POSSIBILITY AND PLURALISM

WILLIAM SAVERY

I. THE FIELD OF MEANING

POSSIBILITY LIES WITHIN the field of meaning. This has been stated by several of the writers in this volume, including Professors Adams, Loewenberg, and Marhenke. Professor Mackay has said that no analysis of facts discloses possibility. Possibility is not an attribute of the actual nor a relation between actuals. It is true that we, as thinkers, characterize the actual as also possible, but this is only when we relate the actual to a wider field of meaning. Consequently, it is necessary to characterize the field of meaning, and especially the larger part of this field, namely, the field of reference.

There is direct experience. There is focalized acquaintance with parts of this experience, which parts are facts or data. There is also a descriptive characterization of these facts, as when I say, "This is green," or "This is on that." Such a description may be said to be a meaning in the widest sense of meaning, although the description does not step beyond the facts. Such descriptions do not employ variables.

Most of our thoughts, however, refer beyond themselves. They have objects, or at least objectives, and these objects or objectives are meanings which constitute the field of reference. They embrace everything that we think about intelligently which lies beyond the duration block. They include, first, my past; second, my future; third, other minds; fourth, the physical world; fifth, the supernatural world (if any); and sixth, fictions. Fictions include (a) false propositions, whether believed, disbelieved, supposed, or doubted; (b) questions which would be truly answered in the negative; (c) commands never executed; (d) wishes unfulfilled; and (e) downright fictitious things, such as Prince Genji and the mock turtle. In another paper I have explained the nature of references

beyond the duration block.[1] James's and Dewey's account of reference as restricted to the future is entirely inadequate. The reference backward to the past is necessary on James's own theory, since, according to him, we say at the end of the process of verification, "This is what I meant." There are also references to other centers of experience, to an external world and to fictions, as already mentioned. I cannot enter here upon an extended description of objective reference, but certain statements are necessary.

My first thesis is: There are simple references beyond the duration block. When I abstract any relation or attribute, any predicate in short, it would have no meaning without a reference to "some" further content, the reference of the variable. In logical terms, every abstract propositional function includes the variable. For example, "with" is a relation and it is the nature of a relation to relate. To think of any relation as a non-relating relation, as Russell did in 1903 in his *Principles,* is absurd. If we abstract the relation from its specific terms we refer to "some" terms. We have the thought of something "with" something, $x_1 R x_2$. If we abstract an attribute we have a reference to one term. Loudness has no meaning except as the loudness of something. Such references as these are simple references and since we abstract from facts we can always find examples by acquaintance or denotation.

My second thesis is: There is a genuine thought-synthesis in which we think of two attributes or relations combined on the same variable. Take a very simple illustration. I may think not only that something is round and that something is red but I may also think that something is round and also red; that is, I may think of a round red thing. Now round red things are found in direct experience, but there are syntheses of this sort that go beyond such experience. Take the illustration of a purple fish. I can abstract the spatial form of a fish from the visual aspect of a goldfish in a pool and the purple from the visual aspect of a petunia growing beside the pool, and think of the combination of these two abstractions. It is true that I may also form an image of a purple fish, but this image is not a percept. In order to think of a perceptual purple fish I must think of a combination of the content of the image with the vividness abstracted from some actual percept. Purple fishes

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[1] "On the Nature of Objective Reference," *Jour. Philos.,* XXIII (1926), 393–407.

doubtless exist. I remember having seen them in the aquarium but I cannot now find them in my experience; I cannot now denote them; they are objects of reference or meanings.

My third thesis is: There are references not only to things that are, but also to things that are not. I can think of a purple fish but I can also think of a purple lotus in the sky. So far as meanings are concerned, man is the measure both of things that are and of things that are not. Some of these things are not now but were in the past. Others are not now but will be in the future. Still others have no being either in time or out of it; in every sense they are not; they are not things, if by a thing I mean anything that has being. There are no mock turtles. When I have the thought of a mock turtle I do not have the thought of what is actually a being. I can only say, paraphrasing Mr. G. E. Moore,[2] I have the thought of that which, if it had being, would be a mock turtle. I cannot say, with Professor Loewenberg, that possibles are actual in the divine imagination. The divine imagination is only a reference to the possible worlds which are not actual at all. I cannot say, with Mr. Strong, that the Mad Hatter is actual in Lewis Carroll's story. There is the written story of the Mad Hatter; there are the words, Mad Hatter; there is the picture of the Mad Hatter; there is the image of the Mad Hatter (copied I hope, from the original picture); there is the thought of the Mad Hatter; but there is no Mad Hatter. The Mad Hatter is not a being; he is not actual; he does not exist nor subsist; he is not real; the Mad Hatter is not a fact. It is the thought of him which is delightful, whimsical, and altogether charming. I cannot even say that the meaning is; there is only the thought of the meaning—the reference to the meaning.

No philosophy which does not admit of reference to things which are not can possibly stand. When Royce makes all objective reference consist of a relation of one part of the absolute to another part, his theory is self-refuting. If there is any absolute, he must think of things that are not, since I am a part of the absolute and I think of things that are not.

We have not yet reached the meaning of possibility, since the field of meaning contains both possibilities and impossibilities. If we identify possibility and meaning we must then distinguish, as

[2] *Philosophical Studies*, pp. 216 ff.

Professor Adams did, between genuine and spurious possibilities. Spurious possibility is not genuine, it is Pickwickian; it is impossibility, the contradictory of possibility. My contention is only verbal, but I think it conduces to clearness to use the word possibility with only one meaning. I shall therefore use the words *meaningful* or *significant* for the wider sense, and dichotomize the significant into the possible and the impossible. The significant is the sphere in which the possible falls. This sphere, when it goes beyond the actual, is a product of synthetic thought. If we do not restrict the word imagination to the production of an image, but use it in its popular sense of creative thought, we may endorse the following:

> "The gleam of an heroic act,
>   Such strange illumination—
>   The Possible's slow fuse is lit
>   By the imagination."

II. THE POSSIBLE AND THE IMPOSSIBLE

Historically, the primary locus of the meaning of the possible and the impossible is presumably the will. The impossible is what is willed but not effectuated. If an end is first willed and then achieved, it is said that it was possible at the time it was willed. The impossible, however, involves a conflict, a contradiction between the purpose and the outcome.

Nevertheless, the meaning of the impossible has been generalized to include all contradictions and I shall confine my discussion to this generalized meaning. Unless the meaning can be stretched to include other incompatibles I shall define impossibility as contradiction. Hence:

My fourth thesis is: Impossibility is contradiction. It has been maintained by certain philosophers that there is such a thing as synthetic incompatibility. Johnson[3] says,

if any determinate adjective characterizes a given substantive, then it is impossible that any other determinate under the same determinable should characterize the same substantive; e.g., the proposition that "this surface is red" is incompatible with the proposition "this [same] surface is blue."

Professor Lovejoy[4] says,

I seem to myself to be unable to attach any consistent meaning to the state-

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[3] *Logic*, I, 181.   [4] *The Revolt against Dualism*, p. 139.

ment that one and the same surface not merely appears to different beholders to be, but actually is, both purple and green.

He adds, however,

Nevertheless, I am told by persons of logical acumen and practice in introspective discrimination that they find no difficulty whatever in thinking of such simultaneous dual or multiple coloring of an identical surface; and I feel bound to admit the possibility that they do in fact achieve this, to me, elusive feat.

Professor Lovejoy seems to admit that the impossibility is an inconsistency. But Johnson does not state whether it is an inconsistency or not. I wish to say, first, that if it is not inconsistent I have difficulty in grasping the meaning of its being logically impossible. Secondly, I am one of those who are unable to find any incompatibility. If instead of the determinable, color, we take the determinable, taste, there is no incompatibility between determinates, since the same sip of coffee may be both sweet and bitter. If we take color, it seems to be only a matter of fact that a surface cannot be both red and blue in the same experience. There is a great difference between a red-blue surface and a round square. There is no contradiction in a circle inscribed in a square. The contradiction arises through the notion of one and only one boundary and that boundary being both round and square, that is, both round and not-round. Now, if I presuppose that a surface has only one color that color cannot be both red and blue, but I do not need to make any such presupposition. The same surface may be red in one perspective and blue in another, and it is not logically impossible that there should be fairies who could perceive the two perspectives combined. I shall continue to limit all impossibilities to contradictions.

It has been denied that impossibilities fall within the range of significance. The answer to this has been elucidated by Professor Marhenke's admirable, as well as timely, analysis. Nevertheless, it might be maintained against him that each of two incompatible propositions has a meaning, but that there is no meaning when we try to put them together. Langford[5] says, "we shall have to say that two incompatible propositions never do give rise by conjunction to a third proposition, and that this is precisely what it means

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[5] Lewis and Langford, *Symbolic Logic*, p. 476.

for two propositions to be incompatible." I wish to support Professor Marhenke's thesis by further argument.

First, the *reductio ad absurdum*. There have been various attempts to limit the range of significance that are untenable. Take first the classical attempt of Parmenides. We have four fundamental theses: (1) Being is. Granted, a tautology. (2) Not-being is not. Another tautology. (3) Thought of being is. Granted. (4) Thought of not-being is not. What is it you cannot think of, Parmenides? Not-being. Do the words not-being have a meaning or not? If they do, then you have thought of it. If they do not, substitute a nonsense word for it—ogliwog. Then the theses are as follows: (1) Being is. (2) Ogliwog is not, or ogliwog is ogliwog. (3) Thought of being is. (4) Thought of ogliwog is not, or thought of ogliwog is ogliwog. It is safe to say that Parmenides' philosophy will not follow from these four theses. It is clear that we know the meaning of nothing-at-all. A pessimistic friend of my early philosophic days once said to me, "If I could press a button and blow the universe, not into little bits (for they might reassemble again) but into nothingness, I wouldn't hesitate a moment to do it." I knew what he meant. Take Herbert Spencer, who said that infinite space is inconceivable, not because it is space but because it is infinite. Substitute a nonsense word: ogliwoggian space is inconceivable. If Spencer were an honest philosopher he would admit, "This is not what I meant."

A similar dialectic applies to the classical Hindu illustration, the son of a barren woman, a clear contradiction. When I say that the son of a barren woman is impossible, I have the meanings, not only of son and of a barren woman but also of the son of a barren woman, since I say, not that a son is impossible, nor that a barren woman is impossible, but that the son of a barren woman is impossible. As James[6] has said:

We think of a thing *about* which certain facts must obtain but we do not yet know how the thing would look when it is realized. The natural possibility or impossibility of the thing does not touch the question of its conceivability in this problematic way. "Round square," "black-white thing," are absolutely definite conceptions.

When I make the statement, "The proposition p is incompatible with the proposition q," obviously I have thought of an incom-

[6] *Principles of Psychology,* I, 463.

patibility or a contradiction, and the meaning of this statement is a proposition, since a proposition and a complete meaning are one and the same.

Secondly, it is easy enough to understand how a contradictory proposition is framed. Just as I frame a complex propositional function through the identity of the variables in "x is round" and "x is red," so I frame a complex propositional function through the identity of the variables in "x is round" and "x is square." Certainly, I am not acquainted with a round square. As James says, I am thinking of it in a problematic way. But that is true of all objective references. I do not so much think *of* meanings as *at* them, but it happens that we use the word *of* instead of *at*. I think of a mock turtle; so I think of a round square. I once listened to a conversation between a small boy and his mother. The boy had previously asked his mother, "Would you be afraid of a bear out of a cage?" and then, "Would you be afraid of a bear in of a cage?" He then said, "Would you be afraid of a bear-out-of-a-cage-in-of-a-cage?" The mother's expression was one of perplexity. She said, "Child, what do you mean?" With an obvious tone of contempt, he replied, "I mean two things at once." He was wiser than his mother and some philosophers.

Thirdly, if contradiction has no meaning then no proposition could be negatively verified, since in a negative verification we "spot" an inconsistency between a proposition and a fact.

My fifth thesis is: Possibility means the absence of impossibility. In spite of the negative word, impossibility is the prior and positive conception. Possibility, as we have seen, lies within the field of meaning, and I may describe a meaning. But if you ask me whether the meaning is a consistent one I must look for contradictions. If I find the meaning exemplified in experience, then I know that there are no contradictions. If I cannot find it exemplified, I develop my meaning fully and look for contradictions in the meaning. If I find none I may then believe (rightly or wrongly) that the meaning is consistent. In any event, possibility means consistency. I agree entirely with Professors Lenzen and Loewenberg in the identification of possibility and consistency. I would add that possibility *as such* is consistency, although of course in a particular example we must specify what the proposition is and with what other propositions, if any, we are comparing it. A proposi-

tion may be possible in itself and yet not com-possible, to use Leib-niz' term, with other propositions. I shall discuss this later.

Professor Loewenberg has said that possibility is epistemic and Professor Adams that possibility is constitutive—an apparent contradiction. I agree with both and I think they agree with each other. The whole field of significance, which includes both possibility and impossibility, is the meaning of thought. Without a thinker, both possibility and impossibility would have no status. So far, possibility is epistemic. Once granted this field, the nature of impossibility and its difference from possibility belong to the field. In this sense they are constitutive. When I think of a contradiction I think of *a* as other than itself, and that *a* is other than itself is exactly what the principle of contradiction denies. Further, consistency is absence of contradiction, and since absence is never anything actual its status must always be the meaning of a thought. There is another meaning of contradiction, namely, the affirmation and denial of the same proposition; but this meaning is secondary. Further, this contradiction is not only possible; it takes place daily. I cannot, as a matter of fact, affirm and deny the same proposition in the same breath, but the statement of this factual impossibility is not the law of contradiction. I conclude: The contradiction which is an impossibility is constitutive in the field of reference. I may remark parenthetically that the two diverse meanings of the a priori correspond to the two senses in which possibility and impossibility are epistemic and constitutive. We *construct* the entire field of significance; that is the first meaning of the a priori. Secondly, we discriminate by inspection the logical possibilities from the impossibilities therein; and this is the a priori of logical and mathematical analysis.

In the conclusion of this section I wish to say a word about the apeiron. As the widest of all specifiables, the apeiron, if still significant, is plainly "some being." Since this applies to everything, it admits of no actual contradictory; everything actual is an example of it. It does, however, have a contradictory in the field of significance, namely, not-anything, or nothing-at-all. This is a meaning, as I have previously explained. If the apeiron is emptied of all significance it is logical nonsense. It would seem then to be similar to the One of Plotinus and of Pseudo-Dionysius in that it is beyond both being and nonbeing. And there I will leave it.

III. THE ACTUAL AND THE MERELY POSSIBLE

As we have seen, the contradictory of the possible is the impossible and not the actual. Indeed, it is a commonplace of logic that the actual entails the possible although the possible does not entail the actual. Hence, I shall divide the possible into the actual and the merely possible. As explained above, possibility is not an ontological predicate of the actual; it is nothing positive at all. After we have established our field of meaning we may then describe the actual as free from contradictions. In this sense, and in this sense alone, is the actual possible.

The possible is divided into the actual and the merely possible : this is my sixth thesis. It would not have occurred to me to emphasize this thesis if it had not been denied by Professor Pepper and at least encroached upon by Professor Lenzen. Professor Lenzen has maintained that the merely possible is prior to the actual in the sense that we may say that an actual table is the sum of the actual and possible aspects of it. Now, I have no objection to the thorough manner in which, both in his book[7] and in his lecture in this series, he has worked out the procedure of a scientific positivism, but I do not think he should call possible aspects in any sense actual. Such actuality is spurious and not genuine. No part of the actual can be reduced to the merely possible.

I think, however, that it would be not out of place to make a few remarks concerning a present tendency of ascetic renunciation on the part of certain scientists. There are mathematical nominalists, for example, who tell us that, as mathematicians, they do not know that two plus two makes four but only that this proposition is entailed by the postulates of arithmetic. There are other mathematicians, whom I might call ultra-nominalists, who, as mathematicians, do not even know that the theorems of mathematics follow from the postulates. For them, mathematics is only the result of the manipulation of symbols very much as certain kinds of fabric are the result of the manipulation of needles and yarn. Mathematics is a kind of knitting. In both groups the philosophers or the meta-mathematicians are left to find out what is true or false. Further, we have had positivists in physical science who would leave to the philosophers the determination of whether there

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[7] *The Nature of Physical Theory.*

probably are electrons or photons. And Professor Tolman and other behaviorists would generously hand over introspective psychology to the philosophers. In spite of this scientific asceticism I think that the general trend of science is in the other direction— that a sound mathematics can be deduced from self-evident axioms, since all mathematics is a huge tautology; that the principles of irrelevance and parsimony[8] give a genuine probability for the truth of the theories of physics; and that the great task of the psychologists of the future will be the correlation of the results of introspection with the laws of human behavior. Philosophy has given birth to its children, the sciences, and even a kangaroo would find it inconvenient to take its adult offspring back into its pouch.

I am not able to share Professor Pepper's doubt concerning the actual. There cannot be possible objects of reference without an actual reference, an actual thought. If the thought were only a possible thought it would be the object of reference of another thought, and, if this were possible only, it would be the object of still another thought, and so on *ad infinitum*. Since the significant is sustained by the actual, without the actual the possible is impossible and the impossible also is impossible. I now feel as though I were swimming in the apeiron.

It seems to me that the first pages of Professor Pepper's lecture do an injustice to his previous paper on "Middle-Sized Facts,"[9] since, after all, middle-sized facts are facts no matter how inaccurately he thinks they are described. I agree with Professor Pepper that there is no kind of truth that is not denied by someone. Brouwer has denied the principle of the excluded middle, which is one form of the principle of contradiction. Mrs. Eddy denied the fact of pain, and Sankara denied all facts of experience. The White Queen is not alone in having "believed as many as six impossible things before breakfast." Some truths, however, seem to be certain; I should say, they are certain. It is logically certain that a thing cannot be other than itself; that red is different from blue; that this patch is extended; and it is certain (although not logically certain) that I enjoy listening to Professor Pepper's excellent exposition of the contextualist theory.

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[8] "Chance and Cosmogony," *Philos. Rev.*, XLI (1932), 150–158.

[9] *Univ. Calif. Publ. Philos.*, XIV (1931), 3–28.

It is certain, first, that there is acquaintance with facts, and secondly, that we derive simple propositional functions by abstraction from facts, and thirdly, that there is, to some extent, an accurate description of facts since we describe facts by means of the predicates abstracted from them. What we must assume, whether we are contextualists or not, is that we remember the past and extrapolate to the future, and that on the basis of these assumptions we reach probable conclusions concerning the distant present. So far as I can see, valid references backward, forward, and outward are implied not only by contextualism but by all other "adequate" systems of philosophy. I am sure that I have arms with which to embrace my fellows, and legs that have walked out of the past and will walk, however haltingly, for some time into the future. I think it is exceedingly probable that there is an external world.

> "A little madness in the Spring
> Is wholesome even for the King,
> But God be with the Clown
> Who ponders this tremendous scene—
> This whole experiment of green,
> As if it were his own!"

My seventh thesis, then, is: The actual may be correctly divided into, first, the experience of the duration block, and secondly, the actual beyond direct experience, which, if apprehended at all, is a part of the field of reference. Thus we return to the direct experience with which we started. We have made three major divisions in the realm of meaning. Before we go further I think it would be well to recapitulate in an inclusive scheme. There is a Hindu legend that the universe is a vast cosmic egg. We may transfer this figure to the entire universe of discourse, which would then look something like the figure on page 212.

The first division (reading from right to left) separates the impossible from the possible; the second division separates the actual, or the factual, from the nonactual; the third division separates the field of acquaintance from the field of reference. This gives us four parts. The first (reading from left to right) is the facts with which we are acquainted; the other three parts are the field of reference. The second part is the facts to which we refer; the third is the merely possible; the fourth the impossible. The first is the

germ; the second the yolk; the third the white; and the fourth the wind egg.

In an earlier part of the paper I followed Leibniz in distinguishing between the logically possible and the com-possible; between a proposition which is consistent with itself and a proposition which is consistent with other propositions or with the facts. As we pro-

The universe of discourse.
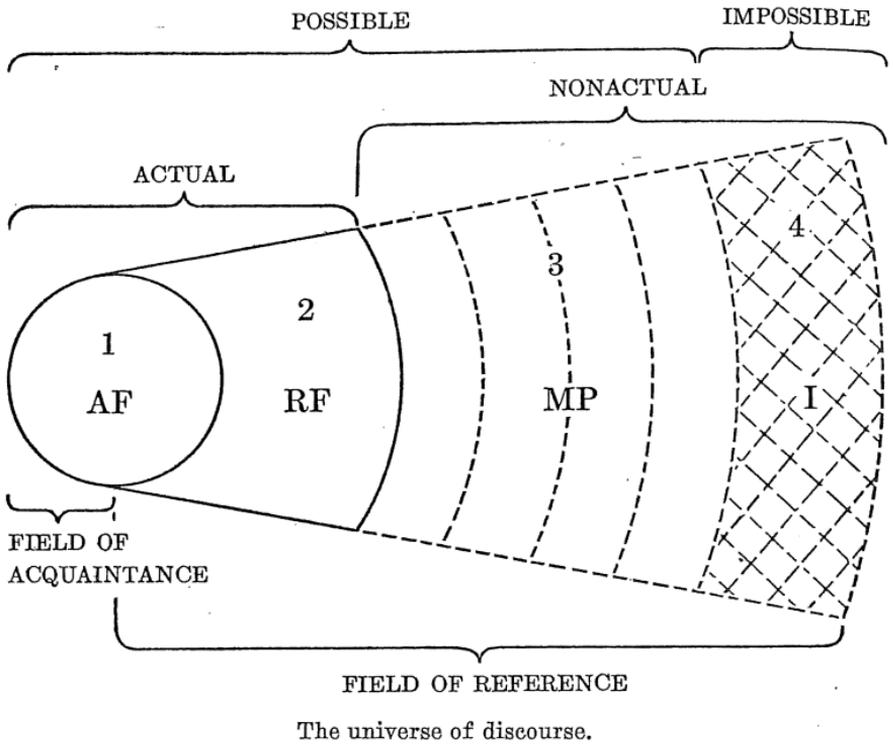
gressively widen our statements of the facts the possible is correspondingly narrowed. The entire third division of our egg is logically possible but we have within it successive narrowings (indicated by lines in the diagram) as our factual data increase. I can add nothing here to the account of the stratification of possibilities as developed by Professor Lenzen except to say it is not only laws but also facts which narrow the possibilities. I shall return to the subject of laws later.

Before ending this section I should like to comment on the use of certain words that are synonymous with the word "being" or at least closely allied to the word "being." We have the following

terms and their opposites: (1) being or entity and not-being; (2) actuality and nonactuality; (3) fact and fiction; (4) reality and appearance.

I make no distinction between an actuality and a fact. Indeed, it is customary to use, for the noun, "fact" instead of "actuality," and, for the adjective, "actual" instead of "factual." Secondly, I can make no distinction between a being or an entity and a fact. The mock turtle is not a fact; neither is it a being.

It might be said that an event in the past is not actual but has being; but such an event is not a being now; it was a being in the past, precisely as the event is not actual now but was actual in the past. A being, a fact, and an actuality have for me, then, precisely the same meaning. The meaning of being is unanalyzable but it is one which all who are not philosophers, and most philosophers also, understand. There are, however, other pairs of terms which attempt to dichotomize the realm of being. Such are "existence" and "subsistence," and "the natural" and "the supernatural." I may not believe in subsistence or the supernatural, but I do not believe that they are contradictory. I merely cut them off as irrelevant. The pair of terms, "reality" and "appearance," is somewhat similar to these latter pairs in its attempt to divide beings into real beings and apparent beings. The word "appearance" is ambiguous. It may mean something that shows up in experience. In this meaning it is a being, as in the New England expression, "The newlyweds appeared in church this morning." In this sense an illusion or a dream is a fact. Or, secondly, it may mean that there is the belief that something is a being when it is not a being; for example, a child believes that there is a mock turtle when there is no mock turtle, that is, no being. Such a meaning is false. So-called appearances are, then, either facts or false propositions. Facts are actual. False propositions are never actual. In my opinion, it would be very much better for philosophy if the word "reality" were discarded and the two kinds of appearance were designated as "facts" and "falsities." If the word "reality" is to be used it should be a precise synonym for the aggregate of beings or facts. I would not say, with Professor Adams, that possibilities are real. I would say, it is true that such and such is possible, that is, certain meanings are either consistent with themselves or consistent with certain designated facts. My disagreement with Professor Adams is

presumably verbal. If AB is customarily followed by T, then A may be said to be a capacity. If AC is customarily followed by T, A, in the presence of C, may be said to be a tendency. I agree with Professor Loewenberg that the alternatives of Professor Adams' are groups of capacities. None of the preceding lectures has hypostasized a *potentia*. Mr. Strong's account of the subject seems to me thoroughly sound.

IV. POSSIBILITY AND CHANCE

I cannot enter here upon an extended discussion of probability, which is a far more intricate subject than simple possibility. Probability, however, may be regarded as a measure of possibility, with its two limits, impossibility, or a probability of zero, and certainty, or a probability of one. The principle of uncertainty is established at present in physics and it seems likely that it will be permanently triumphant.[10] Assuming the truth of this statement, there remains no strict determinism in nature, and chance takes the place of laws. Instead of laws we have correlations which are summations of chance. These correlations are only probable, that is, possible. If we should say, then, as Professors Lenzen and Marhenke did, that the physically possible or the biologically possible is whatever is consistent with the laws of physics or biology, we should then mean that what is possible is what is consistent with another possibility, and we do not yet reach consistency with the actual facts.

We must distinguish, however, between the past and the future, although in both possibility means consistency with all the data. Thus I may say that it is possible that I had mushrooms for dinner on August 11, 1925. But it is not possible that I stayed away from the Greek play and worked on my paper last Friday evening. I may, however, say that it was possible for me to stay away, that is, it was consistent with all the other data up to that time.

We have no data out of the future. In the future everything is possible. Everything is possible and yet not everything, for the probability, and so the possibility, is a restricted one. If we know the position of an electron at a certain instant to a high degree of approximation, we do not know where it will be after a certain duration, but some positions are more probable than others. It is as though we had a die, with an ace on one face, deuces on three

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[10] "Chance and Cosmogony," *op. cit.*, pp. 171–173.

faces, and three spots on two faces.[11] The restrictions are constant and the rest is a matter of chance. We extrapolate the constants in nature; the remainder is equality of possibility. We may say, then, that a future physical event is possible if it is consistent with the past and present facts and the physical constants. Presumably, similar remarks could be made about the possibility of future biological events if we knew the biological constants. If new constants emerge in the future, the problem is more complicated; and I shall not follow it farther.

V. TRUTH AND FALSITY

Before dealing directly with the possibility of pluralism I must first give an account of truth and falsity.[12] My eighth thesis is : All falsity is contradiction and all truth is tautology since the only consistent description of fact or meaning is tautology. I shall divide my brief exposition into two parts.

1. *Correspondence and verifiability.*—It is customary for those who have been influenced by pragmatism (and this applies to several writers in the present volume) to replace correspondence by verifiability. Philosophy has fortunately sloughed off the extreme pragmatism, I might say the pseudo-pragmatism, of Schiller and of James in the second lecture of his *Pragmatism.* The pragmatism of the earlier and the later James and the instrumentalism of Dewey is a prediction and verification theory of truth. Truth is, primarily, the verification and, secondarily, the verifiability of a prediction. Since verification is a process with a terminus *a quo* and a terminus *ad quem* we may adopt a threefold classification of the truth of propositions. First, a proposition is true at the consummation of verification. This consummation I shall call confrontation. Secondly, a proposition is true which will be verified. Thirdly, a proposition is true which can be verified, although the verification will never take place. (Professor Adams' eating of the poisonous mushrooms is an example.[13]) This we may call psychological verifiability. Such a pragmatism is not, as it stands, an adequate theory even of the truth of extensional propositions,

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[11] I owe this illustration to Professor R. H. Fowler.

[12] I have dealt with this subject more fully in a paper, "The Synoptic Theory of Truth," read at the joint meeting of the Western and Pacific Divisions of the American Philosophical Association at Berkeley, in December, 1930. I may refer to it as a "possible" publication.

[13] Present volume, p. 10.

since we make assertions which refer to the past or to inaccessible regions of space or of other minds. These may be indirectly verified to some extent in the future but they cannot be directly verified at all. They are verifiable only in a Pickwickian sense. We may, however, generalize our pragmatism by holding that such propositions are true provided they would be verified if we could remount the past or reach these inaccessible regions. I shall call such verifiability "logical verifiability" and pragmatism, so generalized, I shall call "logical pragmatism."

Such a pragmatism may be easily shown to be the same as the correspondence theory properly analyzed. If I entertain the proposition that I was in Berkeley last Friday, this proposition is identical with the facts. But identity is nothing actual; it is the absence of diversity. If I entertain the false proposition that I was in Seattle last Friday, the proposition is diverse from the facts, but I cannot believe that there is an actual relation of diversity running from the facts to a mere meaning. When a false description is applied to the facts of direct experience I may say there is an actual confrontation, but when I describe something beyond direct experience the falsity of the description consists only in this, that a diversity would be discovered if the confrontation were made. The analyzed correspondence theory turns out to be the same as pragmatism generalized, and if pragmatism is not generalized it is not, as we have seen, an adequate theory of truth.

2. *Correspondence and tautology.*—The analyzed correspondence theory seems to be adequate when applied to the truths of propositions of an extensional logic, but unless it is further generalized it breaks down completely when applied to intentional or modal propositions. Their falsity consists in contradiction; their truth is tautology. In dealing with such truths the pragmatists and the correspondence philosophers have followed different paths. The former (James and Dewey) have denied analytic truth entirely. This is an easy verbal solution but it is entirely sterile. The latter have invented supposed facts with which the propositions correspond. The truth of a mathematical proposition, however, is not its correspondence with facts. Euclidean geometry would be true were there no Euclidean space. If space is non-Euclidean there are neither equal nor unequal vertical angles in Euclidean space; nevertheless, Euclidean geometry discriminates between

them. It holds that the former are possible and the latter impossible. Mathematical propositions are modals.

We seem to have, then, two meanings of truth: first, absence of contradiction in modal or intentional propositions, and, secondly, correspondence or logical verifiability in ordinary extensional propositions. But a little analysis will show that absence of contradiction is the meaning of truth in the second class also. Most ordinary propositions are not verified at all. In such propositions both positive and negative verification do not take place. Take the classical proposition, "Caesar crossed the Rubicon." This proposition is not verified, so both positive and negative verification have the same status in fact. Neither is actual, but there is this difference between them: positive verification is not actual, but negative verification is not only not actual but also impossible. The proposition that Caesar did not cross the Rubicon is contradictory to the facts. Truth is possible verification; falsity is impossible verification. Truth and falsity, in the last analysis, are modals.

There is of course some difference between the falsity of ordinary propositions and the falsity of modals. In the latter the contradictions are in the data. We may be certain of them. In the former we have only a probable and not a certain knowledge of the contradiction since the contradiction lies beyond the data in the objects of reference. And so of truth. Modal truth is known tautology; ordinary truth is only probable tautology, not certain but believed. There is a certain sense, as Professor Marhenke has shown, in saying that even modal inconsistency must be sometimes sought. Mathematical propositions must be completely developed or the inconsistency will not appear. Similarly, inconsistency in ordinary propositions must be sought in connection with all the facts. This analysis fits the previous account of the stratification of possibilities,[14] with the one extreme of a purely logical possibility and the other of a possibility which is consistent with all the facts. In this last possibility the actual alone is possible. Obviously, we can never have complete knowledge of the future since future data are not at hand, and, except some memories the truth of which we accept, we have only probable knowledge of the past.

To summarize: In modal truth we have, at least in principle,

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[14] Lenzen, present volume, p. 57.

certain tautologies. In ordinary propositions that go beyond acquaintance we have only the probability of tautology, but if our data could be complete we should have no possible doubt and of ordinary falsehood we could say:

> "I bet with every Wind that blew, till Nature in chagrin
> Employed a *Fact* to visit me and scuttle my Balloon!"

and of truth:

> "Search in and out and round about,
>   And you'll discover never
> A tale so free from every doubt—
> All probable, possible shadow of doubt—
>   All possible doubt whatever!"

VI. POSSIBILITY AND PLURALISM

Professor Adams has said that the test of a sound philosophy is the provision it makes for possibility. With a sure sense he selected philosophies like those of Hume and Bergson, in which everything is possible, and philosophies like those of Bradley and Bosanquet, in which nothing is possible. I think we can now see that the error of Hume and Bergson lies in their lack of continuant constants which restrict the field of possibility and probability. These constants I have already discussed. I shall now direct my attention to the opposite view of Bradley which, by denying possibility, reaches a rigid monism.

There are four and only four possible hypotheses concerning the number of beings in the universe. These are (1) monism; (2) concatenism; (3) monadism; and (4) a combination of concatenism and monadism. I shall define monism as the hypothesis of an all inclusive being. According to this view, however many beings there may be there is one Being which includes them all. There are various subtypes of monism. There is mystical monism which denies the validity of all description, and abstract monism which accepts attributes but denies relations. Since attributes and relations obviously exist I shall consider only what I shall call concrete monism. I shall define this as the view that there are n substantives or concrete particulars and that these are united by an n-adic relation into an inclusive whole. This whole is a single individual.

The other three views are pluralisms. Monadism is the view that there are many beings which are unrelated. Each of these beings is a monad and the monads are "windowless." Concatenism was suggested by the synechism of Charles Peirce and developed into a specific theory by William James. It holds that the universe is a chain of beings or individuals. There is overlapping of the links but there is no inclusive being. A fourth possible hypothesis is a combination of monadism and concatenism. It would hold either that there are many chains, or one or more chains and one or more monads. The theoretical weakness of monadism is apparent. Since the monads are unconnected, one monad could never know the others. Leibniz attempted to save monadism by his "preëstablished harmony," but this is clearly a dodge since it relates the monad of monads to all the other monads. There may be monads outside the universe to which we belong. If there are I shall ignore them since I can know nothing about them. Similar strictures apply to the combination of concatenism and monadism. So far as our universe is concerned—that is, the universe that can possibly be known to us—either monism or concatenism is true. If concatenism is possible it is probably true, since the monistic hypothesis would then become irrelevant. In monism there is an n-adic relation; in concatenism

all the relations may be of a much lower order—the upper limit of Concatenism would be a world where the highest type of relation is $(n-1)$-adic. . . . In a monistic universe every entity is related to every other entity. The n-adic relation includes all these dyadic relations as a part of itself. It includes also all triadic and tetradic relations and so on, up to and including the $(n-1)$-adic type, i.e., it includes all the relations that are necessary to constitute a concatenistic universe, and many others besides. These additional relations are irrelevant in reference to our present state of knowledge.[15]

I said that concatenism is probable if it is possible. Bradley denies that it is possible. I select Bradley because he seems the ablest of the monists. His argument runs as follows: Let us suppose, as in pluralism, that A and B are two unrelated individuals. It is then true that A is other than B; that is, A is actually other than or diverse from B. Hence, A and B are not unrelated. Further, a relation is a connection; hence, A and B are connected and in their

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[15] "Chance and Cosmogony," p. 159.

connection make an inclusive whole. Bradley's argument was directed against monadism but it applies to concatenism as well since, as I shall show later, in concatenism there is no actual relation between links even if they overlap. Bradley's entire argument depends upon the assumption that true relations can never be possible but are always actual. The validity of his argument depends upon the status of possibility. My ninth thesis is: Pluralism is possible.

1. *Connection and conjunction.*—Bradley offers no evidence, and can offer none, that logical conjunction means an actual connection. If I say that Nefretiti was the wife of Ikhnaton and that Li Po was sometimes intoxicated, I am not asserting a connection between the content of the two propositions. A connection, direct or indirect, there may be since the facts somehow belong to what we call the same universe. But this is not referred to by the word "and." In general, when I make the conjunctive proposition p and q, the word "and" refers only to the universe of discourse or of meaning. This relation I shall call conjunction or the "and relation." I shall use the word "connection" or the term "with relation" to designate an actual relation in the realm of being.

2. *Differentiation and diversity.*—In a similar manner, when I think of the conjunction of two propositions in the universe of discourse I shall call their otherness "diversity" and shall reserve the term "differentiation" for the otherness of two entities that are actually connected—for the fact that actual relations, as Bradley said, connect things *apart.* We may make a cross-classification of these two pairs of relations, using the neutral term "joining" for either connection or conjunction, and the term "disjoining" for either differentiation or diversity. The classification is as follows:

	Actual	Nominal
Joining	Connection *with*	Conjunction *and*
Disjoining	Differentiation	Diversity

I shall now apply this to the discussion of pluralism.

3. *Overlapping links.*—My thesis here is that two overlapping links have the relations of conjunction and diversity in the universe of discourse and not those of actual connection and differentiation. First, it is clear that identity is nothing positive; it is only the absence of diversity. Secondly, there is no actual relation of whole and part. We may analyze the so-called relation in this way: If W is the whole and P is the part, there is an actual connection, r, between P and P', P' being the other part or parts of W. The situation is this: W is identical with PrP'. The relation of whole and part, then, is the conjunction of two relations; first, the relation of identity, which is nominal, and, secondly, the relation between P and P', which alone is actual. We need glue to glue the part to another part, but we do not need more glue to glue the part to the whole. It may be illustrated thus:
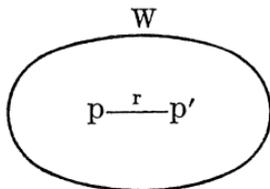

Now let us consider the relation of overlapping. Let us take two links, M and N, and let us suppose that M is constituted by $a \, r_1 \, b$ and that N is constituted by $b' \, r_2 \, c$. The relation of the overlapping of M and N is analyzed as follows: M is identical with $a \, r_1 \, b$, and N is identical with $b' \, r_2 \, c$, and b is identical with b'. The relations of conjunction and identity are nominal, r_1 and r_2 are actual. Between M and N there is only logical conjunction and diversity, not actual connection and differentiation. The situation may be illustrated in this way:
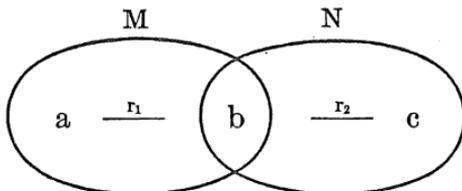
It is obvious that nonoverlapping links have the relations of conjunction and diversity and not those of connection and differentiation.

4. *Time and space.*—Let us suppose that we have a chain of dura-
tion blocks illustrated thus:
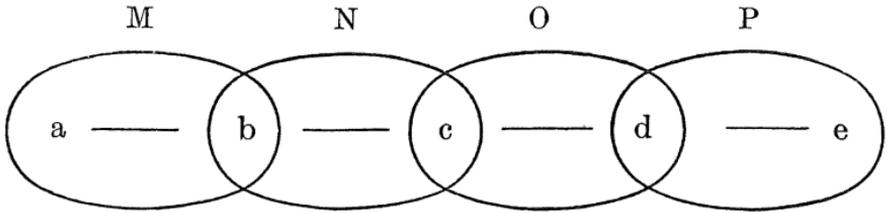
In this chain there is no actual relation of sequence between *a* and
e. If we say that *a* is before *e* we mean that *a* is before *b, and b* is
before *c, and c* is before *d, and d* is before *e*. The proposition that *a*
is before *e* is a conjunctive proposition. There is no fact that *a* is
before *e;* there is a conjunction or aggregate of facts. The proposi-
tion that Caesar crossed the Rubicon (before now) is not made
true by *the* fact that Caesar crossed the Rubicon before the present.
It is made true by an aggregate of facts, the chain that stretches
from Caesar to the present. Even a chain is not a fact, it is a con-
junction or aggregate of facts. Similar considerations will apply to
space if space is concatenated and not an inclusive whole.

5. *Difference and similarity.*—Let us take two nonoverlapping
links of a chain, say the first and the sixth links. We will call them
M and R. Let us suppose that M has only one color, red, and R has
only one color, green. What is the meaning of the proposition that
M and R are different in color? According to concatenism there is
no actual relation between the two entities, the color difference of
M and R is not a fact. The proposition that M and R are different
in color is a conjunctive proposition. It means that M is red *and* R
is green *and* red is different from green. Let us take as a concrete
example the red coat of a mandarin in Nanking and this green
pencil. Monism may, of course, be true. It is possible that there is
an actual relation of difference which runs from the coat to the
pencil, the two facts may be actually compared in an absolute
mind. The verification of the conjunctive proposition may, so to
speak, be performed. But I do not need to assume the actual verifi-
cation; I may substitute logical verifiability. If the verification were
to take place only one solution would be possible. Similarity is a
contradiction, an impossibility. Difference remains as a possibility.

6. *Diversity and possibility.*—We can now understand the man-

ner in which two links of a chain are diverse. If we discard prime matter as a superfluous conception, two diverse links of a chain are dissimilar. If the first and seventh links of a chain are not dissimilar they are the same link and the chain from the first to the seventh link is closed. But whether or not there is prime matter two dissimilar links cannot be identical for that would be a contradiction. Such diversity holds in the universe of discourse. This may readily be seen if we consider fictions.

First, let us take two meanings that do not correspond to anything actual: a mock turtle is other than a rocking-horse fly; that is, if there were a mock turtle it would be different from a rocking-horse fly if there were a rocking-horse fly. I can never verify this diversity through the actual facts since there are no facts to be diverse. But to say that a rocking-horse fly and a mock turtle mean the same is a contradiction, that is, an impossibility.

Secondly, let us consider the relation of a fact to a fiction. When I say that a mock turtle is not a turtle I do not mean that there is an actual rod of connection and differentiation which runs from a turtle which is to a mock turtle which is not. I mean that to identify the two is a contradiction and therefore an impossibility.

Thirdly, the same situation obtains when I am dealing with two facts with different sets of predicates which are not parts of an inclusive whole. To say that they are identical would be a contradiction, that is, an impossibility. But identity is the contradictory of diversity. If it is impossible for two facts to be identical they must be diverse. They are not actually differentiated within a connected and inclusive whole. They are diverse in the universe of discourse. I conclude that Bradley's argument is fallacious. Pluralism may be true.

In conclusion, a word about values. Whether there is an inclusive being or not there is no inclusive good. The satisfactions and pleasures of life are manifold, imbedded in a matrix which is indifferent. Good facts are many and the *summum bonum* is not a fact. The highest good which we can achieve is an aggregate of facts; the proposition which would describe it is conjunctive; the truth about it belongs to the universe of discourse. From an actual which has come largely by chance we reach toward a possible good, "the gables of the sky." God is only possible.