It has been suggested that I make some comments on the very interesting discussion of the relation of facts and value in the March 1969 number of *Zygon*. I do so in the following remarks, which indicate my own perspectives.

**COOPERATION BETWEEN SCIENTISTS AND PHILOSOPHERS**

First of all, a few statements about the desirability of a better understanding between scientists and philosophers as regards their roles and methods. On the whole, I think that present-day philosophers are sufficiently impressed by the achievements of the sciences. I know that I myself, some sixty years ago, began with the assumption that philosophy had to integrate itself with science by clarifying certain perennial problems, such as those of epistemology, the mind-brain situation, the import of evolution, and the relation of fact and valuation. My outlook was naturalistic and even sympathetic to an evolutionary kind of materialism. Out of this, as the years passed, came my championship of a critical, referential realism, the doctrine of emergence, the identity and double-knowledge view of the mind-brain situation, and an attempt to clarify the difference between cognition and valuation. These two differing and yet interconnected activities seemed to me to throw light on the two terms "fact" and "values." Cognizing seemed to me to achieve facts about the world, while valuation, in its own way, arrived at appraisals of objects and objectives in the context of their bearing on human life. With this approach the reader can understand that I was rather irked by the question put in *Zygon* of deriving values from facts. I would rather say that valuations must take account of facts. In morals, for example, *good reasons* for moral decisions must include factual knowledge of consequences of actions. In short, I did not want to reduce one to the other but to distinguish and relate. But I shall go into this point a little more later.

While I am at it, I should like to call attention to a feeling I have had through the years which concerns the cooperation of scientists and philosophers. Scientists are largely specialists and very busy men. They

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are therefore apt to come to philosophy rather late in life and with acquired attitudes. These attitudes reflect a course they may once have had in philosophy, combined with current beliefs as to the fumbling frustrations of schools of philosophy. I can quite understand these attitudes, since I have been somewhat of a heretic in philosophy. All I would say is that scientists interested in philosophy should be rather patient and stand back for a while before they make up their minds about its techniques and perspective. Such a scientist and one whom I worked with a good deal was C. Judson Herrick, a very able biologist. I found we could agree on many points. Lord Brain was another inclined to realism and evolutionary naturalism. These remarks about the cooperation of scientists and philosophers are purely cautionary. I desire an integration of science and philosophy but one that does justice to the methods and functions of both.

Philosophy has stressed the problem of the nature of human cognizing and its conditions, while science has improved human cognizing itself. It is time they joined forces on this great human achievement. It has long been my thesis that facts are cases of knowledge-about. They must be understood in this context. They are not peculiar kinds of entities. They are achieved by methods beginning with sense perception. May not values be somewhat similar achievements, supplementary to facts but resting on an integration of facts and feelings? I use the term "feeling" here in a broad way. Man wants to know, but he must also size up the bearing of what he knows on his own life. That is, he is an agent as well as a knower.

If we turn to language as a guide, we find expressions like value judgments and predicates like good, bad, desirable. The relevant point for the present topic is that these predicates are not descriptive and thus factual but terms of appraisal. Of course, we cannot appraise without relevant, factual knowledge. But why blur the distinction? It is better to clarify the difference and relate it to function. As I said before, cognizing is one function of the human organism and valuing is another. They are, naturally, interconnected. But their range and purpose vary. The valutational activity, as I see it, is more humanistic and centripetal. This has bearing, of course, on religion. It leads to the question of the framework of theology. This began with a supernatural framework, but can this be justified?

I pass now to the contents of the March 1969 Zygon. All the articles seem to me of high quality. But I am going to concentrate on the papers of John O'Connor and Edward Walter. These are young philosophers and intrigue an old one. O'Connor raises the question of deter-
minism as against freedom, while Walter concerns himself with the role of reason in morals. I am very sympathetic with his attack on Hume and on emotivism. Reason seems to me active in both cognition and valuation. Hume separated fact and value but it seems to me for the wrong reasons.

**Self-Determination in Commitment**

First, then, to O'Connor. I like the clarity of his thesis. Determinism means for him that no one could do other than he in fact does on any occasion. To give this thesis plausibility, he stresses the genesis of moral development. The moral life with its quality is a growth. I accept this perspective. It is quite in harmony with my notion of emergence. But I want to raise the question of the varying texture of causality. Even in 1909 I raised the question of levels of causality, and in the fifties I argued for the emergence in man of what I called rational causality, that is, the operating role in morality of rules, criteria, and reasons. Causality at this human level involved a novel kind of texture. I spoke of agential causality. This level is displayed in deliberation. I have argued that the moral decision is not predetermined. It is worked out. And I do think the agent in his sense of freedom or, as it is popularly called, free-will, is aware of this working out. He has to make up his mind. I grant the importance of his moral development. That helps to make him the person he is. But, in agential causality, his potentialities are not enough. He has a moral problem to solve. He has to make a commitment.

Now, a commitment is a *fait accompli*. But why does Professor O'Connor assert that his decision was the only possible one. This suggests that it was foreordained rather than worked out. I would not thus separate the decision from the operative factors. The texture of moral decision seems to me to involve the openness of a real problem. To say that the agent could do nothing other than he did is, it seems to me, a denial of the reality of choice. I, on the other hand, analyze the level of agential causality as involving the texture of choice in a morally developed person. This raises the semantics of the category of "could." To me, its context is the process of moral deliberation in its genetic setting. This seems to me to involve a certain openness. Professor O'Connor, on the other hand, appears to reject this texture.

In agential causality the agent participates in the causal decision. I would therefore call it participative causality. I quite agree that the self is a development under educational, social conditions. It becomes a moral self. This involves the acceptance of standards and criteria.
Insofar, it binds itself. It follows that my divergence from the position of Professor O'Connor turns on my concern with the element of self-determination in commitment. Perhaps I can make this clearer in considering language categories in nonmoral decisions. What does "could have if" indicate? It seems to me that it signifies a recognition of the role of the self in choice. I have no mystical notion of the self. It seems to me essentially dispositional. Yet it is a center of control. In nonmoral situations "I could have if" means that this control is at work. If I had wanted something enough, I could have chosen it. Causality here is not a unilinear affair as in billiards but involves interplay. I think language categories reflect this texture. And it is not surprising that they operate at the moral level.

My divergence from Professor O'Connor is, after all, only a slight one. I am a believer in causality, but I hold to levels of an emergent type. Decisions have their conditions. If, as a moral agent, I make a decision, this expresses my moralized self. The "could" is in the background to reflect the active nature of the self, but it must be taken with an "if." The final decision reflects the texture of the causality at work. But this kind of determinism does not seem to me repugnant. It is a participative one.

Cognition and Valuation

I turn now to Professor Walter's essay. I agree with him in his criticism of Hume. Hume had too passive a kind of psychology. Cognitional reasoning was an affair of repetition. It was concerned with sensations and ideas and habits. And these were terminal. In this he was a phenomenalist. Values tied in with the emotions, and these were of the nature of particular responses. He thus had a fixed dichotomy, which led him to separate the is from the ought. He drew some good conclusions from this separation to challenge theological ethics. But I will argue that reasoning can work both in cognition and in valuation without blurring the distinction between fact and value. As I indicated before, cognizing is one enterprise of the human being and valuation is another. A fact is a case of knowledge-about, while an appraisal has another foundation in concern with the bearing of an object, or objective, on the human economy. In fact, description dominates. In valuation, another type of adjective stands out.

I quite agree with Professor Walter that attitudes are not independent of beliefs. Rather do they reflect that interplay of knowledge and feeling which manifests itself in judgments of value. Taken by them-
selves, emotions are rather blind. Professor Walter shows that they are tied in with beliefs established by tradition.

Emotivism in ethics developed with positivism. In cognition, positivism stressed sensations, and emotions were leftover. Stevenson’s emotivism reflected this separation. It would be my thesis that both cognizing and valuing are activities but with different goals. I wonder how far Professor Walter would agree to this.

I am, of course, completely naturalistic in my outlook. But man is complex and is both a knower and an agent. In science the stress has been upon impersonal fact. But man must note his commerce with things and the way they affect him. He must have good reasons for his choices, and these involve the integration of knowledge and feeling. As I see it, fact and value supplement one another. Both have empirical and rational foundations.

I have long argued for an integration of science and philosophy, but I think that this can be brought about only as a result of mutual understanding. Man’s claim to knowing is a remarkable claim, and I have tried to understand it. The result was my critical realism. Valuation is another kind of claim and deserves study. The cooperation indicated in Zygon is to be welcomed.