
Language, Rules and Behavior*

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MY PURPOSE in writing this essay is to explore from the standpoint of what might be called a philosophically oriented behavioristic psychology the procedures by which we evaluate actions as right or wrong, arguments as valid and invalid and cognitive claims as well or ill grounded. More specifically, our frame of reference will be the psychology of rule-regulated behavior, or rather, since such a science as yet scarcely exists, it will be such anticipations of a psychology of the so-called higher processes as can be precipitated from common sense by the reagents synthesized by the naturalistic revolution in psychology instituted within the memory and with the vigorous assistance of the man to whom this volume is dedicated. Within these coordinates I shall attempt to map a true *via media* (one which doesn't covertly join up with one or other extreme beyond the next bend in the road) between rationalistic apriorism and what, for want of a better term, I shall call "descriptivism," by which I understand the claim that all meaningful con-

*The present paper has grown out of the stimulating discussions with my friend and colleague, Herbert Feigl, which it has been my good fortune to enjoy over the past three years. It was precipitated by a reading of an early draft of his paper, "De Principiis non Disputandum—?" which will appear in a volume of *Essays in Analytic Philosophy*, edited by Max Black, to be published in the fall of 1950 by the Cornell University Press. There the reader will find an exceptionally clear statement of puzzles relating to the justifiability of First Principles, together with a brilliant and original analysis of the various forms taken by the "appeal to Reason."

cepts and problems belong to the empirical or descriptive sciences, including the sciences of human behavior.

Those who deny the existence of such a *via media* offer the following argument: "How can one assert the existence of concepts and problems which do not belong to empirical science, without admitting the existence of a domain of non-empirical objects or qualities together with a mental apparatus of acts and intuitions for cognizing them?" The rationalists add a minor premise of the form, "Concepts and problems relating to validity, truth and obligation are significant, but do not belong to the empirical sciences," and conclude, "Therefore a domain of non-empirical qualities and a corresponding apparatus of acts and intuitions exist." The descriptivist, on the other hand, denying, as he does, the rationalists' conclusion while accepting their major premise, finds himself forced to deny the minor premise. Clearly he can do this either by maintaining that the concepts and problems to which the rationalists appeal are pseudo-concepts and pseudo-problems, or by claiming that, though legitimate, they are, after all, included within the scope of empirical science. In the field of moral philosophy, descriptivistically inclined philosophers characteristically divide into those who claim that the concept of moral obligation is a pseudo-concept, such words as "right" and "duty" serving merely to express attitudes and instigate actions, and those who accept some form of the venerable subjectivistic account now widely known as the "autobiographical analysis."

I can now bring my introductory remarks to a focus by supposing a suspicious pragmatist to ask: "Are you, perhaps, leading up to the following argument?"

Pragmatists are descriptivists
 Descriptivism entails Mill's philosophy of mathematics
 But Mill's philosophy of mathematics is absurd
 Therefore pragmatism is absurd

If you are indeed raising this old chestnut, it can be said right away that pragmatism is by no means committed to what it grants is an absurd interpretation of mathematics. The pragmatist merely in-

sists that there is no aspect of *mathematical inquiry as a mode of human behavior* which requires a departure from the categories of naturalistic psychology for its interpretation. If this is what you call descriptivism, then the pragmatist is a descriptivist, but in that case, descriptivism does not have the absurd consequences with which you threaten us."

Let me reply to this challenge by immediately disavowing any intention of accusing pragmatism of being a descriptivistic philosophy *as a matter of principle*. Indeed, there are clearly certain areas, one of which is exactly the philosophy of mathematics, in which pragmatism has explicitly rejected the descriptivist account, while expressing sympathy with its naturalistic motivation. Notice that our suspicious pragmatist did not say

"The concepts and problems of mathematics belong to naturalistic psychology."

If he had, he clearly would be formulating a descriptivistic philosophy of mathematics. What he actually said was

". . . there is no aspect of *mathematical inquiry as a mode of human behavior* which requires a departure from the categories of naturalistic psychology for its interpretation."

With this latter statement I am in full agreement. It must by no means be confused with the former. If it entails a descriptivistic philosophy of mathematics, it must be shown to do so by an involved argument of a type familiar to students of the rationalistic tradition. Needless to say, I do not believe that such an argument would be successful.

But if I do not accuse the pragmatist of being a descriptivist as a matter of principle, I do contend that pragmatism has been characterized by a descriptivistic bias. Thus, while it has defended the important insight that to reject descriptivism in the philosophy of mathematics is not to embrace rationalism, it has committed itself to descriptivism in other areas of philosophy (*e.g.* in its interpretation of truth and of moral obligation) with all the fervor of a

Dutch boy defending the fertile lands of Naturalism against a threatening rationalistic flood. Now it will be my contention in this paper that a sound pragmatism must reject descriptivism in all areas of philosophy, and that it can do so without giving one jot or tittle of comfort to what has so aptly been called the new Failure of Nerve. My point of departure will be an examination of the forms taken by our appeals to standards and principles when we *justify* something we have done.

What sort of thing, then, is a justification? Before attempting to answer this question, it will be worth our while to consider a familiar challenge to our right to raise it. Those who are alert to raise their voices on behalf of psychology will insist that to justify is to *do* something, to perform a mental action. To explain mental action is the business of the psychologist, and if he is not yet in a position to give a satisfactory account, if the truth must wait until he is adequately grounded in the behavior of the *rattus albinus Norvegicus*, the question nevertheless belongs to him. It is not a more legitimate concern of the philosopher than, say, the question, What is gravitation? If the philosopher objects that this same argument would excuse the logician from examining reasoning and the philosopher of science from examining explanation, he is promptly told that these very parallels make it clear that his business is to explicate the *correctness* or *validity* of justifications, and not the causal structure of justifications as matters of psychological *fact*.

But is it so obvious that by concerning ourselves with the correctness or validity of justifications we have moved from one field called psychology to another called philosophy? If validity or correctness is a property of certain mental processes, then does it not fall within the province of psychology to tell us about this property and its opposite invalidity or incorrectness? Or shall we say that psychology deals with some but not all of the properties exhibited by psychological processes? And if not with all, then what

distinguishes the properties with which it does deal from those with which it does not? Furthermore, must not the latter fall within the scope, if not of psychology, then of some branch of empirical anthropology?

Has, then, our philosophical problem turned out, after all, to be one of empirical science? Or shall we perhaps say that validity is a non-empirical property, and that, together with other non-empirical properties it falls within the scope of a non-empirical science of thought, a rational psychology? Is, perhaps, epistemology the non-empirical science of such non-empirical properties of thought as validity and truth? Could the propositions of such a science be anything but synthetic *a priori* truths?

How shall we choose between these alternatives? Or perhaps we have already made a mistake in speaking of validity as a property which can be exemplified by psychological processes; so that these alternatives do not even arise. If so, how could this be determined? Clearly we have come to the point where what is required is an exploration of some typical contexts in which the terms "valid" and "correct" appear to be properly, shall I say correctly, employed.

We began by asking "What sort of thing is a justification?" We should also ask "What sort of thing does one who justifies justify? Consider the following exchange:

Jones: I stayed away from the meeting.

Smith (pompously): How would you justify your conduct?

Clearly, then, it is proper to speak of justifying *actions*. How is it done? The above exchange continues:

Jones: One ought to do what is conducive to the greatest happiness of the greatest number, and, as I could readily convince you, staying away from the meeting was so conducive.

We are thus reminded that to justify a piece of conduct is to argue concerning the conduct, and, what is more important, that at least the earlier stages of such an argument consist in subsuming the conduct under what used to be called a moral law. Characteristic of moral laws is the use of the word "ought" in its categorical sense.

Now, I must confess that I find the emotive theory of moral obligation as unacceptable as would be an emotive theory of logical necessity, or (*pace* Hume) an emotive theory of physical necessity. This is not to say that I agree with the intuitionists in finding a non-natural quality or relation to belong to actions over and above their empirical characteristics. As I see it, an inventory of the basic qualities and relations exemplified by this universe of ours, and, in particular, by the mental processes of human beings, would no more include obligatoriness than it would include either logical or physical (that is, "real") connections. Although I have felt ever since making its acquaintance that the intuitionism of Ross, Prichard and Ewing is the only contemporary philosophy of morals which is reasonably faithful to the phenomenology of moral thought and experience, I have been equally convinced that we must look elsewhere for an adequate insight into the nature of the *ought* which they so rightly find to be central to the moral universe of discourse. For a time I thought that this insight was to be sought in the direction taken by emotive theories. I now regard this as a mistake—not because the ethical "ought" isn't *essentially* an expressor and instigator, but because what it expresses and instigates is *the observance of a rule*. To make the ethical "ought" into even the second cousin of the "hurrah" of a football fan is completely to miss its significance. If I have become more and more happy of late about Kant's assimilation of the ethical "ought" to the logical and physical "musts," it is because I have increasingly been led to assimilate the logical and physical "musts" to the ethical "ought." But of this more later.

Let us now examine the process of justification in another type of context. Consider the following exchange:

Jones: It will rain shortly.

Smith: Justify your assertion.

Clearly it is proper to speak of justifying assertions, which are, in a suitably broad sense, *actions*. It is equally proper to speak of justifying beliefs, which are, at least in part, dispositions relating to assertion. Shall we say, then, that one does not justify a *proposition*, but the *assertion* of a proposition?—that one does not justify a *principle*, but the *acceptance* of a principle? Shall we say that all justification is, in a sense which takes into account the dispositional as well as the occurrent, a *justificatio actionis*? I am strongly inclined to think that this is the case. But if so, is not our new example of justification as much a justification of conduct as was the first? Or can we distinguish within action in the broadest sense, between action which is conduct and action which is not? and if so how?¹

However this may be, Smith, in the above dialogue, has asked Jones to justify a certain assertion, and Jones's reply to this challenge is certainly relevant to our problem. The exchange continues:

Jones: Clouds of kind X cause rain, and there are clouds of kind X overhead.

Once again we have before us an argument of a familiar form. I want now to focus attention on three directions the argument might take if continued beyond this point.

(1) The justification will achieve its purpose only if Smith accepts the causal premise. If Smith should ask "Why *must* clouds of kind X be accompanied by rain?" Jones may either say, "Because they must, and that's all there is to it!" or, if he is in a position to do so, he may draw on his knowledge of meteorology in an attempt

¹ Certainly it won't do to say that that which is criticized as conduct is overt behavior, an individual's impingement on his environment, so that *public* assertion would be conduct, whereas the *private* assertion that is involved in thinking would not. For surely the mental setting oneself (Prichard) to stab an enemy would be conduct even though paralysis or a stroke of lightning prevented the occurrence of the intended sequence of events. Bearing in mind this obvious connection between conduct and *intention*, shall we say that what the moralist has in mind by "conduct" is basically a matter of the tendency of *thoughts about* sequences of events beginning with the me-here-now to bring about the actual occurrence of these sequences? Do not primitive and pictorial mis-conceptions of desire, motivation and the role of reward and punishment in shaping behavior stand in the way of a recognition of the true scope of "ideo-motor activity?"

to derive this law from other laws relating to atmospheric phenomena which are accepted by Smith. If Smith should challenge these new *musts*, and Jones is willing to continue the argument, but is unable to find still other laws which Smith will accept and from which they can be derived, he may attempt to persuade Smith to accept them (or the original law) by means of an argument from instances.²

(2) The justification will achieve its purpose only if Smith accepts the minor premise ("There are clouds of kind X overhead"). If Smith challenges this assertion, Jones, if he is willing to continue the argument, will attempt to find statements of particular matters of fact—let us call them *historical* statements—and causal laws which Smith accepts, and from which it would follow that there were (or that it was probable that there were) clouds of kind X overhead.

(3) Finally, the justification will achieve its purpose only if Smith accepts the logical *musts* embodied in the arguments Jones offers, as when he says "A and B, therefore *necessarily* C." If Smith challenges these, Jones is likely to say "It is necessary because it is necessary, and that's all there is to it!"

Now, when certain contemporary philosophers hear the words "must" and "necessary," particularly in such contexts as "It must because it must," or "It's necessary, and that's all there is to it," they immediately say to themselves, "Aha! Here we have something that is required by a rule of this fellow's language." And I am convinced that this is a very illuminating thing to say, though I am not certain that I know exactly what it means. As Augustine with

²In dealing with such situations, philosophers usually speak of inductive arguments, of establishing laws by induction from instances. For reasons which will manifest themselves in the course of my argument, I am highly dubious of this conception. I should be inclined to say that the use Jones will make of instances is rather of the nature of Socratic method. For Socratic method serves the purpose of making explicit the rules we have adopted for thought and action, and I shall be interpreting our judgments to the effect that A causally necessitates B as the expression of a rule governing our use of the terms "A" and "B." But of this, more later.

Time, I knew what a rule was until asked. I asked myself and proceeded to become quite perplexed.

I suspect that my trouble with the concept of a rule is in large part due to my ignorance of the psychology of the higher processes. Yet certain things seem clear. In the first place, we must distinguish between action which merely *conforms to* a rule, and action which occurs *because of* a rule. A rule isn't functioning as a rule unless it is in some sense internal to action. Otherwise it is a mere generalization. Thus, if I train an animal to sit up when I snap my fingers, the animal's behavior conforms to the generalization "This animal sits up when my fingers snap," but we should scarcely say that the animal acts on the rule of sitting up when I snap my fingers. Clearly the type of activity which is rule-regulated is of a higher level than that which is produced by simple animal learning procedures. One way of bringing this out is to say that most if not all animal behavior is tied to the environment in a way in which much characteristically human behavior is not. Certainly, we learn habits of response to our environment in a way which is essentially identical with that in which the dog learns to sit up when I snap my fingers. And certainly these learned habits of response—though modifiable by rule-regulated symbol activity—remain the basic tie between all the complex rule-regulated symbol behavior which is the human mind in action, and the environment in which the individual lives and acts. Yet above the foundation of man's learned responses to environmental stimuli—let us call this his *tied behavior*—there towers a superstructure of more or less developed systems of rule-regulated symbol activity which constitutes man's intellectual vision. It is in terms of such systems of rule-regulated symbol activity that we are to understand an Einstein's grasp of alternative structures of natural law, a Leibnitz' vision of the totality of all possible worlds, a logician's exploration of the most diversified postulate systems, a Cantor's march into the trans-finite. Such symbol activity may well be characterized as *free*—by which, of course, I do not mean *uncaused*—in contrast to the behavior that is learned as a dog learns to sit up, or a white rat to run a maze. On the other hand, a structure of rule-regulated symbol activity, which

as such is free, constitutes a man's understanding of *this* world, the world in which he lives, its history and future, the laws according to which it operates, by meshing in with his tied behavior, his learned habits of response to his environment. To say that man is a rational animal, is to say that man is a creature not of habits, but of rules.

When God created Adam, he whispered in his ear, "In all contexts of action you will recognize rules, if only the rule to grope for rules to recognize. When you cease to recognize rules, you will walk on four feet."

If what I have just said appears to be rhetoric and not philosophy, I can only plead that it ought to be psychology, but that if an adequate psychology of rule-governed symbol behavior exists, I have not yet made its acquaintance. This, however, may well be just another example of the philosopher's characteristic ignorance of the science of his day (as opposed to the science of yesterday, with which he is notoriously well acquainted). But if what we have been saying belongs to psychology, then, once again, we must ask, "How does it concern us, who are philosophers and not psychologists?" What would be the relevance of an adequate empirical psychology of rule-regulated symbol activity to the task of the philosopher? Now, that psychology is neither the whole nor even a part of philosophy is granted. Yet bad psychology may give aid and comfort to bad philosophy. This is most clear in connection with the rationalistic pseudo-psychologies which we shall be criticizing in a moment. I want now to point out that if there is any truth in what we have said, then much of what (among philosophers) passes for tough-minded psychology is an over-simplified extension to the higher processes of the *dog-fingersnap-sit-up-sugar* schema of tied responses to environmental stimuli. Not that I should deny for one moment that animal learning theory provides the key to all psychological phenomena. On the contrary I am convinced that this is the case. And not that I should deny that the laws of animal learning (if we had them) would explain even the mathematician's behavior in developing alternative postulate sets for n-dimensional geometries. I am even prepared to endorse this promissory note. Yet the fact remains that the distinction between tied behavior and

free, rule-regulated symbol activity, whatever they may have in common, is a fact of experience, one that the philosopher cannot afford to neglect.

We distinguished above between action which merely conforms to a rule and action which occurs because of a rule and pointed out that in so far as actions merely conform to it, a rule is not a rule but a mere generalization. On the other hand, we must not say that a rule is something completely other than a generalization. The mode of existence of a rule is as a generalization written in flesh and blood, or nerve and sinew, rather than in pen and ink. A rule, existing in its proper element, has the logical form of a generalization. Yet a rule is not *merely* a generalization which is formulated in the language of intra-organic process. Such a generalization would find its overt expression in a declarative sentence. A rule, on the other hand, finds its expression either in what are classified as non-declarative grammatical forms, or else in declarative sentences with certain special terms such as "correct," "proper," "right," etc., serving to distinguish them from generalizations. What do these special features in the formulation of rules indicate? They give expression to the fact that a rule is an embodied generalization which to speak loosely but suggestively, tends to make itself true. Better, it tends to inhibit the occurrence of such events as would falsify it—if it weren't already false, that is, for the generalizations which lie at the core of rules are rarely if ever true, and unless they *could* (logical or physical possibility) be false, they could scarcely function as rules. Thus, consider the moral rule, "One ought to tell the truth." The core-generalization on which this rule is built is "People always say what they believe" which is, of course, false.

Now, Kant saw all this quite clearly. He pointed out that moral action is action because of a rule, and said that to say this is equivalent to saying that to act morally is to act "so that I could also will that my maxim should become a universal law."⁸ If he had said in-

⁸ *Fundamental Principles of the Metaphysics of Morals*, p. 18 of Abbott's translation, included in his *Kant's Theory of Ethics*. The historically minded reader will observe that the concept of rule-regulated behavior developed in this paper is, in a certain sense, the translation into behavioristic terms of the Kantian concept of Practical Reason. Kant's contention that the pure consciousness of

stead that to act morally is to act as though the truth of the corresponding generalization depended only on the occurrence of that action, his claim would have been essentially identical with ours. As far as I can see, the basic fault of Kant's ethics is that he attempted (or seems to have attempted) to derive a specific code of rules from the definition of moral action as action because of rules together with a consideration of the basic traits of human nature.

Now, my chief purpose in making the above metaphorical and unscientific remarks about rule-governed behavior is to stimulate those philosophers who are always talking about rules— usually rules of language—to explain more fully what they have in mind. To urge that these are questions for the empirical psychologist to answer, and that we must wait upon his convenience, is to leave the field of cognitive and moral psychology to the rationalists. To content oneself with glib phrases about stimulus-response conditioning is to give the rationalist armor and armament. (In the good old days before the failure of nerve, when the climate of opinion was favorable to empiricism, the empiricist got away with murder. Today, he must use every weapon in his arsenal, and make doubly certain that it is sharp.) It is easy to shape the psychology of the higher processes as embodied in common sense into the direction of intuitionism and rationalism. Philosophers have been doing just that for over two thousand years. But common sense also contains cues which, when combined with the achievements to date of empirical psychology, can be developed into the outlines of an adequate psychology of rational behavior, and to do this is an urgent task for the embattled empiricist. In thus reconstructing common sense psychology, the empiricist will find that the outcome shows more *structural* kinship with the pseudo-psychologies of the rationalist than

moral law can be a factor in bringing about conduct in conformity with law, becomes the above conception of rule-regulated behavior. However, for Kant's conception of Practical Reason as, so to speak, an intruder in the natural order, we substitute the view that the causal efficacy of the embodied core-generalizations of rules is ultimately grounded on the Law of Effect, that is to say, the role of rewards and punishments in shaping behavior. The most serious barrier to an appreciation of Kant's insights in this matter lies in the fact that most discussions in philosophical circles of the motivation of behavior stand to the scientific account (whatever its inadequacies) as the teleological conception of the adjustment of organisms to their environment stands to the evolutionary account.

with much that passes today for psychology among empiricists. But the teeth will have been drawn. It is only by absorbing the insights of rationalism that a pragmatic empiricism can do justice to the facts. There are many signs that this is being done.

I have already indicated how I would approach this reconciliation of rationalism and empiricism in the field of ethics. I want now to turn to the problem of the *a priori* in the field of specifically cognitive activity. Here we note that where the *regulist* speaks of statements which exhibit the rules of the language in which they are formulated, the *rationalist* speaks of intuition or self-evidence. The *regulist* goes from object-language up to meta-linguistic rule, whereas the *rationalist* goes from object-language down to extra-linguistic reality. The *regulist* explains the significance of the word "must," as it occurs in arguments, in terms of the syntactical rules of the language in which it occurs; the *rationalist* explains it in terms of a non-linguistic grasp of a necessary connection between features of reality.

Now, certain overly enthusiastic *regulists* have spoken of the "sense meaning rules" of a language, arguing that the hook-up of an empirically meaningful language with the world is a matter of rules of linguistic usage. I am as convinced a *regulist* as any, and, as I shall indicate in a moment, a far more thoroughgoing *regulist* than most, but I regard this as a mistake. I have already argued above that the hook-up between rule-regulated symbol activity and the external environment rests on the *meshing* of rule-regulated symbol activity with what I referred to as "tied behavior." Now though this tied behavior is not *rule-regulated* symbol behavior, it is nevertheless customary to refer to certain forms it may take as "symbol behavior." Let us distinguish this symbol behavior by the phrase "tied symbol behavior." Thus we can say that picking up his dish is a tied symbol of food to a dog. Now, what misleads these *regulists* who speak of the sense meaning rules of a language is the fact that in order for the above mentioned *meshing* of rule-regulated language with tied symbol behavior to take place, *certain*

intra-organic events must function as symbols in both senses, as both free and tied symbols. Thus, as children we learn to understand the noise "blue" in much the same way as the dog learns to understand the noise "bone," but we leave the dog behind in that the noise "blue" also comes to function for us in a system of rule-regulated symbol activity, and it is a *word*, a linguistic fact, a rule-regulated symbol only in so far as it functions in this linguistic system. The noise "blue" becomes a mediating link between what can suggestively be called a rule-regulated calculus, and a cluster of conditioned responses which binds us to our environment. Here we should note that the rules which inter-relate these mediating symbols *qua* linguistic symbols must mesh with the inter-relationships of these symbols *qua* tied symbols in the causal structure of tied sign behavior.⁴

Let me nail down the point I have been making as tightly as I am able, even though this means anticipating certain things I shall have to say later on. To think of a system of qualities and relations, is, I shall argue, to use symbols governed by a system of rules which, we might say, implicitly define these symbols by giving them a specific task to perform in the linguistic economy. The linguistic meaning of a word is entirely constituted by the rules of its use.⁵ A scientist who thinks of worlds which exemplify quali-

⁴ Linguistic systems of the kind we are considering center around a structure of sentences which is, so to speak, a *map*. Thus, a language enables us to "find our way around in the world." Clearly this involves that in the employment of a language, not only must certain *predicates* in the language play the above double role, so also must certain *individual constants*. It is also obvious that the individual constants which do this must, from the logician's standpoint, be logical constructions from the basic individual constants of the language, since "recognizable individuals" are always "continuants" or "concrete universals." Thus, not only do "green" and "sweet" function both as linguistic symbols proper and as tied symbols, so also do "Jones" and "Picadilly."

⁵ At this point, the reader will probably hurl the following challenge: "Are you not confronted by a dilemma? For surely the rules for a linguistic system are themselves linguistic phenomena. Therefore either you must hold that they, in turn, are rule-governed, or else admit that at least one linguistic structure exists which is not "rule-governed" in your sense. You can scarcely be prepared to adopt the latter course. If you take the former, you are committed, surely, to an infinity of rules, meta-rules, meta-meta-rules, etc." A full reply to this challenge cannot be given in the available space. The following remarks, however, may help. The reader is quite correct in predicting that we shall take the former course and grant that the rules are themselves rule-governed. He is, however, mistaken in inferring that this "regress" is vicious. It would be vicious if

ties and relations not to be found in this world is making use of symbols which are, or may be, on a par with the symbols we use to think about *this world in every rule-regulated respect*. The "artificial" language with which the scientist is speculating does not, however, include—as does the language in which he speaks about the actual world—a sub-set of symbols which mesh in with his tied symbol responses to environmental stimuli.

If there were such things as sense meaning rules (as opposed to verbal conditionings) how should they be formulated? Perhaps: "When I have such and such experiences, I am to use the expression 'I see red' "? Unfortunately, the philosophers who speak of sense meaning rules are the same *moderni* who insist that there is no such thing as cognition unmediated by symbols. Whether or not such a rule as the above would be sensible given the non-symbolic intuitive cognition of the rationalist is another matter, but without it the rule obviously either doesn't make sense or doesn't perform the function for which it was invoked. In order for the rule to be intelligible, the person who is to obey it must already know when he sees red. But to know when he sees red he must, according to these same *moderni*, understand the meaning of either the symbol "red" or a synonym (which need not, of course, belong to any intersubjective language of *overt* utterance). In short, the very symbols whose possession of meaning is explained by these overly enthusiastic regulists in terms of sense meaning rules, must either already have meaning independently of the rules, or else the sole value of the rules is to serve as a means of acquiring synonyms for symbols which have meaning independently of the rules. This is but a sample of the confusion into which one gets by failing to

the infinity of rules which an organism would have to learn in order to exhibit rule-governed behavior constituted an infinity of rules which differed in the full-blooded way in which the rules of chess differ from the rules of bridge. That the hierarchy of rules is in a certain sense repetitious (compare a rule for naming a name with a rule for naming the name of a name) provides the answer to this difficulty. However, even granting this, the regress would still be vicious if in order for a type of behavior to be rule-governed, every instance of the behavior must be accompanied (brought about) by an organic event of which the *text* (to use Bergmann's term) is the core-generalization of the rule. If this were the case, then, obviously, an infinite hierarchy of events with texts would have to occur in order for any case of rule-governed behavior to occur.

distinguish the learning of tied symbol behavior from the learning of rule-regulated symbol activity.⁶

The above discussion enables us to understand why certain regulists who, owing to a failure to distinguish clearly between tied and rule-regulated symbol activity, push the latter beyond its proper limits are tempted to hold that the meaningful use of language rests on an intuitive cognition unmediated by symbols. Action on a rule presupposes cognition, and if confusion leads these philosophers to conceive of all symbol behavior as in principle—that is, parroting aside—rule-regulated, then they are committed to the search for an extra-symbolic mode of cognition to serve as the tie between meaningful symbol behavior and the world. This link is usually found, even by regulists who have been decisively influenced by behaviorism, in a conception of the *cognitive given-ness of sense-data*. It must, of course, be confessed that these tough-minded empiricists rarely formulate such a doctrine of cognitive awareness in so many words—and might even disown it—but the careful student can frequently find it nestling in their arguments.

Here we must pay our respects to John Dewey, who has so clearly seen that the conception of the cognitive given-ness of sense-data is both the last stand and the entering wedge of rationalism. Thus, since anything which can be called cognition involves classification, the conception of the cognitive given-ness of sense-data involves

⁶The stress laid by many empiricists on "ostensive definition" is on the one hand a sound recognition of the patent fact that a meaningful language system must tie up with the environment, and on the other hand a sad confusion between learning the *definition* of a word, that is to say, learning to use it in a rule-regulated manner according to socially recognized rules, and learning (being conditioned) to respond with the word-noise to certain environmental stimuli. This confusion is exhibited by the ambiguous usage of the phrase "ostensive definition." Sometimes it is used to refer to procedures typified by teaching a dog to understand the noise "bone." Sometimes it refers to procedures typified by leading an individual to adopt a rule by which he would use a new symbol "X" as an equivalent of the rule-regulated symbol "Y"—where "Y" is usually a complex symbol of the form "U and V and W. . . ." Thus a person might be led to adopt a rule by which he would use "sugar" as an equivalent of what corresponds in his intra-organic symbol economy to the "white and sweet and granular . . ." of the *language of overt utterance* which is English, by pointing to a piece of sugar (which he cognizes by means of this intra-organic symbol economy) and uttering the noise "sugar."

as a necessary condition the given-ness of universals.⁷ But once the unwary empiricist commits himself to the given-ness of universals—even if only sense-universals—he has taken the first step on a path which, unless he shuts his eyes and balks like a mule, will lead him straight into the arms of the traditional synthetic *a priori*.⁸ After all, if sense universals are given, and if there are real connections between them, must not these real connections be given? And who is so empirically minded today as not to make obeisance to real connections?

It is my purpose in the following pages to sketch a regulist account of real connections and of the "synthetic *a priori*" which preserves the insights of the rationalistic doctrine, while rejecting its absolutism as well as the pseudo-psychology of cognitive givenness on which this absolutism is based.

It is important to note that the classical doctrine of synthetic *a priori* knowledge distinguishes carefully between the *ontological* and the *cognitive* aspects of such knowledge. Ontologically there is the real connection between the universals in question—say, Color and Extension. It is here that the necessity is located. On the other hand there is the cognitive fact of the intuitive awareness of this real connection, the *Schau* of the phenomenologist. Since it is a necessary consequence of the real connection of the universals that any exemplification of the one (Color) must also be an exemplification of the other (Extension), to *see* this real connection is to have rational certainty that the corresponding universal proposi-

⁷ Let me hasten to emphasize that the difference between the platonist and the nominalistic empiricist with respect to universals (and propositions) does not consist in the platonist's saying "There are universals" and the nominalist's saying "No, there are no universals," but rather in the platonist's speaking of psychological relationships between minds and universals, whereas the nominalist finds this to be nonsense. It is this way of speaking which constitutes the platonic hypostatization of universals, and not the making of triangularity into a super-triangle—which not even Plato seems to have done.

⁸ But is this such a horrible fate? Already we find in the younger generation of epistemologically-minded philosophers—particularly among those who have been influenced by C. D. Broad's masterful *Examination of McTaggart's Philosophy*—those who argue that a carefully restricted synthetic *a priori* is not incompatible with the insights of logical empiricism.

tion "All colors are extended" will not be falsified by any future experience—or so the traditional doctrine goes.⁹

Now a philosopher who finds the notion of a real connection between universals to be a sensible one, and who approaches the problem of what is meant by "causal necessity," is likely to say that causal necessity consists in real connections between the universals exemplified by events in the natural order. On the other hand, unless he shares the rationalistic optimism of a Hegel, he will not claim that we are able—even in principle—to have a direct apprehension of these real connections and so achieve an *a priori* knowledge of the laws of nature. He may, however, as we have already suggested, make an exception in the case of certain real connections between sense-qualities and, perhaps, in the case of real connections between universals of a "categorical" nature, universals relating to the most pervasive features of the world. "Science," he will say, "is able to claim with ever increasing rational assurance that such and such *kinds of events* are connected, but with an assurance that is based on empirical evidence and induction, never on self-evidence."¹⁰

* In speaking of the "traditional" doctrine of the synthetic *a priori* I am, of course, referring to the rationalism characteristic of the Platonic-Aristotelian tradition, though only since Descartes and Locke has the distinction between analytic and synthetic necessity been explicitly drawn and given the center of the stage. Kant, who was aware—as his rationalistic predecessors were not—of the pitfalls of conceptualism, and who, in common with the overwhelming majority of the philosophers of the age, failed to see a possible way out along the lines of conceptual realism—later explored by Moore and Russell—gave his own peculiar twist to the notion of necessary synthetic truth. The regulist position we are formulating could equally well be developed against a Kantian background, but that is a story for another occasion.

¹⁰ It must be confessed that it sounds rather queer to say that there are necessary connections between universals (kinds of events) and that we can understand scientific statements referring to these universals—as the rationalist understands "understand"—but that we cannot apprehend the real connections between them. For surely real connections are not so "external" to the connected universals that these can be apprehended without an apprehension of their connection! Sophisticated rationalists have invented plausible ways of circumventing this objection, the most popular of which rests on a distinction between the apprehension of a universal, and the thought of a universal by means of apprehending a definite description of the universal. Sense universals and perhaps a limited class of other universals, instances of which are *given*, can be directly apprehended. Other universals are accessible to thought only by means of descriptions. This approach, however, can only be consistently defended by denying that the universals one can apprehend have any *connection* with universals which one can not apprehend. But surely there are real connections (if we grant real connections

It takes but a moment to show that if there are real connections between universals, then universals are obviously not the kind of thing one would want to speak of apprehending. In the first place, the philosopher who asserts the existence of real connections can readily be seen to be committed to the existence of non-actualized possibilities. For in saying that all A's *must be* B, he clearly means to say more than that *in point of fact* all cases of A have been, are and will be cases of B. He is, in effect, saying that *there are no possible worlds in which there are non-B A's*. If there were possible worlds in which there are non-B A's, why shouldn't one of them be the actual world?¹¹

The following obvious objection to the conception of real connections arises at this point: "If the connection between A and B is synthetic, then it *is* (logically) possible that there should be a world in which there are non-B A's. Why shouldn't this logically possible world be the actual one? Must not the rationalist admit that the assumption of a real connection between A and B doesn't entail that all actual cases of A are cases of B, and hence that the very concept of a synthetic necessary connection is a self-frustrating one?" Now, as far as I can see, the only reply open to the defender of real connections is that it is a *matter of ultimate fact* that there are no possible worlds which violate the generalization "All A's are B"—though he might explain this fact about A and B to the extent of subsuming it under a more general fact about the realm of the possible, namely, that for *every* universal there is at least one generalization which no possible world violates. A real connection, the rationalist must say, is *identical with* the non-existence of certain possible worlds, of possible worlds answering to a certain de-

at all) between sense universals and physical universals (the laws of psychophysics). Thus, the rationalist who takes this line is forced to underwrite either phenomenalism or neutral monism as an account of the qualities of physical objects.

The other approach is that of Blanshard, who speaks of *degrees* in the apprehension of universals and their internal relations. Induction is necessary for Blanshard, not because we cannot apprehend universals and their connections, but because only a grasp of the place of each universal in the total scheme would be a total grasp of any universal.

¹¹ For a detailed explication of the logical and physical modalities in terms of possible worlds, see my "Concepts as Involving Laws and Inconceivable without them," *Philosophy of Science*, 15, 1948.

scription. Should he be tempted to put this by saying that where A is connected with B it *makes no sense* to say "This is A but not B," he must hasten to add that this statement makes no sense *because* there is no possible world which violates "all A's are B." *Within his framework, the sense-ful reflects the possible and not the possible the sense-ful.*

If we are right in claiming that the defender of real connections is forced to hold that a real connection between A and B is identical with the sheer absence from the totality of possible worlds of worlds which contain A's which are not B, then it is obviously not open to him to speak of apprehending real connections. Real connections are no more possible objects of intuition or awareness than are families of actual and possible sense data.

But though it doesn't make sense to speak of intuiting real connections between universals (as this phrase is understood by the rationalistic philosopher), may not universals themselves be possible objects of awareness? But what would one be aware of in being aware of a universal? Since no universal exemplifies itself, to be aware of, say, *redness* is not to be aware of something *red*. Surely the rationalist is right in claiming that a universal is an item characterized by its place in a structure of universals and, indeed, that this structure is a system of real connections. If this is the case, then it is just as nonsensical to speak (in the philosopher's sense) of intuiting universals, as it has been shown to be nonsensical to speak of apprehending real connections.

Am I, then, claiming that it is nonsense to talk about real connections?—that the latest fashion in philosophy is just one more mistake? Far from it. I shall insist that it is just as legitimate and, indeed, necessary for the philosopher to speak of real connections, as it is to speak of universals, propositions and possible worlds. On the other hand, it is just as illegitimate to speak of real connections as possible objects of awareness or intuition or *Schau* (as these terms are used by the rationalist) as it is to speak of apprehending universals, propositions and possible worlds. I hasten to add that there is a context in which it is perfectly legitimate to speak of *grasping a possibility* or *seeing an alternative* or *apprehending the*

meaning of an expression. This context is correct English usage in non-philosophical discourse. The rationalist makes the mistake of accepting the metaphors of common sense psychology as *analyses* of psychological facts. As Moore has pointed out, common sense knows what it knows, but doesn't know the analysis of what it knows. It is the regulist and not the rationalist who explicates the grammar of assent.

What, then, is the truth about real connections? What is the significance of modal words in logically synthetic sentences? The answer is the twin brother of the regulist conception of the logical modalities. Our use of the term "necessary" in causal as well as in logical contexts is to be traced to linguistic rules. Where Hume charged the rationalist (and before him, common sense) with projecting a subjective feeling of compulsion into the environment, we charge the rationalist with projecting the rules of his language into the non-linguistic world. Where Hume finds an example of the pathetic fallacy, we find the rationalist's (or rationalistic) fallacy, a pervasive mistake which has been bread and butter to the philosophical enterprise. Hume was on the right track, but since he failed to distinguish between rule-regulated mental activity and the association of ideas (an earlier form of the contemporary failure to distinguish between rule-regulated and tied symbol behavior) his account was necessarily inadequate, a fact which comes out clearly as soon as one realizes that he was unable to give even the germ of an account of *logical* necessity. From this perspective, Mill was wiser than most empiricists have realized. He, at least, saw the parallel between logical and causal necessity, and put them in the same category. Given the framework of psychological theory which he learned on his father's knee, what else could this category have been but the association of ideas? And does not his phrase "inseparable association" indicate a groping for a more adequate account?

But these historical asides are delaying the final stages of our argument. Our task is to give an account of the rules in terms of which, we have claimed, the causal modalities are to be understood.

What are these rules? and how do they differ from the formation and transformation rules which we have all come to recognize? I have elsewhere¹² called the rules I am going to discuss "conformation rules" and the phrase seems appropriate. In order to see that a language must have conformation rules as well as the familiar rules of formation and analytic inference, it is necessary to bear in mind the conclusions at which we arrived in the first part of this paper. The meaning of a linguistic symbol *as a linguistic symbol* is entirely constituted by the rules which regulate its use. The hook-up of a system of rule-regulated symbols with the world is not itself a rule-governed fact, but—as we saw—a matter of certain kinds of organic event playing two roles: (1) a role in the rule-governed linguistic system, and (2) a role in the structure of tied sign responses to environmental stimuli. But if the linguistic as such involves no hook-up with the world, if it is—to use a suggestive analogy—a game played with symbols according to rules, then what constitutes the linguistic meaning of the factual, non-logical expressions of a language? The answer, in brief, is that the undefined factual terms of the language are *implicitly* defined by the conformation rules of the language. These specify the proper use of the basic factual expressions of the language in terms of what might be called an axiomatics. Thus, for each basic factual word in the language there are one or more logically synthetic universal sentences which, as *exhibiting* the rules for the use of these words, have the status of "necessary truths" of the language. These sentences are those into which a user of the language would insert the words "must" or "necessary." He would say that what they express is *necessarily* so, as opposed to what *just happens to be so*.

Now it is clear that if the above account is correct, a language is essentially an axiomatic system. Here we run up against an obvious objection. "Is it not clear," it will be said, "that only logicians, mathematicians, and a few theoretical physicists behave in a way which we should call 'manipulating the expressions of an axiomatic system'? How, then, can we say that our ordinary use of language

¹² "Realism and the New Way of Words," *Philosophy and Phenomenological Research*, June, 1948; reprinted in *Readings in Philosophical Analysis*, edited by H. Feigl and W. S. Sellars, Appleton-Century-Crofts, New York, 1949.

is the manipulating of an axiomatic system? Furthermore, if our language is an axiomatic system, how shall we account for the fact that although the language has remained the same, yesterday's necessities are today's contingencies, and vice versa? If the language is the same, must not the rules be the same, and hence the necessities the same? If the rules of the language determine what is recognized as physically necessary, how make sense of the fact that we can meaningfully ask whether or not two kinds of event are causally related, and spend time and ingenuity seeking an answer? If what is causally necessary is merely a matter of the implicit definition of the corresponding terms by the rules of the language, could there be any sense to such a procedure?"

Fortunately, these questions admit of a straightforward answer. In the first place, knowing a language is a knowing *how*; it is like knowing how to dance, or how to play bridge. Both the tyro and the champion know how to dance; both the duffer and the Culbertsons know how to play bridge. But what a difference! Similarly, both you and I, as well as the theoretical physicist, can be said to manipulate an axiomatic system; but we are clearly at the duffer end of the spectrum. Again, in answering the second question we need only note that the identity of the empirical events used as symbols is at best a necessary and by no means a sufficient condition of the identity of a language. In a perfectly legitimate sense one language can change into another even though the noises and shapes employed remain the same. Indeed, modern man is not only constantly introducing new symbols governed by new rules, he is constantly changing the rules according to which old symbols are used. Thus, as science has progressed, the word "mass" as a class of visual and auditory events has remained, but the rules according to which it is used in the language of science have changed several times, and, strictly speaking, it is a new symbol with each change in rules, though each new implicit definition (conformation rule) has had enough in common with earlier implicit definitions so that the use of the same symbol has not seemed inappropriate. Indeed, the scientist in different contexts uses the term in different senses, according to different rules. In common sense contexts his language

is of ancient vintage. Thus we can stick to English and yet be said to speak not one language but many.

In ancient time, changes in the rules of language were very slow. Man was content to be baffled. Since the birth of modern science, man has constantly remodeled his language; indeed, from the standpoint of the anthropologist, science consists exactly in the attempt to develop a system of rule-governed behavior which will adjust the human organism to the environment. If there are regularities in the world, it is only by means of regularities in behavior that we can adjust to them. This process of adjustment can be speeded up by the deliberate exploration of alternative linguistic structures. The recognition of this fact is the achievement of the philosophy of science since the Einsteinian revolution.

We have pointed out that most contemporary rationalists distinguish between those real connections which human thought cannot directly apprehend, which cannot, as they say, be *known*— so that we must be content with *probable opinion* concerning their existence— on the one hand, and those real connections (extremely limited in number) which we can directly apprehend and by apprehending gain synthetic *a priori* knowledge of the world. As examples of the latter we are offered such truths as "All colors are (necessarily) extended," "All tones have (necessarily) an intensity and a pitch," etc. The list is a familiar one. What is there, if anything, in our analysis which corresponds to this distinction? That there is *something* is suggested by the fact, which empiricists are surely sophisticated enough by now to recognize, that where there is rationalistic smoke there usually can be empiricist (regulist) fire.

We have interpreted the notion of real connection in terms of the conformation rules of languages. We thus make real connections, so to speak, entirely immanent to thought. They are the shadows of rules. What sense, then, can there be to a distinction between real connections which are *known* and real connections which are *accepted* but not *known*? The answer, as I see it, is to be

found along the following lines. Modern man has been constantly modifying the rules of his language, and this resulted in an awareness of *alternatives* which keeps the reflective person from saying that he *knows*. Now, these modifications have occurred chiefly in a mid-region between two extremes which I shall now characterize. On the one hand, at least until recently, certain very general structural features of the axiomatics of our language have persisted through the changes due to the advance of science. Indeed, in spite of the dramatic changes of the past few decades, the axiomatics of the language has retained certain structural features from earlier science and even from common sense. These common features—and the extent to which there are any can easily be exaggerated—represent one portion of that which people are tempted to think of as real connections which are known, and which the rationalist claims to be synthetic *a priori* knowledge. These are features for which most of us have not yet been led to seek alternatives. Yet to the extent that one seriously looks for alternatives, they lose the feel of the “unconditionally known” and acquire a “hypothetical” character which is perfectly compatible with their performance of the *a priori* role which the regulist conceives them to have. As a matter of fact, then, the contemporary philosopher of science sees in this direction only structural features of our language for which we are more or less willing to consider alternatives.

In the other direction, however, we find those rules which even the most startling advances in science have not tempted us to abandon, rules which one who pays out any rope at all to the rationalistic doctrine of cognitive awareness will end by claiming to express insight into objective real connections. I have in mind the rules which concern those symbols which not only function in the language as rule-regulated symbols, but also are elements in the tied sign behavior of the organism, and which, by playing this dual role provide the link between language and the world. Here the rules mirror, so to speak, the structure of learned sensory discriminations and associated tied sign behavior. It is these rules that most forcefully present themselves to us as having no serious alterna-

tives. Here is the locus of the most tempting claims to synthetic *a priori* knowledge.

Now it is one thing to recognize that these rules are *causally* in a privileged position, and quite another to make any concession to pseudo-psychologies of "seeing the universal in the particular" or of "intuitive induction." Here again we find rationalistic smoke which only the empiricist (regulist) can turn into illuminating fire. A useful test of one's thought in this connection is to ask oneself what happens when a person who has been blind from birth gains vision and, *never having heard color words used*, develops his own language about color experiences. Does one think of him as apprehending the universals Red, Green, etc., and as more or less deliberately fitting symbols to these universals and giving these symbols rules which correspond to the structural properties which these universals are apprehended to have? This is the way in which many philosophers would seem to think of the matter. And, of course, there is as much sense to it as there is to speaking of intuiting universals, apprehending meanings, envisaging possibilities, etc. It is a metaphorical way of speaking which, provided it is not taken to provide an *analysis* of the learning of rules relating to the use of sense predicates, is both useful and proper. Taken to be an analysis, on the other hand, it is one more example of rationalistic pseudo-psychology.

In the course of our argument we have analyzed the moral "ought," the logical "must" and even real connections or physical necessity in terms of the concept of rule-regulated behavior. The question arises, in each of these areas, "Why one set of rules rather than another? How is the adoption of a set of rules itself to be justified?" I should like to be able to say that one justifies the adoption of rules pragmatically, and, indeed, this would be at least a first approximation to the truth. The kinship of my views with the more sophisticated forms of pragmatism is obvious. Yet I should like to close on a note of caution. The more I brood on rules, the more I think that Wittgenstein was right in finding an ineffable

in the linguistic situation; something which can be *shared* but not *communicated*. We saw that a rule, properly speaking, isn't a rule unless it *lives* in behavior, rule-regulated behavior, even rule-violating behavior. Linguistically we always operate *within* a framework of *living* rules. To *talk about* rules is to move *outside* the talked-about rules *into* another framework of living rules. (The snake which sheds one skin lives within another.) In attempting to grasp rules *as rules* from without, we are trying to have our cake and eat it. To *describe* rules is to describe the *skeletons* of rules. A rule is *lived*, not *described*. Thus, what we justify is never a rule, but behavior and dispositions to behave. The "ought" eludes us and we are left with "is." The skeletons of rules can be given a pragmatic or instrumentalist justification. This justification operates within a set of living rules. The death of one rule is the life of another. Even one and the same rule may be both living as *justificans* and dead as *justificandum*, as when we justify a rule of logic. Indeed, can the attempt to justify rules, from left to right, be anything but an exhibition of these rules from right to left? To learn new rules is to change one's mind. Is there a rational way of losing one's reason? Is not the final wisdom the way of the amocba in the ooze, the rat in the maze, the burnt child with fire? The convert can describe what he was. Can he understand what he was? But here we are on Wittgenstein's ladder, and it is time to throw it away.