference between photographs and handmade pictures, the former only allowing for global decisions pertaining to their mapping rules, and the latter transforming any single spot of their surface into a point of decision. He was followed by a lot of epigones who simply applied his confused terminology to other pictures. Lindekens was another type of pioneer: in positing the conventionality of the photographic sign, he was certainly wrong, but he helped initiate a more serious inquiry into the nature of the constructional kind known as photography. The most important contributions to the semiotics of photography were made by the indexicalists Vanlier, Dubois, and Schaeffer. Yet, when closely considered, their theories leave much to be desired, although they tell us a lot about the specificity of photography: there can be no doubt that, like all pictures, photographs are basically iconical, and only manifest their indexicality mediated by their iconicity. Photographs cannot simply be identified with other traces such as footprints. The latter only mean what they mean as long as they stay at the place where they were first produced, but photographs can (and normally are) displaced from their place of origin. Being fundamentally iconic, photographs are still different from chirographic pictures in being derived from perceptual reality by means of a series of global, as opposed to local, mapping rules.

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Göran Sonesson, born 1951, is a semiotician specializing in pictorial, cultural, and cognitive semiotics. In recent years, he has also been concerned with the epistemology of semiotics, mainly on a phenomenological basis, as well as with an evolutionary foundation for semiosis. His main book-length work is *Pictorial semiotics* (LUP 1989), which, among other things, is the most explicit argument published so far against the structuralist critique of iconicity, and in a defence of a phenomenological–ecological view of perception and the world taken for granted. Sonesson has published numerous articles in many anthologies, as well as in journals such as *Semiotica, VISIO, Sign System Studies, Degrés, RSSI, Signa, Signata,* and *Cognitive Development*. He was one of the founders of the International Association for Visual Semiotics (AISV/IAVS), and has also been active in the boards of International Association for Semiotic Studies (AIS/IASS), the Nordic Association for Semiotic Studies (NASS), and the International Association of Cognitive Semiotics (IACS).

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