detail my reading of his research. In my "Gombrich on Art Historical Explanations" (*Leonardo* **16**, No. 2 (1983) pp.91–96) and in a book, *Artwriting*, which will soon be forthcoming, I show, I hope, that I have learned from his kind responses to my writing. Since I have gained so much from him, nothing would be more ungracious than to quarrel with him now, particularly about the precise interpretation of his work. I hope therefore, that my few, brief remarks may contribute positively to an ongoing debate which, modelled on Sir Karl Popper's theory of scientific experimentation, may lead us all closer to the truth.

My goal in providing a commentary to Dr Norman Bryson's remarks was to indicate one perspective on his semiotic theory of art. As the reference in the second footnote indicates, I do not accept entirely Bryson's theory, nor do I agree with his reading of *Art and Illusion*. Here, then, I present my own reading of Gombrich's work, which differs, I believe, from Bryson's..

Art and Illusion contains two lines of thought which are difficult to bring together. On one hand, Gombrich does seem to say that some naturalistic representations are illusions. For example, he writes:
"While standing in front of a painting by Jan van Eyck we...believe he succeeded in rendering the inexhaustible wealth of detail that belongs to the visible world" (p.220).
"Only in extreme cases...are the illusions of art illusions about our real environment. But they are illusions all the same..." (p.277).
"...under the hands of a great master the image becomes translucent" (p.389).
Not only in the title, I would think, is a theory of representation as illusion entertained. On the other hand, many other passages focus on the role of convention in representation and *explicitly* deny that artworks are illusions. For example: "We rarely get into situations where the eye is actually deceived..." (p.246). Here is one way that these two lines of thought might be made consistent with one another. Gombrich argues that "we can train ourselves to switch between readings, but we cannot hold conflicting interpretations" (p.236; see also p.6). So it seems possible to maintain both that representations may be seen as illusions and that they can also, when we switch readings, be viewed as visual signs. If many readers of *Art and Illusion* have been tempted by the identification of representation with illusion, perhaps that is because they find it difficult to understand how we actually do switch between readings. Michael Podro's "Fiction and Reality in Painting" (*Poetik und Hermeneutik* Bd. X (Wilhelm Fink Verlag: Munich, 1983): pp.225–237) offers a challenging discussion of this problem.

I admire Gombrich's efforts in the papers mentioned in his letter and other work since *Art and Illusion* to carry further the study of this difficult problem. His books and articles have taught me, a philosopher by training, to be skeptical of the belief that the techniques of philosophy can solve these problems. The lesson I draw from his work, and from such other well known texts as Anthony Blunt's "Illusionistic Decoration in Central Italian Painting of the Renaissance" (*Journal of the Royal Society of Arts*, April 1959: pp.309–326) and Sven Sandstroem, *Levels of Unreality: Studies in Structure and Construction in Italian Mural Painting During the Renaissance* (Uppsals, 1963) is that only careful study of concrete examples will advance the analysis. For that reason, I can only regret that

Gombrich has not yet taken issue with the details of Bryson's examples. Would not doing so now carry the debate forward?

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Comments on "A Visual Aid for Artists with Retinitis Pigmentosa ('Tunnel Vision')"

Apart from the obvious usefulness of the use of the two mirrors to correct 'tunnel vision', *Leonardo* **17**, No. 3 (1984), the optical arrangement can be very useful for people who like to stand back from their picture, but are hampered by limited studio space. In case the artist only wished to view the painting without actually working on it, a single small mirror can be mounted on the wall behind the artist, and he or she can look into it to see the picture from about double the distance of the unaided eye.

This last arrangement has a fascinating historical precedent, the experiment made by Brunelleschi, the pioneer of perspective drawing, in the 1460s. To give a lifelike impression of his painting of the Baptistry of Florence Cathedral, he asked the viewer to look through a small hole drilled through the actual painting (a small panel held in one hand) while seeing the reflection of the painting in a mirror held in the other hand [1]. Not a very practical arrangement for the practicing artist!

In my own work I find that sometimes looking through an old detached zoom lens gives a wide overall view of the picture, and then suddenly zooming in on a particular area gives a very vivid impression, helping link up the part to the whole.

One last remark concerning the small mirror of the pair mentioned in the article: a front-coated mirror would be more expensive, but it would give a much sharper image, specially of thin lines, since a front mirror will not give the annoying double reflection caused by the glass used in conventional, back-coated mirrors.

REFERENCES AND NOTES

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Comments on "Drawing for Designing"

I read Peter Lloyd-Jones's article, *Leonardo* **17**, No. 4 (1984), with great interest, as I am in the process of finalizing a teaching method in three-dimensional basic design devised along similar lines of thought. The key idea of the article can be summarized by Mr Lloyd-Jones's statement that "a design is 'discovered' or invented by variations in decisions during the process of construction itself".

Two elements are essential in this phrase: "variation in decisions", which can be defined as experiments or experiencing, and "construction", by which we usually mean some kind of three-dimensional delineation. This delineation is characterized by one or more

well-defined structures which are conceptually conditioned by some kind of systematic approach achieved by the integration of rational thinking and intuitive sensing. In support to the validity of his approach, Lloyd-Jones describes a brief account of some of his students' works. These works are three-dimensional, expressed via axonometric drawings or tectonic objects.

I find it difficult hence to understand why the author employs the term 'drawing' in describing his method. In my opinion, 'modeling' would be a more suitable term. Modeling in itself is a means intended to make possible the realization of 'constructive forethoughts'. I agree with the author that certain kinds of correlations are necessary in order to reach this realization. The question is: why limit students to the use of matrix correlations only?

The final stage in Lloyd-Jones's method is presented as an escape into a 'phantastic architecture'. Is this a compensation, an opportunity to revolt against rectangular limitations?

I believe that this experiment has the potential to achieve more than just some sort of visual pattern. In my view, modeling is a technique that helps transform space ideas from abstract statements into concrete realizations. In order to fulfil this task, modeling has to be enriched by some kind of well-defined content dimensions, formulated as conditions, situations, constraints or demands. This content might be of a functional nature (use-structure), contextual nature (environmental, historical), material nature, or combinations of any of these dimensions.

In no case can design survive, let alone develop, by creating patterns and types for their own sake. The 'raison d'etre' of design in general, and design education in particular, is to create a presence whose meaning and structure are legible, easily understood, employed and enjoyed.

It seems to me that the method presented in Mr Lloyd-Jones's paper can offer answers to the questions I have raised. Therefore a more detailed description of the course, and how Peter Lloyd-Jones developed it, would be helpful to those, like myself, who are interested in the subject.

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Comment on "The Fourth Dimension and Non-Euclidean Geometry in Modern Art"

One of the most striking characteristics of modern art is its unequivocal rejection of perspective. We believe that this rejection is an unjustified prejudice that originated, at least in part, from a conceptual blunder.

This blunder was the belief that one could infer from the fact that the world might be mathematically describable as four-dimensional and non-Euclidean such general notions as that the world is irrational, that truth is relative, that knowledge is conventional, and so on. In modern art, this belief led to the conclusion that the three-dimensional visual reality provided by our sense of sight, and best captured up to that time by classical perspective, was completely deceitful and should be abandoned. At least, such was the conclusion drawn by many modernist artists, critics and historians.