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PART OF WHAT A PICTURE IS

Kent Bach

WHAT IS the difference between describing something and depicting it? The answer lies not merely in the difference between words and pictures nor even in the difference between how each type of symbol relates to what it symbolizes. As will be argued, a general account of this distinction must be given in terms of what distinguishes the symbol systems in which words and pictures operate. In particular, pictorial systems are marked by a feature that I call *continuous correlation*.

In his book *Languages of Art*¹ Nelson Goodman forcefully argues that depiction or representation is not a property of a picture *per se* but is relative to the system that it is in. Though providing a general theory of symbol systems (from which this paper borrows), Goodman fails to give an adequate account of what marks pictorial systems. After an examination of his account this paper presents continuous correlation as the distinguishing feature of pictorial systems. In addition there will be noted a phenomenological correlate of this feature, what I call *metaphorical identification*.

DEPICTION AND DENOTATION

Goodman effectively rebukes resemblance, imitation, and copy theories of representation. At their worst they don't explain the case in which nothing actual is represented or even purports to be represented. At less than their worst these theories still do not distinguish the respects in which a given picture is representational and do not explain the means, necessarily relative to the operant system of representation, claims Goodman, by which these respects are represented. Indeed, he argues, where there is something represented there may be nothing resembled in any of the respects represented. And where there is resemblance its relevance depends on the system. Along the way Goodman exposes the naked eye and the absolute given as myths and perspective as conventional.

On Goodman's view what, if anything, a picture represents depends on what, if anything, it denotes. It can represent Napoleon or a statesman but not Pickwick or an abominable snowman. The respects in which it represents (how it 'represents-as', in Goodman's terms) are determined by what sort of picture it is (a Napoleon-, a statesman-, a Pickwick-, or an abominable-snowman-picture). Thus it can represent Napoleon as a statesman or as an abominable snowman, but it cannot represent Pickwick as either—it cannot represent Pickwick at all. What sort of picture it is is a function, relative to the operant system of representation, of its pictorial properties, determined by what colours it has where; and the pictorial properties are mapped by the system into object-properties. There is no *a priori* constraint on mappings. Colours can be mapped into colours, the same or for example the complement, or into temperatures, ages or moods. An analogous point applies to shapes, sizes and positions of regions of the picture. In standard systems of representation, for example, two-dimensional shapes, sizes and positions are jointly mapped into three-dimensional shapes, sizes and positions.

Utilizing this model, Goodman is able to characterize fidelity and realism of representation. How faithfully an object is represented depends on how accurately the picture ascribes properties to it, given the system of representation whatever it may happen to be, whether familiar or not. Of equally faithful pictures the more realistic (to a person or to a culture) is the one using a more familiar system of representation. 'If representation is a matter of choice [of system] and correctness a matter of information, realism is a matter of habit' (38).

Representation is thus likened to description, which too can be accurate or inaccurate (and detailed or sketchy), and can occur in familiar or unfamiliar systems. Though the grammars of pictorial systems and linguistic systems are formally different (in ways later explained), to be pictured, like being described, is to be denoted and to be classified or characterized, not necessarily to be imitated or copied. Whether with brush or pen, to characterize something aptly, subtly or intriguingly is to 'grasp fresh and significant relationships and devise means for making them manifest' (32), to 'bring out neglected likenesses and differences, force unaccustomed associations' (33) by teaching old habits new tricks. Of course, too, an old system can be altered, extended or even replaced, to achieve novel scope or scheme of representation.

Goodman's preliminary description of depiction (presented in Chapter I), as just summarized, seems incontestable. My major objections are directed against his final account given in the last chapter, which follows his presentation of a theoretical apparatus used to distinguish types of symbol system and types of art. So far he has not yet distinguished re-

presentation from description. However, at this stage I already have some critical and cautionary comments.

At one point Goodman says 'what is denoted depends solely upon the pictorial properties of the symbol' (42), given the picture's functioning as a symbol in some system of representation. This statement can be taken only as a slip, since not *what* a picture represents but only *how* it represents (what it represents-as) is determined by its system as a function of its pictorial properties. By the same picture in the same system, depending on the painter's intention, the town squire or the village idiot could be represented as a civil servant.²

The system determines, then, only how whatever is represented, if anything at all, is characterized. But what, exactly, is the system? Surely it is not something apart from those who use it, artist or spectator. Presumably, to 'read' a picture a spectator must share common knowledge of the system with the artist; where the system is standard in a culture this knowledge is shared. In pointing to the relativity of representation to system Goodman does not mean to suggest that this standard system is arbitrary or unnatural. But it is natural and seemingly right only by habituation. Nevertheless this habituation is itself not arbitrary, not in the way that habituation to a language is. In particular the correlation of a colour to the same colour has a certain natural selectability. On the other hand Goodman rightly argues for the arbitrariness of perspective, not always known let alone used and not understood by primitives who see photographs as two-dimensional patches of colour until they catch on to the perspectival system. Nevertheless, given the familiarity of the standard perspectival system or family of such systems, it is difficult to effect radical change. At best reform here and there, a bit at a time, can be readily used and perceived. Thus variations on the perspectival theme can be introduced through a new choice of vanishing point(s); depth can be enhanced or subdued or all but eliminated; colours can become correlated not with colours but with feelings and moods (impressions); high or low definition in line and shape can sharpen or soften the precision of representation, perhaps to increase or occasionally to decrease expressiveness; bulging, angular or elongated shapes can be used not to represent corresponding shapes but for expressive purposes to represent forms at best topologically equivalent to the shapes that would literally be represented. Each such innovation does not require lengthy entrenchment to become second nature, though it may produce initial outrage perhaps owing to absence of instant adaptation. Occasionally radical innovation is deployed, as in the cubist use of fragmentation and multi-perspectivity, with a proportionate heightening of the level of incensement, exceeded only by that accorded the utter elimination of representation.

I mention the variety of representational reformation in part to support Goodman's thesis of relativity. Also it serves to suggest that the system operant even in a single work is ill-defined, indeed in three respects. First, it is not a closed system; the correlations are not fixed. Second, the correlations needn't be one-one but may be many-many. And third, they are not always readily capable of articulation, even by (perhaps especially by) the artist himself, for looseness, lack or loss of words. Despite all this, however, or perhaps necessitated by this, the comprehension of these correlations, whether by painter or percipient, is immediate and intuitive, not calculated and discursive. The result is fortunate that the painting is in some sense transparent. The painting is seen through to what it represents, not that the subject itself is thought to be seen and the painting to be disguised. It takes special effort not to see through a purely representational painting (or a photograph), and to see only its properties; though modern painters, by relaxing or partially replacing representational requirements, may deftly produce an interplay between three- and two-dimensional perception, often with paradoxical results.³

In addition to vagaries of system and its definition there is also the question for any given painting which of its pictorial properties are representational (are correlated with object-properties). For example, many paintings and drawings contain numerous lines which represent neither boundaries nor contours and which rather serve decorative or expressive purposes. Nevertheless in most such cases it is difficult to decide what many of the lines do. Does a given line represent, does it represent only in conjunction with others, is it also decorative or expressive, or decorative or expressive instead of being representational (or instead of contributing to what is jointly representational)? Perhaps only dissection can provide an answer, perhaps the wrong answer. These questions arise not only with respect to lines but to patches of colours. Underlying these questions are psychological problems about perceptual selection and organization, whose difficulty is shown in part by the consideration that any given line can play any one of the roles mentioned even where the system of representation remains constant. Thus even if a given system of representation were not subject to the vagaries already cited, there would still be the question which of the pictorial properties of a given painting are to be mapped into object-properties. It seems evident from the possible multi-purpose role lines (or patches) of a given type can serve that the system, even assumed fixed, familiar and formalized, cannot select its domain of application. That is, the system determines what what is mapped is mapped into but it does not determine what is mapped. Therefore reading a picture, seeing what

representation it is, requires ascertaining what is correlated and with what it is correlated. Given what is correlated, the operant system determines with what it is correlated. Nevertheless, while the system does not select what is correlated, knowledge of the system contributes to the process of selecting what is correlated. There is implicit in the reading of a picture a selection process whereby from the pictorial properties that might represent, that would have correlates if they were to be mapped, are selected those which jointly represent a meaningful whole. Thus the factors complicating the reading of a picture are many: the system of representation; its many-variabed and many-valued mappings; its lack of fixity and articulation; and, as just noted, the variability of mapped pictorial properties. And it must be emphasized that the knowledge required in reading a picture, the general knowledge of the system and its application to the picture, is implicit and intuitive not articulate and discursive.

These complexities, intrinsically interesting and deserving of more refined exploration, require mention here because Goodman gives a rather confident and complacent impression that systems of representation individuate and manifest themselves readily, neatly, explicitly and unequivocally. Clearly they do not. Nevertheless the general form or schema of a representational system can be given. In giving it I do not mean to conceal the aforementioned complexities wherein reside many problems worthy of investigation.

The subject of a painting can be represented as having many types of property. Two major types can be distinguished. Following Strawson's distinction between M- and P-predicates,⁴ I distinguish the corresponding M- and P-properties, the latter being just those whose possession implies their subject's being conscious. Among them, then, are types of feeling, mood, trait, action and social role or position. Except for still lifes, landscapes, and the like, most paintings that represent represent not only M-properties but also P-properties. Furthermore the P-properties of a subject can be represented either indirectly, by means of its represented M-properties, or directly, *i.e.* by being directly correlated with pictorial properties. Thus letting S be the set of pictorial properties, M the set of physical object-properties, and P the set of (loosely called) psychological object-properties, different types of mapping are possible. Where no psychological properties are represented we have 'sensible representation', with S mapped into M.

sr: S → M

Where at least some of the represented physical properties are mapped into psychological properties we have 'sensible expressive representation'.

$$\text{ser: } S \longrightarrow M \longrightarrow P$$

Note that the mapping from M into P is not given by the system of representation but by our knowledge of how people physically express their psychological states, of how they look when they do what they do or are what they are. Now in 'pure expressive representation' pictorial properties are mapped directly into P-properties.

$$\text{per: } S \longrightarrow P$$

Thus colour or shape of portions of the picture may be mapped directly into moods or feelings. However *per* cannot occur alone; otherwise there would be no indication of what the subjects are whose psychological properties are being expressively represented. Furthermore the mapped picture-portions are likely to play a double role. For example, in the head of the tortured figure of the horse represented in *Guernica* the nostrils, teeth, tongue and mouth are represented but in a highly distorted manner, rendered as manifesting stark agony not as exhibiting biological anomaly. Enough shape is represented to indicate the parts represented, but precision is replaced by direct expressive representation. Or imagine a painting in which a face is represented as red with delight or white with fright, not as red or white or as of any colour at all. In either type of case where there is *per*, *ser* becomes attenuated either in degree or in respect. Combined or 'mixed expressive representation' thus involves both direct and indirect mappings from S into P.

$$\begin{array}{l} \text{mer: } S \longrightarrow M \\ \quad \quad \quad \searrow \quad \downarrow \\ \quad \quad \quad \quad \quad P \end{array}$$

Apart from these general observations, we have not yet distinguished depiction from description. Some of Goodman's technical notions are needed here and are presented next. Then their application by Goodman to representation will be examined, followed by the presentation of an alternative account.

SOME FORMAL NOTIONS

In Chapter IV Goodman presents and develops a variety of technical notions that enable him formally to classify types of symbol system and types of work of art. As I discuss the problems to which he applies these notions in another paper,⁵ here I merely outline those which bear on the discussion of representation.

For the purposes not under consideration here Goodman formulates five requirements on what he calls 'a notational system' as satisfied (more or less) by musical notation, only some of which requirements are met

by natural languages and only some others of which are met by pictorial systems. The first two requirements are syntactic, *i.e.* independent of the semantic correlation of symbol to object or event, and satisfied by any notational 'scheme'. Now any symbol scheme consists of characters, or classes of marks, and any mark belonging to a character is an inscription whether orthographic, phonetic, or whatever. A symbol scheme is notational if and only if no mark belongs to more than one character ('syntactic disjointness'), and it is at least theoretically determinable of any mark not belonging to more than one character which character it belongs to if to any ('syntactic differentiation').⁶ In other words, when these requirements are met the sets of inscriptions belonging to any two characters neither overlap nor blend into one another. An example of a notational scheme is any natural language, written or oral (though there are marginal violations). Now an important type of *undifferentiated* scheme is that which is syntactically 'dense'. A scheme is dense just in case it provides for characters so ordered that between any two there is a third, hence virtually infinitely many. As we shall see, Goodman claims that a representational system must be in a dense scheme.

A symbol scheme correlated with a field of reference becomes a symbol system. Anything denoted by an inscription under a given correlation is one of its compliants. There are three semantic requirements of a notational system. First, all of its characters must be unambiguous, *i.e.* all inscriptions of any given character must have the same compliance-class. Second, no two characters may have (inscriptions with) any compliant in common ('semantic disjointness'). Third, for every pair of characters it must be at least theoretically determinable of any character not compliant with both which one it complies with if with either ('semantic differentiation'). Thus these requirements demand that the classes of compliants of any two characters neither overlap nor blend into one another. Clearly linguistic systems, though in notational schemes, and representational systems do not in general satisfy these requirements. In fact both are not only semantically undifferentiated, they are generally semantically dense: the system provides for infinitely many characters with compliance-classes so ordered that between any two there is a third, hence countlessly many.

Since these definitions are abstract and best understood by example, I refer the reader to Chapter IV of Goodman's book, where illuminating illustrations abound.

DENSITY AND REPLETENESS

Having presented the technical notions facilitating a taxonomy of types of symbol systems and of types of works of art, in the first section

of Chapter VI Goodman proceeds to refine his account of representation as denotation and characterization dependent upon pictorial properties. This preliminary account, it may be recalled, failed to distinguish representation from description, since pictorial systems had not yet been formally distinguished from verbal systems. Furthermore Goodman notes in the present section that pictures have not yet been distinguished from maps and diagrams, many of whose formal properties they share.

Now natural languages, though not notational systems, are at least in notational schemes, since they fulfil the syntactic requirements of disjointness and differentiation. Thus in English (including oral as well as written inscriptions if homonymy is ignored), no inscription belongs to more than one character; and of every mark not belonging to two characters it is determinable which character the mark belongs to (is an inscription of) if to any. That is, the sets of inscriptions belonging to any two characters neither overlap nor blend into one another. However, pictorial schemes are generally neither disjoint nor differentiated. In fact, Goodman claims, a scheme is representational only if (syntactically) dense, and a symbol is representational only if it belongs to a scheme dense throughout (or to a dense part of a partially dense scheme). That is, given an ordering of pictorial characters whose inscriptions are pictures (or picture-parts), between any two there is a third, hence limitlessly many.

Unfortunately Goodman gives no argument for the initially plausible claim that a pictorial scheme must be dense. He gives but one example, seemingly convincing, where the ordering is with respect to height. And an analogous example could be given where the ordering is with respect to colour (actually, the ordering here would be three-dimensional, with respect to hue, intensity and saturation, and the scheme would be dense in each dimension). However, there is an evident type of counter-example to the claim of density for pictorial schemes. Imagine a scheme in which each picture is composed of circular dots at a limited number of permissible places such that they do not overlap, and that each dot is of one of a finite number of distinct colours and sizes. Seurat's Pointillism, the nearest candidate in art history, in fact violates the place, colour and size requirements. However, newspaper photographs and television images come close, respectively violating only the place and colour requirements. Still there could be a representational scheme violating none of them; it would be differentiated.

Thinking a picture must be dense, Goodman asks how it differs from a diagram (or a map) which is also dense and yet not representational. Or at least not as much so, for Goodman draws only a distinction of degree between the two. Whereas the constitutive aspects of a diagram are

highly restricted so that, for example, line thickness and colour do not matter (do not determine character-membership), almost all the visual properties of a picture count; the picture is relatively *replete*.

Compare a momentary electrocardiogram with a Hokusai drawing of Mt. Fujiyama. The black wiggly lines on white backgrounds may be exactly the same in the two cases. . . . The only relevant features of the diagram are the ordinate and abscissa of each of the points the center of the line passes through. . . . For the sketch, . . . any thickening or thinning of the line, its color, its contrast with the background, its size, even the qualities of the paper—none of these is ruled out, none can be ignored.

(229)

Here concerned with distinguishing types of dense scheme, Goodman mentions without comment that the schemes of both the diagram and the drawing are 'assumed disjoint'. However, given the abundance of relevant properties of the sketch, its scheme is clearly not disjoint; the wiggly line in its various respects, some of which may operate jointly, is an inscription of several characters. Its remarkable subtlety prevents one from articulating which of its properties are correlated with those of the mountain, but clearly there are many such correlations. As a result there is an unclarity in the notion of repleteness. If an inscription is replete in proportion to the number of the properties that constitute it, that determine its character-membership, either its many constitutive properties determine which *one* character it belongs to or, if it is in a nondisjoint scheme, each of its many properties (perhaps some jointly) determines each of the *many* characters it belongs to. Since Goodman ostensibly assumes disjointness, I take it that he means the first alternative by 'repleteness'. Notice that if a symbol is replete in the second sense, that of nondisjointness, it may also be replete in the first sense, namely if its belonging to any one of the characters it belongs to is determined by several of its properties jointly.

It seems to me that a peculiarity of a pictorial scheme is that its symbols work in many ways at once; more precisely, each is at once an inscription of many characters. Rather than use the awkward 'nondisjoint', let us say that pictorial schemes are syntactically 'joint', indeed 'many-jointed'. This means that each symbol, in virtue of its many pictorial properties, is an inscription of many characters. Furthermore, pictorial systems are semantically joint, for what an inscription represents complies with the many characters the inscription belongs to. *Very* roughly speaking, an inscription belongs to one character defined by colour, another defined by shape, another defined by size, another defined by position. I say 'very roughly' because in painting subtleties abound. Obviously, for example, brush-stroke matters too, determining texture of a given symbol and its boundary. And where there is no clear

boundary between symbols, or where the boundary itself is effectively a symbol, it becomes difficult to distinguish between atomic and compound inscriptions.⁷ In fact it is plausible to regard the absence of a clear distinction here as at least a symptom of the representational. The least that its absence implies is that there is nothing like an alphabet, hence no well-defined principles of composition. But that is really a marginal matter. As will be suggested in the next section, the distinguishing feature of the representational normally accompanies a lack of alphabeticity but includes much more.

So far, then, I have rejected Goodman's undefended claim that syntactic density is necessary for a scheme's being representational, and I have replaced his notion of repleteness with that of many-jointedness, syntactic and semantic, as what distinguishes representational systems from diagrammatic. That is, pictorial inscriptions belong to many characters, which have different compliance-classes each defined by the property (-ies), correlated with its defining pictorial property (-ies). Now languages, while semantically joint, are syntactically disjoint. However, although representational systems have already been distinguished from linguistic systems (and from diagrammatic systems) by their syntactic jointness, this feature does not explain *why* they are representational. The feature that does explain this, and is to be indicated next, is a peculiarity of the system of semantic correlations present in depiction.

CONTINUOUS CORRELATION

We can expect pictorial systems to be semantically dense, but this surely is not requisite on being representational any more than syntactic density. A representational system could surely provide for a field of reference in which no two compliance-classes blend into one another, say if the field were atomized or unitized. Nevertheless what I now wish to suggest as the distinctive feature of the representational will be defined for systems that are syntactically and semantically dense. For the sake of technical completeness, in a note the definition is broadened to cover the theoretical possibility of cases that do not meet these requirements.

First let me characterize this feature in a rough-and-ready way. Despite the inadequacies (page 2) of resemblance theories of representation as exposed by Goodman, there is an underlying element of truth in these theories, albeit obscured by their parochialism. Whether there is resemblance in the represented respects, the respects being determined by choice of system, this much is true: given the pictorial properties by which a symbol represents properties of its subject, a slight change in the symbol in some respect means a slight change in some respect of what is represented. In the standard system (or standard family of systems), say as

utilized in photography, a slight change in picture colour indicates a slight change in the colour of the subject; again, slightly elongating the image slightly elongates the subject as represented. In general as the pictorial symbol varies, so varies how its subject is represented. In particular a slight variation in the symbol does not produce great variation in the subject; and great variation in the symbol cannot produce only slight variation in the subject.

A seeming counter-example might be suggested by the *Mona Lisa*. To many there is an ambiguity in the expression of her lips: it is not clear whether she is displaying a smile or a snarl. In any case change slightly in one way the portion of the picture representing her lips and she is clearly smiling; change it slightly in another way and she is clearly snarling. And surely there is all the difference in the world between a smile and a snarl. Of course there is, but this dramatic difference is not between the way a smile and a snarl look, as revealed by the very example of the *Mona Lisa*. Thus, using the terminology introduced earlier, we may say that this concomitant variation, or what I call continuous correlation, holds for sensible representation but not for sensible expressive representation. Slightly changing the shape of the lips-symbol in the picture slightly changes how her lips are represented as to shape, but in this case dramatically changes the feeling she is represented as expressing with her lips.

Let us now define the notion of continuous correlation more rigorously, for simplicity assuming syntactic and semantic density. With this assumption, pictorial characters are densely ordered along various dimensions corresponding to various types of pictorial respect, and the compliance-classes provided for are densely ordered along various dimensions of respects represented.⁸ Given these orderings, such a system is continuously correlative if, and only if, between every pair of characters there is a third whose compliance-class is between theirs; and a character whose compliance-class is between those of any two other characters is between those characters. In other words the relation of betweenness, with respect to each dimension of ordering of character and of compliance-class, is invariant from characters to compliance-classes and from compliance-classes to characters. My claim, then, is that this invariance holds in any representational system that is syntactically and semantically dense.⁹

Clearly languages lack this feature. For the phonological and orthographic properties of descriptions obviously do not vary continuously with what they describe. They vary systematically to be sure (a task of linguistics is to exhibit this system), but only in pictorial systems do symbols vary continuously with what they symbolize.

Now it might be objected, particularly by Goodman, that any system can be made to be continuously correlative simply by a suitable choice of orderings, hence that my criterion fails to distinguish representational (and diagrammatic) from other types of system. For surely we can order compliance-classes in the order of their characters, or order characters in the order of their compliance-classes, so that invariance of betweenness is automatically guaranteed. But of course such orderings are quite arbitrary and totally useless. In particular, giving an ordering of characters and the compliance-classes of any two given characters, there is no way to limit the range of possible compliance-class for some third character between the first two (and vice versa, if 'character' and 'compliance-class' are interchanged). An important advantage of a genuinely continuously correlative system, with non-arbitrary orderings of characters and compliance-classes, is that, given correlations of a finite number of characters and their compliance-classes, the compliance-class of a new character can at least be approximated as being between those of the nearest pair of characters that the new character is between; and the character with which a new compliance-class is correlated can at least be approximated as being between those two characters with nearest compliance-classes that the new compliance-class is between. Or, if a representational system does not have its birth in a finite enumeration of correlations, projected to correlations between them by manageable principles of ordering, it must be defined functionally, e.g. colour is correlated with the same colour, or with complementary colour, in such a way that the correlations are more or less fully determinable. In either case projection of new correlations from used ones requires fairly simple and easily entrenched mappings of characters into compliance-classes. Needless to say projection in natural languages, whether by combining familiar expressions or by coining new ones, is not of the sort just described. Certainly projection by coinage is by stipulation, and projection by combination involves the use of a generative grammar, complete with phonetic, syntactic and semantic components, which, whatever the details as currently sought by transformational linguists, involves anything but continuous correlation.

A seemingly more telling objection is that continuous correlation, as I have defined it, does not reflect the informal description I gave at the outset of this section in terms of proportionate variation between pictorial properties and represented properties. It is true that since the formal definition requires only orderings along dimensions of pictorial properties and corresponding represented properties and does not incorporate quantitative measures on each such dimension, the possibility is left open of a continuously correlative system in which, with respect to

some pictorial dimension and the corresponding represented dimension, with both assigned a measure, a narrow range of pictorial properties is correlated with a wide range of represented properties, or vice versa. However, I think there is no reason to rule out such a possibility *a priori*. Considering the wide variety of possible continuously correlative mappings, which under given measures may be direct or inverse, linear or exponential or otherwise, the most we can say is that to be workable they must be relatively simple and straightforward. Thus the present objection is not against my criterion of representationality but against formally bizarre systems of representation.

Again, it might be objected, my definition assumes that the correlations must be single-variabed and single-valued, whereas in practice they are often many-variabed and many-valued, as in the standard family of systems where two-dimensional size, shape and position are jointly correlated with three dimensional size, shape and position. However, clearly the definition can be so interpreted as to apply to such cases: the correlation must be continuous with respect to each variable while the others are held constant, and continuous with respect to each value while the others are held constant. This is easier said than done, for it is difficult to state what is correlated with what more specifically than that, say, a mountain is correlated with the character the sketch is an inscription of.

I have offered an account, in terms of jointness and continuous correlation, of representationality for a symbolic system. Now the following possible objection assumes that it is primarily a symbol, that is a compound symbol such as a painting, which is or is not representational. For consider any clear-cut example of a picture, say a faithful and realistic painting of a man on a horse. It might be objected that this painting is a picture of a man on a horse regardless of what sort of system the painting is in, provided that the system correlates the properties of *this* picture with properties of what it purports to denote. To put the objection differently, this painting is the picture that it is regardless of what other paintings in its system are pictures of. Thus among the countless systems which correlate its properties in the same way there may be one in which a painting but slightly different from the painting in question is a picture of an elephant on a mouse, and in this same system there is a third painting slightly different from the first two which is a picture of the world on the shoulders of Atlas, and so on.

Now my reply to this objection brings out once again the fact that to be a genuine system a system must be workable. That is, painters must be able to use it and spectators must be able to read paintings in it, assuming it to be somehow habituated. For consider what are the conse-

quences of supposing that there could be such a system in which there could be three similar paintings that are such different pictures. Suppose that we have access to the relevant information enabling us to determine which painting is a picture of what, in particular the information correlating shape with shape. How do we utilize this information? With slight differences making great differences, clearly we cannot tell just by looking which of the three pictures we are looking at. Indeed, since one is a realistic picture of a man on a horse, and the others are not realistic pictures, probably we would take all three as pictures of a man on a horse. In short, we would read them as parts of a realistic system with continuous correlation. Or suppose that the picture of the man on a horse is in an unrealistic system. How could such a system become entrenched in such a way that a painting in it could be read, or rather seen, to be the picture that it is (in that system)? Our three similar pictures of three quite different subjects could not be seen in that manner, for the only way their system could become entrenched would be by lexicon rather than by example. And the only way such a picture could be read would be by measuring its shape (and other properties) to determine what characters it is an inscription of. With discontinuous correlation, telling by looking would be impossible. In short, pictures in such a system could not be representational. Such a system would be more descriptive than depictive.

My claim does not rest on a feature accidental to the systems of representation that are familiar and thereby realistic. The feature of continuous correlation is essential to any system properly to be called representational. Only in such a system can the correlates of new inscriptions (inscriptions of newly used characters) be determined, even approximately, from their symbolic properties by projecting from previous correlations of symbolic properties with object-properties. Where the betweenness relation is not preserved, such projection is impossible. Thus, for example, in a natural language there is no way to project from a partial set of correlations of predicates with properties to the correlates of other predicates on the basis of spelling or any other symbolic property. Notice too that syntactic differentiation seems essential for natural languages and is generally absent in pictorial systems. Its absence alone demands some kind of functional relationship between symbolic properties and their correlates, so that to approximate symbol identity is to approximate correlate identity. Continuous correlation makes this concomitant approximation possible. Only where this is present can the picture be seen as what it represents, as is now to be explained.

REPRESENTATION AS METAPHORICAL IDENTIFICATION

In viewing a representation (a picture or a painting) one sees it (initially anyway) not for what it is but for what it represents. One is not thereby under the illusion of seeing the object represented. Still one sees the picture in terms of the properties represented not, or at least not focally, in terms of its pictorial properties with which they are correlated. When one is habituated to the operant system of representation one perceives the represented properties immediately (in both the temporal and phenomenological senses of the word). It takes some mental effort to focus on the pictorial properties, to inspect rather than to view the picture or painting. The degree of effort depends on how purely representational the picture is and on how unobtrusive its pictorial properties are, *e.g.* on how little brush-stroke and the use of colour call attention to themselves or on how subdued are nonrepresentational decorative lines. To be sure, one must tacitly be aware of the pictorial properties themselves, since it is by their correlation with object-properties that the latter are perceived at all. But if one approaches a painting sufficiently closely, or looks at it upside down, one perceives only the pictorial properties—the system of representation can no longer operate. And for the pictorially illiterate primitive, or for someone totally unversed in the operant system, only pictorial properties are perceived, whatever the distance and angle of viewing. For the spectator literate in the operant system, the represented properties are perceived focally, although pictorial properties may obtrude themselves into the experience. And in perceiving works concerned not solely with representation, there may be a dynamic interplay between pictorial and representational perception, sometimes with clashing results.¹⁰

To the extent that represented properties rather than pictorial properties are perceived, representation, I claim, is metaphorical identification. That is, in so far as its own properties are transparent, metaphorically a picture is what it represents. To clarify and substantiate this claim I first reply to a possible objection and then allude to and apply Goodman's account of metaphor.

Now it might be objected that I have not hereby distinguished depiction from description, since in reading or hearing a descriptive passage one is not focally aware of the orthographic or phonetic and syntactic properties of the string of words—if one were, one could not understand them; and yet one is surely not aware, however vivid one's imagination, of the description as being, even metaphorically, what is described, or as having, even metaphorically, the properties its subject is described as having.¹¹ However, there is a phenomenological difference. Although

symbols, whether pictorial or linguistic, work automatically and instantly (when the operant semantic system is used with facility), the many symbols in a picture work more or less simultaneously, whereas words work in succession. Thus the experience of viewing a painting parallels in this respect viewing what is represented (from one angle, since one cannot look around a painting), while in understanding a verbal passage, even with vivid imagining, one must put the described pieces together.¹² Indeed if a painting were 'read' bit by bit, even with at each moment a pictorial property correlated with a represented property instantly and automatically, the experience would not be one of seeing a representation. Of course, like a description a film is 'read' sequentially, but each element of the sequence is a picture and the sequence of experiencing such pictures parallels the experience of viewing a sequence of events.¹³

In discussing the nature of expression in art Goodman argues (Chapter II) that a work metaphorically exemplifies what it expresses. (Note the parallelism with my present claim—a work metaphorically is identical to what it represents.) In explaining his claim (which cannot be discussed here) he makes the general observation that metaphor involves not merely change of range of a given label but an implicit transfer of realm of its schema. That is to say—and the reader is referred to pp. 71-85 of Goodman's book—underlying a given metaphor is a principle of transfer applying to a whole scale of expressions of which the given is but one.

Now to conceive of representation, unlike description, as metaphorical identification is supported by, and using Goodman's account of metaphor explained by, our earlier characterization of representational systems by continuous correlation, absent in linguistic systems. The correlations in a representational system, because they are continuous with respect to orderings (in various dimensions) of pictured properties and orderings of pictorial properties, effectively determine a schema in each pictured dimension and the realm in each pictorial dimension to which it is transferred by correlation. The labels in each schema are those designating pictured properties of each dimension, and they are systematically and continuously transferred to a dimension of pictorial property. Thus by this route of transfer metaphorically the picture is what it represents. It is perceived as such when the system of correlation (schema transfer) is familiar. A description, on the other hand, is not what it describes, even metaphorically, since the semantic system of a language is not continuously correlative. Here the correlation of symbolized properties with symbolic properties is of radically a different sort, the worthy subject for transformational linguists.

CONCLUSION

The general account given here is of *what* it is for a painting or photograph to represent in virtue of its pictorial properties. Little has been said as to how it does this or how one perceives it to do this. Given that only some of a picture's countless properties contribute to how it represents, and that only some of the rest go unnoticed, there arise psychological questions of perceptual and cognitive selection and organization, in answer to which an appeal to implicit knowledge of symbol systems helps only partially. To give a general characterization of such systems merely locates the domain of psychological investigation, in so far as it suggests the type of implicit knowledge in need of explanation. Furthermore, using such a system in 'reading' a painting is more than knowing it, for it does not determine its input. That is, knowing that a particular system of representation operates in a given painting does not tell one how to read it, for the languages of painting, unlike those of writing and speaking, are not alphabetic or even quasi-alphabetic like that of music. Thus knowledge of the system does not tell one what to read; at most it determines what is readable, *i.e.* what properties it maps into object-properties; in some cases several potential readings must be tested until a coherent total reading of the picture is arrived at.

Representationality depends upon an implicit system of correlations between symbolic properties and object-properties. I diverge from Goodman in claiming it to be marked not by denseness but by jointness (syntactic and semantic), and more importantly (except in the parasitic case of expressive representation) by continuous correlation, dimensions of concomitant variation between properties picturing and pictured. These dimensions of correlated properties provide the schemata and the route of transfer by which a picture metaphorically becomes what it represents.

Going beyond the scope of this paper into general philosophical and psychological considerations, it may be speculated that the notion of continuous correlation has far-reaching application to the understanding of perception and nonlinguistic cognition, which by no coincidence many philosophers have termed 'representation'. The speculation is that the systems by which cognitive beings represent things in the world at least in part possess the feature of continuous correlation (which, by the way, the analogue computers are in effect known to possess). If so, there arises the further question how such systems are transformed into discontinuously correlative systems of language.¹⁴ But of course these are topics for another time and place.

REFERENCES

- ¹ Oxford University Press, 1969.
- ² A representational painting may expressly not represent, as for example Magritte's amusing, and theoretically interesting, painting of a pipe, captioned, 'Ceci n'est pas une pipe'—it's a pipe-painting. (Could it be a representation of one?)
- ³ E.g. works by Magritte and by Escher. This phenomenon has been explained recently (Richard L. Gregory, 'Visual Illusions', *Scientific American*, November 1968) in terms of the clash between two- and three-dimensional perception, i.e. between perception of pictorial properties and perception of pictured properties.
- ⁴ P. F. Strawson, 'Persons', Chapter III of *Individuals* (1959). Here we may safely ignore the philosophical problems associated with this distinction.
- ⁵ 'Fake and Works', forthcoming, in which questions of forgery and of work identity are discussed. Goodman examines these questions in Chapters III and V of *Languages of Art*.
- ⁶ Each may grade off, i.e. into neutral zones, but not into the other, so that a character may have borderline inscriptions. An analogous point applies, with respect to compliance-classes, to the definition of semantic differentiation given below.
- ⁷ Goodman discusses the composition of inscriptions on pp. 141–3.
- ⁸ This is an over-simplification, since many types of property are themselves multi-dimensional, e.g. colour and shape. Furthermore this talk of dimensions assumes that properties other than simple sensible qualities can be plotted on to them in various complex ways, so that, for example, how a face, forest or foray looks can be represented by such a dimensionalized system. So for simplicity we are assuming something like Locke's simple/complex distinction.

⁹ The notion of continuous correlation can be expanded to apply to theoretically possible systems not dense in both respects. Consider a system that is semantically but not syntactically dense, such as the restricted pointillism described in the previous section. Then it is continuously correlative if, and only if, given suitable orderings, for every pair of characters between which there is a third, its compliance-class is between theirs; and a character whose compliance-class is between those of any two characters is between those characters, or is one of those characters. By this criterion (and by jointness), restricted pointillism is representational, though not syntactically dense. In contrast any natural language, syntactically differentiated but semantically dense, is not representational, because any syntactic ordering of characters, say a lexicographic ordering, is anything but invariant from characters to compliance-classes and from compliance-classes to characters, even if only characters with compliance-classes (nonvacant characters, in Goodman's terminology) are considered. Notice that in the present case,

When a system is semantically but not syntactically dense, the result may be inadequacy or ambiguity: either some wanted compliance-classes being left nameless [symbol-less] or many sharing the same name [symbol]. (162)

At any rate, if such a system is to be representational, betweenness must be invariant so far as possible, given that the system is not syntactically dense.

Again, a system which is syntactically but not semantically dense is continuously correlative if, and only if, given suitable orderings, between every pair of characters there is a third whose compliance-class is between theirs, if possible, or identical with one of theirs; and a

character whose compliance-class is between those of any two other characters is between those characters. A bar graph, in which length is correlated with population, is in a continuously correlative system of this type, and would represent but for lack of many-jointedness. Finally, a system neither syntactically nor semantically dense is continuously correlative if, and only if, for every pair of characters between which there is a third, its compliance-class is between theirs, if possible, or identical with one of theirs (in which case redundancy); and a character whose compliance-class is between those of any two other characters is between those two characters, or identical to one of them (in which case ambiguity). The last type of system is exemplified more or less by musical notation, at least as regards the note-signs; the sequence of note-signs in a score represents a performance of a score or, for lack of many-jointedness, is at least a diagram of a performance. These last two cases, both involving systems lacking semantic density, are of little importance to us, since where such a system is continuously correlative, it is not likely to be many-jointed, hence not representational, but diagrammatic. To be representational, its symbols would have to have many relevant properties, each of which is correlated with some

property that is antecedently atomized or unitized. Actual cases of continuously correlative systems so correlated include only graphical and diagrammatic systems, which are disjoint, usually representing only one type of property, one measurable in units or countable in integers.

¹⁰ See note 3 above.

¹¹ Except for the non-pictorial objects of symbolic idolatry, at least in the minds of its religious, political, and/or censorial practitioners.

¹² Interestingly, able users of 'Reading Dynamics' (a system of speed reading) in which the units perceived and understood are large blocks of print, find that the experience of reading a descriptive passage takes on a cinematic quality.

¹³ The experience thus paralleled needn't be of an ordinary sort. Just as a cubist painting simultaneously represents an object from different spatial points of view, so certain uses of modern split-screen techniques contemporaneously represent an event from different temporal points of view.

¹⁴ Language is not a picture of reality. So while Wittgenstein rightly says, 'The pictorial relationship consists of the correlations of the picture's elements with things' (*Tractatus* 2. 1514), not just any type of correlation will be pictorial—it must be continuous.