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LETTERS

Readers' comments are welcomed on texts published in Leonardo. The Editors reserve the right shorten letters. Letters should be written in English or in French.

**ON J. J. GIBSON'S APPROACH TO THE VISUAL PERCEPTION OF PICTURES**

James J. Gibson cannot put pen to paper without offering food for thought, for example his recent text in *Leonardo* 11, 227 (1978). I have found some of his ideas immensely nourishing, but there are others that I cannot, frankly, digest. His rejection of the notion of representation and his denial of the possibility of pictorial illusion are cases in point. At the risk of repeating what I have said elsewhere, I should like to begin by expressing my regret that he only concerns himself with 'pictures' and not with images', including 3-dimensional 'fac-similes'. Whether one thinks of nothing more outlandish than artificial flowers imitation jewelry and false teeth, these devices surely can deceive the eye. Gibson may reply that such 3-D objects do not concern him, because they are perceived like other objects 'in the round'. Children will see the stuffed toy kitten exactly as they perceive the real kitten of which he speaks. Granted, but is that always true of 3-dimensional images? There is a tradition in Gothic art of representing Sin in the guise of a beautiful woman when seen from in front, but as a horrible corpse from behind. I cannot see how this type of surprise can be accommodated in Gibson's theoretical analysis. Nor is it all that eccentric, for what it purports to teach is precisely the difference between 'appearance' and 'reality', which has played such a part in aesthetics (and ethics) and which he wishes to negate.

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Gibson may retort that he was not speaking of sculpture. But it seems to me that neither in history nor in perception can 2-D pictures be neatly separated from 3-D representations. The transitional form is

of course known as relief. There are all grades of relief, from near statues in front of painted backgrounds to flat surfaces a few millimeters deep. Whatever they are, they are objects in space that should, if I understand Gibson rightly, be perceived precisely for what they are, through their invariants. But this postulate is contradicted by experience. No form of 'representation' is more apt to unsettle one's assurance than precisely this. Of course one does not take the relief representing the nativity to be a real glimpse into a stable - this notion of illusion is a red herring - but there are many cases where one is less than certain how far, say, the images of the ox and the ass in the background protrude. Nor is this uncertainty removed by binocular vision or even by parallax. 3-D and 2-D seem to merge imperceptibly, as, incidentally, they also do in a stereoscopic viewer, where there is an even transition from the impression of solidity to a progressively pictorial appearance of distant buildings and hills.

If proof were needed of the relevance of the sculpted relief to this issue I would see it in the tradition of trompe l'oeil painters to paint precisely such fictitious reliefs in decorative contexts, over doors or over chimneys. I venture to say that it is empirically incorrect to say that such paintings cannot leave one in doubt whether they are wholly flat or not. I wish that I could take Gibson on a tour through the Baroque churches and castles of [174] Italy Austria and Southern Germany to demonstrate to him the effectiveness of illusionistic tricks. It is far from easy to decide in every case whether an architectural string course or console is 'real' or 'painted', particularly where there is a transition from one to the other. Granted that these tricks are performed with manufactured objects (marble reliefs, stucco friezes, etc.) and not with the real objects of our environment. There may be a lesson here, but not quite the one Gibson teaches.

Much has been made of the fact that the most spectacular illusionistic tricks of these Baroque painters can only work from one station point. Both M. Polanyi and M. H. Pirenne have used these examples to arrive at a definition of pictures that comes closer to Gibson's than mine would. For the collapse of the illusion in these cases is due to the continuity between the architecture and the illusionistic painting, the real columns support painted ones, and, as soon as one shifts one's position, one sees the break and feels discomfort. But, though this continuity is a powerful aid in the achievement of illusion, it is not an invariable condition. Painted reliefs over doors and similar minor tricks may be less spectacular, but they offer a counter-example to the analysis. This kind of illusion does not depend on monocular vision from one point only. Finally, I wish I could take Gibson to that enchanting church in Milan, S. Satiro, in which the great Renaissance architect Bramante used his mastery of perspective to simulate a choir that appears to extend in depth, though it is only a few yards deep. No amount of a priori reasoning can do away with the fact that even without a 'bite-board' sane visitors endowed with two eyes have been first deceived and then baffled by this unexpected array.

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In his long search for an adequate theory of pictorial perception, James J. Gibson has shown an exceptional capacity for changing even rather basic convictions to follow new evidence and insights. Where he once relied on exact matching of bundles of light rays, he now recognizes that such matching occurs, at best, 'for a single eye at a fixed point of observation with a constricted field of view, that is, for "peephole" vision' (in *The Ecological Approach to the Visual Perception of Pictures* [Leonardo 11, 227 (1978)]). Or, as I wrote in *Languages of Art* [1968; 2nd ed. (Indianapolis: Hackett, 1976)]: 'The picture must be viewed through a peephole, face on, from a given angle and distance,

and with a single unmoving eye.... What can be the grounds for taking the matching of light rays delivered under such extraordinary conditions as a measure of fidelity?'

But I find some difficulties in Gibson's latest views. The 'invariants' that are now the fundamental elements of his analysis are, he says, 'nameless and formless'. I suspect that he is saying that what one perceives are things-in-themselves, making up that neutral world that remains when one removes all that is contributed by diverse right versions of it. Such a world, such things-in-themselves, will turn out - my recent *Ways of Worldmaking* [Hackett, 1978] argues in some detail - to have no features at all, to be indeed nameless, formless and pointless.

In the course of his text, Gibson inadvertently furthers a misunderstanding of one aspect of my work. He writes: 'Goodman, in *Languages of Art* assumes that depiction is fundamentally description, that we learn to read a picture as we learn a language and that linear perspective could just as well be reversed from the way we have become accustomed to interpret it.' I do indeed argue that one has to read pictures, like texts, in the sense that one has to learn and apply the appropriate symbol system and that symbol systems in the case of pictures vary widely, even to the point of reversing perspective. But I surely do not say that depiction is fundamentally description. On the contrary, I devote many pages to drawing a distinction between description and depiction in terms of the different characteristics of the symbol systems employed.

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**Editor's note:** For other discussions of J. J. Gibson's text see p. 121 and p.135 in this issue, *Leonardo* 12 (No. 2, 1979). [175]