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THE NEW IDEALISM

By

MAY SINCLAIR

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THE NEW IDEALISM

BY

MAY SINCLAIR

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THIS BOOK

IS DEDICATED TO

WILLIAM PEPPERELL MONTAGUE

WHO WILL NOT AGREE
WITH A WORD OF IT

INTRODUCTION

The aim of this book is twofold: to examine the foundations of realism more critically, and to outline a reconstruction of idealism more closely than was possible five years ago. The latest developments of philosophy demand a revision of the whole problem, from a shifted standpoint. Since 1917 realism has gained in solidity and a certain intricate precision. The Critical Realists [1] have discovered a flaw in its theory of perception and tried to mend it (not, I think, with conspicuous success); Professor Whitehead [2] has laid down its first principles once for all; and Professor Alexander [3] has built it up into a system among systems.

Realism is ten times more formidable than it was in 1917.

And since 1917 the issue has been narrowed down to the field of Space and Time, and it is there that the battle between realism and idealism must be fought.

That issue is very clear. For, however realists may differ among themselves, whether they say with Professor Alexander that Space-Time is the ultimate reality, or with Professor Whitehead that the ultimate entities are events, they are all agreed that mind is not the ultimate entity and must be kept out of the problem. "Nature," Professor Whitehead says, "is closed to mind." Mind, on any realist scheme, is only

[1] *Essays in Critical Realism:* 1920.
[2] *Enquiry Concerning the Principles of Natural Knowledge:* 1919. *The Concept of Nature:* 1920.
[3] *Space, Time and Deity:* 1920.

one more entity, one more change in a sequence of changes; the last thing, not the first, though highest, if you like, in the scale of values.

The problem of the realist, then, is how to account for mind as part of a system in which mind was not present from the beginning. I have tried to show that this attempt to get mind out of the mindless lands us in endless difficulties and contradictions, contradictions which are only removed from one level of the enquiry to crop up again on the next; that it is easier to obtain an uncontradictious space-time continuum from ultimate consciousness than to produce consciousness from an ultimate space-time.

Take this affair of the continuum. Professor Whitehead tells us that it is secured by the covering which one event gives to another and to its own "event-particles." You can divide an event into an infinite number of event-particles, but the whole event extends over them in unbroken duration. This is true. It is also true that if once you start splitting up events into event-particles you are saddled with all the inconveniences of discontinuity. The event as a whole, as a covering continuum, exists only for consciousness which holds together all the moments of its duration. For the idealist, consciousness is *the* covering event.

I have tried to show both that consciousness is ultimate and that there is consciousness and consciousness, and that the realist attack bears hard, not on *primary* consciousness which perceives, feels, wills, remembers, conceives and imagines, but on consciousness which returns on itself, on that *secondary,* supervening consciousness which reflects, judges, infers and reasons. Professor Whitehead is right when he says that it is no explanation of anything to say that "there is a mind knowing it," if he means that things are not

made or modified by the play of mind on them. But this play is the act, not of primary but of secondary consciousness.

I have not seized on this distinction because it is an easy way out of the difficulty, but because it seems to me to be a simple fact of experience. I should be ashamed of treating so plain a platitude as if it were a discovery were it not that it is continually overlooked. The main assumption of realism—that in knowing we know that things exist in themselves apart from any knowing—rests on the confusion.

I have tried to show that this assumption is not justified; that primary consciousness knows nothing about things outside and apart from itself and makes no affirmation of their independent existence; that this again is the work of secondary consciousness, and that we have only to examine our primary consciousness in its innocence and purity to see that it is so. The affirmations of secondary consciousness (which are what realism goes on) come too late. It does indeed report a distinction between itself and what it knows; but what it knows is nothing more nor less than that primary block of consciousness in which there is no distinction between knowing and things known.

I am not going to apologise too much for this book; for it is not a defence of my "Defence of Idealism." On the contrary, it is an attempt, successful or unsuccessful, to remedy the many shortcomings of that lighthearted essay.

The worst of these were its failure to realise the supreme importance of Space-Time in the problem of consciousness, and the bearing of Values on the moral problem.

I am still in the curious position of admiring beyond everything the work of the realists with whose con-

clusions I am not able to agree. I have no longer any prejudice against realism, and would even be glad if somebody would convert me to it, so that I might enjoy the advantages of the position; for example, its freedom from metaphysical care. About all the arguments for idealism there is an air of melancholy compulsion, while for sheer intellectual delight, give me realism. It has turns of surpassing fascination and surprise. Such is Professor Laird's idea that when you remember Mont Blanc you are really and truly back in the past, beholding the mountain. Such Professor Whitehead's theory of Time, and Professor Alexander's correlations of Space-Time and his vision of Deity. These things come on you like the first burst, long ago, of Plato and Spinoza, of Kant and Hegel, on your excited youth. I know no other philosophy that provides a comparable thrill.

As it was not possible, while still struggling with my opponents, to convey any sense of my profound indebtedness, I record it here, lest in the agitation of controversy I should seem to have forgotten what it would ill become me to forget.

If I betray ignorance of many contemporary idealists, it is because for years I was satisfied with Kant and Hegel relieved by Schopenhauer and Mr. Bradley, and because, lately, my chief interest has been in seeing what can be said *against* idealism. It is the realists who have made me look to its defences and who have most helped to show me the possible lines of reconstruction. I could have done nothing without Professor Alexander's work on Space-Time. Much as idealism owes to idealists, its larger debt must be to the first realist who taught them to "take Space and Time seriously." So, after years of devotion to Mr. Bradley's Absolute, I wanted to see what would happen if

I simply followed the trail which, thanks to Professor Alexander, I saw before me. If it happens to have struck across somebody else's trail, so that I seem to have borrowed without acknowledgment, I apologise.

The part of the present essay I feel most nervous about is that in the second section of Chapter III, where I have ventured to criticise Professor Whitehead's work. The idealist who has no expert mathematical knowledge must always be haunted by a ghastly fear. For all he knows, the mathematician may come out any moment and slay him with a set of equations, and he will not even have the benefit of knowing how dead he is.

Again, I am afraid that in my chapter on The Antinomies of Space and Time, I have done less than justice to Professor Boodin who has written three brilliant philosophic works: *Time and Reality; Truth and Reality* and *A Realistic Universe;* besides his essay on Cosmic Evolution.[1] He has succeeded in making even Pragmatism fascinating. But it seemed a pity that so fine a thinker should have taken up with such a lamentable view of space and time. The more so, as his pragmatic realist intentions have not blinded him to certain aspects of the case that make for idealism, and he has shown very clearly that he sees where the root of the matter lies. Thus in *Time and Reality:*

"We can never prove . . . that what appears as continuous is not objectively discrete. Thus the surface of the water and the pictures of the vitoscope appear as continuous, though objectively we know that they are discrete. The continuity here is in the perceiving subject, not in the perceived object. . . . The only way then to be sure we have a continuum is intellectually to construct one. If you ask, then, how we know that there is such a continuum, whether it is not merely an ideal construction, we answer that this is irrelevant to our purpose; but if there is objective continuity at all it must be thus constructed."

[1] Published in *The Proceedings of the Aristotelian Society:* Vol. XXI.

The uninstructed student should be warned that realism is more formidable than it can be made to look. Also that when the critics of Professor Whitehead and Professor Alexander have done their worst, *Space, Time and Deity,* the *Enquiry Concerning the Principles of Natural Knowledge* and *The Concept of Nature* are likely to stand with the greatest philosophic works of the twentieth century.

I do not imagine for one moment that my own idealism is watertight, or that no doubt will ever trouble me as to the truth of its assumptions. All metaphysics are highly problematic, and the idealist is not more bound than other people to furnish a watertight system. Enough if his theory does not leak too much; he cannot *prove* anything any more than other people. His assumptions need not even be a better description, provided they give a more adequate and consistent explanation of the facts.

But they must be adequate, they must be consistent, and they must explain.

I can hardly hope that mine fulfil these requirements at all points. It must be admitted that idealists before now have spoiled their case by injudicious statements. I have tried to avoid injudicious statements, but it is more than likely that I have not been so successful as I think. The worst, or the best, that can happen to me is to be found out. I shall not care if some idealist comes along and says, "This isn't new idealism. So and So has said it already ten times over;" for then I shall have So and So's support. Or if another idealist says, "This will never do. This isn't the way to reconstruct idealism. I can show you a much better one," I shall not care, provided he does show me.

And I hope I shall not mind very much if a realist comes and smashes the whole thing to smithereens,

provided he convinces me of some truth I have not seen. I can only say, "This is the truth about idealism as I see it now."

I submit myself to the judgment of those who know how hard it is, in this adventure, to escape disaster.

MAY SINCLAIR.

London, July 29th, 1921.

CONTENTS

		PAGE
	INTRODUCTION	vii-xiii
	BOOK ONE: THE CRITICAL PREPARATIONS	
CHAPTER		
I	THE OLD IDEALISM	1
	i The Position	1
	ii Epistemology	3
	iii Future of Idealism	13
II	THE NEW REALISM	15
	i The Realist Position	15
	ii The Realist Theory of Memory	22
	iii The Realist Theory of Relation and Knowledge	29
	iv The Strength of Realism	36
	v Objections	37
III	SOME REALIST THEORIES OF PERCEPTION	39
	i Professor Broad and the Real Counterpart	39
	ii Professor Whitehead and the Concept of Nature	81
	iii The Critical Realists	114
IV	ANTINOMIES OF SPACE AND TIME	139
	i The Antinomies	139
	ii Some Modern Solutions	142
	iii The Compact Series Considered	158
V	"SPACE, TIME AND DEITY"	162
	i Space-Time	162
	ii The Categories	179
	iii Quality	191
	iv Consciousness	195
	v Deity	209
	BOOK TWO: RECONSTRUCTION OF IDEALISM	217
VI	SPACE, TIME AND CONSCIOUSNESS	219
	i The Problem	219
	ii Consciousness and Space-Time	224
	iii Consciousness and the Categories	232
	iv Relativity	243

CHAPTER		PAGE
VII	SPACE, TIME AND OTHER CONSCIOUSNESSES	246
	i Forms of Consciousness	246
	ii Reversible Time Series	247
	iii The Fourth Dimension	249
	iv Dream Space-Time	251
	v Personal Perspectives	252
VIII	DIFFICULTIES AND OBJECTIONS	260
	i The Challenge	260
	ii The Crux	261
	iii Being and Being-known	267
IX	PRIMARY CONSCIOUSNESS	274
	i The Distinction	274
	ii The Naif Confusion	283
	iii The Unperceived Reality and the Crucial Relation	284
X	SECONDARY CONSCIOUSNESS	290
	i The Work of Mind	290
	ii Relation of Primary and Secondary Consciousness	291
	iii Realism and Idealism	293
XI	ULTIMATE CONSCIOUSNESS	295
	i Necessity of Ultimate Consciousness	295
	ii Problems of God's Knowing	299
	iii The Moral Problem	303
	iv Free-Will	305
	v Relation of Finite and Ultimate Consciousness	307
XII	SUMMARY	311
	i The Unsolved Problems	311
	ii Primary and Secondary Consciousness	313
	iii God	314
	APPENDIX	315-319

BOOK ONE

THE CRITICAL PREPARATIONS

THE NEW IDEALISM

I

THE OLD IDEALISM

i

What is the exact position of Idealism at the present day? What is likely to be its position in the future? How is it going to emerge, if it emerges at all, from its encounter with the New Realism? There is no denying that the New Realism has made a prodigious disturbance in philosophic thought, a disturbance so vital and far-reaching that philosophic thought will never look the same again. **The Position**

The idealist is fatuously sanguine if he expects his own pet system to come up out of the turmoil looking just the same. Never before has there been such a ruthless exposure of the weak points in his position. At the present moment it seems fairly safe to say that the Old Idealism, I mean the Idealism of the eighteenth and nineteenth centuries, of Berkeley, of Kant and Hegel, of the new-Kantians and new-Hegelians, all the old logic and epistemology (horrible word) will have to go and give place to an idealism which will take serious account of the world of space and time.

The Old Idealism owes its present rather dubious position not only to its more recent excesses, but to the shadiness of its transactions in the past. Consider its origins. It started with the crime of question-

begging. Descartes's "I think, therefore I am" was really a very glaring instance. Since then Idealism has never ceased to mix up the *ratio essendi* with the *ratio cognoscendi* and to glory in the confusion.

Still one aspect of Idealism should not be lost sight of. Hitherto it has always been a reaction against some foregoing dogmatism. It started critical. Even with Descartes it started critical. It may even be said that the most valuable part of the Cartesian philosophy is its criticism, its scepticism, its method.

And modern idealism, properly speaking, starts with Kant, following Hume. Even realists will admit that, as Hume's philosophy, like Berkeley's, was a justifiable reaction against the dualistic realism of Locke, Kant's philosophy was a justifiable reaction against the dogmatic realism of Wolf. Every great philosophic system is a reaction or a development from its predecessor; in either case it must be critical, since development also involves selection and rejection. Idealism, then, is primarily a criticism. Whatever construction or reconstruction it may end with, it begins empirically with an examination of experience. In Kant's hands it became a system that any realist can in his heart respect, even when he has danced on Kant's Antinomies and his Unity of Apperception, and his Transcendental Ego.

We know that the Critical Philosophy ended in a formidable scepticism, a drastic doubt of appearances, a thoroughgoing system of relativity. Even the *schemata* of space and time, even the categories, constitutive of experience though they may be, apply only to appearances, not to things-in-themselves. By a beautiful irony of logic, Kantian idealism ends in dualism, too. There is a gulf fixed between thought and the Thing-in-Itself. Kant's *schemata* fall apart from his categories. The august categories, after all, are not

constitutive of reality, they are barely constitutive of phenomenal appearance, though they receive its taint. They are ready-made intellectual forms, salvage from an exploded logic, clapped on to the given stuff or content of sensation, frames into which sense-data, like so many window panes, somehow amazingly contrive to fit. Constitutive or not, thought partakes of the phenomenal, the ultimately unreal character of its sensuous content. Knowledge is cheated of Being, if the Thing-in-Itself remains unknown and unknowable.

At the same time this dualism between appearances and reality was simpler than the dualism of Descartes and Spinoza, simpler than any preceding realism. And the next step in simplification was obvious. Hegel took it. He knocked the bottom out of dualism with one immense simplifying phrase: "Thought is the Thing-in-Itself"; why go out of your way to assume any other? The *Ding-an-sich* does not skulk and dodge unknown behind phenomena; it is part, the most essential and permanent part, of the entire show. An ultimate, unknown, skulking and dodging *Ding-an-sich* is an unwarrantable and superfluous duplication of the real; he called it a dead-head. Wherever you pick him up he is concerned with the process of self-determining, self-realising thought; with the posing and opposing and reconciling of its differences; with the world of Becoming, of passing away and with the passing away of the passing. And the Thing-in-Itself emerges again and again in higher and higher forms, as it swings itself upwards, eternal and selfsame through all the intricate movements of the Triple Dialectic. Nothing could be more complicated, yet nothing could be simpler. It seems almost childishly simple when you catch the trick of it. The world is neither more nor less than a system of thought-relations. A transparent system. The net in which Hegel snares the un-

wary world is "a net of diamond." Sense itself, the crux of Hegelianism, what is it but one of two terms in a "thought relation"? This cosmos of perceived relations is through and through "objective" *for us*, for finite and relative consciousness; but the subject-object relation itself falls into the net of Absolute thought. Its being is to be known. Pure unqualified Being is the thinnest and poorest of the categories, but Absolute Knowledge is Being in its totality.

It doesn't greatly matter whether this is or is not a true account of Absolute Idealism. It is the account that passes for it with most of Hegel's followers and all of his opponents. I do not think it distorts Hegel more than he distorted himself in his Logic. Anyhow it is what we mean when we talk about Absolute Idealism; and it has secured a firm and independent footing under that name. That the grand totality of thought is itself only a moment in the process of Absolute Spirit; that spirit should be regarded as a neutral "Third," the underlying, unifying reality of "matter" and "consciousness"; that in Hegel's system, properly understood, the logical aspect is ultimately transcended; all this may be urged with equal passion and reason by the devotees of Hegel; in spite of them, in spite of his own reiterated protests, his Logic stands as the most thoroughpaced system of epistemology (that horrible word again!) ever known. Thought is the Thing-in-Itself; it is ultimate Reality; it is the Whole; so comprehensive is it that it renders Spirit or any other metaphysical entity superfluous. We are forced to the preposterous conclusion not only that all Knowing is being, but that all being is knowing, which appears, to say the least of it, improbable.

Observe that in each system of Idealism some fundamental element of reality escapes the net. Thus Berkeley takes little account of thought, Hegel is not serious

with sense; Kant fails to correlate them: all three neglect the metaphysical and creative will.

ii

Epistemology

Now if it fails to establish an Absolute Consciousness carrying and covering the totality of things, Idealism is done for. Its *reductio ad absurdum* is Solipsism. Of the world before consciousness we shall be obliged to say either that it never existed, or that it only exists now, from moment to moment, in consciousness that provides it with a past time and a behaviour deducible (in consciousness) from its behaviour here and now. We shall have to say of the solar system, of the plesiosaurus flopping on his mesozoic beach, of the club mosses and tree ferns of the carboniferous age that they have only this problematical existence. They never really were; they are constructions in consciousness of what they would have been had there been any consciousness to perceive them. When I go out of the room, the room and everything in it ceases to exist; I give birth to the hall and stair passages instead as I go along them. I may carry all space and all time about with me, but within them the vast cosmos lives and dies according to whether I am conscious of it or not. When I am unconscious space and time also die.

To return to sanity, the vital problem for the epistemological idealist is the problem of the synthetic judgment; the judgment by which we enlarge our experience. At first sight it looks as if such judgments could only be empirical, as if it were truer to speak of experiences by which we enlarge our judgment; as if there could be no such thing as synthetic judgments *a priori*.

All judgments concerned with *a priori* material, all judgments of pure space-time, all judgments of pure mathematics, even the simplest, so long as they advance from a lower to a higher power—from the point

to the line, from the line to the plane, from the plane to the solid—are synthetic and are *a priori* in the sense that they are true independently of actual concrete experience.

But mark what follows. According to the Old Idealism the mind is the origin and home of all the *a priori* stuff there is. You would therefore suppose that in any judgment *a priori* the mind is not travelling along the field of experience and arriving at fresh knowledge; it is merely unloading the thought-stuff which, previous to all experience, it carries about with itself as a matter of course. Consequently no *a priori* judgment can be synthetic in the sense of giving it something that it hasn't got. It is in the field of space and time that the self adds to its knowledge and that synthetic judgments become possible.

If Kant is right and space and time are forms of sensible experience alone, not only will pure mathematical knowledge be independent of space and time, but there will be no such thing as synthetic mathematical knowledge *a priori*. No advance, no discovery in the higher mathematics. When Bolyai found that two parallel lines can be drawn through one point, contrary to Euclid's axiom (contrary, you may say, to all previous experience of parallel lines), you would have thought that if ever there was a synthetic judgment it was that. The whole business is purely synthetic, neither contained in the notion of parallel lines nor provided for by their definition; and it is purely *a priori*, since no possible concrete experience would give you the behaviour of Bolyai's parallel lines.

And so far from denying all this Kant declares, very emphatically and in leaded type, that all mathematical judgments (even some apparently analytic ones) are synthetic. And yet, if he is right and the mind supplies the *a priori* elements of the cosmos, he has no

business to talk about *a priori* synthesis at all. Bolyai will not have discovered new properties of parallel lines. The pure mathematician cannot discover new properties of anything; he does nothing but cart old properties about with him in his *a priori* portmanteau and take them out and look at them as he goes along.

The Old Idealism is in a dilemma. If Kant is right and space and time are *schemata* of sensible perception only, they may provide for the synthesis, but they do away with all the *a priori*ness. If Hegel is right and they are forms of *a priori* thinking, where is the synthesis? On either theory it is clear that you can't have both.

This affair of the synthetic judgment is crucial for Idealism. The epistemological idealist has got to account for the unearned increment of mathematical knowledge, for the mathematician's advance from the known *a priori* to the previously unknown, when on his hypothesis the *a priori* unknown is a contradiction in terms.

But an *a priori* truth becomes an empirical truth as soon as it *is* known, that is to say, is taken up into the general body of experience. On the other hand no possible manipulation will convert an empirical truth into an *a priori* one. So that, properly speaking, there are no immediate empirical truths, only empirical facts, from which truths are derived by a process of generalisation. It is a fact that I see a brickbat fall to the ground, but it is not a truth, though my judgment may be true or false according as it agrees or not with the fact. It is a truth that "action and reaction are equal and opposite," but it is also an empirical fact.

It is obvious that though Newton arrived at his third law of motion by a process of thought, it is not a law of thought that he arrived at but a law of motion.

So when the idealist (I mean the epistemological

idealist) says that the universe is "the work of thought," what does he precisely mean?

Presumably he does not mean that it is the work of an ingenious Creator manufacturing a cosmos after a pattern of ideas in his head. He means that thought is more intimately connected, more deeply interfused with the universe than that. He means that thought is the stuff of it, and that so far it is downright concrete and objective. He does not mean merely that the universe is of such a sort that it may be understood, that by taking thought we can find out all about it. He means nothing more nor less than that thought builds up a solid barracks of a cosmos with the bricks of sense-data and the mortar of the categories. If he is a post-Kantian idealist he will of course reduce space and time to thought relations and settle them down comfortably among the categories, too. And he will tell you all about the categories, but of the sense-data he will not be able to give any coherent account at all. Even the nature of the correlation will be left obscure. Enough that somehow or other we can and do apply (changing the metaphor) the neatly cut pattern of our thoughts to the unreasonable and shapeless stuff of sense.

And all the time there is no state of consciousness, no real process of thinking, that in the least resembles this process—except that after-thought which recognises the presence of the categories in any given section of experience. True that, cut it where you will, experience will yield to thought at least the categories of space and time, of relativity, of quality or quantity or both. And equally, the data of sense will play, so to speak, into their hands; they will not on the first casual encounter show themselves hard and recalcitrant to thought. That is a later development. Up

to a certain point they will submit placably to thought-relations.

So far so good. But the epistemological idealist takes little or no account of cosmic processes which are in no sense processes of thought. He can make nothing of cosmic relations, the terms of which are not terms of thought but such things as matter and motion, energies, inertias, velocities; chemical actions and reactions; life, growth and reproduction. The sequences in which he builds up his universe are ludicrously unlike the sequences in which the universe would appear to have built itself up before thought, before consciousness came into it.

The epistemological idealist declares that the being of the external universe is to be known. And though you may say of any given section of experience that in the perception of its quality you join the category of quality on to its sense-data, that the finding of the cause of any given effect involves the application of the category of causality, and so on through the whole list, still, this is not the method by which experience is increased section by section. The external world becomes known by processes of synthesis and analysis: not by such synthesis as the dabbing of categories on to sense-data, nor by such analysis as disentangling them again from the result; but by thought's patient, subservient following of processes the majority of which are inherently irrational, irreducible to any thought.

The idealist may be able to face without a qualm the idea of the plesiosaurus disporting himself on his mesozoic beach when there isn't anybody to look at him, the idea of primordial matter in motion, of worlds, indubitably real, whirling away in space millions of years before the appearance of consciousness on this

planet. His Absolute ensures him against loss. His cosmos is perfectly safe, floating about in the vast consciousness of the Absolute. The plesiosaurus is not playing to an empty house, for he has the all-appreciating eye of the Absolute upon him. So far the idealist has nothing to worry about.

But what he ought to worry about and doesn't is the idea of a cosmos claimed to be the "work of thought" and the very process of reason, which yet contains so many things that are not reasonable, so may processes that are not processes of thought at all. When we consider what reason is and what it does and what it doesn't do, have we any reason to suppose that in the Absolute consciousness an irrational relation becomes a rational one, or that matter in motion, say, is known as spirit at rest?

It may be. The pattern of the cosmos as a whole may be a purely static affair. Within the absolutely resting Whole matter in motion may turn out to be a mode of the manifestation of spirit; but, if it does, it will not be by virtue of its epistemological qualities; and at the present stage of proceedings we have no business to assume its spirituality.

For it is the thorough-going irrationality of the universe that is dangerous to our idealist. The bosom of the Absolute is not the comfortable home he thinks it is. It is too comprehensive, too hospitable to those irrational elements.

Look at some of them. Who can measure the proportion of reason and non-reason in the universe? There is reason in certain complexes, in all adaptations of means to ends; in all laws derived from laws, in all generalisations from generalisations, in all measures and proportions. There is reason in a physical equation, in a resultant whose factors are known, in all mathematical processes apart from their ultimate

terms; in every calculation of causes whose effects are known or of effects whose causes are known; in every calculation whose terms are known; in every relation whose terms are known; in every quantity-quality correlation when the original connection between quantity and quality is known.

But there may be no reason in the original connection; for example, between vibrations of a certain wave length and the quality red. No reason in the connection between molecular nerve change and stimulus, and between nerve change and the *sensum* red, or between an act of will and muscular contraction. No reason in chemical action and reaction, in magnetic attraction; in gravitation; in the transformation of heat into energy and energy into heat, or in any other physical permutation, no reason in certain fundamental axioms of mathematics, in any irreducible, indefinable term, in any ultimate entity. We shall presently see that there is no reason in pure space and pure time. No reason, it would seem, in the very elements from which the cosmos is built up.

And besides his confusion of being with knowing, and his neglect of those ultimate, irreducible things, the idealist ignores the Will. Will is chief among ultimate, irreducible things. If Will is to be treated merely as a department of human psychology, why not thought? In what respect is a "category" (which, after all, has got to be put there by somebody or something) more commendable than an act of will? Epistemology is always shirking this fundamental problem of the will.

What are we to say then? Is the realist right in regarding all knowledge as, primarily, discovery?

The idealist is faced with the glaring fact that there *is* discovery, not only in the physical sciences, but *in his own a priori realm.* If he stopped to consider se-

riously what he means when he talks about "experience" he would see that he is juggling with the double meaning of the term. Even when he is honest and calls the thing consciousness all the time, he is landed in queer places. It is not that my private and personal adventure, the process by which I enlarge my knowledge, is made to figure as an ontology. The idealist distinguishes between the empirical experience of the ego in space and time and the ontological function of the categories. He can insist that knowledge is only discovery for *us,* for finite consciousnesses progressing in space and time. Experiencing is not experience. But this doesn't help him very much. The trouble is that the actual process of the cosmos bears no earthly resemblance to the means by which he affirms it to have arisen in consciousness.

It looks as if he would have to surrender to the first realist who comes along and confronts him with the difference.

But no. It is at this point that he makes his bolt for the Absolute.

Now supposing the idealist is not thinking of consciousness *as we know* it at all; that he has made a successful bolt and found his refuge in the Absolute. It is not possible that thought alone should be this Absolute. Whatever else it does, the Absolute must cover, must somehow provide for all those recalcitrant, irrational, unclarified elements that make up half the fabric of the universe. He can only arrive at his Absolute by exposing the relativity of the ultimate categories of thought and filtering them away. The Absolute is nothing if it is not a higher, more comprehensive term than thought, higher and more comprehensive even than consciousness. After all, being is not knowing, and knowing is not being; so that epistemological idealism is broken on its own wheel.

iii

For this generation, anyhow, epistemological idealism is dead; and I confess I do not see how there can be any resurrection for it. With its one-sidedness, its blindness to the actual pattern of the universe, its fantastic logic, its failure to correlate the forms and processes of thought with the forms and processes of things, it was bound to provoke a formidable reaction. Future of Idealism

I think it must be admitted that new realists are right in contending that there are things in the universe which forever escape the snare of thought; that you might as well put salt on its tail as try to catch the universe that way. By no conceivable process can it be reduced to terms of mere knowing. To consciousness *as we know it* the universe presents an obstinately objective front.

Now it is against all precedent that any philosophic system should appear again in the precise form in which it originated. If idealism is to survive, if a New Idealism is to spring up by way of reaction from the New Realism, it will be a system as far removed from logics and epistemologies as the idealisms of Kant and Hegel, of Green and Bosanquet and Bradley are removed from the sensational idealism of Berkeley and of Hume.

If it is to survive——

It is unthinkable that Idealism should remain unaffected by the profound change that has come into philosophy with the appearance of the New Realism. Clearly it has got to move on or go under. These essays are an attempt—slight, I am aware, and imperfect, as such tentative efforts must be—to estimate the effect of the New Realism, to map out the first lines of possible movement. One thing is obvious: that no advance is possible without definite revisions and surrenders. Idealism must not underrate the enemy's forces, and

it must be prepared to cede certain territory. It must leave behind it certain nobly built redoubts, certain cherished positions no longer tenable. It must give up its unnatural logics, scrap its obsolete apparatus of thought-relations.

And it must change its methods. It must once more be empirical, critical, reactive. And that is no simple affair of surrenders and concessions. Idealism must effect an entire change of front. It must come out into the open and external universe of things. It must somehow contrive to reconcile the universe of things with the universe of thought, without doing violence to its palpable objectivity. It must cease to make nonsense of the plain principles of physical science, and of the plain man's progress in the world of so-called physical realities; and it must be proof against all attacks based on the behaviour of that world.

First of all, then, the New Idealism has to do as Professor Alexander tells us, "Take space and time seriously."

II

THE NEW REALISM

i

The New Realism was bound to come. Other philosophies anticipated its insurgence against the persistent tyranny of the Absolute and the One. I think it was William James who first pointed out that the appetite for unity is not a universal one. It seemed to him a perverted appetite, or at best an acquired taste, a psychological eccentricity which, as it has no bearing upon conduct, the pragmatist need not take into account.

The Realist Position

But Humanism, Pragmatism and Vitalism did little but revolt; they were incapable of accomplishing a revolution. None of the three had anything that could be called a logic or an ontology. Still, by setting up irrelevant standards they succeeded in side-tracking philosophy for quite a number of years; Humanism defending the honest man's claim for possession of a world of real things uncontaminated by subjective processes; Pragmatism turning its back on the quest for "ultimate" reality and substituting its scale of "working" values for the logical criteria of truth; both boosting the "Many" at the expense of the One; Vitalism presenting its *élan vital* as the ultimate reality, and reconstructing the perceived cosmos with reference to our action and our action only, going from one contradiction and confusion to another in its attempt to reconcile realism and idealism, physical science and metaphysics. They have nothing in common with the new

realism but their respect for "external" reality and their distaste for the Absolute of idealist monism. They need not detain us here.[1]

Realism then starts with a criticism of the idealist theory of knowledge and being. Its method is strictly empirical. It takes the cosmos provisionally at its face value and asks: Why assume that this is a universe rather than a pluriverse? Why assume that it is a world of appearances rather than of real things? Why assume that its being is only to be known? If you are going by appearances, which is all that on your own showing you have to go on, then the cosmos presents every appearance of plurality, every appearance of independent reality utterly outside consciousness. But this independence and outsideness is more than a mere matter of appearance; it follows from the nature both of reality and of knowing. If a thing is known, *ipso facto* it is something more than the act, or state (whichever it may be) of knowing. Idealism assumes that this act or state is simpler than it really is. Knowing involves at least two terms and a relation, whether you take the subject and object as your terms and consciousness as your relation, or consciousness and the object of consciousness, when your relation will be an unknown x. In either case the object will stand on its own feet as a separate and independent entity, which is all that realism wants.

Now the realist complains with every show of reason that the idealist mistakes the nature of the terms and the relation, and confuses the *ratio essendi* with the *ratio cognoscendi*. When the two theories are tried out pluralistic realism shows itself more scientific, and would seem to conform better to the actual, known processes of the cosmos. The new realist revolutionises philosophic thought by abandoning the ego-centric

[1] See *A Defence of Idealism*, pp. 51-74.

position. The ego-centric position is to him what the Ptolemaic system was to Copernicus, a whole stellar cosmos turning round a comparatively insignificant earth. This looks as if the new realist ignored every form of idealism but solipsism. But if you grant his premises, objective and absolute idealism are equally vulnerable to his attack. No act of mere knowing, even if it were absolute—and knowing is purely relative to the known and to the knower—no act of knowing could confer reality upon its object. Things are not there because we know them; we know them because they are there. And the Absolute, even if it existed, could not know, for knowing would at once involve it in relations. So that outside finite and relative consciousness there *is* no knowing to sustain the universe, and no finite and relative consciousness is equal to the job. Besides, we have no experience of any finite and relative consciousness but our own; and it is obviously absurd to suppose that our own consciousness confers being on a cosmos known to have existed ages before we did. Even now that we *are* here, by far the greater part of the cosmos continues to exist outside the bounds of our awareness and according to laws which are very far from being the laws of our thought. Obsessed with the idea of knowledge as being, the idealist ignores its essential nature as discovery. Obsessed with the unity of the Whole he forgets that discovery is partial and incomplete. What trifling unity there may be in a pluralistic universe is a real unity independent of the alleged unity of consciousness.

But though the new realist cannot abide unity in any sense of totality, and excludes it from his pluriverse, he swears by continuity: that continuity of time and space which ensures the reality of both, and with it the reality of all objects and movements and relations in the world of space and time. In a cosmos said to be

real, absolutely real, you cannot have insoluble contradictions of time and space. To the realist the real is absolute, though the Absolute is not the real. Mr. Bertrand Russell, for one, would probably object to my saying that he bases the reality of the perceived external world on the findings of pure mathematics. He would contend that the realist theory of perception can very well afford to stand on its own feet. All the same it is clear that he regards the mathematical continuum of the compact series as destructive to any idealist theory based on the antinomies of space and time.[1] The last thing that the idealist desires is their solution, and it is precisely this solution that the realist confronts him with. Between any two points in space or any two instants in time there is an infinite number of points or instants. There are, that is to say, no gaps and no nextness of point to point or instant to instant, nothing anywhere that is not pure space and pure time. an indisputable continuum.

It will be seen at once that this theory links up the space and time of pure mathematics with the actual space and time of physics in one system of reality; so that, unless the idealist can succeed in picking a hole in the mathematician's continuum he cannot throw any metaphysical doubt on the reality of motion. Achilles —even if we conceive him moving in pure space and pure time—Achilles with a given velocity would cover any given stretch of space in any given time and would infallibly overtake the tortoise. And the new realism claims to have done away for ever with the Kantian antinomies of space and time.

Thus, given the absolute external reality of space, time and motion, the absolute external reality of matter follows unconditionally; and in approaching the problem of perception from the periphery the realist

[1] *Our Knowledge of the External World.*

succeeds in bringing his philosophy into line with physics and mathematics. In no sense are things there because we perceive them; we perceive them because they are there and they owe nothing to our perceiving.

This is true, even of such apparently subjective affairs as pain or anger. Pain, according to the new realist, is not a subjective affection, it is a thing, as objective and external as a tree in a field. Pain is where it professes to be and where I perceive it, in my big toe and not in my consciousness. It follows that we perceive things as they are and that they are what they appear to be. Properly speaking, in a realistic universe there can be no appearances, for every appearance is itself a reality. We shall have to return to this question when we are considering the nature of reality; but for the present we may take it that in the universe as an existence there is no deception, and things are what they appear at the moment of their appearing, and every aspect of reality is real. The straight stick appears bent in the water, the cube is convex one minute and concave the next, as you shift your eyes, but the stick's crookedness in water is as real to the eye as its straightness is real to the touch; both are real aspects of the stick, but in different contexts. The same holds good of the convex and concave cube. In mistaking appearances for reality we are not dealing with appearance at all, we are simply referring reality to the wrong context. In the case of the stick we say that touch "corrects" the finding of the eye, that it is "truer"; but this only means that it affirms a more constant relation. The eye also sees truly what is there —the visual and temporary aspect of the stick in water.

But there are eyes and eyes. My friend is blind to red. To him all heather is blue and all poppies are yellow. It may be said that his eye sets up a private scene in contradistinction to mine. So it does. But

his scene is just as real, just as external to his perceiving as mine; in the matter of objectivity there isn't a pin to choose between them.

At the same time it is now evident that the sensible properties of this "spectacular universe" depend on something private to the spectator. In what sense, then, do we see the same *things?* It is clear that we do not see the same *forms,* for we each approach them from a separate angle and see them in a different perspective. Only when I have changed places with my neighbour can we be said to see the same thing, but our seeing is now in another time. Our times and our spaces can never by any possibility coincide; therefore we are perceiving different universes and there will be as many universes of sensible qualities as there are spectators, and each one of them will have the same absolute reality independent of our perceiving. And all these universes will arise from the play of the ultimate, unperceived constituents of matter in motion within a system which is one and the same for all of us. It is our bodies, each with its complex of nerve cells, sense-organs and brain cortex, that multiply the sensibles of this universe into so many *sensa* and break up its one space into innumerable perspectives. First we have certain converging lines of matter in motion communicating their vibrations along our afferent nerves to our various sense-organs, which pass on the shock of the encounter to the cerebral cortex. If we say that the "*sensum* blue" is a "fulguration"[1] (to use Professor Alexander's word), arising from this contact we shall have as many different *sensa* as there are shocks. It follows that in the absence of bodies with their sense-organs and cerebral cortices no *sensa*

[1] *The Basis of Realism,* pp. 16-17. "Fulguration" is Professor Alexander's word, but he would repudiate the context. He denies that the *sensum* is relative to the sense-organ. See *Space, Time and Deity,* Vol. II, p. 141. Also below: pp. 203-204.

will be "there"; only sensibles, permanent possibilities of *sensa*. When we all leave the room, the room as a constellation of "fulgurations," a complex of *sensa*, ceases to exist, not because our minds have moved on, but because we have removed our bodies. Thus all our movements will affect the universe profoundly. Our approaches will mark the swift or gradual increase in the vividness and complexity of the "fulgurations," our departures their swift or gradual diminishing, fading and extinction; one coruscation arising, swiftly or gradually, as another vanishes, with a continuous overlapping of edges. Our cosmos will only "stay put" when we stand still. We shall have to consider the full implications of this theory later on; meanwhile, observe that it gives to space and time and their correlations an importance which they can never hereafter lose, of which any future metaphysics will have to take account. It may be said that the new realism is literally the first philosophic system in which space and time have been taken seriously. This is especially owing to the brilliant work of Mr. Bertrand Russell, Professor Whitehead and Professor Alexander.

Now, as on some realists' own showing,[1] every spectator carries about with him his own system of fulgurations and his own private perspective, since we are not conscious of the same *sensa*, in what sense can we be said to inhabit the same world? This is a question, not of ontology, of the nature of reality, nor of epistemology, of the nature of knowing, nor yet of psychology, but of physics and mathematics. We do not perceive the same *sensa*, but we perceive the effects of the same sensibles. We inhabit the same world of space and time, of matter in motion, of geometrical construction and proportion, of quantity and num-

[1] Mr. Bertrand Russell and Professor Broad are mainly responsible. See below: pp. 79-81 and 252-259.

ber. There may be two or two million blues for every two or two million spectators, there is only one space and one time, one matter, one set of energies and motions, only one set of laws of motion, one set of geometrical axioms and problems, one set of each system of co-ordinates, one algebra and one arithmetic; in two words, one science. This uniformity, it should be noted, only holds good within a given system; when we come to examine the metaphysical validity of the statement we shall find that we have to accept it with certain reservations.[1]

The important thing for realism is that within our cosmic system we have only one physical space and one time, and that, as all spaces are parts of one space, and all parts of space are spaces and all parts of time are times, and all correlations of space-time are spatio-temporal, it is possible to correlate all private perspectives with what Mr. Bertrand Russell calls public space.[2] The same will hold good of times and therefore of events.

ii

Realist Theory of Memory

Now if the subject is the mere spectator of its percepts, what happens when we remember, imagine and anticipate? Hitherto even materialists have surrendered memory and imagination to the subjective side, denying their external reality on that account. Hitherto, as regards the memory image—and the image of imagination is only a memory image torn from its original context and placed in another setting—the idealist could always claim that this incontestably subjective thing bears every mark of its "objective" prototype, except scale weight, organic behaviour and practical utility. The horse of my memory is chest-

[1] On the Einstein Relativity theory there will be many time-systems and no real motion. See below: pp. 243-245.

[2] *Our Knowledge of the External World:* pp. 87-92.

nut, he has the colour, the shape, and all the points of the real horse, he may even be said to have motion over a certain limited field of remembered space; but he cannot be weighed, he isn't alive, and I, except in memory, cannot ride him. A certain vague memory of weight may seem to attach to the image of objects once held or carried; but this, obviously, must be counted as memory of muscular sensations associated with the image rather than a property of the image itself. Still, as far as it goes, the memory image presents the same sensory appearances as the perceived thing. When I am carrying on a train of thought in words, the words are memory echoes, but they have the sound of words spoken; if I visualise them as printed, typed or written, they will have the look of "real" print, type or writing; and the idealist has a right to say: If memory images are "mental" in the sense of existing in consciousness and nowhere else; if they present the same qualities of extended colour, of shape, sound and so on as the original, perceived objects, what grounds have you for denying that those original, perceived objects may be mental, may exist only in consciousness, too?

The materialist can do nothing but reply that the memory image, though not a real outside object in a real, outside space world, does not owe its existence to consciousness any more than the perceived object does, but is a mere sensory revival arising from internal stimulation of the sense-organs through the cerebral cortex. And the idealist may still retort that he knows all that; that we have nothing here but the same psycho-physical correspondence he is already familiar with in the mechanism of perception; and on his theory the entire system of correspondence falls inside consciousness, since his body and the space-time it moves in are already inside.

This argument, from the common qualities of objects perceived and remembered, is met by the new realist in a very drastic fashion. What earthly reason have you for supposing, he says, that the memory image is an image at all? Or that it is mental? If the object perceived and the object remembered are *both* real outside things in a real outside world, that would account for the sameness of their qualities. It would be possible on a realistic theory to regard memory images as *sensa* revived by internal stimulation of the cortex, having their place, not in the great world of public space, but in a circumscribed area somewhere inside your head. But this is to do less than justice to their wide spatial character, their distances and perspectives. The image theory, therefore, involves phantasmal reduplication of space.

But new realists are scrapping all this clumsy apparatus of the memory image. Professor Laird, for one, does not hesitate. He declares roundly that the object remembered is the same thing as the object perceived.

"Recollection seems to be direct acquaintance with the past." [1]

To the new realist things are what they seem.

. . . "things perceived and remembered are independent of the mind and directly apprehended by it. Our grounds for this conclusion, were, briefly, that they seem to be so, that the best reason for their seeming so is that they really are so, and that all arguments which purport to prove that they are not so are inconclusive." [2]

Thus:

"According to the usual theory, Smith's recollections of his ascent of the Matterhorn are a series of representative images in his specious present. These images are what is in his mind when he relates his adventures at his own fireside, and in that case there is no room for direct recollection of the ascent itself. Smith's memory is not split in two. He does not see these images and also the

[1] *A Study in Realism*, p. 52.
[2] The same, p. 64.

Matterhorn. . . . There is only one thing before his mind as he tells his modest story, and our problem is what that thing is.

He remembers, I think, the very thing that he perceived . . . for in both cases he is aware of the Matterhorn."[1]

This, because, if he did not, if a series of images interposed between him and the object of his recollection he could never be sure that what he was remembering *was* the Matterhorn. To remember the Matterhorn is to have it immediately before consciousness. On the image theory what is immediately before consciousness is an image.

Memory is, in fact, perception, not of the object as it exists now (for the object may be changed or dead) but as it was perceived. We perceive it for ever as we perceived it then.

"Smith's memory is limited to the past Matterhorn just as his perception was limited to the Matterhorn at the time he perceived it. . . . Smith, therefore, remembers the mountain in the state in which he formerly perceived it. . . . Memory does not mean the existence of present representatives of past things. It is the mind's awareness of past things themselves."[2]

In every case of remembering, then, we perceive, and it is only by its time element that we distinguish between memory and perception.

Objects that have changed their context we in memory perceive in their original context; those that are changing, that go on changing their contexts, as in continuous motion, we perceive in all their successive contexts, each with its own date. And objects may exchange contexts.

Observe, on this theory, the importance of the rôle of time. These objects, outside as they are and real, would be occupying each other's spaces if it were not for time that divides up their spaces and gives to each one its proper "place" in the past.

[1] *A Study in Realism*, p. 55.
[2] The same, p. 56.

And it is the same with the imagined object, Professor Laird's "stuff of fancy." The imagined object is essentially "stuff," a real thing, a memory object serving in a context which again is itself made up of memory contexts in which the object need not and commonly has not originally figured. I do not know how far Professor Laird would allow that this shifting of complexes, this transplanting and rearranging of memory objects in different space and time contexts is the work of the subject. But on any realist theory the subject cannot create; it is not even making something "up" out of ideas in its head; it is using old material all the time, real outside material.

"Images are the mimics of percepts."[1]

But,

"These mimics of sense which we call images must have the same status as percepts. If the latter are objects the former are too. If one is a mental event so is the other. The imaged St. Sofia is domed and minaretted and shapely just as the perceived St. Sofia is, so that if the perceived St. Sofia cannot be mental (on the ground, say, that the mind itself cannot be coloured or extended) the imaged St. Sofia cannot be mental either (for precisely the same reason)."[2]

. . . "images have the same status as perceived and remembered things. They are apprehended things confronting the mind and not varieties of mental operations. They are given to the mind, like anything else that it discovers."[3]

But they are not identical with perceived things. With things remembered—probably. I think Professor Laird takes the image to be a memory object torn from its context in memory. He regards its "elements" as having been once perceived,

"and in that case there is nothing to hinder us from supposing that the elements imaged at any time are literally the same elements as those formerly perceived."[4]

[1] *A Study in Realism*, p. 62.
[2] The same, pp. 63, 64.
[3] The same, p. 64.
[4] The same, p. 69.

So that when Keats wrote about

> "Magic casements opening on the foam
> Of perilous seas in fairylands forlorn,"

he was merely rearranging his old percepts of open casements and foam and seas, and his concepts of peril and forlornness, in a new and charming juxtaposition with other old percepts picked up God knows where and labelled "magic" and "fairyland."

And the objects of anticipation *ought* to be every bit as real and outside as the objects of memory; but I gather from Professor Laird that they are not—quite. They refer to the future and not to the past, and even a new realist cannot say that the future is perceived. To be sure, so far as an anticipated event is really a present or past event projected into the future, it has outside reality. It has not the directness of the remembered object.

> . . . "Expectation is always a present fact representing the future. . . . Our anticipations represent the future, and yet we can never be directly acquainted with the future. . . . The future is never observed." [1]

Whereas our memories do not represent the past, they present it.

Here I think Professor Laird is not getting all the advantage he might out of his realism. In a sense anticipation is literally a looking forward as memory is a looking back. And the "stuff" of anticipation, like the "stuff of fancy," is taken from present or past outside experience, only set in a firmer context. And insofar as future events have a way of differing profoundly from past and present ones, our anticipations are apt to be wrong. The true anticipation is a lucky hit, a projectile that coincides with its target.

Rational prediction is another matter, inasmuch as

[1] *A Study in Realism*, pp. 52, 53.

it is firmly grounded in the present and the past: it is not a hit, but an extension of the real, outside uniformity of nature. It is this grounding in the real that enables us in some sort to share each other's memories and anticipations, so that even in remembering and anticipating we inhabit the same world.

Professor Alexander's theory leads directly to the same conclusions. But in this connection I have preferred to quote Professor Laird's *A Study in Realism* rather than *Space, Time and Deity,* because he has given an unusually important place to memory and imagining, whereas in the larger work they are more or less subordinate to Professor Alexander's general view of space-time.

There is yet another very vital sense in which we inhabit the same world. There will be as many percepts or complexes of percepts as there are *sensa* or complexes of *sensa,* and there will be as many *sensa* as there are acts of sensing, even when we are dealing with one subject only; but to many acts of conceiving by many subjects there will be only one concept or complex of concepts. Concepts in the realistic universe are not the work of thought; they are independent external realities. According to Mr. Bertrand Russell they subsist out of space and out of time. According to Professor Alexander they are deducible from space-time. In either case the mind is passive and not active in conceiving; it adds nothing. We are merely spectators of our concepts as we are spectators of our percepts; with this difference, that we are all looking on at the same thing. If it were not so there would be no truth, only private opinions. And so far, again, the new realism would seem to satisfy the requirements of the world as we know it.

iii

The position of the categories on this scheme is particularly interesting. As outside entities, independent of consciousness, categories are objects among other objects planted out in the universe. Thus they will be constitutive of the universe in a very definite and real way, a way that, so far from implying that the universe is the work of thought, sets thought altogether on one side as a casual looker-on. Casual because it is indifferent to the reality of the universe whether it is looked on at or not. Thought is not the builder and the mover, it is the discoverer of reality. Thought moves, so far as it can be said to move at all, always in the path of discovery; it corrects experience by experience, finding complexity in the given simple, simplifying relations in the given complex; it has the power, a power that any critical on-looker might have, of adjusting old experience to new; and though it would seem to have an altogether independent power of selection and rejection, its choice is really determined for it by the requirements of the given and external context. "Power" is not a word that should be used in this connection. Thought in the sense of thinking always finds relations and does not make them. Therefore in no sense can thinking be said to relate. Like the *sensum,* like the percept, each thought-category will be a little absolute on its own account.

Of the Categories, Relation and Knowledge

Hitherto we have been dealing with terms of relations only; on the new realist theory every one of these is a hard and fast reality. But the relations themselves have a still more peculiar position; for each relation is also an independent entity, external not only to consciousness but to its own terms. That is to say relations are absolute. Where relations are themselves related they do not lose this character, be-

cause this relation will be external to its terms, too, and absolute. At least this follows from the theory of external relations. It is only fair to add that not every realist is committed to it without reservation.

Mr. Bertrand Russell will not allow that any relation is "grounded in the nature of its terms," because, in the case of the whole and part and subject and predicate relations you would get no real, neat distinction between the terms, nothing but a common mush of unity. If, that is to say, you have got your relation tucked into your terms already—concealed in their "nature"—their entering into that relation will make no difference. If it is not tucked in, if it does make a difference, it is an external relation.

But Dr. Moore is rather more precise. He distinguishes between relations and "relational properties," and admits that while *some* relations are external in the sense that it makes no difference to the numerical identity (he might just as well have said the substance, or existence) of the term whether it has the relational property in question or not, others may be said to be internal in the sense that without some particular relational property the term would not be what it is. Its "nature" is not indifferent to the relation.

I take it that Dr. Moore's subtle distinctions and reservations amount to that.

Thus to the complete individual King Edward it is indifferent whether he is the father of George or not, and to the father of George whether he is or is not the father of more children. But it will not be indifferent to him whether he has or has not certain relational properties, characteristics of his personality, without which he could not be King Edward. There is a still more precise sense in which Dr. Moore admits that a relational property, as distinct from a relation, "*is* grounded in the nature of any term which possesses it."

"Namely that, in the case of every such property, the term in question has some quality *without* which it could not have had the property. In other words that the relational property *entails* some quality in the term though no quality in the term *entails* the relational property." [1]

The stickler for external relations might reply that you have no business to consider the general nature of the terms *outside* the particular relation, King Edward as he exists, say, outside his fatherhood, if his fatherhood is the question. Within a given relation the relational property may be something added to the terms of the relation and thus remain outside them as much as the relation itself.

What is to be said, then, of logical processes? Of thought's functions? The new realist will not allow that thought relates. Even in its logical functions it does not relate. The judgment in each premise is a statement of reality, a case of mere reporting. All processes of deduction are the unravelling of implications of the given real; all processes of induction are discoveries of given reals, or of relations that obtain between reals. The relation of a conclusion to its premises is an external relation of external conceptual entities, particular or universal. "To be," is not, as Lotze affirmed, "to be in relations"; relation is simply a special example of being, as definite and irreducible as its terms.

Thus new realism begins in atomistic ontology and ends in logical atomism.

It will be seen that, on any realistic scheme of the relation between knowing and the thing known, the rôle of consciousness and the subject is considerably reduced. Consciousness, as mere knowing or awareness, has no content. You must no longer talk about states of consciousness. Consciousness, properly

[1] *External and Internal Relations:* (Proceedings of the Aristotelian Society.) Vol. XIX, p. 40 *et seq.*

talked about, has no states. It is a pure, featureless transparency let down between subject and object, and dividing them, if it can be said to divide what was never joined and never could be joined. All the colour and richness and movement and tumult are on the other side. No states of consciousness. If consciousness can be said to be itself a state of the subject, it is a state without quality or identification mark. All the identification marks are on the other side.

To be sure you can, and do, distinguish between sensing, perceiving, remembering, imagining, reflecting, judging, reasoning believing and opining, but only (since consciousness has no content) because their objects are different. Of course we can, and do, reflect, judge, reason, have beliefs and opinions about one and the same thing, or about one and the same thing in different relations; but whether in any given instance we reflect, judge, reason or have an opinion or a belief will depend on the character of the thing and its relations, of the whole block before consciousness, and, above all, on the sufficiency or insufficiency of our experience at the time. There will, of course, be differences of value in these several acts, both as between different subjects and different states of the same subject at different times. Thus some people judge better and reason better than other people, and better at some times than other times; but these differences in value can hardly be said to touch the essence of these affairs, or to give consciousness a content. And even when you have admitted that there is a distinct difference of type between reflecting, judging, reasoning, believing and opining, and between the various forms of judgment and reasoning, and that they all have *some* content since they all consist of propositions, still in itself this content is featureless and colourless. And if you contend that, on the contrary,

propositions have subjects and that these subjects have colour and feature, still that colour and feature are derived from the objects of thinking which are outside thought. All the time it is objects making a difference to consciousness, not consciousness making a difference to itself.

Once for all, whatever it happens to be doing, the relation of consciousness to its object is purely, to use Professor Alexander's word, a relation of "compresence." And the essence of the act—if it is an act—itself is "contemplation" and it is nothing more. And contemplation, by itself, is very thin.

Only in doubting, believing, expecting, do we seem to catch an authentic gesture of the self, an attitude. But here our judgment of knowing is in suspension and that suspension is due to the uncertain appearances of the object, or the insufficiency of our experience, or both.

And there are willing, hoping and fearing, desiring and undesiring, trusting and distrusting, loving and hating. There are repugnance and disgust. These are all indubitable acts or states of the self, but they are not knowings. Their content, their comparative thickness, is conferred on them solely by their grip on the world said to be external to consciousness. They all have their feeling tone, if they are not all pure feelings; even willing, which is obviously not feeling, has its feeling tone. And that is a physical affair. It belongs, palpably, to the external world of the body.

Loving, at first sight, would seem to be a unique affection of the self, with a strong objective reference either to the perceived or to the remembered object (and for new realists these two are one). But even when you have recognised that passion need not be entirely or even mainly sexual,—there is such a thing as a passion for pure truth,—yet quâ passion it remains

very much a matter of physical vibrations and excitements; indeed, even in its most immaterial manifestations, in its purity, its devotion, its abnegation, its transcendence of its own delight, its utter selflessness, love, on any strict realistic theory falls to the world outside consciousness. Non-conscious reality bags the lot. My experience of passion is my compresence with feeling-objects; my fulfilment of passion is my compresence with certain objective events; my renunciation of passion is my withdrawal from events of one order in favour of events conceived to be of a higher order. On the realist theory both concept and higher event are part of the external and objective world. Once you have begun drawing the line between consciousness and the objects of consciousness I do not see where you are to stop. So that the margin of consciousness and of the self is the narrowest conceivable.

Some realists surrender to it very handsomely the whole world of art and the æsthetic emotions,[1] but I do not think that a thorough-going, consistent realism allows of this concession. The æsthetic emotions are not on a more subjective plane than other emotions (their plane is if anything less so); and strict realism is bound to regard *all* emotion as objective. The finished product of art, the poem, the picture, the statue, the opera, is eminently objective, a real outside thing in a real outside world. If anything could make it more objective than other objects it is that character of inevitableness and universality that art has at its highest; you can almost think of one art-form as more real than another and of the highest art as the most real thing there is.

[1] Mr. Ralph Barton Perry: "A Realistic Theory of Independence": *The New Realism*, p. 141. Mr. Perry also concedes "selection," "combination" and "value." He holds that "Parts of consciousness, as such, are dependent on the whole of consciousness" and "reciprocally dependent within the system." (This "only in a limited sense.")

You have of course, to allow for the work of the artist, for his creative will. But that is another story. We have seen how the new realism deals with creative imagination. We have yet to see how the creative will fits into the new realist scheme.

Consciousness then is contentless. It neither gives nor receives. It is what Professor Alexander calls a "compresence." To quote Professor Alexander again, it "contemplates" and it "enjoys"; but enjoyment would seem to be only another word for mere awareness, it doesn't amount to realisation; let alone that, applied to consciousness, "realisation" is a double-edged term very dangerous to realism. Enough that consciousness has no content. It is the only relation that is not immediately an object, though it may become one when we think about it. In either case it is a pure, blank transparency.

At least this extreme conclusion seems to me to follow from a consistent realism. Again, it is only fair to add that it is not allowed even by so devout a realist as Professor Whitehead.

"Our perception of natural events and natural objects is a perception within nature, and is not an awareness contemplating all nature impartially from without." " . . . natural knowledge is a knowledge from within nature, a knowledge 'here within nature' and 'now within nature', and is an awareness of the natural relations of one element in nature (namely, the percipient event) to the rest of nature."

"The conception of knowledge as passive contemplation is too inadequate to meet the facts. Nature is ever originating its own development and the sense of action is the direct knowledge of the percipient event as having its very being in the formation of its natural relations . . . perception is always at the utmost point of creation." [1]

Knowledge then goes on inside nature; it is one of nature's events among others; it is nature apprehending its own events, recognising its own objects.

[1] *Enquiry Concerning The Principles of Natural Knowledge*, pp. 13, 14.

"Objects enter into experience by recognition, and without recognition experience would divulge no objects. Objects convey the permanences recognised in events and are recognised as self-identical amid different circumstances." [1]

This is not to be interpreted idealistically. The being of the object is not to be recognised, is not to be perceived; neither recognition nor perception does anything for it or to it; the object is simply a given element, the permanent element in "the flux of events." Neither must we take "recognition" in a Platonic sense. It is not ἀνάμνησις; it is certainly not the mind's recognition of its own content. But the object, if it is to count as an object, must be recognised, *known again,* through all its recurrences, for what it is. By its recurrences, its comparative permanence amid the passing of events it lends itself to recognition rather than to apprehension. Contemplation will thus be a protracted recognition. Nature, recognising, makes a perpetual return upon herself.

Seen from nature's side, consciousness enriches the cosmic process of which it is a part; but seen from its own side, distinguished from objects and events, for all the intimacy and warmth of its includedness, it remains a blank transparency. And realists have every reason for insisting that it must and can be and is so distinguished. Do away with the distinction and you do away with realism. Press realism home, and nothing is left to consciousness but its "compresence," its detached and limited capacity for looking on.

iv

The Strength of Realism

The great merit of realism is that it does distinguish, that it respects the integrity of being and puts knowledge in its place, that it makes a dangerous and ferocious stand against vagueness and loose thinking; that

[1] *Enquiry*, p. 64.

it recalls us to seriousness. Realists are all for hard clearness; they never use a term they have not previously defined. They revel in distinctions. They have tidied up with a thoroughness unknown before in philosophy. Thanks to the work of Mr. Bertrand Russell and Professor Whitehead, formal logic has become an instrument of almost perfect precision. New realism has done what Vitalism set out to do; it has reconciled philosophy with science. By turning the stuff of consciousness out of doors and taking things at their face value as outside reality, for the moment it simplifies its problem. New realists have apparently steered clear of contradictions and dilemmas; at any rate they have avoided, as far as possible, certain well-known occasions for contradiction and dilemma. Thus they have made things uncommonly hard for any idealist who attempts to come after them. They have set philosophy in a clean place; and whatever else it does, idealism really cannot be allowed to mess it all up again. It will have to adopt some, at least, of the realists' distinctions or perish.

The idealist's only hope is to go further on this happy path and distinguish between distinctions.

V

Objections

For, after all, the new realism has a suicidal subtlety. If it is taken literally—and you cannot imagine that its intention is to be taken otherwise—it ends by disintegrating the world in thought.

Thought, that realism will not allow to build up even its own universe, has this power to dismember and pull down. Taken literally, realism is committed to the doctrine of external relations. And external relations, taken literally, do not really relate. They are cut off from all possibility of relating, not only by an

endless regress, fatal to their reality, but by their hard and cruel indifference to their terms at the start. They are only contemplated as relating. And if realities are contemplated as doing what they do not really do, then, contrary to the first principles of realism, they appear as they are not and we do not know them as they are.

Nor is contradiction altogether avoided. If the new realist takes exception to the absolute idealist's Absolute on the grounds that it is related, the idealist can object to the realist's relative on the grounds that it is absolute; the terms of his relations and his relations themselves are, in the hard recalcitrance of their reality, so many little absolutes.

Take, for example, the subject and its predicates. The new realist has a special spite against this innocent relation. You would have thought that if ever there was a clear case of an internal relation, securely "grounded in the nature of its terms," it was this. But no; the same predicates are related to different subjects and the same subjects to different predicates, and if we were once to admit that all these relations were internal and securely attached to their terms we should have that unity in difference which is so abhorrent to the realist with his pluralism.

The pluralistic realist, if he is to be consistent, cannot really affirm that the rose "is" red or that it "is" coloured, only that it has a red colour; for, if terms have reality apart from their relations, then the red of the rose and the red of the pillar box will be the same detached reality, and he will be affirming that both the rose and the pillar box are it, that they are, so far, the same thing. He can only save himself by greater precision, by saying that the rose is damask red and the pillar box scarlet; in this case the predicates have turned out to be different, after all, but his

trouble is only postponed till the moment when he comes across two subjects with the same predicate.[1] And this will hold good of all the qualities of a thing.

To be sure, even supposing their red to be the same red, the rose and the pillar box will have other predicates that you might think would distinguish them sufficiently; the rose has a smell that the pillar box hasn't; they have different shapes, and the pillar box is a useful public servant in government employ, which the rose is not; but these differences will not avail them anything, for they are all the predicates of other subjects, too. The pillar box in Russell Square is not the only public servant in government employ; it is not even the only pillar box, and my sealing wax has its colour and my studio stove its shape; and again, the differences between my stove and the pillar box are the predicates of other subjects. The attachment of predicates to subjects is the only thing in the realists' world that would appear not to be absolute.

But mark what follows if the relation between the thing and its qualities be not grounded in the nature of its terms. We cannot in this case break the thing up into its qualities, we cannot take it as the sum of them, or as the relation itself, for the relation is outside the thing *and* the qualities; therefore the thing and its qualities fall apart, and we have the thing-in-itself all over again, that thing-in-itself whose existence new realism strenuously denies. Whatever else relations may do, they do not relate. The universe is a collection, an assemblage of entities hard and recalcitrant as atoms. It is not even a collection or an assemblage since that implies a relation that relates. These entities are not even just "one damned thing after another," as their sequence would constitute a relation

[1] Of course they never will have the numerically same "real" quality, but neither will they on the idealist hypothesis.

that relates. They are, in their ultimate analysis, irreducible atoms, repugnant to all relations. But as the universe certainly presents the semblance of relatedness, the new realist is landed in the very last place where he would wish to be, in a world of appearances, supported or apparently supported by a vast number of things-in-themselves distinguished only by those positions in space and time which constitute their numerical identity.

I do not see how, on any thorough-going theory of external relations, he can avoid this catastrophe.

And when you come to the subject-object relation the consequences are tremendous. Here if anywhere, the relation must be strictly external if realism is to stand. That is to say, if you take the subject and object as your terms and knowing as your relation, knowing will not be grounded in the nature of either subject or object; subject and object alike will make no difference to knowing; though, if we take Dr. Moore's reservation into account,[1] knowing may make a difference to the terms. It may make a difference to the object, then, as well as to the subject. But this is just what cannot happen on a realist hypothesis; so that Dr. Moore's reservation, which rested on the distinction between relations and relational properties, cannot in this case apply. Subject, object and the relation of knowing will be three hard, distinct, mutually repellent entities, and it is hard to see how, on the new realist theory, they ever could have contrived to come together. Nor are you a bit better off if you take the form of this relation to be: the subject's knowing-of-the-object, or (reduced to the simplest possible terms) contemplation-of-object, when, whatever mysterious relation "of" may be it is equally indifferent to "contemplation" or to "object."

[1] See above: pp. 29-31.

On the other hand, once recognise that terms are sympathetic to their relations, once admit that it does make a difference to the object to be known and to the subject to know, and you have let in the thin end of the idealist's wedge. If knowing is not grounded in the "nature" of the object, it will at least be grounded in a "relational property" of the object. And this can only mean that there is something in the object by reason of which it is known; it has a side by which knowing takes it. But this relational property, so far from being the only property of the object which is known, is precisely that property which is not known, since it is impossible to mark down the property in question and say it is this rather than that. And supposing all the properties of the object to be known except this one property which makes it known, each of those properties will have its own relational property which makes it known, so that we cannot think of this particular relational property as being one property of the object among others, but as something pertaining to or inherent in the object as a whole *and* in each one of its properties, and that is as good as saying we cannot think of it as a property at all, but as a relation grounded in the nature of its terms, which brings us straight to the idealist position that the nature of known things is to be known; in other words that being known makes a difference to things. Or you may knock out the term "nature," as introducing an unnecessary complication, and say simply: the relation is grounded in the object, and the being of objects is to be known.

But modify the position in the interests of realism and say: Things are, *and* are such that they are known, draw a hard and fast line between the "are" and the "are such," and you are landed, again, with an unknown thing-in-itself. Carry on the process with

each of the are-suchnesses, and distinguish between their being and their suchness, and you are only multiplying things-in-themselves within things.

You can only avoid the conclusion by regarding consciousness as an empty transparency; and you are then faced with a difficulty. If consciousness is an empty transparency that makes no difference to its objects, its objects, presumably, must make a difference to it. But it is hard to see how anything can make a difference to an empty transparency. Either objects are the content of consciousness or they are not. If they are they cannot be said to be either outside or independent of consciousness. If they are not, consciousness remains an empty, meaningless transparency. Meaningless, because if it had meaning, its meaning must profoundly modify its objects. And if you contend that objects themselves have meaning you must either distinguish between the meaning and the objects or not distinguish. If you do not distinguish you have no business to talk about meaning at all. (If meaning is to have any meaning it must be distinguishable.)

If you then say, distinguishing, that objects have meaning for consciousness which they have not apart from it, you are again admitting that consciousness makes a difference to objects; consciousness will invade them at all points of meaning. If you simply say that consciousness adds its own meaning to the object you are again carrying consciousness over into the objective world.

But the crucial discrepancies are those which involve space and time. Even Mr. Bertrand Russell admits a difficulty here.

"It is said, not wholly without plausibility, that these different shapes and different colours cannot co-exist simultaneously in the same place, and cannot therefore both be constituents of the physical

world. This argument I must confess appeared to me until recently to be irrefutable." [1]

He gets over it by referring the discrepant appearances to different spaces. Not that they have a permanent and independent existence there.

"Sense-data . . . probably never persist unchanged after ceasing to be sense-data." [2]

That is to say, after ceasing to be perceived. Their dependence, however, is not on the mind. The subjectivity they suggest is "physiological subjectivity, i. e. causal dependence on the sense-organs, nerves or brain."

But physiological subjectivity, though compatible with pious realism, is no better than any other. Combined with the theory of "real" private spaces, it has difficulties of its own.

For example: You and I are sitting in two opposite chairs. Naïvely, one would suppose that the part of space *from* which you see me is the part of space *at* which I see you. On Mr. Russell's theory they belong to different and private spaces which are not "mental." What really happens when we exchange chairs? Naïvely, one would suppose that our bodies, on which the appearances in each private space depend, have transferred themselves to each other's private spaces, which is absurd. Clearly, each body has changed its place within its own private space. But the chairs have not changed places. Clearly, then, we do not see the same chairs. The chair that you are now sitting on is not the same chair I was sitting on a moment ago. There will be as many chairs and as many rooms as there are inhabitants of a room.

Now the idealist is equally committed to this multitude of chairs and rooms, though not of physiological

[1] *Sense-Data and Physics* (Logic and Mysticism), p. 153.
[2] The same, p. 151.

chairs and rooms. He is, therefore, not entitled to complain of the multiplicity. But he *is* entitled to ask: If the chairs are private because physiological, how about the private spaces? Space cannot be physiological. Yet if space is private it must be subjective in another sense; it must be somehow personal. Therefore it cannot be physical. And if it isn't physiological it must be mental.

The idealist can object with reason to the physiological relation. It is a subversion of the real relation of dependence. For private space is part of one all-embracing perspective space. The place my body occupies at any given time is part of my private space. How, then, can the change in my body account for the existence of the whole spatial show of my private world on which *its* existence is dependent? It is one complex of my sense-data, how can it account for the whole system of my sense-data which contains it? My body occupies space which, however private, is still a part of perspective space, in a relation such that if there were no perspective space there would be no private spaces. How can it account for sense-data conditioned by the space it pre-supposes? It is itself such a sense-datum.

Further, its changes pre-suppose and depend on the whole system of physics, which in its turn pre-supposes and is determined by the whole system of the one all-embracing space and the one all-embracing time, in the sense that all objects of physics are objects in space and time. Mr. Russell says that if my body were not there the whole show perceived in my private space would not be there: whereas, clearly, if my private space were not there my body would not be there either.

The idealist avoids this awkwardness by packing my body and my private space into my mind and re-

ferring all the causality there is in the affair to an ultimate consciousness which contains all space and all time.

If, on the contrary, you say that meaning, distinguished and yet inseparable from the objects that "have" it, is part of the outside pattern of the universe, then, once more, consciousness is a meaningless transparency, with all the awkwardnesses that attach to a meaningless transparency.

I shall not insist on the difficulty of discriminating between subjective and objective sensory affections, for the simple reason that new realism does not admit the distinction. Since the new realist regards sound and colour, heat and cold, pain and fatigue as outside objects, equally independent of sensation, it is useless to call his attention [1] to their habit of merging into each other, as if this made any difference to their status. I will only point out that new realism leaves no room on the hair-line margin of consciousness for any subjective affections at all, as long as you profess to distinguish between affection and consciousness of affection. The whole world of the self, beyond its blank on-looking, has been hauled over to the outside.

It should not be forgotten that the main charge brought by realism against idealism is that in its subjective form it annihilates the cosmos known to have existed before consciousness, while its absolute form is equally fatal to the appearances of that cosmos, its sounds, colours, smells and densities; appearances which realism affirms to be realities.[2]

But on the realist theory appearances are equally bound to disappear, not because of the absence of sen-

[1] See *A Defence of Idealism*, pp. 248-250.

[2] Not every realist affirms it. I am a little doubtful as to Professor Broad's position, for example. At one point in his argument he takes all the secondary and some primary qualities to be "appearances." But if I understand him aright, he reinstates them as realities through their correlations with touch. (See III, pp. 71-78.)

sation, but because of the absence of sense-organs. The "fulgurating" *sensa* are the result of change in the cerebral cortex set up by the contact of matter in motion with the appropriate sense-organs which pass on their shock. No sense-organs, no fulgurations. No heat of sun, no cold of glaciers; no thunder of surf on palæozoic beaches; no green of grass and leaves in palæozoic forests. No wet, no dry. No light, no darkness. No distinction between sea and land or night and day. The "sensibles" simply go trying to pass on their shocks, without anybody there to *be* shocked.

Of course if it was so, it was so; it can't be helped, and if we don't like it we must stand it; but the new realist should be the last to raise a cry against the idealist on behalf of the solar system and palæozoic earth. There is only one hope for them, and that is the idealist's assumption of an enduring, super-cosmic spirit in whose consciousness they have still endured.

For, consider the nature of the transaction. We are to suppose that neural change in my private and personal body is the spark that fires the fulguration of the *sensa,* that makes the cosmos with its system of sensibles burst forth in colour and sound and touch and taste and smell. The visible, audible, palpable and smellable properties of the world are thus the offspring of changes in my body which is itself the offspring of that world; that is to say, we have changes in the subsequently existing part, an organism narrowly limited in space and time, giving rise to extended aspects of the previously existing whole. Inconceivable when we consider that the neural motions involved are themselves continuations of the motions of the larger world. Inconceivable if we assume the absolute, outside reality of the body and its world. And whether "contemplation" occur inside or outside nature—inconceivable

reality's final leap from the unconscious to consciousness.

Not inconceivable if the whole system of events occurs through and in a consciousness presumed to be adequate to the display. The hypothesis may not be capable of downright *a posteriori* proof. But at any rate physiological subjectivism raises more problems than idealism leaves unsolved.

And to be serious with the new realist theory of memory and imagination is to be landed in difficulties even less remote.

For, consider once more Professor Laird's Mr. Smith and his Matterhorn. The Matterhorn is an absolute, outside, independent reality in an absolute, outside, independent space and time: independent in the sense that they have nothing to do with either an absolute consciousness or with Smith and *his* consciousness, except in so far as Smith contemplates the Matterhorn and his ascent of it. Consider that, though Smith may not remember every detail of the Matterhorn and his ascent, yet as much as he does remember is literally so much of the Matterhorn and of his ascent. In memory Smith is contemplating the Matterhorn itself as it existed when he climbed it. He is, then, contemplating an existence which has a real, definite, unalterable position in space and time, an existence immensely far removed from Smith and his present moment, and the smoke-room at Surbiton where he does his remembering. But we are asked to believe that Smith sees the real Matterhorn, *the Matterhorn itself,* in a space somewhere between his arm-chair and the smoke-room door, where, in fact, Smith's bureau is standing. Ten to one that is where Smith, seated in his armchair, will locate his Matterhorn. He may, perhaps, remembering his geography, give his mind's eye a south-eastward turn; but that only brings the Matter-

horn across the top pane of Smith's bow window; at the farthest stretch Smith will see it hovering about outside on his lawn above the pampas grass.

Useless to say that time divides these spaces. Time only makes the queer business queerer. Besides the marvel of this immensely distant "real" mountain disporting itself within a few feet of Smith's armchair, you have its past telescoping into Smith's present. Impossible to believe that the Matterhorn Smith remembers is the Matterhorn itself when it is behaving so unlike itself. And Smith can play tricks with the Matterhorn of his memory that he could never play with the Matterhorn of his perception. He can tear it from its base in Switzerland and plump it down in Venice in the middle of the Grand Canal; he can plant St. Sofia on the top of it. That he can only do these things with the visible Matterhorn does not—since he is dealing with the Matterhorn itself—make his performance essentially less remarkable. And though you may say that it is Smith's imagination and not his memory that is now at work, it is Smith's memory that provides his imagination with its material, which is, again, the Matterhorn itself.

There is, I believe, a way in which Smith can do all these things, a way in which he can both remember and imagine *the Matterhorn itself*, without the intervention of a single "image;" but it is not the way of realism which supposes the Matterhorn to exist in absolute space and time outside and independent, not only of Smith's contemplating mind, but of all the consciousness in the universe.

III

SOME REALIST THEORIES OF PERCEPTION

i

When realists like Professor Laird say they believe that realism is true because it looks as if it were, it isn't very easy to refute them; you can only invite them to prove that realism is what it looks. When they add that all the bad arguments are on the other side, that is a definite challenge which the idealist should not be afraid to accept.

Professor Broad and the Real Counterpart

Some realists, like Mr. Edwin Holt, make statements as against idealists which no idealist would think of disputing; as, for example, that dreams and hallucinations in their own context have a reality of their own as cogent as any other. And the realist who asserts that dreams and hallucinations and memories and concepts and secondary qualities and primary qualities are all equally real, is difficult to refute. He is a dogmatist disguised as an empiricist; nearly all of the American "Symposium of Six," with the exception of Professor W. P. Montague, are camouflaged dogmatists and difficult to refute. And if any realist has the wild consistency to maintain that every single object of consciousness exists independently of consciousness he will be harder to refute than any of them. With each added extravagance the realist's position becomes more inaccessible to direct attack. You can only challenge him to produce his proofs.

Therefore it is refreshing to find a realist like Professor Broad who has some caution and an inkling of

the hardships and dangers of his position. If his theory proves, after all, to be vulnerable this is partly because it is so highly correlated, has so many approaches and attachments, and partly because, out of sheer honesty, he concedes so many points to his opponent. Unlike some of his fellow realists he is very far from regarding realism as self-evident, or even as the handiest theory there is. He is intensely aware of its difficulties, and with a sincerity no less brilliant than his amazing perspicacity he does not hesitate to state them. His argument is one long experiment in arguments; and he seems to be always engaged either in setting up some revised form of a theory he has just knocked down, knocking down some provisional theory he has just set up, or reinstating it with suitable modifications. Owing to the swiftness and dexterity of his movements it isn't always easy for anybody less nimble-witted to keep up with him; he seems to be perpetually doubling and turning on his own argument; but in the end it is clear that he is only pushing it back and back to the apparently impregnable position where it makes its final stand. This sounds as if Professor Broad were the enemy of his own argument; it only means that his is a strategic retreat that brings him by the safest way to his impregnable position.

Still, for reasons which I shall try to make clear, I think this final position is not really so impregnable as it looks. I have no doubt that they are obvious reasons which will occur to every careful reader of Professor Broad's book; but they are so vital to my own argument that I cannot afford to leave them out just because somebody has probably thought of them before, and, no less probably, expressed them better.

We shall presently see that it is on the character of tactual perception that he makes his stand. It would be taking a most unfair advantage of his various very

handsome admissions to say that the entire system of realism stands or falls by it; but it is clear that he regards the sense of touch as of the first importance in the realistic theory of perception, and it is by its theory of perception that realism stands or falls.

He criticises in turn the non-causal arguments for naïf realism; the arguments for Phenomenalism; for the "Instrumental," the "Causal," and the "Scientific" theories of perception. He finds that there is much to be said for naïf realism ". . . none of these arguments which are so confidently repeated by philosophers really give conclusive reasons for dropping even the crudest kind of realism." (He, however, develops other reasons for dropping it with which no idealist would quarrel.) He rejects Phenomenalism on the ground that its conclusions defeat its own premises, and ends by adopting the "instrumental" theory of perception for one set of perceptions, namely touch, while rejecting it for others on the grounds that (*a*) it multiplies reals, (*b*) it conflicts with the causal and scientific theories.

There remain the causal and scientific theories, to both of which with certain reservations Professor Broad inclines.

He starts the long series of arguments with assuming "the distinction between a perception and its object which idealists so frequently ignore," while he admits that not "all arguments for Idealism rest on this confusion." And he defines the object of perception comprehensively and non-controversially as "anything that may be perceived regardless of the question whether it can exist if it be not perceived."[1] So far, so good.

With Dr. Moore he insists on "the truism that when you perceive you perceive something, and that what

[1] *Perception, Physics and Reality*, p. 7.

you perceive cannot be the same as the perception of it."[1]

Now "cannot" is a highly controversial word. If we are simply taking perception in its innocency as the *primary block of consciousness* before superawareness, judgment and reflection have got to work on it, "cannot" is the whole subject in dispute; it is what the realist has got to prove; and we shall find that even on Professor Broad's own showing, "need not" is the most that can be asserted as probable. If, on the other hand, by perception we are to understand, not what I have called the primary block of consciousness, but that secondary and supervening state in which we perceive that we are perceiving, then every idealist would admit that perception in this sense and the content of primary perception are not the same thing, and as far as he is concerned the question falls.

But even if realists would consent to recognise the distinction as vital to the problem at all, they would not allow that it is perception *in this sense* which is under discussion; and I submit that they have yet to prove that perception in *their* sense and what they call the object of perception (and I should call the content of the primary block of consciousness) "cannot" be the same thing—in the sense that the object (or the content) *can* exist when it is not perceived. We must not assume all these exciting matters at the start.[2]

But let that pass. We shall see that Professor Broad is not extravagant; and that in the long run he offers us, not proof, which in the nature of the case cannot be, but a high degree of probability.

To begin with, he examines the various objections to naïf realism under the heads of "Synthetic Incompatibility" in the evidence of the senses, either of one

[1] *Perception, Physics and Reality*, p. 5.

[2] Of course, by "perception in *their* sense" I mean what I should call primary, and not secondary awareness.

person or of different persons; relativity to the organs of perception and to states and positions of the organism; the arguments from dreams and hallucinations and from the confusion of sense perceptions with feelings. He contends that the celebrated tests which its opponents apply to naïf realism either do *not* apply or prove nothing against it when they do.

There are, as we all know, the temperature test, and the colour test. You put one hand in hot water and one in cold, and afterwards both in lukewarm water which will then feel hot to the cooled hand and cold to the heated one. The colour test supposes that, say, a red and a blue surface are in contact, and that at the points of contact red and blue will co-exist in the sense that they will both occupy the same points. Professor Broad dismisses the temperature test on the grounds that (*a*) it does not disprove the existence of *some* temperature, and (*b*) that the two temperatures need not be thought of as occupying the same points. The colour test goes, too, because, either contact does not really exist, in which case the colours will remain distinct, or, if it exists the colours will modify each other and there will still be *some* colour, just as there was *some* temperature.

Now the trouble with these tests is that we really cannot be sure, in the case of the water, that the two temperatures are not co-existing at the same points when the two hands displace so considerable a volume of water, and in the case of the coloured surfaces that different coloured bodies are not occupying the same space, contrary to all that we know of the behaviour of bodies. And in any case the two tests do not run on all fours. A test more analogous to the water experiment would be that of the modification of one colour by another that the eyes have been looking at a long time. A "real" independent body cannot be one

colour one instant and another the next in the absence of any change in the actual pigments, owing to light or chemical action or any other external cause. As for the common sense view that "it is no matter that different colours should co-exist at the same point of space, so long as they are the colours of different bodies," it is obvious that it makes a bad business worse. This is also the view of naïf realism which will swallow any trifling difficulty of this sort rather than admit that colours and temperatures may not be "real." Needless to say Professor Broad does not adopt it even in the interests of naïf realism.

In dealing with "synthetic incompatibility" of the deliverances of two senses in one person, that is to say, of sight and touch, he dismisses provisionally the typical test of the painted cube in perspective on the grounds that, "as far as perception goes," the object visually perceived and the object tactually perceived are numerically different. Between two different objects there can be no synthetic incompatibility. The problem is, however, complicated by the spatial relations of these objects. Professor Broad is

> "not at all confident that the extension and figure and relations analysed from objects of tactual extension can at once be identified with those that are analysed from visually perceived objects. What seems to be more true is that in visual extension we can analyse out elements and relations which form a spatial order of the same type as that which we find on reflection to be constituted by the relations and elements that we can analyse out of the objects of visual perception. We do not perceive an elaborate spatial order, but when we come to analyse and reflect upon what we perceive by sight and by touch we are led to construct spatial orders of the same type" . . . "there are not two similar orders left standing side by side but one which is supposed to include both. It must be noted that when I talk of 'constructing' a spatial order I do *not* hold, as so many people seem to do, that this implies that the order so reached cannot be that of the real world."[1]

On the contrary we shall find that it is just from our ability to construct this common spatial order that

[1] *Perception, Physics and Reality*, p. 29,

realism argues to the reality of the real world; and we shall have to enquire how far and in what sense its argument is sound.

At the same time Professor Broad admits that

"the evidence of two senses does not add the least certainty to the existence and qualities of an object so long as that object continues to be perceived; for this certainty, as we have already seen, is the highest we can have, therefore no evidence can hope to increase it."[1]

So that we cannot use the evidence of two or more senses by itself to prove the reality of an object. The evidence of two senses is no more support to naïf realism than the evidence of one.

So far we have only been considering the senses of one stationary subject. When it comes to several subjects and several positions of one subject more serious complications arise; so serious that in the face of them we shall see that naïf realism can no longer be supported.[2]

The whole ground of the problem at its present stage would seem to be covered by one dilemma.

"Either what A and B perceive is the same or different. If it be the same there is no problem; if different then, since the qualities of their perceptions are the qualities of different objects, what matters it if they are incompatible? Why should not both objects exist quite comfortably unperceived either by A or B."[3]

So that, so far, naïf realism would seem to have scored.

But the problem here is not quite so simple. For it involves the complicated geometrical properties of the objects. A by himself will only see a circle in the flat as circular from one position only. B, or A himself, occupying another position, will see it as some sort of

[1] *Perception, Physics and Reality*, p. 35.

[2] . . . "This consideration of what is meant by two persons 'perceiving the same object' and one person 'perceiving the same object from different positions' is a serious stumbling-block to naïf realism." The same, p. 49.

[3] The same, p. 38.

ellipse. Touch will not help them here, if the circle is in the flat. But if you have a sphere the case is worse; for touch will testify to one sphere which cannot be seen, while sight will testify to as many ellipsoids as there are spectators and possible positions of spectators, and none of these ellipsoids will be tangible. Faced with the ellipsoids Professor Broad throws up the case for naïf realism, not on account of "synthetic incompatibility" but of "the terrible complications involved." Incompatibility there will be none as long as the objects are held to be different. But there will be more real ellipsoids than even realism can stand. So that

> "one is almost forced to the theory of a common cause of the perceptions of each person and to the degradation of most if not all of these perceptions to the level of appearances."[1]

The question as to the "communicability" of sense perceptions also leaves the issue doubtful for naïf realism. We can never be sure that when two people are talking about colours they mean the same thing, still less that when they are looking at colours they are looking at the same thing. In fact it is sometimes quite evident that they mean and are looking at different colours. Rather more evident than appears in Professor Broad's statement of the case.

When my partially colour-blind friend and I have a poppy field on our right and a vivid patch of heather on our left, and he assures me that the colour of poppies is the colour of very pale daffodils, and the colour of heather the colour of delphiniums, I am pretty certain that what he cannot see is red, and that he cannot see it either by itself or in combination; and though I cannot be quite so certain that he really sees daffodils as yellow, I conclude that he does see *some* blue, since, in the combination, purple, blue is what is left when you

[1] *Perception, Physics and Reality*, p. 49.

have abstracted the red. But I shall never know whether he and I see precisely the same blue. And I can see very delicate rose and blue and green and amethyst and orange in a sheet of ice where another friend, not colour-blind, can only see a watery grey. But this is a different case. I can imagine that if my friend had trained her sense of sight she would have seen those delicate colours too. But, again, I should never know whether she and I would ever see the same colours. On the other hand I should never know it if we didn't. So that I think the argument from mere incommunicability alone proves nothing either way, while in certain cases where communicability is established, in the sense that I know what colours other people don't see, the discrepancy involved is disastrous to naïf realism.

The problem of dreams and hallucinations need not detain us here, as it cuts both ways for idealism and realism, and idealists would agree that the distinction between illusory objects and "real" ones lies in their context and not their character. Dreams are true while they last. And I shall not consider the argument from perceptions that merge into feelings, since I am not pressing it here.[1]

Hitherto we have proceeded on the assumption that causality has been left out of the reckoning. But by now it is very clear that the deliverances of the senses involve relativity to an organ; which brings us straight to the "instrumental" and the "causal" theories of perception. It is also clear that the distinction between appearance and the real arises at this stage, and this brings us to the theory of Phenomenalism which must be disposed of first. Professor Broad disposes of it very neatly.

[1] Professor Broad's theory of pleasures and pains is rather more relevant to the issue. See Appendix I, p. 315.

Phenomenalism maintains that nothing exists except perceptions, strings and assemblages of perceptions, to which no objects or relations of objects correspond. As perceptions have no real permanent cause, there will be no causal laws,[1] only laws of the mysterious sequence and association of perceptions. Professor Broad points out that phenomenalism has thus no right to call its perceptions appearances, since it admits nothing to which they appear and no reality to distinguish them from, or of which they can be said to be the appearances.

All the same I confess I cannot see what else it *could* call them. Anyhow it is clear that what phenomenalism means is that perceptions have no reality in the realist's sense.

Phenomenalism bases its argument on the relativity of perceptions to sense-organs. Professor Broad says that it has no right to this base, because it would deny that sense-organs have "a permanent structure." But phenomenalism never said anything about relativity to permanent structures. All that relativity means to it is relativity to certain impermanent structures which are also mere appearances. Professor Broad says that the phenomenalist has no right to talk about seeing things, as his eye will itself be relative to other people's sense-organs and cannot exist when nobody is looking at it. But surely even a phenomenalist may be allowed to make inferences like other people, provided they do not land him inconsistently in the realism he denies. If he says that the seeing of red is relative to the structure of his eyes, he is entitled to infer the presence of his eyes whenever he sees red, whether anybody sees his eyes or not. If you ask him how he then knows that his seeing is relative to his eyes he can say that it appears to be so; that he infers the relation from the

[1] See *Perception, Physics and Reality*, Chap. II, "On Causation."

association of his appearing eyes with his apparent seeing. For though his eyes can never appear to his own eyesight they can and do appear to his general sense and his sense of muscular movement. He can at least open and shut his eyes. And he can make inferences, like other people, from what happens then. That is to say, there is always enough association between his eyes and his seeing to warrant his inferring relativity even if no eye has ever presented to him the appearances it presents to the anatomist with his scalpel and microscope, who associates seeing with delicate internal structures invisible to the naked sight.

But it must be admitted that when it comes to objects beyond the reach of microscopes and eyes, to the unperceived and imperceptible particles of matter in motion, which are to science the real causes of perception, the phenomenalist is in a very awkward case. He is logically bound to deny the existence of *these* objects and their relations, and with them the existence of the imperceptible matter-in-motion of the sense-organ. Thus the relativity of perceptions to a sense-organ, permanent or impermanent, goes by the board.

The idealist who is not a phenomenalist will not quarrel with this statement of the position, but I think he will hardly admit the superior happiness of the realist's case that "boldly assumes real causes of our perceptions rather like their objects."[1]

Professor Broad approaches his problem of phenomenalism with two questions (bristling with controversy).

"(a) Why should it be held to be *a priori* more probable that that which is real is perceptions than that it is something like the objects of our perceptions?"[2]

"(*b*) Whether laws entirely in terms of perception will explain"

[1] *Perception, Physics and Reality*, p. 167.
[2] The same, p. 168.

[the facts] "better than laws in terms of realities whose general nature is like that of the objects of our perception."[1]

The answer to the first question is that it is *a priori* more probable that perception is its own reality because no other reality is directly given in perception. (This is not denying that *a posteriori* it may be less probable.)

To the second it may be said in the first place that it is not the idealist who distinguishes between primary perception and the object of primary perception, while he does distinguish, or rather, he should distinguish between primary and secondary perception; so that to him laws in terms of primary perception will be the same as laws in terms of objects of perception, and laws in terms of secondary perception will be different. His is the advantage of not having to decide the question (bristling again!) of likeness or unlikeness.

In the second place, assuming the real to be something distinct from the perception of it, the question arises whether it is something that depends on a relation to the organ of perception—for example, the *sensum* blue—; or something existing unperceived apart from it—for example, light waves or matter in motion —which provides the stimulus which gives rise to the *sensum* blue. Clearly in both cases the *sensum* is the object of perception, since the other factors are unperceived; and clearly there is no resemblance between the *sensum* blue and the width of a light wave or the movements of matter in motion. Even more clearly, in the former case, there is no resemblance between the *sensum* and that relation to a sense-organ on which it depends. And the same will hold good of all *sensa*. Therefore the sense elements in perception are as unlike the real as they would be unlike the bare act of perceiving, supposing primary perception can be dis-

[1] *Perception, Physics and Reality*, p. 178.

tinguished from its content; and I think it is not easy to show that it can.

But the concrete object is never a pure *sensum* or complex of *sensa;* it has spatial and geometrical qualities and relations which, again, are not in the least "like" light-waves or matter in motion. It has also "categorial" and relational characters which, as they will owe nothing to anything that happens to sense-organs, might perhaps fairly be real. But why "like" the real, unless you are taking the object twice over?

It will be seen that in the case of tactual perception and (unless I mistake him) in all other cases involving spatial relations, Professor Broad *does* take the object twice over, once as object of perception and once as causal "counterpart." And why take it twice over when by the very assumption "it," and not some appearance of "it," is what is perceived?

Finally he concludes that the laws

> "of the real causes of our perceptions are most probably those which science finds it necessary to assume in order to account for what is perceived. Now those laws are not in the least like those which perceptions obey among themselves; although they are of course connected with the latter. They are, in fact, laws about the kind of changes that we can perceive in the object of a single continuous perception; and the only common characteristic of the objects of our perceptions and the perceptions themselves is that both have temporal relations and can enter into causal laws." [1]

And he fairly challenges idealism:

> "Hence, until anyone can make up a theory in terms of laws like those which hold between perceptions which will explain our perceptions better than the theory of science, we shall be justified in holding that if there be a real world at all it probably resembles the objects of our perceptions." [2]

Observe in passing that the one thing science does not account for, the one thing that fairly howls to be accounted for on any realistic theory, is "our per-

[1] *Perception, Physics and Reality.* p. 185.
[2] The same, p. 187.

ceptions," is perception itself. Science may or may not account for the alleged real and independent existence of the objects of perception (I think it only accounts for their behaviour after they have come into existence), leaving perception to account for itself as best it may.

The challenge then for the idealist is *to frame his theory so that its terms will be at once a better description and a better explanation of the facts.* Of this later. [1]

Meanwhile Professor Broad examines the Causal theory of perception.

To avoid misunderstanding let me say at once that I, for one, do not agree with those people who hold "that relativity to an organ is fatal to the reality of sense qualities." Relativity in itself can only be fatal to the assumption of absolute, unconditioned, independent reality. It is discrepancy in the evidence of the sense-organs that is disastrous, unless you are content to multiply reals. Personally, if I were a realist I would ten times rather put up with the multiplication than assume a "real counterpart" characterised as "like" the multiplied appearances. It is hard to see how a real sphere can be like those multiplied ellipsoids, though all the multiplied ellipsoids may very well be quite real though relative aspects of the sphere.

To return to Professor Broad:

"The fact that what I perceive has a certain relation to an organ of perception cannot possibly be by itself any reason for supposing that it does not exist when it is not perceived. For the relation to the organ, whatever it may be, *is* not the relation of being perceived, since that is a relation to the mind and not to the body."

(Idealists will agree to this with positive enthusiasm, glad that the "mind" should have a look in at last.)

[1] See below, pp. 260 *et seq.*

"To prove the phenomenalist conclusion we need a premise to the effect that the relation R to the organ of sense, whatever it may be, implies also the relation of being perceived." [1]

We are reminded that besides phenomenalism there are two alternatives:

"(i) that the object continues to exist in the same relation to our organs even when we cease to perceive it, or (ii) whilst it cannot be perceived when it ceases to stand in this relation to an organ, yet it does not cease to exist when it ceases to stand in this relation." [2]

We shall find that the latter alternative, sufficient for some realists, is not sufficient for Professor Broad. Existence uniquely in relation to an organ or organs, entailing as it does a monstrous multiplication of reals, is no satisfying substitute for the "real counterpart" to the object of perception. His provisional conclusion is that

" . . . the relativity argument has proved powerless by itself to show that the objects of our perceptions are appearances rather than that the structure of our organs is the necessary condition of our perceiving certain special qualities and characteristics of reality." [3]

To which it may be objected that, even if the relation of the object to an organ is the condition of our perceiving certain qualities and characteristics, we have no reason for assuming that these are necessarily the qualities and characteristics of reality, since reality is taken to be that which exists unperceived. And at certain stages of his argument Professor Broad appears to admit that the objection holds. We have to distinguish between two interpretations of the facts:

"The Instrumental one which holds that our organs and their detailed structure are instruments by which the mind perceives real things and their real qualities and characteristics; and the

[1] *Perception, Physics and Reality*, p. 189.
[2] The same, p. 189.
[3] The same, p. 197.

Causal one which holds that our organs and their internal structure are conditions of the perception by the mind of objects and distinctions in them, both of which for aught we can tell are mere appearances."[1]

Professor Broad goes on to test the instrumental view by analogy with a mechanical instrument, a typewriter. You start with a typist (*a*), a typewriter (*b*), a blank sheet of paper (*c*), and an effect (*d*). The example proves fatal to the analogy with our sense instruments, because in typing the mind of the typist (*a*) produces an effect (*d*), on matter (*c*), (the paper), by means of the instrument (*b*); whereas in perception the real object (*c*) produces the effect (*d*) on the mind (*a*) by means of the instrument (*b*). In the one sequence we begin with mind in the other we end with it.[2]

The instrumental theory breaks down when we have to distinguish between appearances and realities. It is as if the instrumental view had waked Professor Broad with a shock to the fact that after all there are such things as appearances. There is the instrument of the insect's eye, so different in structure from our own that it is impossible to believe that objects appear the same to it as they appear to our eyes. Unless we assume that all these differences are appearances caused by one real object we have the trouble that we had in the case of the ellipsoids all over again. Too many realities for realism to put up with. But, with one exception, the instruments that cause us to perceive all these objects so differently afford no criterion for distinguishing between appearance and reality.

Thus we are driven to the Causal theory, which, however gives us no assurance of the real.

According to the causal theory (I must again quote Professor Broad's own words, for the ground here is dangerous and I do not want to attribute to him

[1] *Perception, Physics and Reality*, p. 197.
[2] The same, pp. 202-204.

recognitions and admissions which are not his), according to the causal theory,

"Something X acts on the organ, the organ and the mind together produce a perception as a whole, i. e., something from which indeed an object can be analysed out, though there is no reason to think that it can exist out of that whole called a perception. Such an object is an appearance in our sense of the word." [1]

As against the instrumental theory which assumed that the sense-organs give true knowledge about reality, the causal theory is not very encouraging to thoroughgoing realism.

Let us look at it a little closer. To a certain extent common sense takes the causal view. Their combined assumptions amount to this (to quote Professor Broad again):

"(*a*) Certain objects of perception have events in them which are causes of those objects being perceived; and (*b*) All objects that are real and are perceived have the perception of themselves caused by events in them." [2]

How can we prove that either of these propositions is true? The analysis shows that it cannot be done by direct observation. We can only start with the object of perception at the moment of perception, and there is no way of observing the causal event, which on the hypothesis must either have preceded the perception, or, if simultaneous with it, is not to be distinguished in the result. Let us assume, then, as science assumes, hypothetical events in hypothetical objects and hypothetical parts of the alleged object. But these are imperceptible. Moreover science has already given up the reality of secondary qualities and on this footing will deal only with primary. These, or rather, some of these in certain geometrical relations, are all that it allows perception to tell us of the real.

[1] *Perception, Physics and Reality*, p. 204.
[2] The same, p. 211.

And all the time the real, causal real remains unperceived.

In other words, the scientific theory takes what it wants of the instrumental and causal views and comes to the conclusion that some—not all—primary qualities are real, and that *all* secondary ones are mere appearances because not discernible in the external cause. Anyhow, we are left with a lot of these appearances on our hands.

"The crux of the whole question then really is whether we can keep the instrumental view for the perception of primaries. If so, we can keep the scientific theory as in essence true about a large part of reality." [1]

The trouble is that science gives up so many primaries. It

"is perfectly convinced that most of the shapes and sizes that we perceive are not real, but are appearances more or less like the reality." [2]

Why "like"? And how can science tell whether "like"? And we may ask whether primary qualities are not in the same case with secondary qualities in being indiscernible in the real cause. How do I know that an object said to be a sphere really is a sphere when all that I perceive of it is ellipsoidal? I can go round and round it and correlate my ellipsoids so that together they form a sphere; but never at any one moment do I perceive the sphere. Never the sphere and the time and the ellipsoids all together. I can only construct the sphere intellectually so that either I judge its "real" (which is just as much its "ideal") character to be spherical, or I can judge all its relative appearances to be "real"; but as far as perception goes I appear to be dealing all the time with appearances. Am I?

[1] *Perception, Physics and Reality*, p. 230.
[2] The same, p. 230.

Now before Professor Broad arrived at the causal theory he decided that the testimony of two senses adds nothing to the reality of an object when its reality has already been testified to by one. A thing cannot be more real than real. He now enquires whether the "instrumental" view (which asserts the reality of all objects perceived through the medium of sense-organs) adds anything to what was said before, whether, that is to say, it brings in considerations which make the assumption of their reality more plausible. Now the only additional consideration it brings (if we admit the possibility) is that of a direct relation through the instrumentality of our sense-organs between our minds and events occurring in objects. When our sense-organs assure us that an object is presenting itself both as a circle and as an ellipse they are introducing us to appearances and not to realities.

"If we decide, then, (*a*) that most of the visually perceived objects are to be counted as appearances, so as to prevent the infinite multiplication of reals, (*b*) that all the visual objects and also the tactual objects are connected with a single reality and (*c*) that under suitable circumstances this common reality can be an object of both sight and touch, we shall have to conclude that the reality is circular and not elliptical."[1]

That is to say, on the grounds that the instrumental view has made a difference to the question, he now decides that, after all, two senses are better than one for determining reality; this, after counting most of the visually perceived objects as appearances for an excellent reason.

It is hard to see how one sense can be said to support the evidence of another when that other is found to be untrustworthy. It is also hard to see how the introduction of an "instrument" which on the theory's own showing only serves to complicate matters, should make more plausible what was not plausible without it.

[1] *Perception, Physics and Reality*, p. 237.

Now, does the fact that we can and do correlate the appearance with the reality, the unreal ellipse with the real circle, make most for the unreality of the circle or the reality of the ellipse? It seems to me that once you have admitted the possibility of unreality either in your secondary qualities or your primary ones, the game of realism is up. The correlation corrupts the primary qualities said to be real more than it rehabilitates the incurably unreal ones. Science in making use of the instrumental theory is forced to "the conclusion that we never see solid bodies as they really are." And Professor Broad asks:

"Can we give any reasonable account of what we mean by the instrument being wrongly adjusted or out of order; and will not the account of this be so general that it will replace the old instrumental theory altogether?" [1]

The appearance and the reality have this in common that (in the case of the circle and the ellipse) they are both shapes. What is more, the ellipse, as Professor Broad points out, is very like a circle. You can go further and say that it has such geometrical relations to the circle that it would be the height of rashness to deny that they belong to the same world.

To the same world, then, of objects perceived? Or of objects that exist in the absence of perception?

Professor Broad states the argument for idealism with exceeding fairness on page two hundred and forty-one. On page two hundred and forty-two he is less admirable. He says that the present position is analysable into

"states of brain caused by states of organs, caused by states of something else. The states of brain, however caused, produce the same perception whose object is of course an appearance; but in some cases the object perceived resembles a reality, states in which are a remote cause of those in the organ." [2]

[1] *Perception, Physics and Reality*, p. 239.
[2] The same, p. 241.

Professor Broad admits that while there is a correspondence in our sense-organs with the *general* qualities of objects perceived by means of them, we cannot trace any such correspondence with the particular characteristics of those organs; but he concludes that the particular correspondence must exist because the general correspondence can be traced. But correspondence or no correspondence, realism cannot well be content with a theory that obliges it to regard so many qualities of objects as mere appearances, while at the same time it maintains that some of these appearances, where primary, are a guide to the qualities of their remote objects. So far, realism is arguing from an admitted appearance to a reality, assuming that resemblance holds, whereas the most that science can assert is that the remote cause of perceptions is common to the perceptions of different perceivers, not that it is like the objects of their perception. And here, with the possible failure of the scientific theory before his eyes, Professor Broad once more challenges idealism.

"Any alternative hypothesis about the real will have to rest its probability entirely on its ability to explain the perceived."[1]

It is confidently expected that idealism will not be able to bear the strain.

To this it may be said that the scientific theory, so far, has not explained the perceived in its relation to perception. But let that pass for the moment. *Does* the probability of the alternative theory rest entirely on its ability to explain, that is to say, on its ability to explain entirely? Supposing the alternative isn't quite so drastic? Supposing science explains up to a certain point, up to the point of psychophysical correspondence, and confesses its inability to bridge, not only the gap between the loose end of the physical chain and the psychic fact of perception, but the gap between

[1] *Perception, Physics and Reality*, p. 247.

the real and the merely appearing qualities of the object? Isn't it enough if the idealist's theory, while leaving the links of the physical chain intact in their order, does away with all the gaps by denying the distinction between the real and the appearing, and by linking up the chain with consciousness at each loose end? It must, of course, be a probable linking up, a linking up that does no violence to the alleged real. But hasn't the idealist just as much right to argue from the fact of consciousness at the near end to the probability of consciousness at the far end, and to say that the real there is "like" the real here, as the realist has to argue from the qualities of the perceived object to the qualities of its unperceived real cause and say that appearance here is like reality there? He has, if anything, more right, because, in the first place, he is not starting with the distinction between appearance and reality here; in the second, he is not leaving perception itself on one side. Let alone that science altogether fails to account for the sensuous particulars in perception.

Professor Broad sees all this as clearly as the idealist; but after exposing the difficulties of the theory of science he still concludes that, after all, there is no alternative theory that so well explains the facts. And the idealist may ask him: Does idealism disturb the facts? And does the scientific theory allow for all the facts? The one fact that idealism allows for and the scientific theory does not, is, as I have just said, the not unimportant fact of perception itself. The scientific theory, therefore, is very far from explaining all the facts. It begins by divorcing the objects of perception from perception itself, analysing them from that isolated standpoint, and ends by leaving perception wholly unexplained. It does not cover perception as a whole covers its parts. And it cannot solve the

hopeless contradictions between appearance and reality within its system.

And as a matter of fact we find Professor Broad confessing that

> "the scientific theory would gain in probability by not having to make such definite and complicated assumptions about reality."[1]

He admits all the awkwardness of regarding colour and sound as qualities like the real.

But when he comes to *touch* his difficulties vanish. Here, he argues, we have the indubitable real, the perceived quality that is like the quality of its unperceived cause. He adopts again the "instrumental" view of touch that he was obliged to abandon in the case of sight. And before we quarrel with his apparent inconsistency we must remember that in the case of sight he was put off the instrumental theory because of the terrible multiplicity of reals involved—all those ellipsoids. But the troubles of realism are not ended. The instrumental theory of touch has, indeed, the advantage that it does not involve you in anything of the sort on its own account; but by the backing that it gives to the deliverances of sight it at once brings all those realities down about your ears again. Or else you must say that while touch witnesses to reality sight does not, a statement not very intelligible in view of the fact that its deliverances can be correlated with those of touch in our geometrical system.

Or, say that sight only witnesses truly when it is corroborated by touch, and that for the rest it leaves us with all those unreal ellipsoids on our hands. That is saying that the most highly specialised, the subtlest, the most intellectual of our senses, the one most concerned in our geometrical judgments, is the most untrustworthy, and needs the backing of the most gen-

[1] *Perception, Physics and Reality*, p. 249.

eralised, the most slap-dash and hap-hazard of our senses next to taste and smell. It would of course be irrelevant to point out that sight and sound have been throughout the ages the most valuable of human senses, from the most primitive and savage life of action up to the latest and highest life of civilization and of art. For they might very well be all this and yet very far from assuring us of reality beyond perception, and in any case these considerations are not on the present level of the enquiry. The real trouble is that sight does not invariably consent, as it ought on the realist theory, to follow the superior leading of touch.

Professor Broad comes to the conclusion that the circle is real while all these ellipses are not. But of a circle or of any other figure in the flat touch cannot tell us anything at all. It does no corroborating here. It tells us that the sphere is spherical[1] but its testimony stands alone, for it is just here that sight obstinately refuses to follow it.

And when it comes to what we know or rather what science assumes to be the nature of the unperceived real, it cannot be said that touch is in any better case than sight, or than sound for that matter, because *unperceived matter is intangible.* Even perceived matter that touch perceives to be dense science demonstrates to be permeable; a surface that touch perceives as even or unbroken science declares to be rough and to have no cohesion; bodies that touch perceives as at rest in all their parts science knows to be agitated by violent molecular and atomic movement. In judging temperatures touch and the thermometer do not agree with any accuracy.

And in the one rôle left it as a truthful witness, its discernment of three dimensional figures, can we be perfectly sure that it is touch and touch alone that is

[1] Even this must be admitted with reservations. See pp. 74-76.

witnessing immediately and to reality? When we see colour in mass as extended we may be fairly certain that we are seeing extended colour or coloured extension (whatever that may mean); when we draw our hand over an extended surface we may be fairly certain that we are feeling smoothness and hardness; when we see a circle in the flat we may be equally sure that while we remain in the position that gives that particular view we are seeing a circle; but it may be questioned whether the up and down, right and left, backwards and forwards of the movements are perceived by any one sense alone. It is hard to tell what is precisely the naked rôle of feeling in so highly educated a sense as touch—all our senses are more or less sophisticated by judgment—but it is quite clear that we are dealing here with a complex the full account of which cannot be given in terms of mere contact. The sense of direction (which enters into all our tactual perceptions of figures), so far as it can be said to be a sense and not a judgment, is a complicated affair involving correlated perceptions both of muscular movements and of sight. So far from touch correcting sight here, sight has to be called in to supplement touch.

Nor can you leave movement altogether out of the visual relation. In fact, visual and tactual perceptions would seem to be very much alike in this respect. I can see that a sphere is a sphere, not all at once, but bit by bit, by going all round it, that is to say, by moving my eyes round it and correlating my percepts. Similarly I feel that it is a sphere, not all at once, but bit by bit, by moving my hands or my fingers round it and correlating my percepts. Or, if it is small enough, I can turn it in my hands, thus bringing it into the same relation to my eyes as if my eyes were turning round it. Again, as my sense of touch is general throughout my body, I can feel surfaces with any part

of it; but if that part is stationary I shall not feel shapes. If my hands were as limited in their movements as my eyes I should not feel shapes any better than I see them; and if I carried my eyes not inside my head but on an elevated ring, like a candelabrum, outside it, I should see every part of any sphere that came within its circumference all at once, and as well as if I had felt it.

Now in tactual perception of three dimensional shapes, if your sphere is small enough to be grasped in one hand (say, a marble or a ball) it may be said roughly that we perceive it by touch as round; but the more accurate account of the matter would be, surely, that we judge it be round by correlating feelings of contact with feelings of muscular contraction, the grip and set of the hand, the position of the fingers.[1] So that even here we cannot get touch in the required perfection of its innocence. Or if we say that the sphere is perceived by turning it in the hands or by moving a finger-tip round it in successive circles, then, equally, correlations, judgments or perceptions of movement and direction have come in. Increase and go on increasing the size of your sphere and the rôle of judgment is increased out of all proportion to the rôle of touch, till, if your sphere be big enough all that touch can testify to will be a flat surface.

Or take the tactual perception of a triangular cube. We indeed perceive by touch alone the sharp edge of the sides, the points of the angles, the smoothness of the surfaces; correlated with muscular movements of the hand or fingers touch may be said to yield even shape and size; though, here again, and wherever there is such correlation, judgment probably steps in, and it

[1] Possibly the truth may be that what we once, in our exploring infancy, judged, slowly and laboriously, to be round we now do actually perceive to be round by an instantaneous correlation of percepts: but this is psychology and irrelevant here.

is doubtful whether by touch alone we ever perceive shape as a whole or size as a whole. In fact on Professor Broad's own showing—or indeed on anybody's—it can never be said with any certainty that touch, in its first innocence and purity, conveys anything to perception but those secondary qualities which he has decided to regard as mere appearances. There is little doubt that we associate these secondary qualities with our judgments (or perceptions) of shapes, and sizes and geometrical properties generally; but in this case we have done it so inveterately and so long that it is difficult now, if not impossible, to disentangle them from the result, though at first sight it may seem obvious that we ought to be able to. As it is you have only to extend the scale and complicate the system of your figures for the element of judgment to emerge unmistakably. I am inclined to think that so far from one sense correcting or corroborating another, this must always be an affair of judgment—rapid and unconscious, of course, but judgment. If we could ever catch a *sensum* in its first freshness it would tell us nothing of reality, though, on a realist hypothesis, it might *be* it.

So that, if we pay no regard to motion, the sense of touch is no more faithful witness to reality than sight. Yet it is to this sense that Professor Broad takes his flight from the intolerable multiplicity of ellipsoids. And we have still to ask *how,* when, with sight and touch and movement all correctly correlated, we have succeeded in combining our many ellipsoids into one sphere—how do we know that that sphere is a reality that exists when we do not perceive it? It must, I think, be agreed that we do not directly perceive it as a reality any more than we perceive it as one or a sphere. And I think it must be equally clear that we have just as much *and no more* reason to suppose it is

a reality as we have to suppose it is one and a sphere; and our reasons have precisely the same grounds: that is to say, that at whatever time we observe it we find that it is separated in space from other bodies, and that both its boundaries and its parts have certain geometrical, spatial relations to each other such that at whatever time we observe them we find them always the same. Also, as we know from observation that, though the relation of each part to our bodies and their sense-organs will vary with the movements and positions of these bodies and these organs, their relation to their own whole is constant; therefore we infer that that relation exists apart from the movement and position of our bodies; in other words that in relation to that movement and position it is an independent real.

But this is not saying that the *whole* is a real, and independent of our combined perceptions. And we are faced with this dilemma: If we deny its independence we shall have to admit between the whole and its parts a temporal cleavage fatal to their spatial integrity; that is to say, the parts—for example, each ellipsoid—will exist in dependence on our partial perception at a time previous to the existence of the combination, the whole.

And this is a simple dilemma.[1]

If, on the other hand, we assert the independence of the whole on our perceptions, partial or combined, the dilemma is considerably more complicated. We shall then have set up a multiplicity of spatially incompatible reals (for each ellipsoid was real while it lasted) within the whole, and introduced a spatial integrity of these reals, impossible in itself and fatal to their separation in time. For in the whole the parts, *all* temporally incompatible in partial perception, inasmuch as they must necessarily fall in separate times,

[1] For its solution see pp. 264-267.

and *many* spatially incompatible (where their boundaries overlap)—all these incompatibles, say, will be co-existing at the same time.

And supposing we adopt Professor Broad's assumption of the independent real "counterpart" which is "like" the object of our tactual perception and related to it in a point to point correspondence? I am not quite clear as to whether he does allow this entity to be also the counterpart of the object of our visual perception, with its tactual and visual qualities correlated analogously to the qualities of the object perceived; but I think he must, for otherwise the totality of perceived visual qualities will lose all relation to the real, and we shall be saddled with three entities (a) the perceived visual object, unreal, but mysteriously related to (b); the real perceived tactual object; and (c) the counterpart of the tactual object, correlated with it at all points but cut off from all direct relation to the visual object. Moreover, if the object of tactual perception and the object of visual perception are different objects, one with a counterpart and one without, there is no possible sense in which we can be said either to see the same object as other people or the same object that we ourselves feel. And the one real and common counterpart will not be the cause of both these objects but of one. It will not really be common.

(And yet I am puzzled; for Professor Broad does distinctly say that the visual and tactual objects of perception are not one but two.)

But supposing this counterpart entity contains the counterparts of all the qualities of the perceived object, except the secondary ones, which the consistent realist would count as real but which Professor Broad and science will not have at any price, supposing that everywhere these prodigious counterparts exist, you have then a duplication, and I think a very unnecessary and

complicated duplication which, if thorough enough, can only repeat, boundary for boundary and point for point, those incompatibles it was called in to reconcile and explain. And if not thorough, on what principle do we pick and choose? What incompatibles are we to abstract from the counterpart if it is to remain a counterpart?

But this theory provides more entanglements than we have realised yet. Not only is it

> "possible to reason from a visually perceived object of a given shape to the real counterpart of a tactual figure of definite shape, events in which *do* cause the visual perceptions which we have, and which, if we performed the proper actions, *would* give us a corresponding tactual perception,

but

> ". . . such a statement as 'I cannot perceive an atom but I believe that atoms are shaped like dumb-bells' means that I believe that there exist in the real counterpart realities qualitatively like those, events in which cause visual perception of dumb-bell shaped figures, but the real quantity which corresponds to the sizes and volumes and surfaces in perceived objects is so small that no perception is actually produced."

As we shall see, this is a jolly good thing for the real counterpart if it is to remain real.

Remember, the unperceived figure with its shape and distance, all its geometrical qualities, the figure that exists when we do not perceive it, is never the figure we perceive but always its counterpart. Never the figure we perceive, never a figure we have perceived, never an object of possible perception, and yet we are asked to believe that there would correspond to it "a tactually perceived figure with the geometrical qualities in question, if as a matter of fact we did have such a perception."

Now what on earth is to prevent the idealist from refusing point-blank to accept this preposterous counterpart, throwing the whole assumption overboard and confronting the realist with what is left—the objects

of his perception which he has just shown to be more unreal than idealism could wish? Unreal, because perceived.

And on the top of all this excitement Professor Broad introduces the dumb-bell shaped atom, so that the idealist's happy cup is now full. Up till now you might have supposed that the real counterpart, though to our perception unsized and imperceptible, would, in the sheer contradiction of its nature, be a sizeable thing (since it was a tactual counterpart) composed of atoms; and now it turns out that it may be an atom itself that would be perceived in the form of a dumb-bell were it transcendently magnified. And this question of magnitude is exceedingly important. It means that if there were intelligences with suitable sense-organs of *n*th magnifying power the imperceptible reality would cease to be imperceptible; and, as Professor Broad will have it that nothing that is perceptible is real, it would cease to be real. The real on this view is the potentially unreal.

And when it comes to shape and size yet another question arises: Where do you start and where do you stop? What is your unit object of perception? Are there counterparts shaped like Paris hats and Empire sofas and Buckingham Palace? And how about distance? When I am close up against Buckingham Palace I can only see a portion of the immense façade. If I stand a little way off I see the whole of it. And I know the Palace has a back and wings that I cannot see. Will there be counterparts of all these aspects and of all intermediate aspects? Will there be, not one Buckingham Palace but many Buckingham Palaces?

And consider the Empire sofa and the Paris hat, and say that your unit of perception is a room which contains both and many other things besides. There will be counterparts both of these things taken singly, when they are taken singly, and of all together when they are

taken together. But perceptions do not possess this departmental character, they cannot be blocked off from each other. They move. They suggest at every turn the old image of the cinema. Is there a separate counterpart for each flicker of the motion? I move and I take in more details as I go along. Is there a counterpart of each phase of the object as it composes?

And supposing the unit of perception is as much as I can see of the sky on a starry night? Will the counterparts correspond to the real or the apparent size of the heavenly bodies?

Talk of terrible complications! As the unit of perception is incessantly varying with distance there will be as many units as there are possible distances and as many counterparts as there are units, *and* as there are atoms in each unit. Nobody has a right to object if this really is so. But what I cannot understand is Professor Broad's throwing over the comparatively innocent instrumental theory because of a few poor little ellipsoids more or less, and cheerfully entertaining all that multitude of counterparts. If he says I am hopelessly wrong, and that it is the object of tactual perception only that is the unit I must then ask: What is the unit of tactual perception? Surely it will vary with the size of objects; and, as I have pointed out, large sizes are not given to it all at once but bit by bit, and there should be as many counterparts as there are bits; in which case there will still be a considerable assemblage of counterparts. And isn't it really rather odd that if visual and tactual perceptions are truly correlated one should give you absolute size and the other size that is purely relative to distance? It looks as if there were two alternatives, both unpleasant for the realist: either that the two perceptions are not truly correlated at all, or that neither of them is, in the realist's sense, real.

And when Professor Broad repeats that "in all probability nothing that is perceptible is real" I can only wonder again why, if this be so, he is at such pains to make his unperceived real the counterpart of the perceived.

And I cannot see that his theory of the continuum solves any of these problems. It seems to me in one vital respect to be a hindrance to him rather than a help, inasmuch as it bridges the distance between the imperceptible and the perceived, thus bringing the real elements of the cosmos into the category of the unreal.

I see no tolerable alternative between that extreme but consistent realism which accepts hospitably the immense multiplicity of "given" reals, and idealism with its sweeping simplifications along the whole line. We shall see later on whether idealism can be so restated as to avoid these difficulties and dilemmas. If it can it will have provided, if not a better description, a rather more credible explanation of the facts.

ii

Professor Whitehead and the Concept of Nature

So far we have been dealing with the simple relation of perceiving to an object perceived, in which the object, or rather, its "counterpart" is the ultimate reality. And, so far, it has been assumed for the purposes of theory that what is perceived is always an object, obligingly present in space and time; in other words that the object stands still to be stared at. This theory presupposes, or should presuppose, a ready-made space and time for the object to stand still in, which therefore will be more ultimate than it. This, on a realist theory, without prejudice to the objective reality of space and time.

Further, any realist theory which assumes this static character of perception and the object perceived so far implies a dualism between perception and the cosmos.

Perception will not be an event within nature; it will stand outside it.

Professor Whitehead[1] is not concerned with the problem of knowing but with the ultimate elements of the thing known, of "nature at a moment." But nature in its ultimate elements does not stand still to be stared at. "There is no holding nature still and looking at it." The ultimate elements are not objects but events.

It is its obstinate traditional habit of taking objects first and events after as something happening to objects in time and space which has landed philosophy in everlasting difficulties with space and time. Philosophy, intent on objects, catching its object first, before any event can get to work on it, is necessarily saddled with an absolute space and an absolute time independent of objects and events and independent of each other; a timeless space in which objects stand or move, a spaceless time through which they move as they move through space; a space and time whose accounts can never hope to balance, inasmuch as all space stands still at any one instant, while no one instant ever stands still. So that, not only must all space occur all over again with every instant, but you can whittle away time till there is no instant left for space to occur in, and you can whittle away space till there isn't a point left for time to cover. It is clear that with such a time and such a space any real point-instant correspondence is impossible, and where it is arbitrarily assumed you have all the antinomies that have rejoiced idealists from Zeno's time till now.

But Professor Whitehead, like Professor Alexander, denies the existence in nature of this kind of space and time, while unlike Professor Alexander, he denies the ultimate and independent existence of space and time

[1] *Enquiry Concerning Principles of Human Knowledge. The Concept of Nature.*

at all. Space and time have no existence apart from what happens in nature, that is to say, from events. They have no existence apart from each other. Spaceless time and timeless space are abstractions from the fundamental unity of events.

"Primarily we must not conceive of events in a given Time or given Space, and consisting of changes in a given persistent material. Time, Space and Material are adjuncts of events. On the old theory of relativity they are relations between the materials, on our theory they are relations between events." [1]

"Events are the relata of the fundamental homogeneous relation of extension . . ."

"The externality of nature is the outcome of this relation of extension. Two events are mutually external or 'separate' if there is no event which is part of both. Time and space both spring from the relation of extension."

"Time and space express relations between events. Other natural elements which are not events are only in time and space derivatively by reason of their relation to events."

"Events (in a sense) are space and time, namely, space and time are abstractions from events." [2]

And the old traditional conception of matter as the ultimate physical reality must give way to this superior ultimacy of events. Science persists in regarding matter as planted securely in pre-existing space and time. Its assumption is

"the outcome of uncritical acceptance of space and time as external conditions for natural existence . . . first philosophy illegitimately transformed the bare entity, which is simply an abstraction necessary for the method of thought, into the metaphysical substratum of these factors in nature which in various senses are assigned to entities as their attributes."

And next, following philosophy's bad example,

"scientists . . . presupposed this substratum, quâ substratum for attributes, as nevertheless in time and space.

This is surely a muddle. The whole being of substance is as a substratum for attributes. Thus time and space should be attributes of the substance. This they palpably are not, since it is impossible to express spatio-temporal truths without having recourse to relations involving relata other than bits of matter."

[1] *Enquiry*, p. 26.
[2] The same, pp. 61, 62, 63.

Again:

"It is not the substance which is in space, but the attributes. What we find in space are the red of the rose and the smell of the jasmine and the noise of the cannon. We have all told our dentists where our toothache is. Thus space is not a relation between substances but between attributes. . . ." [1]

"The true relata are events." [2]

No definition could well be plainer.

Thus on this theory space and time are nothing but relations; and, so far from being presuppositions of experience they presuppose the events they relate. Strictly speaking, we are not dealing here with presuppositions, but with experience, in the objective sense, itself, with the ultimate entities of nature. Professor Whitehead gives you a list of them.

"i) Events, ii) percipient objects iii) sense-objects iv) perceptual objects v) scientific objects." [3]

It is clear that perception will be primarily concerned with events and not with objects and that objects are to be carefully distinguished from events. Thus:

"Objects convey the permanence recognised in events and are recognised as self-identical amid different circumstances; that is to say, the same object is recognised as related to diverse events. Thus the self-identical object maintains itself amid the flux of events: it is there and then, it is here and now, and the 'it' which has its being there and here, then and now, is without equivocation the same subject for thought in the various judgments which are made upon it." [4]

"The object is permanent because (strictly speaking) it is without time and space; and its change is merely the variety of its relations to various events which are passing in space and time." . . . "objects are only derivatively in space and time by means of their relation to events." [5]

"The chief confusion between objects and events is conveyed in the prejudice that an object can only be in one place at a time. That is a fundamental property of events." [6]

[1] *The Concept of Nature*, pp. 20, 21.
[2] The same, p. 24.
[3] *Enquiry*, p. 61.
[4] The same, pp. 62-63.
[5] The same, p. 63.
[6] The same, p. 65.

It is equally clear from its place in the list that perception, so far from standing outside nature is contained within it as one event among others.

"The essential existence of the event here present is the reason why percipience is from within nature and is not an external survey." [1]

"The percipient event is discerned as the locus of a recognisable permanence which is the percipient object." [2]

And this is as near as Professor Whitehead will allow us to get to a subject, a mind. The "percipient object" is indeed much more akin to a body, to "the natural life associated with one consciousness," and therefore definitely within nature which is "closed to mind."

In the percipient event recognised sense-object and apprehended event are correlative and inseparable.

"There is no apprehension of external events apart from recognition of sense-objects as related to them, and there is no recognition of sense-objects except as in relation to external events." [3]

The percipient event, then, is in nature. But yet

"Percipience in itself is taken for granted. . . . We leave to metaphysics the synthesis between the knower and the known." [4]

So that, though the percipient event is in nature, percipience itself is something beyond nature, with which a philosophy of nature is not concerned. All the same, in making some statements about percipience and percipient events this philosophy is going beyond its book, the book of nature. Nature does not tell us whether the percipient event is inside or outside it; and, as we shall presently see when we come to consider the intellectual constructions of space and time, thought goes far outside nature's book. And as in the end these intellectual constructions have to be called on to help out the four-dimensional geometry of events, any philos-

[1] *Enquiry*, p. 70.
[2] The same, p. 83.
[3] The same, p. 83.
[4] *The Concept of Nature*, p. 28.

ophy of nature which has sworn off metaphysics is in an awkward case.

But these adventures of thought in the realm beyond nature are another story. Professor Whitehead's problem is definitely not a metaphysical one. What he is chiefly concerned with avoiding is just this everlasting problem of knowing and the knower. We may object that he is making things too easy for himself by leaving it out; but he is perfectly within his rights. We cannot be reminded too often that

"No perplexity concerning the object of knowledge can be solved by saying that there is a mind knowing it." [1]

Though who in their senses ever said it could? Idealists may protest against this rude summary of their position; they have no business to object to anybody's isolating the "object of knowledge" for examination, so long as they are convinced that the more strictly you isolate and the more thoroughly you examine nature, the more surely will you discover nature's inadequacy, her failure even to provide the data for a philosophy of nature. "Nature," Professor Whitehead says, "is closed to mind," though not to the percipient event; so closed, you may add, that thought has to go beyond nature to make nature intelligible.

And yet Professor Whitehead protests against the "bifurcation theory" which divides nature up into "two systems of reality," [2] nature known and conditioned by "the by-play of the mind," and nature unknown, the mysterious cause of knowing, with the consequent split between primary and secondary qualities, between appearance and reality. He refuses

"to countenance any theory of psychic additions to the object known in perception. . . .

"This dragging in of mind as making additions of its own to the

[1] *The Concept of Nature*, p. 28.
[2] The same, pp. 30, 31 *et seq.*

thing posited for knowledge by sense-awareness is merely a way of shirking the problem of natural philosophy." [1]

And this cutting out of mind as a possible contributor to the perceived result is merely a way of shirking the problem of knowledge. And observe that Professor Whitehead has no sort of anxiety about the incompatibilities that shake naïf realism, and the doubtful status of secondary qualities. On his theory—and on the idealist's—there isn't a pin to choose between primary and secondary qualities.

"We may not pick and choose. For us the red glow of the sunset should be as much a part of nature as are the molecules and electric waves by which men of science would explain the phenomenon." [2]

"As far as reality is concerned all our sense-perceptions are in the same boat." [3]

But here idealism and Professor Whitehead are at issue—the boat is nature's boat not mind's. Primary and secondary qualities are one, not because they are all one to the mind that perceives but because

"there is but one nature, namely, the nature which is before us in perceptual knowledge." [4]

Still Professor Whitehead admits that some sort of case can be made out for the bifurcation theory so far as it is based on the assumption of absolute time:

"In the first place time extends beyond nature. Our thoughts are in time. Accordingly it seems impossible to derive time merely from relations between elements in nature." . . . "In the second place it is difficult to derive the true serial character of time from the relative theory. Each instant is irrevocable." [5]

And when it comes to the "scientific objects," the light-waves and the electrons and the agitated molecules he cannot but see that there really is a difficulty in relating these with colours (for example) in "the

[1] *The Concept of Nature*, pp. 29, 30.
[2] The same, p. 29.
[3] The same, p. 44.
[4] The same, p. 40.
[5] The same, p. 34.

same system of entities."[1] It cannot be done "Unless we produce the all-embracing relations,"[2] which by the way, rightly or wrongly, is what idealism has always claimed to have done. But for the moment the claims of idealism can wait.

These all-embracing relations Professor Whitehead finds in Time and Space.

"The perceived redness of the fire and the warmth are definitely related in time and in space to the molecules of the fire and the molecules of the body."[3]

He admits, further, that, on the assumption of absolute space and time the bifurcation theory has the merit of all-embracingness. Absolute space and time bridge the gulf between appearances and causal realities by bringing both into the same double system of relations, and thus link up what would otherwise fall apart. But his objections to the theory cut deeper than time and space. They are in short, three:

"In the first place it seeks for the cause of knowledge of the thing known instead of seeking for the character of the thing known: secondly it assumes a knowledge of time in itself apart from events related in time: thirdly it assumes a knowledge of space in itself apart from events related in space."[4]

If we take bifurcation seriously it will split up time and space themselves into the real and the apparent. Why, if we make this great division, why stop at space and time?

"Why—on this theory—should the cause which influences the mind to perception have any characteristics in common with the effluent apparent nature? In particular, why should it be in space? Why should it be in time? . . .

"The transcendence of time beyond nature gives some slight reason for presuming that causal nature should occupy time."[5]

[1] *The Concept of Nature*, p. 44.
[2] The same, p. 32.
[3] The same, p. 40.
[4] The same, p. 39.
[5] The same, pp. 39-40.

For the mind occupies time. But the mind does not occupy space. So why, if you bifurcate, should causal nature occupy space? This difficulty, we are reminded, does not exist for science which seeks only "the character of the thing known." Science is cutting mind out altogether.

Now if you cut mind out altogether it is clear that you have indeed got rid of the tiresome responsibility of adjusting the relations of mental appearances to the relations of causal nature. In seeing red if you cut mind out, you have only to account for the emergence of red in the field of vision and are only concerned with the chain of physical causation which leads up to red and not beyond it to perception.

"Science is not discussing the causes of knowledge but the coherence of knowledge."[1]

And according to realism the coherence of knowledge is to be found not in mind but in nature which is closed to mind.

We have seen that the main support of the bifurcation theory was the assumption of absolute time and absolute space, and Professor Whitehead's argument suggests that bifurcation suicidally cuts away the ground from under its own feet. (And again, idealists for opposite reasons will agree.) It fares still worse if, on the other hand, you take time and space as relative. And this, on the first blush of it, looks bad for idealism, which has hitherto assumed that its worst enemies were absolute space and absolute time, as bestowing their own reality on objects and events occurring in them. It has been supposed to thrive on their relativity. But it will not thrive on the relativity Professor Whitehead offers it. Relativity is fatal to any idealism which clings to any form of the bifurcation theory. It destroys the space and time which were

[1] *The Concept of Nature*, p. 41.

common to causal unperceived nature and the appearing nature of perception. Time and space will depend on the relations between appearances, they will *be* relations between appearances; and you will have to assume another space and another time relative to the events in causal nature. Idealism can only afford to say Why not? if it can show these events themselves to be elements in some supreme, all-embracing system of consciousness.

Now the single crux for idealism is precisely this assumed existence of unperceived causal realities; for idealism can make nothing of reality unperceived.

But the character of the unperceived object is, as we have seen [1] a crux for realism too. And here again, on the event theory, after all its elaborate definitions and correlations which build up the concept of the geometrical continuum, our first contact with matter introduces the incurable discreteness which met us on the traditional theory of space and time.

The material object appears to perception as continuous in space and time, and according to science is really made up of discrete particles. But the realist theory of perception stands on the axiom that objects are what they appear or are perceived to be. How does Professor Whitehead, having named this difficulty, get over it?

He gets over it by his theory of the ultimate character of events. In the case of a material object we have a complex consisting of the appearance of the object, its "situation" and its "causal character." The appearance is thus conceived as an event within an event. Obviously, this theory avoids any contradiction between appearance and reality within the object, while allowing for this distinction within the continuous unity of the event complex. The object, that is to say, is con-

[1] Above: i, pp. 52 *et seq.*

ceived as real and permanent in the stream and as shifting the responsibility for its character as a mere appearance on to the shoulders of the event which is its situation. As nature is never standing still the object will always be in some situation, there will always be some obliging event ready to hold itself responsible for the apparent duplicity. A drop of water, say, is found guilty of a breach of continuity. Professor Whitehead says we must distinguish between the drop of water as it appears, the event which is its situation, and "the character of the event which causes the event to present that appearance." [1]

At this point the idealist begins to suspect, and I think to suspect rightly, that objects of perception with their inherent contradictions are being camouflaged as events, and he is not without hope that their *eventual* character will presently disclose contradictions of its own.

We shall have to consider the single crux of idealism later.[2] Meanwhile it is clear that for realism the crux is triple. On the one hand the incompatibility between the primary and the secondary qualities, and this whether they are in the same boat of reality or not; and on the other hand the absence of any intelligible correspondence between the perceptual objects and the scientific objects, the electrons, the light waves, the molecules; and again, between all these and consciousness. These difficulties, Professor Broad and Professor Whitehead would remind us, do not exist for science which has no use for secondary qualities and ignores perception. But it is where the difficulties of science end that the difficulties of philosophy begin; and it is at this point that you wonder whether even a philosophy of nature is justified in simplifying its problem by leaving out all the troublesome factors. Professor

[1] *Enquiry*, p. 183.

[2] Below, pp. 261-267.

Whitehead denies that they are factors, and if the way of omission and denial is the first step to arriving at the clear and definite concept of nature, it is above criticism. So I will not at this point, raise the irritating and irrelevant question of consciousness, of the synthesis between perception and the object perceived, let alone the synthesis between both and the perceiver. I will merely ask whether the concept of nature we have so far arrived at is really adequate, and whether it is self-consistent.

The whole problem turns, first of all, upon this question of adequacy.

Professor Whitehead has given us a concept of nature, built up by means of an elaborate and perfect system of definitions, so clear and precise in its main lines that there is no excuse for any failure to follow them.

The concept, as we see it now, sweeps all things in nature, all events, all objects, real and apparent or frankly delusive, into the essentially derivative yet practically all embracing net of time and space. It presents nature as an endless process of passing events in which objects alone maintain stability and permanence. It regards events as the most ultimate of all realities. There is no getting behind events. It translates all the philosophy of nature into the language of events and of relations between events. Time and space, the all-embracing, are so far from ultimate that they exist only in relation to events. Events create time and space as they go along. Objects are only in time and space as it were on sufferance by reason of their connection with events. In the language of events the redness of a red object is "colour in a situation," the situation being determined by events and itself determining the character of the object. Thus, a "real" object is distinguished from a delusive object by the

coincidence of its "situation" with its cause, a fact that we express when we say that the object is really out there where it is seen. The ambiguous and the delusive object have their situations out there and their causes somewhere else: for example, the image I see in the looking-glass has its situation there, in the looking-glass and its cause in some object behind or beside me in the room; the hallucination I see in the room has its situation there and its cause in some kink in my optic nerve or cerebral cortex.

As the time order and system is nothing but the order and system of events, it is clear that there will be as many time orders and time systems as there are orders and systems of events. And as pure time is a baseless abstraction apart from space, and pure space a baseless abstraction apart from time, and both are baseless abstractions apart from events, time conceived as duration, or united space-time, will have the thickness of space. Time is to be thought of, not as a linear series of instants, but as layers, layers formed by the system of events enclosing and enclosed. This extension, this snug covering that time and space acquire through their relation to each other and to events, ensures their continuity. It forms a four-dimensional stratified continuum, in which time is the fourth dimension.

It is easy to see that this concept does away at one stroke with all incompatibilities, disjunctions and antinomies. It has an immediate appeal to the appetite for philosophic unity, the appeal of all vast and sweeping simplifications. It is at first sight so satisfying that you can hardly believe it possible to find a flaw in it. You say to yourself, Why not be content with this concept? It is so all-embracing in its relativity as to appease even the lovers of the Absolute. Why not lie down in this comfortable, uncontradictious philosophy and be at peace? There is nothing damaging to honour

in this repose; it is not like taking the brutal assaults of realism lying down. Professor Whitehead is not assaulting anybody; there is nothing polemic or metaphysical about him; on the contrary, he is avoiding the bitterness of controversy by refusing to drag in mind. Almost you could agree with him. Why, after all, worry about perception? Why not call it the percipient event and have done with it? Something has to be taken for granted, and you can't, on any theory, account for consciousness any more than you can account for nature. It just is, and nature just is, and by far the most comprehensive thing you can say about them is that they are both events.

And the most comprehensive thing you can say about events is that they are in space and time——

But it is when you get here that the real trouble begins. Inveterately you conceive events as in space and time. If space and time are to be adequate, if they are to do their work as the required all-embracing relations —all that linking up and unifying business—you must so think of events, and events must be as so thought of. But in so thinking you are doing what Professor Whitehead over and over again insists that you are not to do. You have ceased to think in terms of events and are thinking back again in the old tiresome terms of space and time which have landed philosophy in all its difficulties.

But observe what happens if you obey Professor Whitehead and think, conscientiously and rigorously, in terms of events. Time and space which were to have been the all-embracing relations, cease to embrace. They cannot, on the theory, embrace events, since only by and in events do they themselves come into being. That is to say, they fail to embrace the better part of nature, the most ultimate realities in nature. And they

cannot, they most certainly cannot embrace objects, since objects are not in space and time, or are only derivatively in space and time through their "situation" in events. Therefore they fail to embrace any part of nature. And if I may, in passing, drag mind in, they cannot embrace thought, because thought goes beyond nature, goes beyond space and time. Therefore they cannot embrace anything at all. They are phantoms, shadows cast by events in their passing.

So that the concept of nature is not adequate to provide those all-embracing spatial and temporal relations it promised us, and we are left with events embracing each other and themselves, and objects sitting, permanent and cold, outside this intimacy.

We have no business at any stage to demand that any philosophy should account *for* mind, account *for* consciousness or so much as render their existence plausible, but a philosophy which goes beyond nature (and I cannot see how a complete philosophy can well stop there), a metaphysical philosophy must demand an account *of* mind, *of* consciousness, and I think it can hardly be contested that this cannot be given by simply calling consciousness an event and leaving it at that. The concept of nature is singularly inadequate here. And we have not yet even sighted the problem of ethics. But again I am reminded that we have no business to press the concept of nature beyond nature. Enough if we have seen it to be inadequate in its own realm.

And how about its consistency? The consistency of the apparently perfect definitions on which it takes its stand?

Take the distinction between objects and events. Objects are not truly, only derivatively in space and time, yet spatial and temporal relations were brought forward as linking up all objects, whether of sense-percep-

tion or of science, whether delusive or non-delusive, in a unity.

Objects are defined as permanent structures amid the flux of events; yet objects are the only things in nature that are subject to change. The object of sense-awareness and perception is at rest. The same object, to the eye of science, is the centre of profound and secret agitation.

The traditional view also lifts up the object out of the stream of events and regards it as an eternal permanent thing, fixed in the block of consciousness, which will for ever stand still to be looked at, while it conceives events as streaming away from the object on every side. *But* it puts the object first and the events after, on the grounds that events are what happens to objects and that an object must be there first for them to happen to. And I think it must be said that if objects have this permanence and *are real apart from perception* we are forced to regard them as ultimate, more ultimate than events. Their reality confers on them this ultimacy; an ultimacy that they lose if we say with idealism that perception (in which I include memory) confers on them their reality.

But perception also takes stock of the events. Things are happening to the object. Something changes. The lump of sugar is dissolving rapidly in my tea-cup. Under my microscope the chrysalis, in its golden latticed shell, that was once a smooth, greenish, oval body, began to put out buds the other day. To-day it has burst its shell and come out, a slender black insect with iridescent wings. Something changes. It is not the event.

"Events never change. Nature develops in the sense that an event *e* becomes part of an event é which includes (i. e. extends over *e* and also extends into the futurity beyond *e*. . . . Thus we say that events pass but do not change. The passage of an event is its passing into some other event which is not it.

The terms past, present and future refer to events. The irrevocableness of the past is the unchangeability of events."[1]

Then what changes must be either the object perceived or the perceiver or his body. Clearly, in the cases of the lump sugar and the chrysalis, it is not the perceiver. Therefore it is the object. The object then has this twofold contradictory character that it is the one permanent thing in the flux of events and that events change it while they do not change. As far as permanence goes events and objects seem to have exchanged places.

And there is trouble about the parts of objects. It seems that a leg of a chair is not really part of the chair.

"Now the object during ten seconds is not part of the object during one of those seconds. The object is always wholly itself during ten seconds or during one second. It is this train of thought which led to the introduction of the durationless instant of time as a fundamental fact, thus fatally confusing the whole philosophy of science."[2]

But if you discriminate between the object and its situation you dissociate it from its time. This is one of the senses in which Professor Whitehead assumes the object to be not in time. And time and space go together.

"The derivation of space and time by the method of extensive analysis exhibits the essential identity of extension in time and extension in space. Thus the reasons for denying temporal parts of an object are also reasons for denying it spatial parts. Again, it is true that the leg of the chair occupies part of the space which is occupied by the chair. But in appealing to space we are appealing to relations between events. What we are saying is that the situation of the leg of the chair is part of the situation of the chair."[3]

But it is not part of the chair. This is the sense in which Professor Whitehead denies that objects occupy space. Thus the leg of the chair is only part of the chair as it were on sufferance, by right of its place in the "situation." We are at liberty to regard the leg as one object and the chair as another object.

[1] *Enquiry Concerning the Principles of Natural Knowledge*, p. 62.
[2] The same, p. 91.
[3] The same, p. 92.

And thus the unity of the object disappears, for there will be as many objects as there are parts of the situation. It disappears in the multitude of its parts and at the same time it is said to have no parts. It is not even a self-consistent object.

To be sure what you lose on the objects you gain on the events. So let us turn to the events.

To begin with there is trouble about the relations of objects to events.

"The ultimate natural entities are events."

As we have seen, it is hard to accept this concept if objects are the permanent element in events; if they constitute the material of events. Surely it is to be understood that to "convey the permanences recognised in events" is equivalent to being an "element in" or the "material of" events. But apparently we are *not* to understand this; for it is distinctly stated that the two types, objects and events, are radically distinct and that the term "element" refers only to products within "any one mode of diversification of nature"; therefore one type or mode will not and cannot be an element of any other type or mode. So how are we to understand this essential internal relation of objects and events?

Again, Professor Whitehead allows objects to be regarded as "qualities" of events. So that they cannot be the permanent material of events; and even if we could agree that events must needs be more fundamental and ultimate than the qualities they have, the question is whether we can regard objects as of this secondary importance. Mark that this is more than a mere question of precedent and prestige; it involves the very essence of these entities. For Professor Whitehead says that the six questions Which? What? How? When? Where? Whither? "reveal that what is ultimate in nature is a set of determinate things, each with

its own relations to other things of the set," where among "things" objects are clearly included. So that we start not knowing which really is ultimate in nature. Now it is the events, now it is the objects, and again, and over and over again, it is the events. But the very fact that the six questions "can be construed as referring to events or to objects" surely points to a community in six relations between object and event. How then can they be so radically distinct? But if objects, through their situations, may be said to take part in events—and surely they may?—then there is a sense in which they are elements in events, and if they are elements community would follow as a matter of course. Professor Whitehead's contention, I think, is (at any rate it follows from his theory) that this depends on the events and not on the objects. It is the events that let the objects in for the community. How then can objects be said to be qualities of events? Events have no substance or matter to support qualities, and in any case, on the theory, substance or matter has gone by the board; in which case nothing but the qualities are left, and the theory will not admit of our identifying events with their qualities, the objects. So I do not see how and in what sense this relation is to be established.

And how can an object not in space and time have any real community, even derivatively, with events which are in space and time? How can events extend beyond their time and space to rope in these essentially spaceless and timeless entities?

Or take causal relations. Take, scientific objects; for example, electrons. They are said to "express the causal character of events." (Observe that it is never the object in itself which is causal, only the situation of the object, the events which, so to speak, stream through its permanence.)

"At the present epoch the ultimate scientific objects are electrons. . . . Events related to a definite electron are called the field of that object. The relations of the object to different parts of the field are interconnected, and when the relationship of the object to certain parts of the field is known its relationship to the remaining parts can be calculated.

As here defined the field of an electron extends through all time and all space, each event bearing a certain character expressed by its relation to the electron. As in the case of other objects the electron is an atomic unity only mediating in space and time by reason of its specific relation to events." [1]

Now how can an object, an ultimate object, "express the causal character of events?" The object in itself is never causal. It must wait upon events before ever it can have or be in a "situation." How does the ultimate object, the atom or the electron, get a move on so as to express a causal character? More fundamental than the object is the event. But the event, I take it, has not yet begun, it has to wait, so to speak, on the electron.

"The field is divisible into two parts, namely, the 'occupied' events and the 'unoccupied' events. The occupied events correspond to the situation of the physical object." [2]

We have therefore in all space and all time, which is the field of the electron, an infinite number of empty events, of possible situations, waiting for their physical objects to come along and occupy them. Observe that "unoccupied event" is the translation of empty space-time into the language of events by which we seem to avoid this difficulty of object before and event after; and we must allow the theory the full advantage of this rendering.

"The unoccupied events possess a definite character expressive of the reign of law in the creative advance of nature, i. e., in the passage of events. This type of character of events unoccupied by the electron is also shared by the occupied events. It expresses the rôle of the electron as an agency in the passage of events. In fact the electron is nothing else than the expression of certain recognisable features in this creative advance." [3]

[1] *Enquiry*, p. 95.
[2] The same, p. 96.
[3] The same, p. 96.

I take it that we are to understand by this that the "unoccupied events" are those events in which the electron has not yet played its part, but which are strictly determined by the ascertained part it *has* played, in accordance with the laws of nature. Again, this is a translation of the concept of the uniform behaviour of electrons in terms of events.

In terms of events, observe, to avoid the traditional concepts of space, time and matter. We must stick to the translation, for we shall miss all the implications of Professor Whitehead's theory if we revert to the original corrupt text. But observe, also, the double part played by the electron. It is expressly stated to be an "agency in the passage of events." Thus its causal character is declared at the same time that its character as object ("the expression of certain permanent recognisable features") is insisted on. No doubt once an electron always an electron; but how can an object be at once a cause and not a cause?

And this affair of the electron is more complicated still. Hitherto we have been considering one electron, and events as occupied or unoccupied by it. But an event not occupied by one electron will be occupied by another electron and the translation will be continued thus:

> "The character of event *e* which it receives from electron A, which does not occupy it, is one of the influences which govern the change of electron B which does occupy *e* into the occupation of other events succeeding *e*. The complete formula of change for B can be expressed in terms of the complete character which *e* receives from its relations to all the electrons in the universe."

Here we have the translation of electrons passing through space and time in terms, not of space and time and matter, but of pure events. It must be admitted that the translation has the immense advantage of simplification and comprehensiveness. Translated back into the old terms of space and time and matter, you

would have physical objects hurtling through pre-existing space in fore-ordained time and in such a manner that if space and time be taken as absolute, at any instant the object will be stationary in space, thus parting with the event character of its motion. On the other hand, if space and time be taken as relative, matter itself will be infected with that relativity and lose its alleged character as the causal ultimate.

The question is whether *precisely the same thing has not happened to the events,* whether the formula in terms of events does not involve contradictions every bit as bad as any that the traditional view was landed in.

Take events themselves. Events do not change, they pass. They are and are not. "An event is what it is, when it is and where it is." Definite demarcation, all or nothingness, is the essential character of events. Thus events take on that hard quality of exclusiveness which characterised the points of absolute space, the instants of absolute time. Their demarcation seems incompatible with their continuity. If events are as self-contained as all that, it is hard to see how one event can extend over another, or how any duration which is the time of events can enclose or be enclosed by another, or how one event can cause, condition or influence another. If an event which has passed has passed utterly, if neither it nor any particle of it is to be thought of as somehow continuing in the event it has influenced, conditioned or caused, the old antinomies of space and time have broken out again transferred to events. We are faced with endless breaches in the continuity of events.

The theory of duration is presented here as saving the continuum.

"The continuity of nature arises from extension. Every event extends over other events, and every event is extended over by other

events. Thus . . . every duration is part of other durations; and every duration has other durations which are parts of it."[1]

We must think of time in vertical, not linear extension, in stratified durations, because it is space-time, in other words, event-time we are dealing with. Durations are stratified thus:

"A pair of durations both of which are part of the same duration are called parallel, and also a pair of moments such that there are durations in which both inhere are called parallel."[2]

Again:

"A complete time-system is formed by any one family of parallel durations. Two durations are parallel if either (i) one includes the other, or (ii) they overlap so as to include a third duration common to both, or (iii) are entirely separate. The excluded case is that of two durations overlapping so as to include in common an aggregate of finite events, but including in common no complete duration."[3]

If you think of this in terms of time only it is meaningless. If you think of it in terms of linear extension it is meaningless. You must think of it in terms of events, events piled one on the top of the other. It means that events do not follow one another in a single linear, past, present, future series with point-instant correspondence in a procession that has but one starting point; but that they form a system or systems, and there will be as many parallel layers as there are events contained in one duration.

But in spite of the extreme precision of these definitions it is not easy to see within a given duration what actual durations would be parallel and what would not. Take, for example, the duration of my day. The duration of my working times (10 a. m. to 1.30 p. m., and 5.30 p. m. to 7.30 p. m.), and the durations of my meal times (8.30 to 9 a. m., 1.30 p. m. to 2 p. m., 5 to 5.15

[1] *The Concept of Nature*, p. 59.
[2] *Enquiry*, p. 113.
[3] *The Concept of Nature*, p. 190. The same rules apply to families of durations, p. 59.

p. m. and 8 to 8.45 p. m.) are "parts of the same duration" which is my day; yet so far from being parallel they are successive; they fit into alternate places in the completed order of my day; and I cannot conceive of their spatial character, the fact that one order of events goes on in my dining-room and the other in my study, as altering this character of successiveness. It is clear that such orders of events within a duration are not the parallels we should be thinking of. Nor do they seem to belong to the excluded case (iv).

For "two moments which are not parallel necessarily intersect." And there is no moment of my working times that anywhere intersects or is intersected by any moment of my meal times—so long as I do not work when I am eating—therefore it would seem that my working and my eating times must belong to different time systems. Yet they are all covered by the duration of the event which is my day. I am puzzled by this double character of successiveness and enclosure. And I am driven to conclude that these parallels are only to be found in any two orders of events going clean through any two durations within the same duration, and of an equality such that their starting points and their end points respectively will be covered by the same moment. The selection of starting point and end point will be purely arbitrary for any two orders of events in any given slice of observation; but what is a starting point or an end point for one must be a starting point or end point for the other

I think this must be so, because otherwise we should have no hold on events, we shall be dealing with serial event orders which may outrun the limits of our covering duration at either end, and we shall have to stretch this duration so as to cover their unequal starting and end points, which may again extend beyond the in-

creased duration, and with this game of event-durations we shall never have done.

On the other hand, if we insist on the one starting-point for all pairs of parallels within the one time-system we are back again in the old tradition of the point-instant correspondence and "all nature at an instant"; and though all nature at an instant is never given in sense-awareness, we know very well that beyond our sense-awareness all nature at an instant is there.

And I do not see that the difficulties are avoided by substituting events which *are* space and time, events which are durations, for spaceless times and timeless spaces, and event-particles for point-instants, however fitly the distinction expresses the timefulness of space and the spacefulness of time. For the essential character of an event is that it is a definite thing marked off from all other events; and this differentiation cannot be purely qualitative as it is in the case of spaceless and timeless objects; for events do not change, they pass, one moment they are and the next moment they are not, and they are to be distinguished from objects by precisely this property and by the fact that one event cannot occupy two spaces at the same time. Indeed an event never can occupy two spaces at any two times, for the moment it occupies another space at another time it is no longer the same event but another. "Events are what they are, when they are, where they are." True, the actual presence of the event will extend over some duration; but this must surely be in such sort that the event ends with its duration and is succeeded by another event in another duration. And what applies to durations and events will apply to moments and event-particles.

So that we are faced again with the old problem of

"nextness" and succession. All that has happened is that we are dealing with events and durations, that is to say with extensions instead of points and instants; but as between event and event, or one event-particle and another, there will be breaches of continuity. Breaches that you cannot hope to fill by means of the Cantor-Dedekind compact series; for I think you cannot say that between any two events or event-particles there is an infinite number of events or event-particles. An event and every part of an event is essentially finite and qualitative, and as such will not admit of infinite stuffing, though durations may.

Nor can I see that the covering of one duration by another, the extension of one event over another, really ensures continuity, as long as you assume, and you certainly *have* to assume, differentiation between events and durations.[1]

The symbol of this continuity is the "Chinese toy," the set of smaller and smaller boxes packed one inside the other, except that in the event-continuum there is no smallest box. Its diagram is a system of enclosed and enclosing squares converging to a central point, and the packing is indeed so tight and the layers enclosing the ultimate point so thick that for a moment you are juggled into believing that you have here an indubitable continuum. It is only when you translate the hieroglyphics of the diagram back again into the original language of events that you perceive that continuity there can be none. For one thing, events have to be taken, so to speak, in the rough; they are not entirely surrounded; they do not really converge to a point. The point is an ideal limit.

"It is evident that an abstractive set as we pass along it converges to the ideal of all nature with no temporal extension, of all

[1] Professor Whitehead calls this assumption "an arbitrary postulate of thought." I cannot think why "arbitrary." If ever there was a necessary postulate——

nature at an instant. But this ideal is in fact the ideal of a non-entity."[1]

But the point at the narrow end is not more ideal than the limit, the square at the other end of the scale, the all-enclosing, unenclosed event. When you consider seriously these two ends open to the infinite and the ideal, where space and time must either cease or contain and be contained for ever, you begin to wonder whether the whole construction is not ideal without any application to actual events. It can only apply, so far as it applies at all, to all nature at an instant which is never given in sense awareness, and was dismissed as an intellectual abstraction. For nature is enlarging her temporal borders moment by moment; the two ends of the system of squares are open to the past and to the future. In vain you build up your system of squares; nature outruns your building. In vain you dovetail time into space and space into time. Nature forges ahead, putting out more and more events into the ever appearing present which was once her future, throwing back more and more events into her past.

To be sure, in a mathematician's head and in a diagram on paper, a continuum is achieved in the sense that serial time is vanquished for a moment. Between the squares that contain and the squares that are contained there is no such solution of continuity as would exist were all the squares unpacked and ranged in a row side by side. They are all, as William James would have said, "snug in their own skins." That is to say they would be if this containing process left them any skins to be snug in. Events have to be well skinned to fit into the system. For if you admit the skin you admit the boundary line, and between boundary line and boundary line is as bad as between point and point. And since you are dealing with actual finite and par-

[1] *The Concept of Nature*, p. 61.

tially qualitative events and event-particles you have not the resource of introducing infinities. If, on the other hand, you delete the boundaries you have one unbounding and unbounded event which is the very defiance and negation of the principle at stake.

And all the time nature is rolling on and on in a past, present and future process that fairly cries out for serial time.

It is only when any section of the process is past that the mathematician, wantonly abstracting from it all that was passing and successive, can telescope the events in it one inside the other and in fancy see them as containing and contained. I do not mean to suggest that his procedure is not perfectly legitimate in its way, nor do I want to deny that nature presents to sense-awareness a rough and ready appearance of continuity; that is to say, sense-awareness cannot find a break. I do not mean that there is any better way of regarding nature at any given moment of awareness, but I do insist that there is no way of conjuring continuity out of a series, even a vertical or stratified series, of events, and that Professor Whitehead's way only succeeds because of the surreptitious introduction of the very last factor he would desire to admit—the factor of consciousness.

This is what comes of taking events for ultimate realities and flying to them for a continuum. Why, even the comparatively despised perceptual object does more for the mathematician than that. It at least does stand still to be stared at. If we did not know its secret life of infinite change and agitation, its apparent permanence might suggest a kind of continuity in space and time. But here again, if the object does not exist in space and time its continuity will not help the problem where it is now.

We have seen that the event-duration theory ends by

throwing us back on "the ideal of a non-entity." It would, therefore, seem that the concept of nature contains a fundamental contradiction somewhere. I do not know whether Professor Whitehead would deny the contradiction on the grounds that nature is one thing and its concept another, or on what grounds he would deny it. The fact remains that a contradiction between nature and its concept is a contradiction within the whole of reality which is nature and thought taken together. I cannot see that realists have any business to say that there isn't any such whole of reality, seeing that it is implied in any discussion of ultimate concepts.

We must then have either a complete dualism between nature and thought, or a dualism between nature and the concept of nature within the whole of reality; and if reality is to be a whole this is regrettable.

And in the long run Professor Whitehead agrees that "the concept of the properties of nature at an instant . . . is fundamental in the expression of physical science"; so that once more we have the deliverances of sense-awareness contradicting the deliverances of science, which once more is an awkward position for realism.

But we have not yet done with serial time.

Serial time is stated to be the result of "an intellectual process of abstraction." (We may wonder how the intellect contrives to abstract from events what was not in them already.) It has been said previously that "each element of the series exhibits an instantaneous state of nature," but

> "This serial time is not the very passage of nature itself. The state of nature 'at a moment' has evidently lost this ultimate quality of passage."[1]

So that between a state of nature and nature's passing we have a temporal contradiction. And again, "the

[1] *The Concept of Nature*, p. 65.

lapse of time is a measurable serial quantity." We cannot juggle away the serial quality of time by calling it an intellectual abstraction. These difficulties, however, are not created by Professor Whitehead who gets over them by denying the priority and independence of time, and distinguishing between the event-time of nature's passing and the passing of abstract serial time.

"We have first to make up our minds whether time is to be found in nature or nature is to be found in time. The difficulty of the latter alternative—namely of making time prior to nature—is that thus time becomes a metaphysical enigma." [1]

(The idealist would say that that is precisely what time is.)

"The dissociation of time discloses to our immediate perception that the attempt to set up time as an independent terminus for knowledge is like the effort to find substance in a shadow. There is time because there are happenings and apart from happenings there is nothing." [2]

The trouble is that in the long-run we have to recognise that

"there is a passage of sense-awareness and a passage of thought. Thus the reign of the quality of passage extends beyond nature."

And we have to distinguish here between "passage" which is "fundamental" and "the temporal series which is a logical abstraction." And so it turns out that

" . . . time in the sense of a measurable temporal series is a character of nature only and does not extend to processes of thought and of sense-awareness except by the correlation of these processes with the temporal series implicated in their procedures." [3]

I am not quarrelling with the facts, but we may as well notice that measurable serial time, which a while back was said to be "not the passage, the very passage of nature itself," is now declared to be "a character of nature only." Yet the character of nature is passage.

[1] *The Concept of Nature*, pp. 65-66.
[2] The same, p. 66.
[3] The same.

Moreover the time in which thought passes extends, as thought extends, beyond nature, so that all time cannot be swept into nature's flux of events or nature's durations; and thus time is not an intellectual abstraction. The consideration of memory complicates the question further.

. . . "the mere fact of memory is an escape from transience. In memory the past is present. . . . Accordingly memory is a disengagement of mind from the mere passage of nature; for what has passed for nature has not passed for mind."[1]

We have now seen the inadequacy and the inconsistency of the concept of nature that refuses to drag in mind. And we have reached the point where mind refuses to be left out any longer, where it obtrudes itself in spite of all the well-guarded defences of realism. We have, after all, to include in the philosophy of nature as an ultimate entity the time of mind which extends beyond nature, and to deny any place beyond nature to measurable serial time, for all it was said to be an intellectual abstraction, since the processes of nature are measurable and calculable in time. And yet the time we measure and calculate by cannot be the space-time which events *are,* for Nature cannot measure herself. It is a mind-time which events conform to, and so far as they conform, and so far as this time is a "character of nature," nature is not "closed to mind."

What is more, it has become increasingly noticeable that the very definitions of the "percipient event" presuppose a certain psychical limit. We are dealing always with nature as observed and there are limits to our observation. And a psychical limit, I submit, is every bit as bad as a "psychical addition" for a philosophy of nature which is rigorously excluding mind. Take for example the psychical standard of duration:

"Our observational 'present' is what I call a duration." . . . "The duration as a whole is signified by that quality of relatedness (in

[1] *The Concept of Nature,* p. 68.

respect of extension) possessed by the part which is immediately under observation; namely, by the fact that there is essentially a beyond to whatever is observed. I mean by this that every event is known as being related to other events which it does not include . . . exclusion is as positive a quality as inclusion." [1]

Note that exclusion is of space—all the things in nature which we don't have under observation—and of time, all the things in nature which have not happened for us; all the things which both for us and for nature haven't happened yet.

Now if percipience is an event in nature, that is to say, in the nature of the realist which is independent of percipience, anticipation of the future is impossible and meaningless. Memory is both impossible and meaningless. For both memory and anticipation are forms of perception with a change of tense, and perception cannot jump outside nature to perceive the things which for nature have passed and for nature have not yet begun.

Again, if perception is in nature it can never transcend nature at any moment; it can never transcend the stretch of nature which it has under observation at any moment; yet in order to grasp that stretch, above all, in order to make that distinction between perception, or if Professor Whitehead prefers it, between "percipient event" and object perceived, that distinction which is vital to realism, it must transcend nature from moment to moment. If this distinction is not given in perception, for realism it is never given.

"We observe nature as extended in an immediate present which is simultaneous but not instantaneous, and therefore the whole which is immediately discerned or signified as an inter-related system forms a stratification of nature which is a physical fact."

We have already seen what happens between stratifications. We have seen that by knocking out point-instants we have not got rid of discontinuity; it crops

[1] *The Concept of Nature*, p. 186.

up again between durations. And here it is at last impossible to exclude consciousness from the problem. Consciousness emerges as the controller of these stratifications. That is to say, the "percipient event" is the measure of the "observational present" which is nature's "here-now." Nature in any "here-now" can be no less and no more than what perception can take in at one bite. It is events with their rhythm, their vibration that bring discontinuity in, while consciousness covers the events, consciousness slides from duration to duration without a break. It and it alone provides the continuity discerned in nature. It, or rather the enduring self behind it, *is* the continuum. Beside the steady stare of consciousness events quiver, you can almost hear the tick-tick of their passing.

May not the truth be that events as distinguished from objects, space as distinguished from time, and both as distinguished from events, reality as distinguished from appearance, and nature as distinguished from thought are all abstractions from the continuous unity of some all-embracing self? Even finite selves confer unity and continuity on nature as far as they go, though their consciousness is closed to the greater part of reality.

And there were those contradictions. We have seen the twofold contradictory character of objects on the realist event theory. I do not see how we are to believe that a real object, independent of perception, of the form of consciousness, could have this twofold contradictory character. Let us look at it again. If the permanent object and its change or changes are not one object but two or more objects, the object hasn't changed, and each successive state of the object will constitute a literally different object. But we can't say this, for this is what holds good of events. And events are the very stuff of our experience.

"Events are lived through; they extend around us. They are the medium within which our physical experience develops."[1]

I hope I am not confusing the question by an ambiguous use of the word "experience"; what I mean is that to part, at any rate, of our perceptions the object is presented, not clean and separate, but immersed in events. Even when we, so to speak, take it up to look at, it still drips with the stream. There will be a stage of perception when it will be both isolated and yet dripping. And I repeat, we cannot think of a real object, there on its own account, as thus permanent and separate and at the same time undergoing change and dripping.

But suppose with idealism that the object only exists when and as it is perceived or recognised? Suppose that, as regards this particular contradiction, the duplicity is in our consciousness, and that the changing, eventful object is the object perceived and remembered, and the permanent, unchanged object is the object recognised and conceived? We shall not have accounted for change or for passing, we shall not have solved all the contradictions in the concepts of space-time and of objects and events, but at least we shall have pointed the way towards a possible solution.

iii

The Critical Realists

Realism in its later stages has become self-critical. It has learned that its postulates are hard to reconcile with the fact that our senses give us conflicting evidence, that physical objects are not perceived as they really are, and that their ultimate nature, as disclosed by science, affords no explanation of their appearances. Critical Realism is aware that these are downright serious matters very much in the way of a realistic theory of perception.

Unlike new realism, it is not extremist. It does not

[1] *Enquiry*, p. 63.

turn the whole content of consciousness out of doors. On the contrary, it draws a curious and very interesting distinction between the content and the object. The content, the "datum," what is immediately before consciousness, is, the critical realists say, never the object itself, but always an "image," the logical essence" by means of which the object is perceived.[1] Thus there is no direct perception of objects such as both naïf and new realism assume. The essence is the mediator between the god-like inaccessibility of the object and the perceiving mind. It is as much the instrument of perception as the bodily organism, and is as little to be confused with the perceptual object itself.

The essence is expressly stated to be *not an existent,* either in the sense in which the object is existent out there in space, or in any other sense. It is to be carefully discriminated from the "mental state" which is its "vehicle." The mental state has the status of an existent like any object, except that I suppose it would be said to be "here" in consciousness and not "out there" in space. The pure sense-elements of perception are existents and not essences; they are mental states, contributions of the mind, "secondary" qualities with which it "clothes" the objects of perception.

There are some distinctions that simplify the problem of knowledge, and there are some that obscure and complicate it. It cannot be said that the distinctions of critical realism are of the simplifying and clarifying kind. We shall see that on this theory, though some bad difficulties are avoided, the whole business of perception becomes extremely queer. We are no longer troubled with contradictory witnesses to reality, since the sole "data" of perception are the essences, quality

[1] *Essays in Critical Realism,* by Durant Drake, Arthur C. Lovejoy, James Bissett Pratt, Arthur K. Rogers, George Santayana, Roy Wood Sellars, C. A. Strong.

groups which have their own inalienable character, are not existents and therefore do not challenge the objects on that ground; since the objects do not come into consciousness at all and since we may suppose that the sense-elements do not "witness" to anything. Thus compared with the objects the essences are frankly indoor, subjective affairs. Their status is as safe from irrelevant comparison as on any idealistic scheme. We have no incompatible existents. Incompatibilities only arise as between existences in space and time, and the essences have no such existence.

Not that critical realists are agreed as to their precise status. Professors Drake, Santayana, Rogers and Strong maintain that the datum, which is always to be discriminated from "the mental state which is the vehicle of its givenness," is *not* an existent "representing the object,"

"it is . . . simply the essence or character (the *what*) of the object known."

And always the mental states are existents. They may "give" mental traits, feeling traits to the character-complex of the datum. While to Professors Sellars, Lovejoy and Pratt the datum is

"*in toto* the character of the mental state of the moment, and so is an existent, though its existence is not 'given'." [1]

But these differences need not concern us.

Professor Drake [2] trains all the old arguments from incompatibility on naïf and new realism alike with deadly effect. The position of critical realism is that

"the existent at a given point of space at a given time never has more than one set of compatible qualities." [3]

Then what about the alleged incompatibles? Professor Drake will not admit that they arise from differ-

[1] *Essays in Critical Realism, The Approach to Critical Realism*, pp. 4, 20, 21.
[2] The same, p. 4.
[3] The same, p. 16.

ences in relations. Each supposed incompatible is a downright quality. It is what it appears to be. But these qualities do not compete with one another on the same plane. That is to say, of two alleged incompatibles one may be a mere feeling or sensation, which is part of the "mental state" of the perceiver, therefore a subjective existent; the other may be part of the quality group, the logical essence, which is really *what* the object is. It is clear that on this theory we are not dealing with two incompatible existents, both qualities of the object. Professor Drake is not so admirably precise on this point as he is everywhere else; but I think all this may be gathered from his theory as a whole.

So far, so good. It is when we come to consider the relation of the essences, the not-existent data of perception to the existing object that we realise that we are not much safer than we were before. The data

"are character complexes (=essences) irresistibly *taken*, in the moment of perception, to be the character of existing outer objects." [1]

When we ask what guarantee we have that they *are* the character of objects, since they are all we've got, we are told that

"There never is a guaranty in the moment of perception that they really are the characters of any outer existent."

The guarantee is a purely pragmatic one.

"Our instantaneous (and practically inevitable) belief in the existence of the physical world about us is pragmatically justifiable. . . . This little realm of Appearance (i. e. what appears, what is 'given') might conceivably be merely the vision of a mind in an empty world. But we instinctively feel these appearances to be the characters of real objects. We react to them as if they had an existence of their own. . . . Everything is *as if* realism were true." [2]

This is meant to show that we are not the victims of a series of subjective hallucinations. As we have

[1] *The Approach to Critical Realism*, pp. 5-6.
[2] The same, p. 20.

seen, the essences are not to be confounded with my mental states. The states are existents and the data are not. (As we shall see presently, Professor Strong counts secondary and tertiary qualities, sensations and feelings, as might be spots of blue and fits of temper, as states equally mental, thus introducing a further complication. And I gather that all critical realists agree with him.) The mental existents "make possible the appearance of the essence." If we go and call the data existents we shall be bestowing existence on our hallucinations, for there are hallucinatory data. Delusion consists in imagining that these exist "out there."

Here again, in this matter of hallucination, I find critical realism disappointing. For the real datum, the "character complex" is on the same footing of *not existing out there.*

What is the critical realist going to do about it?

He flies to "imagination." The character-complex of the hallucinatory object is *imagined* as out there, and we falsely imagine it as existent out there. The character complex of a really existent object is imaginary too, only in this instance we rightly attribute it to a real existent.

"These imagined character-complexes are our data. Usually some of the traits of the character-complex are real, some are merely imaginary. But whether really true or not they are never *found* there by a sort of telepathic vision, but are imagined there by a mind."[1]

And you gather that it depends merely on the quality of the imagination (plus our possible reactions) whether they shall count as genuine data or no. Thus perception is

"a sort of imagination—vivid, controlled, involuntary imagination, which is to some extent veridical."[2]

But veridical to what extent and in what instances

[1] *The Approach to Critical Realism*, p. 23.
[2] The same.

we have no exact means of knowing. And, really, on the theory, we have no means of knowing at all. Imagination is at once the suspect, the witness and the judge; we have no other.

Critical realism distinguishes, much as Locke and the old tradition distinguished, between primary and secondary qualities. It accepts "the general verdict which hold that only the primary perceptual qualities are literal characters of objects," and it maintains that

> "*in so far as* perception gives us accurate knowledge, it does so by causing the actual characteristics of objects to appear to us. The objects themselves, those bits of *existence,* do not get within our consciousness. Their existence is their own affair, private and incommunicable." [1]

This is all very well; but as most primary qualities, shape, size, extension and motion, are specially distinguished by their spatial and temporal relations, it is hard to see what their characteristics can have in common with logical essences expressly stated to be not existent, to have no relations in space and time. A queer sort of literalness, this.

Again, Professor Drake says:

> "Identical essences can be 'given' by means of very varying mental states. A vivid sensation, a faint sensation, a memory, a conceptual state can be vehicles, at different times, by which one and the same essence can be 'given'." [2]

Now, how, on the theory, can you possibly tell that it is one and the same? How can you make your leap from existent state, to not-existent essence? And how can essences be "given" by qualities which do not belong to them? There is no sense in which the secondary qualities of the mental states can be said to belong; since the essence *is* the group of primary qualities from which secondary qualities have been excluded.

[1] *The Approach to Critical Realism,* pp. 23-24.
[2] The same, pp. 27-28.

This theory of essence compels us to take our complex data as part existent and part not-existent, part mental and part non-mental, which is what Professor Drake said (rightly, I think,) we were not to do. That was on page twelve. On page thirty he says:

"we live in the presence of . . . hybrid objects—existences really there, but clothed, in our mind's eye, with the qualities which our mental states put into them. Our data are characters which may be said to be projected. . . . Not actually projected . . . but simply supposed to be out there, 'imagined' out there . . . common sense takes it for granted that they are out there and has never grappled with the difficulty of how they are revealed if they are there, or what their status is if they aren't there."[1]

And again it is hard to see how you "grapple" with the difficulty by saying the projection is imagined and by presenting the content of knowledge as the means to it. You might as well identify our percepts with the physical apparatus of perception. If the content of consciousness *is* the content what more do we want? If it isn't, if it is only the means to knowledge, what knowledge have we got? Only the mental state remains indubitably existent and indubitably known. What could subjective idealism wish for more?

Professor Pratt's theory does not differ essentially from Professor Drake's. He evidently thinks that the main objections to it are that it involves transcendence and that it makes perception indirect.

Idealists will not quarrel with it on the score of transcendence. The real trouble is that it offers as a substitute for the perceptual object a logical essence, which according to Professors Drake, Santayana, Rogers and Strong is non-mental and not-existent, and according to Professors Pratt, Lovejoy and Sellars is the total character of an existent mental state; a substitute which is not really projected but imagined as out there where the object is. Thus we have absolutely no criterion

[1] *The Approach to Critical Realism*, pp. 27-28.

for judging that our imaginations correspond with reality, and no grounds, other than pragmatic, for supposing the existence of any object at all. And, really, those pragmatic grounds—How *can* the mere fact that we find it convenient, that, in the consecrated phrase of pragmatism, it "works" to assume reality, justify us in assuming a reality unperceived, unproved and otherwise unwarranted? A working hypothesis *in* the field of experience is one thing, and a pragmatic hypothesis carried into the field *beyond* experience is another. For the pragmatic test, the fitness, the convenience of working, are all part of my experience, my perceptual content, and have no application to the beyond. My reactions prove nothing. When I see my 53 'bus coming along to Piccadilly Circus and adapt my movements to its decreasing rate of movement and to its final position of rest, with reference to the curb, when, in other words I *catch* my 'bus, the 'bus and its movements and the curb and the Circus and my body and its movements are all part of the content of my consciousness at the moment, and afford in themselves, no possible grounds for the assumption of a "real" 'bus and a "real" Circus outside consciousness. The reactions of my fellow passengers, do, I admit, appear to give grounds; this is a difficulty for idealism which I hope to dispose of in its proper place,[1] merely remarking that these manifestations of other people are also part of the content of my consciousness as, indeed, my manifestations are of theirs. But this is not a pragmatic relation. In the logic of pragmatism the *a posteriori* cart draws the *a priori* ontological horse.

To return to Professor Pratt. After showing very clearly that the percept is all the datum we've got, and that the percept is not the object, he goes on to say that we do not "see" the percept, but the object,

[1] See below, *Space, Time and Other Consciousnesses*, pp. 245-259.

and that we see it by means of the percept: "the object of perception *is* the object of perception." In seeing my friend,

> "He is the object of my sight. I do not see my percept of him; I see *him*, and I do so by means of my percept." [1]

That is to say the object is never directly perceived, since it is an outside existent, and the percept is never perceived since it is the means of perceiving, yet the percept is the datum, the given content of perception, and *yet* by means of this unperceived content I perceive! It may be so, but if I have nothing to go on but this imaginary content I shall never know it. I am shut up with my apparatus of essences and have no grounds for assuming an object outside them. There is no sense in which I can be said to see or be in any way conscious of that object. And if I am not allowed to perceive my own percepts it is hard to say what I do perceive.

Percepts, Professor Pratt says,

> "are simply my means of perceiving and thoughts my means of thinking, just as the voice is my means of speaking; to insist that I cannot perceive a red house because I have to perceive it by means of my percept is like insisting that I cannot hear the organ because I can only hear the sound, or that I cannot say 'Boo' because I have to say it with my voice." [2]

It seems to me that there is some confusion here. I do not perceive by means of my percept in the same sense that I speak by means of my voice. In speaking by means of my voice I am not affirming the objective existence of voices, I am simply making noises which are the recognised symbols of existents other than voices, and in every respect unlike them. But in perceiving by means of my percept I am supposed, on the theory, to be affirming the existence of objects in all respects so similar to or correspondent with my per-

[1] *The Possibility of Knowledge* (*Essays in Critical Realism*), p. 103.
[2] The same, p. 104.

cepts that I am said to perceive the very objects themselves. And I contend that from the character of the data at my disposal I have no business to affirm anything of the sort.

Again, "to insist that I cannot perceive a red house because I have to perceive it by means of my percept" is not at all on all fours with "insisting that I cannot hear the organ because I hear only its sound." For in the case of the percept we have nothing "given" corresponding to organ, while in the case of the organ we have all its other perceptual qualities associated with its sound.

Professor Pratt admits the fallibility of knowledge obtained by means of the apparatus of images.

("The ultimate nature of reality in itself may be very difficult, or even impossible to discover");

and he pleads that our actual knowledge is precisely in this case. But all that critical realism has done, so far, is to complicate this problem of knowledge further by duplicating it with the old, clumsy machinery of "images"; the only justification for this proceeding being the guarantee of a corresponding reality—a guarantee which is admitted to be impossible. There is no sort of use, on any realistic theory, for all this imaginary scenery rigged up between consciousness and reality.

Nor does Professor Santayana, in his *Three Proofs of Realism* carry us much further. He holds the balance between two extremes, the "minimum" and "maximum" of realism, the mere innocent "presumption that there is such a thing as knowledge" and

"the assurance that everything ever perceived or thought of existed apart from apprehension and exactly in the form in which it is believed to exist."[1]

The problems for critical realism are two: one of the

[1] *Three Proofs of Realism* (*Essays in Critical Realism*), p. 163.

independent and separate existence of the object; one of the "literalness and adequacy" of knowledge. The problem of existence is concerned with appearance and that underlying reality to which Professor Santayana boldly restores its old name of "substance." This involves relations; so that the problem of existence splits off into two problems: one concerning the "existence" and "conditions" of substance and appearance; the other concerning the degree of "similarity" between them; to which the answer of the realist tends to be that "their existence is quite distinct and their conditions entirely different,"

and that

"the similarity is great and may even rise to identity of essence."[1]

As we have seen, the critical realist complicates his problem gravely by the introduction of essences. He has in the long-run to admit that some appearances at any rate are not similar to, much less identical with, the underlying reality (if you go back as far as "the scientific object," a colour is not similar to a light-wave nor a sound to an aerial vibration), so that he is further saddled with the old distinction between primary and secondary or tertiary qualities. Even if you take the primary qualities only to be essences (the secondary and tertiary being "mental states"), you cannot say that they resemble the ultimate physical realities.

Centreing round substance and appearances, then, there will be two "perfectly consistent and truly complementary" tendencies in critical realism:

"the one tends to separate appearance from substance only in existence; the other tends to identify them only in essence";

The truth, according to Professor Santayana, being that they are strictly correspondent and mutually dependent:

[1] *Three Proofs of Realism* (*Essays in Critical Realism*), p. 165.

"they hang together and reflect one another like a poet and his works. Only if arrested and isolated would the material world and the bodily life of animals seem not to involve sensation and thought and not to be involved in them. . . ."[1]

And once more we ask: what criterion have we, what guarantee that the appearances of sensation and of thought, if separate from substance in existence, are identical with it in essence? Even if the unperceived "material world and the bodily life of animals" may be taken as equivalent to substance (which I doubt) we are faced with our old difficulty which was that of identifying the qualities given in sensation and perception with the ultimate elements of matter and their behaviour; for we can hardly imagine anything more totally dissimilar. It is not as if we knew absolutely nothing about those ultimate elements; science has at last reduced them to hypothetical electrons, to atoms and molecules and their movements and vibrations. If you say that these ultimate elements are substance you have the dissimilarity on your hands; if you say that they are *not* substance but the appearances of a reality still more ultimate, you have a set of appearances which do not appear, you are further off from substance than ever, and again you have no evidence to show for your alleged identity of essence.

Critical realism, then, unites two assumptions:

"first, that knowledge is transitive, so that self-existing things may become the chosen objects of a mind that identifies and indicates them; second, that knowledge is *relevant*, so that the thing indicated may have at least some of the qualities that the mind attributes to it."[2]

Professor Santayana says that these assumptions are "instinctive and necessary to the validity of knowledge," whereas the truth is that the transitiveness, the passage from the external self-existing object to the

[1] *Three Proofs of Realism, (Essays in Critical Realism)*, p. 167.
[2] The same, p. 168.

mind is a necessity created solely by the realistic assumption of separation and externality; and the relevance is, again, the question in dispute. On this theory—I repeat—you can never be certain that your assumption is correct.

If on the other hand you identify substance with some underlying mind or self, and appearances with the content of its consciousness, parts or aspects of which content are transmitted to the consciousness of finite selves, you have all the transitiveness your instinct can require (if it did require it) and an indisputable relevance (I will admit that our instinct demands relevance.) You have, in fact, a direct relevance of consciousness to consciousness without the interpolation of any images or essences, which only serve to make this complicated affair more complicated still.

Professor Santayana's three proofs of realism amount to this: (1) Man as a biological organism adapts his behaviour to the assumption that objects are outside him, that is to say, outside his organism. (2) Even the idealist's psychological behaviour implies the independent reality of time, of other minds, and of his own transcendental logic. (3) Knowledge involves the external reality of *logical* essences, changeless amid the flux of existence.[1]

The biological proof merely proves that we are conscious of the existence of objects outside our bodies, a fact which no idealist would or could deny. The psychological proof is valid only as against solipsism; the logical proof only as against sensational idealism. For the idealist would, or should, admit the reality of logical essences, not external to all consciousness but constitutive of the universe within it, the "means," if critical realism likes to put it that way, by which the

[1] *Three Proofs of Realism* (*Essays in Critical Realism*), pp. 169-184.

mind recognises objects already perceived in what I call the primary block of consciousness.

Professor Sellars in "Knowledge and its Categories" enters more precisely into the question of separation of existence and identity of essence. He insists that

"Mere identification does not meet essential difficulties. It must be remembered that, in the act of knowledge, the idea which gives the content of knowledge (the *esse intentionale* of the scholastics) is other than the object of knowledge." [1]

Yet identity there is. It is a logical identity in the sense that the data "possess cognitive value."

Professor Sellars, like Professor Drake and Professor Pratt is keenly alive to the difficulty of establishing the relations of passage *from* and fitness of knowledge *to* the object. It is not done in the moment of perception.

"Only as reflection proceeds is the givenness of content distinguished from knowledge and regarded as the instrument of knowledge." [2]

We might even say that this happens only in the reflections of critical realists.

"The physical realm is one we can never intuit as common sense tends to suppose; the only realm we can intuit is the realm of data." [3]

Thus, to begin with, we must distinguish between knowledge and intuition, and, further, the critical realist holds

"that we do not *infer* a realm of existents co-real with ourselves but, instead, *affirm* it through the very pressure and suggestion of our experience." [4]

And so, always at the critical moment when the critical realist is asked to give grounds for his as-

[1] *Knowledge and its Categories* (*Essays in Critical Realism*), p. 190.
[2] The same, pp. 193, 194.
[3] The same, p. 195.
[4] The same.

sertion that his ideas and reality tally, he puts you off with his dogmatic affirmation that it is so; and this after having coolly told you that the "givenness of content," as *not* knowledge but "an instrument of knowledge," is reached by a process of reflection; when the idealist's obvious repartee is that *his* processes of reflection reveal nothing of the sort. We may indeed intuit the content of knowledge, but if we do not intuit the physical realm along with it neither do we intuit their logical identity; and I submit that a bare "affirmation" has no ground of justification when it rests neither on intuition nor on inference. These delicate distinctions between content and object, between identity of existence and identity of essence are all very well, but how on earth are you to get from one to the other if you may neither intuit nor infer?

Professor Sellars's method of solving this problem is to add yet another unproved and unprovable affirmation to the rest: the affirmation of "thinghood." You add the category of thinghood and your perception is complete. On page a hundred and ninety-seven he admits that

> "reflection has discovered that the content with which we automatically clothe these acknowledged realities is subjective."

Professor Drake admits it. All the critical realists admit it. None of them suggest that the discoveries of reflection are invalid, or that any after reflection impugns the subjectivity of this automatic clothing. Yet on the very next page Professor Sellars gravely states that "the object must be known in terms of the content which is given to the knowing self."

What could idealism wish for more?

Remember, it was stated on page one hundred and ninety-five that we do not *infer* a realm of existents coreal with ourselves, we *affirm* it. Apparently, having affirmed it, we go on, after reflection, to infer that it

must be known in terms of the content. But the whole process of inference rests on the original baseless affirmation. And then, again, after being told that we do not intuit the "physical realm," the realm of objects, we are thrown back on intuition. Knowledge, Professor Sellars says,

"is just the insight into the nature of the object which is made possible by contents which reflect it in consciousness."

And he repeats his statement that the object is known in terms of the content presented to the knowing self.

A while back we had the content "clothing" the object "automatically," now we have the object "reflected" in the content. I do not want to descend to mere verbal quibbling, but it seems to me that we have here a confusion between two fundamentally different relations, of objects reflecting themselves into contents, and contents putting their own clothes on objects, of objects taking the initiative and contents taking the initiative, and that this confusion expresses a fundamental ambiguity in the relation, which critical realism has not helped to make clear. And we may ask if the content, after all, has to be presented, why distinguish between it and the object? What presents it? Not the object, for then it would be the content of the object and not a mere instrument of knowing.

"The content has cognitive value."

And this is "a way of saying" that it is

"relevant to the object, that it has a sort of revelatory identity with the object, that it contains its structure, position, and changes."[1]

It is implied that there are characteristics which it does not contain and that those it does contain are not perfectly identical; it has only "a sort of" revelatory identity. Critical realism is very careful not to commit itself too deeply on this question of identity, anyhow

[1] *Knowledge and its Categories* (*Essays in Critical Realism*), p. 200.

we are evidently back again in the old dualism between primary and secondary qualities.

"One flower is white and small, another is blue and large, etc. These differences are rightly taken by all to point to differences in the physical object."[1]

But when we ask "what is the exact nature of this agreement" we are referred to "the total psychological situation."

Now the total psychological situation may tell us pretty plainly that there is correspondence of a sort, that there is even a direct connection between the moving molecules of the causal object and the moving molecules of the physical organism, but it does not and cannot tell us of any sort of identity or even of similarity between content and object. Even if we were to grant that primary and secondary qualities are *not* in the same boat, the utmost possible agreement would be that the structure and position of objects moving or at rest may be supposed really to occupy the same geometrical points of space that they appear to occupy at a given time. Only, even so, the image (or essence) theory saddles us with the insuperable difficulty of objects there in space, and essences (or images) here in consciousness.

And on page two hundred and six we are told, in italics, that

"the critical realist holds that knowledge is a function of the known rather than a peculiar, real relation between the knower and the known."

That is to say, the peculiar real relation between object and content presupposes no sort of relation between either and the knower. And yet it was the knower who "clothed" the object with the subjective qualities of the content, who was related to it as "the poet to his work."

[1] *Knowledge and its Categories* (*Essays in Critical Realism*), p. 202.

The fact is the critical realist is sailing very perilously between realism and idealism. He is trying to get all the advantages of epistemology without its disastrous effects on realism. Critical realism, to do it justice, is only too keenly aware of the danger. Thus Professor Sellars, faced with the obvious dissimilarity between content and object, says

"But we who have given up the sensible physical thing realize that the belief in appearance as a manifestation *like* the physical thing is misleading." [1]

So that, after all, we are no nearer knowing where we are. One moment we are told that the essence of content and object is identical, that the subject clothes the object with the qualities of the data and that in seeing by means of our apparatus of percepts we are really seeing objects (though apparently we may not perceive them); and the next that to talk of mere likeness between object and appearance is misleading.

And again, when it comes to asking plumply and plainly, Are the data mental or non-mental?

"The critical realist agrees with the idealist that the content is mental, but strikes his counter-blow by asserting that knowledge is a claim to know an object in terms of this content. The object is known but not intuited; the content is intuited but not known." [2]

I confess I cannot see how the idealist is hit by this blow, seeing that it is precisely what he asserts himself.

As far as memory is concerned, while the critical realist would, I think, agree with the idealist criticism of the new-realist theory, he is in a curious position. He contends that "the object of memory no longer exists but that the claim and content are elements of the present act." [3]

So that he is left with a content without an object.

[1] *Knowledge and its Categories* (*Essays in Critical Realism*), p. 210.
[2] The same, p. 212.
[3] The same, p. 216.

When it comes to *The Nature of the Datum,* Professor Strong is up to his neck in the familiar incompatibilities. Almost passionately he reiterates that the datum is *not* the physical thing. Therefore the physical thing

"can only be either an intellectual construction made on the basis of data or a real existence brought before us by data." [1]

He objects to the word datum, used so freely by the other critical realists, because "it suggests that the givenness is given along with the thing," in other words, that we intuit givenness, which involves a relation to the self. He wants his datum clean, cut clear from all the fringes of the self, therefore he prefers the word essence alone. There is a purity about essence, it carries no psychological implications. In fact the persistence with which Professor Strong clears away the psychological fringes seems strangely at variance with the conception of the content as "mental," and of the mind as clothing the object with its qualities. To Professor Strong, in the case of a physical object, say, a face, the content is physical in essence but not in existence.[2] Pain and a fit of temper are not, for example, on the same footing as a face. They are frankly psychological. But the content, face, is neither psychological nor physical (except in essence) but logical.[3]

By this time it is clear that this subtle distinction would fairly rule the subject out, if critical realism could make up its mind to this drastic action. At first sight it isn't easy to see how it can deny that the content is psychological and yet assert that it is mental, nor how, if the content is mental in existence, it can

[1] *On the Nature of the Datum* (*Essays in Critical Realism*), pp. 227, 228.
[2] The same, pp. 228, 229.
228, 229.
[3] The same.

prove that the object is physical in existence, nor yet how, still distinguishing between essence and existence, it can prove that the content is physical in essence, since the real nature of the physical object is unknown. Critical realism draws a distinction between what is subjective in the psychological sense and what is subjective in the logical sense. In this latter sense, then, the content is downright subjective.

We may appreciate the dangers which have driven critical realism to its conclusions, but our appreciation cannot blind us to the difficulties they give rise to.

I do not say that the logical essence of a blue jug or of a smell of fried potatoes is a more staggering conception in itself than the logical essence of deity; and I am not denying the reality of logical essences in their proper place, but I do not think that their proper place is where the jug and the smell are, in the world of space and time. On any theory of knowledge or of reality I do not think that logical essences belong in any sense to space and time. I gather that critical realists do not either, and I also gather that Professor Strong does not regard a pain or a fit of temper as a logical essence, and while I can perfectly well see that a pain or a fit of temper may *have* a logical essence out of space and out of time by virtue of which they figure in logical propositions, I cannot see that a blue jug or a smell of fried potatoes can *be* a logical essence, seeing that they are in space and time.

Professor Strong gets over this difficulty by denying that sense-data *are* in space and time, and affirming that only the physical things which the sense-data bring before us are in space and time; and I want to know how he knows this about physical things since his only guarantee is the evidence of data not in space and time? I do not think you could well have any two

classes of entities more hopelessly divided in existence *and* in essence, more hopelessly uncorresponding and unrepresentative of each other than entities in space and time and entities timeless and spaceless. His denial is also in plain contradiction with the evidence of our percepts, which (whatever they may not do) do at least present themselves as in space and do most certainly occur in time. Sense-data may be in flagrant contradiction with each other, they may not agree with any concept of physical nature which science gives us, they may for all we know be sheer hallucinations, yet they do indubitably appear as visibly or tactually extended, or audibly located in space, and as spatially related to each other, and the dates of their appearing and the order of their appearing are indubitably in time, and they are temporally related to each other. And if they were not they would be pretty poor data for realism's affirmation of external reality. Even a pain may be "located," and a fit of temper occurs in time in a definite relation to other events. I simply do not know what Professor Strong means by his assertion that visual data have no spatial relations to each other. Here it is in full:

"the visual data as such are neither here nor there. They have no spatial relations to other possible visual data, but only spatial relations among their own parts—none, in short, that are not at this moment given."[1]

If he means that they are not perceived as visibly related in space to other data not perceived at the moment when they are given, this is not saying that they are not so related to other visual data which are perceived at the same time. My bookcase is to the right of the fireplace and to the left of the door. All the visual content, of various data, which I have before me at this moment appears to me as spatially and tem-

[1] *The Nature of the Datum* (*Essays in Critical Realism*), p. 232.

porally related. Professor Strong says that these data are not so related among themselves as wholes, but only their parts, and I ask him Why not the wholes, where separate wholes can be discerned in one block of consciousness? And I cannot see how he can deny to the whole what he grants to the parts, how a whole whose parts are temporally and spatially related can avoid being itself spatially and temporally related. By far the safer line for him to take would be that logical essences have no parts.

He also denies that they are existences. This follows from denying that they are related in space and time; and the idealist can have no possible objection; in fact, by taking this particular line critical realism is playing very obligingly into his hands.

In order that we may the better realise that a datum is not an existence—and remember, the idealist is not quarrelling with him on this score—Professor Strong insists on the distinction between the datum and "the psychic state which is its vehicle." By the psychic state he means, not the mere psychic fact that we are sensing, but the sense-element, the sensation which we should have supposed to be an element of the sense-datum, but which now appears as a *tertium quid* which is "in time and perhaps space when the data aren't." But as he identifies it with the psychic state it is hard to see how, on his theory, it can be spatial. In fact this appearance of the sense element as a separate psychic entity from the sense-datum, though it clears the character of the logical essences, does not serve to clarify their relations. He argues in effect, that the psychic state "which we have always with us whether we merely feel or whether we perceive" *is* an existent in its own way, but affords no grounds for our assuming the existence of the essence; otherwise

"we should have three existences concerned in sense-perception—the physical thing, the state of our sensibility and the essence"—

This, again, to avoid multiplication and incompatibility of existents.

The example he gives as showing "most clearly the difference between the perceptual essence and the sensation"

"is that of the after-image of the sun projected successively on the thumb-nail, on the wall of the room and on a mountain side."[1]

Because he finds that the after-image itself "retains the same sensible size," he argues that the variation in the size of the objects

"must be something which the after-image has as a symbol but not as a sensible fact."[2]

I am afraid I cannot see the necessity. In the first place I think it may fairly be objected that the after-image "has"n't these sizes, either as symbols or as facts, at all, any more than it "has" the projections on the thumb-nail, the wall and the mountain side. The sizes belong clearly to the projections, and not to the after-image; they and it are on precisely the same footing, and they are in no more peculiar case than the reflection of the sun itself on any distorting, or diminishing medium. We have here in fact some rather special instances of the relativity of size, three sense-data in three different contexts. (Clearly Professor Strong regards the projections as data, since he refers to their "meaning"); and so far from the facts being "difficult to construe on an idealistic hypothesis" I should say they were absolutely damning to Professor Strong's theory that sense-data are not related in space and time. If ever there was a glaring instance of spatial and temporal relations it is the relations of

[1] *The Nature of the Datum, (Essays in Critical Realism)*, pp. 234-235.
[2] The same.

that after-image and its projections. New realism, taking them all to be realities in real time and real space, is in a still more awkward predicament, but this does not make the position a bed of roses for its critics. I do not think the objections to his examples, which Professor Strong brings forward in order to refute them, are very serious objections, but I do think his examples are very serious objections to his theory.

It must be admitted at once that the arguments against critical realism's view of perception do not apply with equal force to its theory of memory. To begin with, space and time are not implicated in the same way. We are dealing with "images" which the theory rightly or wrongly assumes to be spaceless and timeless. This assumption is clean contrary to that of Professor Laird and the new realists who regard a memory as tantamount to a perception with its date in the past. The memory of the critical realists is the old memory-image of tradition reinstated, with a complication owing to the assumption that it is the image of an image, the idea of an idea.

Professor Strong considers that the "idea" which we have before our minds when we remember is

> "distinct from the mental image, visual, auditory or other, by means of which we conceive it; that this mental image alone is a present fact, an existence, and that the idea is the mere character which we conceive the past fact to have, without its existence—in short, an essence."[1]

The idealist has nothing to say against this except that his own alternative theory is not lumbered up with the old machinery of duplicate images. He can take the new realist's view that in memory we indeed perceive the past thing itself in present time. The idealist can do this without telescoping the various "real" times and "real" spaces together in an impossible

[1] *The Nature of the Datum* (*Essays in Critical Realism*), p. 238.

spatio-temporal perspective, because he assumes that his consciousness carries past, present and to some extent future times and spaces with it. Consciousness is itself existent in the form of space and time.

It is precisely in its treatment of space and time that critical realism is most unsatisfactory; while, in its view of primary and secondary qualities it is dragging philosophy back to where Locke left it, and playing, as Locke played, into the hands of the idealism that must come after. It should be given full credit for its dexterity and skill in dodging the traditional incompatibilities, though, as we have seen, its subtlety lands it in troubles of its own.

Its assumptions, in short, are reducible to this absurdity: *We know the reality we can't know by means of knowledge that we haven't got.*

NOTE:—I am not sure that I understand Professor Whitehead's "Method of Extensive Abstraction." I see, of course, how the system of enclosing squares generates the point-instant by converging towards an ideal limit, but not how it generates the series of point-instants. You start with a duration and end with point-instants. To obtain the next point-instant you must, I imagine, slice through the next event and develop another system of Chinese boxes, whose squares will overlap those of the system you started with. But durations are made up of point-instants; therefore each "box" will cover an infinitely greater number of point-instants than it converges to.

IV

THE ANTINOMIES OF SPACE AND TIME

i

In the theory we have just considered the antinomies of Space and Time are supposed to be ruled out and continuity secured intact by a four-dimensional system of space-times or events. These, as we have seen, are symbolized as packed one inside each other, square within square, diminishing, converging to the point, or instant, an ideal minimum or limit which is never reached, and can never be common to all the including durations. That is to say, it will always fall outside the ultimate square. Its perpetual extension beyond the enclosing square of any one duration gives rise to the infinite linear series of instants. Thus serial time is an abstraction from the system of enclosures.

The Antinomies

This linear series with its point-instant correspondence has been held responsible for the antinomies. It is supposed that within each case, the spatial and the temporal respectively, the vicious contradiction of discreteness in continuity is due to time's character of successiveness imported into space, and the passage from next point to next point. The antinomies of Zeno —Achilles and the Tortoise; the Arrow; and the three Processions—are based on this nextness. Achilles cannot overtake the tortoise because, going from next point-instant to next, he cannot possibly cover more than one point at one instant, and the tortoise cannot very well do less. The arrow cannot fly, because going from next point-instant to next, it is stationary *at* each

point *at* each instant. The processions involve a frightful time dilemma. Two of them are moving towards each other past a third procession which is standing still. They can only go from next point-instant to next. There will be a moment when all three will be lined up evenly with each other; but in approaching this position *half* of each moving procession will be lined up with *half* the standing procession in the *half* time of the total movement. Yet in getting there *each* member of the two moving processions will have moved forward one point-instant, thus covering successively *each* point-instant of the whole time, so that the half time will be equal to the whole. There will be more time left over than can be accounted for by the positions in space. On the other hand, let the moving processions be in line with the standing procession at the start and let them depart in opposite directions. At the first instant the first and last members of the moving processions will be in line with each other. At the *second* instant they will be in line with the third member, or next point but one, of the original order. They will each have had to pass the *intermediate* member or point; but there will be no intermediate instant in which they can have done this. There is not enough time to go round.

The antinomies of Kant turn on the discreteness in continuity, the divisibility and indivisibility of space, time and matter, and on their finiteness and infinity. Thus:

The world has a beginning in time and limits in space, because, if it hadn't, an eternity of moments and an infinite series of events must have elapsed up to any given moment or event; the beginning of the world would be such a moment or event, but on the theory of an infinite series it could never happen, since such a

series is never closed. The same thing will hold good of the infinite synthesis of points in space. Therefore the world must have a beginning in time or space.

But the world cannot have a beginning in time and space, because if it had, it would be preceded by an empty time and an empty space, and in empty time it is not possible for anything to happen, since no part of such time would have any determining quality of existence. And the world consists of objects standing in spatial relations to each other, but in such a space it would have no correlate and thus it could not be. Therefore the world has no beginning in space and time.

Again, every concrete substance consists of simple parts, because, if it didn't, supposing you could think away the synthesis, nothing at all would be left; and supposing you can't think away the synthesis, you can't think away the parts which are put together. Therefore every concrete substance consists of simple, indivisible parts.

But no concrete substance can consist of simple indivisible parts, because, if it did, it must consist of as many parts as there are parts of space, and space doesn't consist of simple parts but of spaces. That is to say, if space is infinitely divisible, matter is. Therefore no substance can consist of simple, indivisible parts.

The absolute necessity is laid on us, therefore, of qualifying space, time, and matter by contradictory characteristics in one and the same relation and at one and the same moment. It is not open to us to say that space, time and matter are finite, divisible and discrete at one moment and in one relation, and infinite, indivisible and continuous at another moment or in another relation; for the character of space and time is that all spaces are alike at all times and all times alike

in all spaces;[1] all parts of space being spaces and all parts of time being times, and the relation in question is the relation of those parts and their wholes. Therefore these contradictions are inherent in the very concept of space, time and matter.

ii

Some Modern Solutions

Now Hegel, like Professor Whitehead and Professor Alexander, contended that the antinomies arise from our deplorable habit of abstracting space and time from their context in the cosmic process; only, unlike Professor Alexander and Professor Whitehead, he conceived the cosmic process as the movement of thought in the Triple Dialectic. Thus discreteness and continuity are taken up in the higher concept of Quantity. But as discreteness breaks out again violently in the Quantum, the antinomy can hardly be said to be disposed of. All that the Hegelian dialectic does is to bring its warring elements a stage nearer to the ultimate, all-reconciling peace of consciousness.

And this is a bit too late for physics and for mathematics which have to deal with space and time and matter now. It is too late for realism. To realism the antinomies are peculiarly disastrous. If motion is to be real in a real space and real time, it must not at any stage involve self-contradiction. Therefore modern realists fly to the solution said to be provided by the Cantor-Dedekind definition of the compact series. Nextness, it is supposed, is the sole ground of the contradiction; do away with nextness, define continuity in terms which exclude nextness, and the antinomies are solved. The Cantor-Dedekind definition of the compact series does away, it is said, with nextness.

[1] This would not be so according to the *Principle of Relativity*. But that principle does not touch the antinomies of continuity. So far from solving any of them, it introduces further complications of its own.

Between any two points, or instants, there is an infinity of points or instants.

And I gather that Profesor Whitehead's series of event-particles is similarly compact—compacter, since he stratifies them in four dimensions.

The struggles of various philosophers to get rid of the antinomies are both amusing and instructive. It can only be done by denying flatly the serial character of time, or by distinguishing between *real* time which is qualitative and continuous, and *unreal* time which is quantitative and discrete, in which past, present and future are measured off by the falling of the sand in the hour-glass, by the movement of the shadow on the dial, of the hands on the face of the clock. This is M. Bergson's way. Meanwhile serial time, past, present and future, he calls spurious time, a bastard time which is really spatial. Real time, immeasurable time, is *durée* and it is purely qualitative and non-successive. When we come to Professor Alexander's Space-Time we shall see that it is precisely the time which is spatial which is real, and that pure, non-spatial time is an abstraction and a contradiction; time and space taken apart being discrete, and taken together continuous. But he agrees with Professor Bergson in regarding time as stuffing for the interstices of space, and in denouncing serial time.

Altogether serial time has a bad time of it among vitalists, pragmatists and realists. Professor Montague, one of the least dogmatic of new-realists, will have none of it. Professor Boodin, a pragmatist on a cosmic scale transcending mere human behaviour, will have none of it.

Here is Professor Montague.

He rejects utterly all solutions of the antinomies but two: the "relational" theory and the "punctiform" theory, and in these he finds serious defects. Those

who swear by the relational theory deny that time and space can be thus divided into instants with no duration and points with no extension. They say that these are intellectual abstractions with no real existence, and therefore no grip on real objects given with their motions in perception. Space and time are relations between events. So far Professor Montague is at one with the upholders of the event theory, but he objects to their depreciatory view of points and instants as unreal.

What he calls the punctiform theory is that theory of the compact series which we have been considering, as developed by Mr. Bertrand Russell. According to Professor Montague's view of Mr. Bertrand Russell's view

"The arrow never does move *from* one position *to* the next. It *is at* one position at one instant and it *is at* the 'next' position at the 'next' instant and that is all there is to its motion."[1]

(I think Mr. Bertrand Russell would say it never is at any "next" position at any "next" instant, because in a compact series there is no "nextness," but that it flies along the stretch of the infinite number of points in an infinite number of instants).

Professor Montague does not deny the reality of the points and instants nor their serial character, but he demands, rightly, I think, "a thread to hold them together." And he has hit upon the brilliant idea of a composite theory, the "Double-Aspect" theory, which shall combine the merits of the relational and punctiform views without their defects. And he develops his theory with brilliance. We must have the points; but there is no reason why we should not have the relations too.

[1] Professor W. P. Montague, *The Antinomy and Its Implications for Logical Theory, (Studies in the History of Ideas)*. Columbia University Press, 1918.

"A spatial line truly contains an actual infinity of points, but by themselves those points could never compose the line . . . all points in the series, if they are to constitute a line, must stand to each other in the relation of 'besideness' or 'to-the-right-and-left-of'. . . . Without the points the line could not exist; without the relations between the points they could never constitute a line." [1]

And the same holds good of time.

"Just as the points of space must be related by being beside one another, so the instants of time must be before and after one another. Relations of succession are as truly elements as the instants themselves." [2]

We have, then, the relation of besideness for space and of succession for time, and their correlation for motion.

"A moving body, besides involving a series of point-instant correlations, involves equally a series of beside-succession correlations. The first correlations exhibit motion as a series of occupancies of points through a continuum of instants. The second correlation exhibits motion, as a series, not of occupancies but of *slips* (or from-to relations of transition) which together constitude an uninterrupted and unitary slide." [3]

The occupancy answers to our conception of space-time, and the slide to what is given in perception; and we are supposed to have thus made the best of both worlds.

But *have* we? If we are to give to Cæsar the things that are Cæsar's, the "occupancy" to conceptual space-time, and the "slide" to the space of perception, we are no better off than we were before when we still knew that bodies in actual experience do apparently move in "an uninterrupted and unitary slide," and are not perceived as occupying successive points. To satisfy the requirements of the double aspect theory we ought also to be able to say both that bodies are perceived as occupying in succession the points of the line they move along and are conceived as moving from

[1] *The Antinomy*, p. 245.
[2] The same, p. 246.
[3] The same.

point to point at instant to instant in a slide. So long as points and instants remain discrete—and Professor Montague sees very clearly that the compact series does not do away with their discreteness—you cannot get a continuum out of the relation of besideness and the relation of succession, or the relations of besideness and succession taken together. In either case the relation is only another expression of the discreteness.

This is shown very glaringly in the case of time, and in Professor Montague's answer to the question:

"'If a body at each instant of the time of its motion is in one and only one position in space, when can it move from one position to another?'

"'The body can move from one position to another when one instant succeeds to another'."[1]

Observe that it is the *relation of succession* which is supposed to have done the trick. To the obvious objection, that "when" is itself an affair of instants, Professor Montague replies that

"the time when one instant succeeds to another is a perfectly real time, though it is not itself any instant, just as the 'space where' one point is beside another is a perfectly real space, though it is not itself any point."[2]

It seems to me that there are two bad fallacies here. You cannot draw a distinction between the time when a thing succeeds and a time with instants. If it is a "perfectly real time" it *will* have instants, and if a perfectly real space points, and the antinomy will have broken out again. And how can an object move in the relation of besideness, or the relation of succession? I doubt if even "common sense" would be absurd enough to maintain that "time is made up both of instants that succeed each other and of the succeeding of those instants"; for time is not the succeeding, though

[1] *The Antinomy*, p. 247.
[2] The same.

the succeeding is in time. You cannot treat the relations of space and time as if they were times and spaces. Professor Montague says himself that they are not.

"No more is a relation between two brothers itself a brother. Not even an infinitesimally small brother."[1]

And he does not strengthen his case when he adds that it is "as real a constituent of brotherhood as are the brothers related:" for, in the first place, the relation is not a constituent of brotherhood; it *is* brotherhood, just as succession and besideness are simply succession and besideness; and, in the second place, it is not the reality of succession that is in dispute but the reality of motion through purely serial or successive time. A body moves, if it moves at all, in space and time and not in the relations of besideness and succession. Moreover a body in the relation of besideness is a stationary body.

Professor Boodin's philosophy is based on a kind of inspired physics in which energies and "energy patterns" are the ultimate realities. There are hierarchies among these entities such that the universe may be conceived as a stratified system of energies working on higher and higher levels. The lower strata are not so strictly closed but that, when on any level the special energy of that level has done its work, new energy streams down into it from the next higher level. On this theory the process of evolution is not a simple unfolding from within outward, but a combined movement of impulse downward and inward and of expansion upward and outward. The flooding in of higher energy on to lower levels checks the tendency to degradation of energy on each, and gives the cosmos that series of forward and upward shoves which keeps it going. Thus life enters the inorganic world and con-

[1] *The Antinomy*, p. 247.

sciousness the world of life just in time to save them, respectively, from the degradation and ultimate disappearance of their forms.[1]

In so far as Professor Boodin's pragmatism is on the grand cosmic scale it is fairly safe from the reproach of parochialism. But the high purpose and wide sweep, the brilliance and fascination of his performance must not be allowed to blind us to the inherent inadequacy of pragmatism as a solution of ultimate problems, nor yet to certain defects in his special theory of Time. And it is his theory of Time that more immediately concerns us here.

That theory is so curious and in many respects so original that it should not be overlooked in any survey of the philosophy of Space and Time.[2]

First of all Professor Boodin states the following antinomy of serial time.

"If you assume your time series to be real, then you have the coexistence of an indefinite number of real exclusive moments claiming the same space, for each moment of time claims the whole of concrete perception with its dimensions. But reality cannot be both one and many in the same respect, hence reality becomes impossible."

"But if the time series is regarded as ideal, then we have an indefinite number of descriptions of judgments each exclusive of the other, and each referring to the same reality at the same time. Hence our descriptions or judgments, claiming to be diverse and yet of one reality, in the same respect, are contradictory and truth becomes impossible."

His solution is

"to regard time as non-serial or prior to series, and to regard series as a derivative construction."[3]

There are, I think, several objections to this theory. To begin with, the solution itself involves the contradiction of regarding non-serial time as prior to anything. And if time is not serial in the sense of succes-

[1] *Cosmic Evolution* (Reprinted from the Proceedings of the Aristotelian Society), Vol. XXI.
[2] *Time and Reality, A Realistic Universe.*
[3] *Time and Reality.*

sive, then all Time is one time, one *now*, and the universe stands still. Motion in space will be impossible, because there will be no time for its successions to go into.

Again, Professor Boodin says that

"Space, eternity, the *simul* system of significance, must be considered as derivative in relation to the time process, which ever looks upon itself anew under the same formal limitations." [1]

You may ask how a spatial system is to be derived from constellations of objects which presuppose space? Or how it can be derivative "in relation to the time process" when, "so far from space and time being identical in meaning they are antithetical." If "in relation to" means "in contradistinction from," how can the spatial system be derivative in contradistinction from the time process which was said to be derivative too? And how can a time-*process* be non-serial, non-successive? And a "process which ever looks upon itself anew under the same formal limitations" sounds uncommonly like succession somehow "creeping in."

Again,

"time is the negative property which makes all systems unstable." [2]

This because it reduces them to the past and future, to the ideal constructions of memory and anticipation. But Professor Boodin would not be driven to this view of the instability of all events save the present, if, like a good realist, he regarded memory and anticipation as a perceiving of real objects in a real time, or if, like a good idealist, he brought time with all its events into the one comfortable fold of conscious experience. On either theory both systems are relatively stable; while on a theory of non-serial time the present which he relies on will exist at the expense of the past and future,

[1] *Time and Reality.*
[2] The same.

and the past and future at the expense of the present, in an impossible and suicidal now.

Professor Boodin's correlations of Space-Time are the exact opposite of Professor Alexander's.[1] While Professor Alexander sees time breaking up and dividing space, and space giving its own continuity to time, filling up the gaps in time, Professor Boodin sees space as

"a system of co-existent series, whereas time is non-serial."

Consequently, the function of time is to give continuity (of motion) to space.

" . . . without the negation, or passing of time, space would fall asunder into discrete positions. . . . Time is bound up with the fluent or continuity aspect of our world, whereas space is bound up with the diversity or habit aspect, the serial aspect."[2]

If we choose to admit the necessity of Professor Boodin's view, and the equal necessity of Professor Alexander's, there will be a very neat little antinomy here, too. But I am inclined to think that Professor Alexander has it, and that Professor Boodin's view of time is comparatively private and perverse.

He maintains further that whereas time

"conditions the arising of spatial series, is involved in the *ratio fiendi* of space, space, as a system of relations on the other hand conditions the knowing of time, is the *ratio cognoscendi* of time."[3]

This sounds like a contradiction, but only if we persist in regarding time as serial. If you ask how non-serial time can account for spatial series, the answer is that spatial series are not successive but co-existent. Professor Boodin takes a static view of series; but combined with his view of time as non-successive, it makes motion more impossible than ever.

We shall see how his solving concept of non-serial

[1] See below, pp. 162-213.
[2] *Time and Reality.*
[3] The same.

time works if we examine his theory of time as causality.

As he started with the antinomies of serial time, he now starts with the antinomies of causality. Cause and effect cannot be the same or nothing would happen, you would have one unchanging fact. Cause and effect cannot be different because then they would be two facts, and causality would lie outside them.

Mechanics reduces cause and effect to "static equations of mass and position"; there is no process and therefore no time factor: logic reduces causality to a "sort of static position within the whole." In reciprocity nothing passes, but cause and effect, so to speak, take in each other's washing. We have to assume in causality a mysterious something over and above that somehow does the trick, and which is not cancelled out in the equation.[1]

Professor Boodin asks: "Can time be so completely excluded?" . . . He "cannot agree with Kant that some time sequences are not causal." Does he mean that time is this something over and above? That it "creeps in," dividing cause from effect? Then he is thrown back on his first antinomy.

Again:

"Time is that element in reality which makes all our descriptions relative; and that is precisely what we mean in the last analysis by chance."[2]

It may be questioned whether this is precisely what we mean by relativity. Meanwhile it is clear that Professor Boodin regards time as equivalent to chance.

Time, then, is chance. But

"The concept of causality involves the idea of connection."

It

"implies the concept of habit as well as that of chance or time

[1] *Time and Reality*, pp. 48-53.
[2] The same, p. 54.

. . . such habit or uniformity on the part of nature as realises expectancy."

And behold a new and devastating antinomy:

"Make uniformity or law absolute and the time element vanishes. Causality becomes lost in mechanical reciprocity or ideal system."

Incidentally such uniformity

"makes consciousness . . . impossible. If again you emphasize the chance or time aspect you make any uniformity of law or necessary connection impossible."

His conclusion is not exactly a solution. It is, of course pragmatic, and when did pragmatism solve any ultimate problem? Causality is a relative and approximate affair.

It is good intentioned.

"Causality, to the end, *means* to deal with real process, but it never does."

It

"marks the struggle of the self to synthesize or unify the process of experience."

Thus you have a subjective attempt at unity relating to an objective "process." But why process, and how a unity when time disintegrates the elements of all sequences? And I do not know what Professor Boodin means by that ambiguous word "marks." He says "It" (the self, presumably)

"succeeds in this attempt at unification only at the expense of ignoring the very process aspect of existence which it *means* to explain. Causality thus ceases to be real causality and becomes a timeless category."[1]

This antinomy bursts out again as freedom and necessity, when causality appears in the form of consciousness, of will. And again Professor Boodin throws the weight of his argument into the scale of chance. He identifies freedom with chance and chance with time, because

[1] *Time and Reality*, pp. 53-55.

"Wherever there is real process, where events happen, there we have chance. Time and chance, used in this ultimate sense, are identical."

He goes on:

"Is it true, then, that chance is objective and necessity subjective or *vice versa*? Neither is true. Both are subjective meanings."

Then is causality a subjective meaning that we give to time? How can this be if wherever there is "real" process there we have chance? Or is chance a subjective meaning that we tack on to real process? If so, how about time? If time is chance there is no real time. And, observe, this sense is "ultimate"; we cannot get back of it to something that will restore reality to time. It seems to me that this, to say the least of it, is a very compromising position for a realist. And I don't see how Professor Boodin is to explain it.

In the end there turns out to be a sort of social or pragmatic necessity for necessity (and for chance). Necessity so that the course of nature and of social nature may be predictable. Chance so that experience may not become stereotyped by habit, but that new adjustments may arise.

"Causality thus affords a synthesis of chance and necessity."

This is all very well, but if experience be once tainted with subjectivity at its source, I do not see how any pragmatic explanation can save it for realism. Take uniformity alone. Uniformity is uniformity of sequence and sequence is of events in time. But time is chance and chance is subjective. The new, unexpected events Professor Boodin has already handed over to chance which is time, so where *does* real process come in?

Again:

"Real process and real futurity lie alike outside the field of scientific description,"

so that, so far as necessity and chance relate to future needs and pragmatic readjustments they cannot be scientifically described. We can only say: Present experience being what is is, past events were so made as to be capable of adjustment to this present which was once their future. And at this rate, in spite of uniformity, nothing would be really predictable. We could only prophesy after the event.

All these direful results follow from Professor Boodin's pragmatic inability to make up his mind between realism and idealism. They show—what might have been expected—the insufficiency of pragmatism in dealing with any ultimate category such as time.

The case is worse if we fall back upon Professor Boodin's conclusion that "Time is prior to serial construction"; that "our serial positions are *a posteriori* abstractions, ideal constructions," and that "Process is prior to ideal construction."

How can process be prior to serial positions? How can process proceed without serial positions? If time is not a succeeding, if time is also duration, yet all succession is in time and of time. If time were *all one,* all pure duration, with no serial positions, no instants before and after, events would happen just at any old time, and one time would be as good as another; the same event might be happening all the time, or all events might be happening in any one time; in fact no events would be happening in any sense of sequence which is process. Supposing them to happen at all, nobody would know they would happen, or whether they had happened; events would be unrecognisable and unpredictable. It is not serial time that destroys the uniformity of nature, but time credited with an unnatural duration.

I cannot but think that in identifying time with chance Professor Boodin fails to distinguish between

time and events in time, and that the same confusion underlies his treatment of the antinomy of co-existent simultaneity and succession. He seems to me to be further mixing up one kind of order in space, which is purely simultaneous and static, with the order of events in time and the double order of events in time and space—the occupation of successive positions—which are not only purely successive but owe their successiveness to their time character. The sense in which Professor Boodin holds that all series are static is not, as he thinks, a real but an ideal sense. It is consciousness that keeps the members of a series together, holding down each one in its place, so that all are known as members of a series. A series taking place, whether in consciousness or outside it, is essentially an affair of before and after and in its temporal aspect irreversible; it is Professor Boodin's "process in the making."

Certainly "series and order themselves involve ideal construction and presuppose time as a datum," if by series and order you mean the series and order of events in time. Even the series and order of instants in time presuppose the time of which they are instants, just as the series and order of objects in space presuppose the series and order of their positions. These, again presuppose the space in which they are positions; space-time or point-instants being just as ideal or as real as you choose to take them.

And Professor Boodin's perverse and peculiar theory of time lands him in a still more perverse and peculiar theory of number. He says:

"It is not true that each moment in history includes the significance of the preceding moments in the way each step in the number series includes the previous. Old age does not include childhood and youth in the way that 3 includes 1 or 2. This is due to the fact that the number series is constructed in conformity to voluntary purpose, expresses a formal law of the activity of the self, whereas the concrete historic series involves involuntary elements, must conform to certain objective data. This involuntary and uncertain

aspect of history is due partly to the creeping in of time and partly to the pluralistic character of the world."[1]

You would have thought that if ever there were a construction that bore no earthly relation to voluntary purpose, that was a thing apart, and on any realistic theory utterly apart, from the activity of the self and beyond its control, it was a number series, and that "the way that 3 includes 1 and 2" was a way of iron necessity. You would have thought that, so far from time "creeping in" to upset our calculations, all our calculations (even number itself) were based on the order of instants in time. You would have thought that if there was a series in which voluntary action tended to make most things exciting and uncertain it was the historic series; and that if anything tended to subdue this excitement and correct this uncertainty it was the creeping in of time. I do not know the whence and whither of my existence; but I do know that within its mortal time limit the indubitable certainties are dates; all past and present and some future dates. I do not know whether I shall make this book three hundred or three hundred and fifty pages long, nor whether anybody will be rash enough to publish it, but I do know that if my present time rate and time length of writing continue I shall finish it in time for publication in the autumn. I know how much time will elapse between certain events, for example, my departure from King's Cross and my arrival at Edinburgh. I know that, short of unforeseen catastrophe, I shall breakfast at nine o'clock tomorrow, and that, even if unforeseen catastrophe arises, time will have no more to do with it than to fix its date and thus render its uncertainty certain. You may even say it is just this element of temporal succession, of ruthless before and after, that in time reveals the necessity of events. I

[1] *Time and Reality*, p. 34.

can go forwards and backwards in time, and my memories and anticipations will be precise and certain, very much according to the precision and certainty of the time element in them. Thus time confers fully as much certainty on experience as space.

True, an unknown future event will have to happen, if it happens at all, at some moment in time uncertified; but it will also probably have to happen in uncertified space too, so that space will, so far, be every bit as chancey. (Chancier; for not all events that happen need happen in space, though they must happen in time. And this spatial consideration makes it clear that chance refers to events and existences themselves and not to time.) True, the screen of time separates and conceals from us the face of future events; true, the unforeseen comes out of time like a bolt from the blue; but it is not time but some other unseen complex of events that shoots the bolt. Chance is not in any sense causal, it is a name for our ignorance of connections and sequences, just as necessity is a name for our ignorance of conditions. Though temporary, it is no more temporal than a bishop's blasphemy or any other unlooked-for happening in time. I do not think that any antinomy is solved by denying the serial character of time taken in itself, or by calling time "chance" and "absolute, dynamic non-being." This view leads ultimately to the denial of all truth and to the pragmatic criterion.

"This absolute non-being is forced upon us, we have seen, by the instability of our universe, including the universe of truth; it is invented to account for passing away and novelty . . . we need a negative property, as well as a positive property to make change possible."

I think it is Professor Boodin who has forced on himself and invented the absolute non-being of time, through his refusal to admit consciousness as the con-

tinuum of time. Rather than face the dismal consequences he is driven to his pragmatic theory of truth:

> "its dependence upon the larger demands for life, and its subordination, if need be, to this demand."

We shall see that another deduction can be drawn from the analysis of space-time: whatever else truth may be, it *is* truth and independent of life and our demand.

iii

The Compact Series Considered

Professor Boodin's theory, so far from affording a solution, leaves us with the antinomies in all their nakedness on our hands. We are still haunted by the ghost of serial time.

That ghost, Mr. Bertrand Russell says, has been laid by the Cantor-Dedekind definition of the compact series, the infinite continuum.

Let us look again at this definition, undeterred by its mathematical prestige, and see whether it really does provide an unbroken continuum, such as would solve the Kantian antinomies and enable Zeno's processions to meet, his arrow to fly, and his Achilles to overtake the tortoise.

Between any two points in space or any two instants in time there is an infinite number of points or instants.

The "catch" of the antinomies, we remember, lay in the relation of "nextness" in the point-instant correspondence. No possible increase of velocity will take you farther than the next point at one instant, or quicker than one instant to the next point; so that there can be no movement, swift or slow, only a disconnected series of stations at points. There cannot even be successive occupations of points in the series, since the disconnection is such that between points there is no space, and between instants no time; there is nothing to bridge the gaps.

Now the Cantor-Dedekind definition does away with nextness. If between points A and B there is an infinite number of points, if between instants A′ and B′ there is an infinite number of instants, B and A and A′ and B′ will not respectively be next each other; and if you say the same of any two points, no two points will ever be next each other. You have bridged the gap between the finites with infinity. You can do the same with event-particles and so ensure, on Professor Whitehead's theory, the continuity of events.

At first sight I admit it looks as if the compact series *had* done the trick, and as if the definition excluded contradiction. Certainly you will never get anything closer than space and time packed with all those infinities of points and instants. And so long as you fix your attention on the points and instants, without considering their relations and conditions, you cannot escape this conclusion.

As a matter of fact you have only exchanged the relation of nextness for the relation of betweenness (if indeed you have got rid of it at all), and a definite condition, the existence of A and B, or A′ and B′, for an indefinite one, any two points or any two instants.

If there is no betweenness you cannot shovel in your infinities; betweenness constitutes as definite a gap as nextness, and for every two points or instants or event-particles you will have an infinity of betweennesses; that is to say, you have not avoided discreteness, you have still just as much discreteness as continuity.

Nor will you really have avoided nextness. To be sure, a definite A and B, or P and Q, or V and W will no longer be next each other, but some indefinite point-instant x will still be next *some* indefinite point-instant y, and by raising their number to infinity you have only multiplied nextness and discreteness. And there is another fatal property of the compact series. It

excludes infinitesimals. You cannot therefore say that you are approaching any point by distances infinitely small; the idea of quantitative, measurable distance is ruled out, and with it the idea of any approximate continuity. Between any two points or instants you have all those infinities of points or instants.

So mark what happens. In the case of Achilles, instead of a simple contradiction you have a dilemma. Achilles will still be unable to overtake the tortoise because of nextness camouflaged as betweenness; neither will he be able to get from point A to B in instants A′ and B′ at all, because A is divided from B by an infinite number of points and A′ and B′ by an infinite number of instants. To say that he can do it in an infinite number of instants means that he can never actually do it. Neither can the tortoise, so that, once start them moving, Achilles and the tortoise can never, never stop.

But—here is the dilemma—neither can they start; for an infinite number of points removes their indefinite starting point x from that indefinite point y which would be the first step in their progress if progress there could be. And as their starting point x is similarly removed from any preceding point w they never can have moved at all, but must have existed and must continue to exist on x throughout all eternity, and goodness only knows how they got there.

The same things will apply to the movements of the arrow and the processions, and to the event-particles of Professor Whitehead's world. And the Kantian antinomies will remain unsolved, though they must be stated in a slightly different form.

Thus: The world has a beginning in space and time, because if it hadn't it would be separated from any point-instant here and now by an infinite number of

spaces and of times and could have no existence at any one point-instant.

The world has neither beginning nor end in space and time because, if it had, at any point-instant here and now it would be separated from its end and its beginning by an infinite number of spaces and an infinite number of times.

By far the nearest approach to a solution is provided by Professor Alexander's correlations of Space-Time. But Professor Alexander's theory requires a long chapter to itself.

NOTE:—Professor Boodin's theory of Time is only a small part of his brilliant contributions to evolutionary realism. It should be clearly understood that his general theory does not stand or fall by it, and cannot be touched by any criticisms of this point alone.

V

SPACE, TIME AND DEITY

i

Space-Time

I do not see why the devout idealist should not conceive an admiration for Professor Boodin's theory of evolution, nor admit the momentary temptation to surrender to Professor Whitehead and wallow in the comfort of his concept of nature. Elsewhere I have spoken of the irresistible fascination of Mr. Bertrand Russell's pluralistic realism and confessed to something like remorse for certain inevitable disagreements with Professor Bergson and William James. I am increasingly aware of the risks which attend this adventure of attacking new realism. Even now I cannot get over my fear that Professor Whitehead's mathematics may yet do something to me that I shouldn't like.

I do not feel, in precisely the same way, that Professor Alexander may be concealing himself in the Fourth Dimension with a deadly battery of equations; and yet, the idealist who sets out to refute him stands in even greater danger of being converted to realism. At moments, for example, when he is exhibiting the correlations of Space-Time or the stupendous unfolding of his Deity, you are almost overwhelmed by the temptation to forsake all and follow him. Not because of any comfort that he gives you. The encounter with *Space, Time and Deity* is the most thoroughly uncomfortable, the most upsetting and dislocating experience that the devotee of idealism could well undergo. There

has been nothing like it since the outbreak of Kant's *Critique of Pure Reason,* nothing to compare with Professor Alexander's work but the work of the greatest system-makers. Of Spinoza. Of Kant. Of Hegel.

For this is the first time in the history of philosophy that realism has got itself built into a system. Mr. Bertrand Russell has given us brilliant essays in realism. So have Dr. Moore and Professor Broad. We owe it to Professor Whitehead that the Prolegomena to any future metaphysics have been settled with scientific authority and precision. These four have done more to set realism going than any living philosopher beside Professor Alexander; but they have not aimed at building realism up into a great system. And Professor Alexander's is a great and very perfect system, close-linked, creating an almost perfect illusion of inevitableness, and, as a sheer piece of philosophic architecture, exquisite in its proportions. It is all one; solid block on solid block; no untidy excrescences that refuse to fall into line. When you have got over the incredible surprise of it, the psychological effect is one of almost complete intellectual satisfaction. Professor Alexander knows how to convey the passion of its metaphysical adventure. He has passages that fairly vibrate. And it is hard even for the devotee of idealism to resist his appeal. *Space, Time and Deity* is a new and beautiful thing in philosophy; hence the absorbing interest and the excitement.

It is, unlike other realisms, a philosophy of evolution, while it agrees with all of them in keeping mind out of the essential process. Professor Alexander denies that mind is in any way an ultimate or a unique reality. Half the interest and excitement come from wondering how on earth he is going to get along without it. For, again unlike many realists, Professor Alexander does more than merely affirm that the world

exists independently of mind and, up to the actual appearance of consciousness, has been evolved without it. He is not content with the affirmation, the assurance that it is so, nor with the irresistible feeling that it must be so, nor yet with the pragmatic belief that it is right for life and conduct that it should be so. Most realists fight very shy of explaining in detail how it actually came to be so. Even Professor Whitehead's constructions begin and end with four-dimensional geometry. But Professor Alexander shows us the process as it may be supposed to have actually happened. He builds his universe, or rather, he records its building, from the simplest elements up to the moment of mind's emergence on the scene and after. For, henceforth, mind is not to be kept out; it takes its part as one, though only one bit of the whole complex.

The simplest, ultimate elements are Space and Time. To these all things, life and mind included, are reducible "without residue." Not to Space and Time as separate entities, but to Space and Time taken together. For Space and Time are not really two entities, but two aspects of one entity. Space and Time by themselves are unreal abstractions from the one indivisible reality which is Space-Time. Space-Time is the *a priori* stuff from which all things are made, the universal "matrix" in which matter "crystallises" and from which, when it has reached a certain appropriate complexity, the empirical qualities emerge; to be followed in their turn, when they too are suitably compounded, first by life, then by consciousness. Within the one reality of Space-Time, Time is the "restless element" which drives Space to generation. "The world is begotten by Time out of Space." Matter is Space crystallised, and Time is its motion, and its motion, again, is generation. It is the "restlessness of Time" which causes new things, empirical

quality, and life, and mind or spirit to emerge. And the process does not end here. Time's restlessness, which is infinite, sweeps mind and spirit onward till their new complexity breaks out in the form of Deity, which is a new thing, not mind or spirit or consciousness, but higher than they; it causes Deity itself to flower in forms of higher and higher perfection. In this process Deity is evermore ahead, and the world, with its accomplished forms, evermore behind. So that Deity is and remains a "nisus," a perpetual straining for perfection, an everlastingly unrealised ideal.

Now at first sight it looks as if the theory provided at least three opportunities for the idealist to put his foot down and protest that such things cannot be. You cannot, except by some miracle, conjure quality out of "unqualitied" matter, nor life out of non-living matter, nor consciousness out of unconsciousness, to say nothing of non-spiritual Deity out of spirit. But I think if you have once given in to the initial assumption of the crystallisation of matter from pure immaterial Space-Time, you need hardly cavil at the rest. Once grant that initial assumption and the rest of the system is a matter of such careful dovetailing that the idealist will find it hard to get his knife in anywhere and prize it open. I do think that the alleged emergence of quality or life or mind *is* miraculous, but I do not think it is more miraculous than the emergence of matter from pure Space-Time. The whole system is founded on the correlations of Time and Space so that there is no way of upsetting it unless you can first of all show that if you assume *nothing but* Space-Time these correlations are impossible. You have, in short, to restore the antinomies, if you can. And I think you can. I do not say that the theory cannot be refuted on the higher levels, but this will not be the shortest or the surest way. That its vulnerable points lie round

about the alleged continuity is shown by the care Professor Alexander has taken to safeguard this issue.

Observe that the whole process, which ends, or rather, never does end, in Deity, begins with pure Space-Time.[1] We start on a level where even matter and motion are not yet. Obviously, if Space and Time contain insoluble contradictions it will be impossible to evolve out of them a real universe. So, first of all, Professor Alexander has to solve the antinomies of Space and Time.

They arise, he maintains, only if we take Space and Time separately, and are solved if we take them, as they *are* in experience, together. We have to realise

"that Space is in its very nature temporal and Time spatial."[2]

" . . . Now if Time existed in complete independence and of its own right there could be no continuity in it. . . . If it were nothing more than bare Time it would consist of perishing instants. Instead of a continuous Time, there would be nothing more than an instant, a now, which was perpetually being renewed. But Time would then be for itself and for an observer a mere now, and would contain neither earlier nor later."[3]

You would have thought that whatever it might be for itself, for an observer with all his faculties Time would not be a mere now, but that (assuming the possibility of an observer of pure Time) earlier and later, past and present, would be held together in his memory and the future with them in his anticipation. But no; Professor Alexander says that memory will not help us here.

"For memory cannot tell us that events were connected which have never been together."[4]

To be sure, in actual experience the observer always

[1] "Now in order to examine empirically what Space and Time are, it is necessary to consider them by themselves in abstraction from the bodies and events that occupy them, . . ." *Space, Time and Deity*, Vol. I, p. 37.

[2] The same, p. 44.

[3] The same, p. 45.

[4] The same.

has a background of Space to mark Time off against, as it were; but, since a mere background may be conceived as existing independently of Time, I take it that Professor Alexander means considerably more than that if Time is to be spatial. And he is in fact assuming the possibility of a pure Time without any observer. We shall see whether taking Space as Time without consciousness or memory removes these difficulties. Meanwhile, observe that Time and Space are at any rate together in perception and are only divided by an intellectual process of abstraction.

Again,

"If, therefore, the past instant is not to be lost as it otherwise would be, or rather since this is not the case in fact, there must needs be some continuum other than Time which can secure and sustain the togetherness of past and present, of earlier and later. . . . This other form of being is Space." [1]

The same thing holds good of Space. Space without Time would be a mere blank. In such a Space there would be no distinction of parts, no distinct bodies and no motion of bodies.

"For Space taken by itself in its distinctive character of a whole of co-existence has no distinction of parts. As Time in so far as it was temporal became a mere 'now,' so Space so far as merely spatial becomes a blank. . . . There must therefore be some form of existence, some entity not itself spatial, which distinguishes and separates the parts of Space. This other form of existence is Time." [2]

As it was Space that, enduring throughout all the instants of Time, united them in a continuum of time, so Time, that cuts across this blankness of Space, divides it up into spaces. It is Time that drives Space on to connect with other spaces in a continuity, yet it is also Time which breaks up Space and makes it infinitely divisible. We are to understand that Space

[1] *Space, Time and Deity*, Vol. I, p. 46.
[2] The same, p. 47.

"holds down" the moments of Time as they pass, and keeps the past and future together with the present.[1]

But does it? For all its spaciousness Space cannot hold down more instants than one at a time. The past has gone from it, its grip on the future has not yet begun.

Nor should we give in too readily to the statement that Space as pure coexistence has no distinction of parts. Coexistence is juxtaposition of points, and I cannot see how its points are to be conjured away from Space in the mere absence of Time. Only when you begin to move about among them can you talk of Time discriminating the points of Space, which after all only means that it takes time to get from one point to another. But getting from one point to another is the very opposite of coexisting, inasmuch as a point can only occupy one position at a time.

Let us go back to Space-Time.

"Without Space there would be no connection in Time. Without Time there would be no points to connect."[2]

Not only no discrimination of points, you see, but no points to discriminate. So much for coexistence in Space.

"It follows that there is no instant of time without a position in Space and no point of Space without an instant of Time. I shall say that a point occurs at an instant and that an instant occupies a point. There are only point-instants or pure events. In like manner there is no mere Space or mere Time, but only Space-Time or Time-Space."[3]

But this conception is purely provisional. If there were nothing but this one-to-one, point-instant correspondence, both Time and Space would be broken up and be neither successive nor continuous. There would be nothing but a point now, and a point now, and a

[1] *Space, Time and Deity*, Vol. I, p. 258.
[2] The same, p. 48.
[3] The same.

point now, without relation or connection, both perishing as they were born.

"If the point corresponded uniquely to the instant it would share the character of the instant and Space would cease to be the Space we know."[1]

For, on Professor Alexander's view it is the permanence of the point, its "repetition" throughout many instants which secures it from "perishing" utterly. Its self-identical presence at this moment is the witness to the moment which has passed.

This is evident; but I do not find it quite so easy to follow Professor Alexander when he goes on to argue that if the instant corresponded uniquely to the point, if it never occupied more than one point,

"Time would share the character of Space, be infected with bare blank extendedness, would in fact be mere extension and cease to be the Time we know, which is duration in succession. In order that it should be in its own nature successive and so be able to discriminate points in Space, the instant of Time must be repeated in or occupy more points than one."[2]

Surely it is the other way about. It is just this occupying by one instant of more points than one which gives extension or spaciousness to Time, and in this spaciousness its successiveness or time character is lost; for every one instant will cover many points, in fact every one instant will cover all the space there is. And if we could really tie up pure Time with pure Space there would be no successiveness of Time. Either Time must have an instant to instant movement of its own which is not conferred on it by Space, or it must exist purely in relation to events; for example, to the movements of bodies from point to point in Space.

(It must be noted that in dealing with the more complex spatio-temporal relations, for example, the

[1] *Space, Time and Deity*, Vol. I, p. 49.
[2] The same, p. 50.

relations of the dimensions of Space, Professor Alexander has shown triumphantly the mutual interdependence of Space and Time. The whole of this exposition is masterly and should not be missed.)[1]

But there are further and more exciting implications.

"Space must be regarded as generated in Time, or, if the expression be preferred, by Time. For Time is the source of movement. Space may then be imaged as the trail of Time, so long as it is remembered that there could be no Time without a Space in which its trail is left."[2]

Now, how *can* Time generate Space if Space is essential to and coexistent with it? In this case there cannot be Time first and then Space. And indeed Professor Alexander presently abandons this notion of generation.

"To suppose that Time generates new Space is to neglect the infinity of Time (and indeed of Space)."[3]

And to suppose that Time has generated old Space is to suppose a previously existing Time. To avoid this difficulty Professor Alexander flies to the theory of displacement and re-distribution in Space-Time. Thus:

"In a line of advance *c b a* we have the displacement of the present from c through b to a. . . . This is the meaning of motion. Points do not of course move in the system of points, but they change their time coefficient. What we ordinarily call motion of a body is the occupation by that body of points which successively become present, so that at each stage the points traversed have different time values when the line of motion is taken as a whole. . . ."[4]

"In this way we conceive of growth in Time or the history of the Universe as a whole, or any part of it, as a continuous redistribution of instants of Time among points of Space. There is no new Space to be generated as Time goes on, but within the whole of Space or the part of it the instants of Time are differently arranged, so that points become different point instants, and instants also become different point-instants."[5]

[1] See Appendix II, pp. 315-317.
[2] *Space, Time and Deity,* Vol. I, p. 61.
[3] The same, p. 62.
[4] The same, p. 61.
[5] The same, p. 63.

Now we see how it is that Time gives its values to the points of Space, how it discriminates and introduces diversity into that blankness. It does not do this of itself, as Professor Alexander's theory assumes, but only through a body in motion. It is *to the body in motion* that points successively become present; and surely it is the body in motion that by its successive occupation of points, by the fact that it is now here, now there, its inability to occupy more than one point at one instant—surely it is this behaviour and this character of bodies that confers their time value on the points?

Points do not move in the system of points. Left to themselves, they are all present at every successive instant; when a body occupies a new position it leaves its old position behind it, and we have that existence of "all Space at an instant" which Professor Alexander denies.

And as a matter of fact, when it comes to total Space-Time, which is divided up, not in perspectives, that is to say, in times which stretch over other times and spaces which stretch over other spaces, but in sections which take a clean cut through Time and Space, we indeed arrive at all Space at an instant, or all Time at a point.

Professor Alexander denies that these sections

> "represent what the world of Space-Time is historically or at any one moment. For at any moment of its real history Space is not all of one date and Time is not all at one point." [1]

He says that all Space at an instant and all Time at a point are got by "arbitrary selection from the infinite rearrangements of instants among points."

I do not understand this. I can of course see why the clean cut at any one instant should represent all Space at an instant, and the clean cut at any one point

[1] *Space, Time and Deity*, Vol. I, p. 81.

should represent all Time at a point, and that neither should represent all Space-Time, since all Space is not at one point nor all Time at one instant; but it seems to me that *for* the instant, *at* the instant all Space and all events occurring at the instant will be truly and "historically" represented. That is to say, the history of the instant will be the history of all events occurring "then," the events will be truly and historically "there." True, this language is misleading so far as "history" implies a past as well as a present; in this sense we must not say that history is represented. But the total fact, the whole coexistent complex of instantaneous events is represented, and this is all we mean by all Space at an instant or through any given duration.

Similarly the one point will be truly and historically one event enduring throughout all Time, and I cannot conceive why a section should be a more "arbitrary" selection than a perspective. On the contrary, when we are "within the region of Space-Time pure and simple, before qualitied events like the fall of a tree or the birth of a flower, or the existence of complex percipients like plants or ourselves," the section is the only selection we are justified in making, or for the matter of that, which can well be made. The perspective, on the contrary, must needs be an affair of "qualitied events," of events perceived from different standpoints in the process of becoming, events distinguished as earlier or later, events, that is to say, selected from the context of experience. All our perceptual experience is on this level and of this nature, but the ultimate analysis of Space-Time is not on the level of our perceptual experience. And our choice of any particular section will only be arbitrary in the sense that one section will be as good for our purpose as another. The purely spatial and temporal differ-

ence between a section and a perspective is that a perspective involves a finite stretch of Space, an extension, correlated with a finite stretch of Time, a duration. This correlation will of course not itself be arbitrary, inasmuch as the place of events in time through any given perspective will be determined strictly by the places and times of preceding or simultaneous events constituting the irreversible process of nature. But the same thing will hold good of the order of pure point-instants. And our choice of any particular perspective, or correlated chunk of Space-Time, will be every bit as arbitrary as our choice of a section.

And you will not have ruled out the existence of all Space at an instant, or of all Time at a point. You can only say that all qualitied events cannot happen at an instant, nor can any one qualitied event continue in the same quality through all instants of time. You will not have solved the antinomies of Space and Time nor altered their essential character; you will only have introduced the characters of other entities beside Space and Time. On the lowest level of qualitied events matter and motion will themselves be "infected" with their contradictions.

We have already considered the antinomies of Space and Time taken separately. But Space-Time itself gives rise to an antinomy. And the antinomy of Space-Time is this:

One instant of Time covers all the points of Space. That is to say, all the points of Space will be repeated, will occur all over again at each successive instant of Time. Thus Time, so far from receiving continuity from Space will poison all Space with the successiveness of repetition. In the same way, any one point covered by all instants will be indistinguishable in its time character from any other point equally covered

by all instants, and any instant will be indistinguishable in its space character from any other instant, since all instants cover all Space; so that, so far from Time discriminating between points, it only interferes to confuse them and will be itself corrupted with the indeterminateness of Space.

Introduce motion into your complex of point-instants, and you set up the old point-instant correspondence with its antinomies of discontinuity.

Take the total of Space-Time, Space-Time that was and is and is to be, and you will indeed have all Space covering all Time, and all Time covering all Space; but, if this mutual covering is to be conceived as a complete fit, Time must lose its time character of succession, it will be what Space is, an eternal "now"; and Space must lose its space character of eternal presence and become what Time is, succession for ever and ever. And within this total, at any point or any one instant, there will be an infinite number of points at one instant and an infinite number of instants at one point. That is to say, at any one point or any one instant you will have parts unequal to each other which yet in the whole of Space-Time are equal to each other and to the whole. To every other relation of whole and part the time factor is indifferent, but here it figures as itself a term in the relation, an amphibious term which stands now for a whole covering all Space and now as a part in the whole of Space-Time. And Space will be equally amphibious.

Professor Alexander tries, very dexterously, to dodge these antinomies by avoiding the complete fit and setting up within his system of Space-Time a system of unequal dates. He has got to show that all Space and all Time are not contemporaneous within the total, and that one instant is not and cannot be contemporary with all points, nor one point with all

instants. In order to do this, however, he has to forsake pure Space-Time, and introduce, as it were surreptitiously, "qualitied events," of the kind that intersect and overlap, events which in one Space-Time will be of different dates; for example, the rings of a tree which mark in space its successive ages in time, its past thus overlapping into its present and causing a redistribution of instants in space. Similarly, the movement of bodies through space will cause a corresponding redistribution of points in time. For the body which when stationary will occupy but one point in successive times will now be occupying many points in succession. Moreover, events have the accommodating property of occupying each other's time, though no two of them can occupy each other's space. This dovetailing of events is taken as constituting a continuity or packing in Space-Time.

But *does* it constitute a continuity? Will even the carefully chosen overlapping of events in Time constitute a continuity in Space-Time?

Take two series of unequal and overlapping dates. Let a series of passing events A, C, E, G, cover the instants 1, 3, 5, 7, respectively; and a series of passing events, B, D, F, cover the intermediate instants 2, 4, 6, respectively. Each instant will be duly and properly covered by an event.

Now, if event A is not to be succeeded by event C until instant 3, it will have had to overlap, that is to say, to endure throughout B's instant, 2. And if B is not to be succeeded by D until instant 4, it will have to overlap C's instant, 3. And the same will hold good of the other events and instants. And at first sight it looks as if this ensured continuity.

But, though A has endured throughout instants 1 and 2, and B throughout instants 2 and 3, and C throughout instants 3 and 4, D throughout instants

4 and 5, E throughout instants 5 and 6, and F throughout instants 6 and 7, yet each event ends with its second instant and is succeeded by another event which ends with *its* second instant. Besides, if the instants are to have a definite end and a definite beginning—and they must have if definite dates are to be assigned to definite events, if events are to be calculable—then there will be a repetition or re-birth of A at instant 2. (You can only avoid it by running the instants together, which in perceptual experience is precisely what you do do.) And if the instants divide events into event-particles, the same will hold good of the event-particles.

Again, Professor Alexander gets his continuity by regarding Time as essentially Space, and Space as essentially Time. Space-Time is a more profound and intimate affair than mere relation; it is an affair of identity. But does the unity manifestly conferred on them by their relations amount to identity of being? Can it be truly said that Space and Time are one in this sense?

When we say that any instant covers all space, this does not mean that the instant is really stretched out into Space, that it has the same spatial extension as space and that "while" has the meaning of "where," only that all points of Space are present *at* an instant. All Space has this instantaneous character. So far from Time giving continuity to Space, Time, as we have seen, brings into Space its own successiveness and discontinuity. As it is all Space that is repeated in Time, there will be no space between repetitions, that is to say, between instants. Or take Space filled with matter in motion; here again Time splits up Space-Time into point-instants. Professor Alexander calls this "discriminating" the points in Space, as if with-

out Time, or without motion from point to point, they would not discriminate each other. But quite apart from Time, Space is pure juxtaposition; that is to say, points are already discriminated by their positions—they *are* positions—without the aid of Time.

And from Professor Alexander's theory of change as an empirical quality and not a category I think it follows that Space-Time is not directly implicated in change. I mean that change, if qualitative, can only take place at a higher level than that of pure Space-Time; it comes, with the qualitied events of varying ages, too late to help us.

Therefore, I repeat, I cannot see how we are to get over the difficulty of those successive re-births of Space at each successive instant by this simple device of redistributing points among different dates. True, redistribution is an empirical fact. The all-Space of the present instant has not the same configuration or filling as the all-Space of the past or of the future instant, seeing that new spatial events are arising all the time from instant to instant. There has been movement, growth, appearance, disappearance, reappearance of forms, in a word, change. But we must not think of change as the movement of Space-Time itself. There is properly no movement of Space-Time beyond the succession of its instants. The redistribution, therefore, is not a redistribution of point-instants, but a redistribution of events, or bodies in motion, occupying various points at various dates, or of qualities exemplifying various ages of the same substance (the rings on Professor Alexander's tree). But these changes or redistributions of quality will have precisely that empirical character which Space-Time itself has not. There is no use calling in an empirical quality to help an *a priori* reality in distress.

Redistribution of events (or qualities), then, comes too late to save all Space from the successiveness of its repetitions in Time.

You may perhaps say that to ensure continuity all Time, past, present and future, must be taken together with all Space, so that there may be no spaceless outstanding Time, no timeless outstanding Space. But on the theory this is impossible. It is only in the mind, in mind's memory and anticipation that past and future can be taken together, and on the theory Space-Time is outside and independent of mind; it is what it is in and by itself, without any gratuitous mental contributions. And, apart from the anticipating mind, future time has not happened yet, and past time has happened and has passed. You may say that past time at any rate *has* happened, and it has left the trail of its events on all events here and now; but in the nature of the case future time cannot affect the present otherwise than through the mind. Let alone that if it were not for memory, for recognition, there would be no trail of the past for our perception, but every element of every present event would be strangely new. But memory, so important for perception, does not touch the Space-Time problem as anticipation does. On the theory, the past *has* happened, memory or no memory; equally, on the theory, the future, as such, does not exist, and as providing for all Space-Time, never will. In this respect Time is at a disadvantage compared with Space which can be all at an instant; so great a disadvantage that on the face of it it is hard to see how Time and Space can be taken together as identical. There is nothing in Space which corresponds with this non-present existence of future Time.

ii

Further difficulties present themselves when we consider the categories as arising from Space-Time only. The Categories

The categories are:

Identity, Diversity and Existence,
Universal, Particular and Individual,
Relation,
Order,
Substance, Causality, Reciprocity,
Quantity and Intensity,
Whole and Parts, Number, and
Motion.

You will observe one glaring omission. It is not a printer's error. Quality has been left out on purpose. Quality, Professor Alexander says, is not a category. And we shall presently see the reasons for this singular exclusion.

All the categories are said to be ultimately reducible to terms of Space-Time.

. . . "the categories prove upon examination to be fundamental properties or determinations of Space-Time itself, not taken as a whole, but in every portion of it. They belong to all existents because, if our hypothesis is sound, existents are in the end, and in their simplest terms, differentiations of Space-Time, the complexes of events generated within that matrix."

. . . "The categories are, as it were, begotten by Time on Space." [1]

Identity, Diversity and Existence come first, and at first sight they are plainly reducible.

"Self-identity of anything is its occupation of a space-time. Diversity is the occupation of another space-time." [2]

"Bare being is . . . simple occupancy of a space-time,"

and

[1] *Space, Time and Deity*, Vol. I, p. 189.
[2] The same, p. 194.

. . . "occupancy of a space-time is *ipso facto* exclusion of other space-times." [1]

This is all very well but, obviously, it can only be true of the being of things in Space-Time. However, it is no use pressing this point in this connection, as Professor Alexander does not admit that there *are* any things not in Space-Time.

But he goes on. He takes a big jump clean out of the category and lands in qualitied existence.

"Not-white is the character which excludes or is different from white."

But not-white excludes white, not as occupying another space-time but as occupying another class. It may be empirically true that a not-white thing cannot occupy the same space-time as a white thing (or as any other spatio-temporal existent), but this is not the ground of the exclusion. The exclusion is from the class of whites and not from their space-times. But we must not anticipate the discussion of quality.

Let us pass to the Universal and Particular.

The problem of every theory of universals is how to secure to individuals their individuality, their embodiment of the universal, here and now. Professor Alexander maintains that it is provided by his doctrine of the universal as a spatio-temporal constitutive plan or habit which persists in the individual as such. The individual repeats the plan and all repetition is of Space-Time. Universals

"are habits of Space-Time, and empirical universals like dog or tree or justice are possible because Space-Time is uniform and behaves therefore on plans which are undistorted by differences of place and time." [2]

"They may be called patterns of configuration or, to use the old Greek word, 'forms' of Space-Time." [3]

[1] *Space, Time and Deity*, Vol. I, p. 199.
[2] The same, p. 213.
[3] The same, pp. 214-215.

There will be no highest universal, because there is nothing higher than Space-Time, and Space-Time is not a universal, it is not even a category; it is the stuff from which universals and categories are made.

"Universality is therefore a category or determination of Space-Time. Every finite possesses universality or identity of kind in so far as it admits without distortion of repetition in Space-Time, that is, can itself undergo change of place or time or both without alteration, or can be replaced by some other finite." [1]

In other words, universality is a determination of Space-Time because it is absolutely indifferent to Space-Time and Space-Time to it.

"Universality is . . . begotten like the other categories by Time on Space." [2]

This because of its bare repetition, and all the repetition in the world will not in itself give universality. The universal implies the quality of *sameness*. It is, indeed, above all and before all, purely qualitative. Even if the universal could find itself in Space-Time (and this is disputable), it would not therefore be constituted by it or derivable from it or reducible to it. To say this is to confuse it with the succession of particulars, to make it many; whereas the universal is the one in the many.

Professor Alexander sees very clearly the difficulty of conceiving the relation of the universal to its particulars. He says:

"Half the difficulty, or perhaps all of it disappears when once it is admitted that particulars are complexes of Space-Time and belong therefore to the same order and are of the same stuff as the universals which are plans of "Space-Time." [3]

You would have said that this was precisely where the difficulty would begin. Let alone that all universals are not plans of Space-Time—for beauty, truth, justice

[1] *Space, Time and Deity*, Vol. I, p. 214.
[2] The same, p. 217.
[3] The same, pp. 220, 221.

and whiteness are not plans of space-time; and though a white Angora rabbit is an object in Space-Time, the universal of a white Angora rabbit is not an object in Space-Time or a plan—let alone these glaring exceptions, the natural effect of Space-Time on the universal is rather to divide, break it up into particulars, than bring particulars into its unity. They can, I think, only be brought together as elements in some consciousness which displays universals and particulars as of the same mind stuff. A stuff that unites instead of separating.

Professor Alexander's view is inconsistent with the doctrine of the "concrete universal" which he criticises severely. The concrete universal makes for an ultimate individual or universe,

> "related to its particulars as a thing to its predicates." . . . "It is not a law but a system." . . . "If universals (on the discovery of which all science turns) are really universes and not merely laws, there is in the end only one individual or universe which is self-existent; the minor universes are shadows."[1]

He calls this absolute universal

> "the devouring maw which swallows all empirical things."

Swallows, that is to say, their individuality—as if the individuality of empirical things would thus be put off and off, until the ultimate universal was reached, as if individuality were never attained here and now.

But if the idealist is right even the ultimate universal is attained here and now. If Professor Alexander is right, and universals are "merely laws," they will be regulative, not constitutive of things. They will not have come down into the world of things to saturate them with quality. They will not "have hands and feet." And, as we have seen, if the "plan" be purely spatio-temporal it will not account for those universals of qualities which are not of Space-Time although cor-

[1] *Space, Time and Deity*, Vol. I, p. 236.

related with it, what Professor Alexander calls "disguises of qualities higher than mere motion."

These embarrassments thicken when we come to the category of Relation.

"All existents are in relation because events or groups of them are connected within Space-Time."[1]

Space-Time is then the Mother-Father of all relations, and all relations follow the type of relations in Space-Time.

"All relation is reducible to spatio-temporal terms."[2]

Now, since it has been already laid down that all relations of space and time are spaces and times, it follows that all relations of entities, however "qualitied," will be spaces and times. There is a certain frightful bleakness about this statement as it stands, and I gather that Professor Alexander shrinks from the extreme consequences of his theory.

"Not all relations of existents are in their immediate character or quality spatio-temporal; but if our hypothesis is sound they are always spatio-temporal in their simplest expression."[3]

They are, that is to say, reducible.

"Since qualities are, we assume, correlated with spatio-temporal processes, the relations, however otherwise represented summarily or compendiously by their qualities, are in the end spatio-temporal. . . . They are at least reducibly without residue to such relations, which are themselves configurations of Space-Time."[4]

Let us try this operation of "reducing" on existents which inconsiderately present themselves as "disguises" very far from spatio-temporal. We shall have to abstract from them all those qualities of their obstinate complexity which are not reducible. From an individual man we must abstract more than the colour and texture of his skin, hair and eyes and the sound of

[1] *Space, Time and Deity,* Vol. I, p. 238.
[2] The same.
[3] The same.
[4] The same, p. 246.

his voice. You may say that these qualities *are* reducible since they can be correlated with characters of space-time, since colour may be said to be extended in space-time and sound to fill space-time, and travel through it. But even when we have admitted them to be spatio-temporal in a vicarious and derivative way, they are only partially reducible; there is still a "residue," that definite something which we call quality which distinguishes blue eyes from black, and brown hair from red, and a voice of one pitch and accent from a voice of another pitch and accent. These distinctions have their spatio-temporal correlates: wave-lengths and rates of vibration; but wave-lengths and rates of vibration are not black or blue, loud, or soft and insinuating. And we have further to abstract qualities which have no spatial character at all, and no temporal character but that of bare existence or continuation in time. All the invisible, intangible things: psychic dispositions, ways of feeling and of thinking; play of motives, acts of will, the whole fabric of a man's consciousness have got to go. You must abstract them all from their spatio-temporal correlates; and, *though the association may be constant,* there is no sense in which you can derive consciousness from or reduce it to these. Correlating is not reducing.

If the result of this experiment is not sufficiently convincing, try it on Deity.

Observe that, if Professor Alexander's theory were sound, what gives character and distinction, say, to a fit of temper would be the space-time in which it happens to occur.

Again:

"the relation of particulars to one another under or by their universal is that one particular may be substituted for another." . . . "Things of the same sort are in the first place numerically different and exclude each other in space-time."[1]

[1] *Space, Time and Deity,* Vol. I, p. 247.

The exclusions of numerical identity are thus purely quantitative. The space-time relation does not account for or describe the qualitative difference in things where they are different.

And what is to be said of the relation of "likeness"? This is purely qualitative. It is not altogether an affair of imperfect substitution. The exclusion of like things from the same Space-Time is not by virtue of their likeness, nor is their likeness (or unlikeness), as such, reducible to any spatio-temporal relation or quality.

And again we have the doctrine of external relations.

" . . . relation from the nature of the case, as being the situation which unites things, is outside them spatially (or rather spatio-temporally)."[1]

Surely only if the relation is a purely and directly spatio-temporal one?

And here there emerges a very flourishing contradiction.

Relations in space and time are themselves spaces and times. Then space and time *can* be relations. But they are expressly stated not to be relations between bodies, that is to say, between events, as on Professor Whitehead's theory, but only between spaces and times. How then are bodies related in space and time? For they *have* spatial and temporal relations. Bodies are said to be bits of Space-Time, crystals in the matrix; Time is their motion. The terms of spatial and temporal relations, then, are spaces and times; and the relations are spaces and times, too. How then do we distinguish between the terms and the relations? As between categorial and non-categorial entities?

Now, relations are categorial, and Space-Time, Professor Alexander says, is not; it is the source of the categories. But the relations are what the terms are,

[1] *Space, Time and Deity*, p. 250.

spaces and times; and the terms are what the relations are, bits of Space-Time. Therefore both terms and relations will be categorial and non-categorial, which is a fine contradiction.

You may perhaps say they are distinguished by their empirical qualities. But empirical quality "emerges" from Space-Time and its relations; it is both temporally and logically speaking outside the purely spatio-temporal relations we are discussing; it is a later birth, and its birth comes too late to help us to the distinction we require.

Practically, in perception we do distinguish *events* both by their relations and their qualities. The point of the present objection is that, if we stand by Professor Alexander's definitions, we shall have no logical grounds for distinguishing between relations in space-time and their terms. The point has no practical or scientific value; still, it is worth considering. There should be no logical lapses in a sound metaphysical view of Space-Time.

There is no great hardship in admitting that Order

"depends ultimately in every case on spatio-temporal betweenness."

Thus even the moral order, so far as it depends on betweenness, degrees of goodness, badness and so on, is derived from Space-Time. But this is not saying that moral qualities are so derived.

The category of Substance is rather more important. It is extremely important. On the theory, substance, like the rest, can only be a configuration of Space-Time, simple or complex. Unity of qualities

"is supplied by the Space (that is the space-time) within which the qualities are disposed. Each quality inheres in the substance because it is included in the space and unifies the substance."[1]

Substantial identity is that which endures through-

[1] *Space, Time and Deity*, Vol. I, p. 274.

out Space-Time. Since, then, "Personal identity is a special instance of substantial identity," the person or mind must be regarded as extended in space as well as in time. If we insist that the mind is only in time and not in space we divide time and space and are back again in the antinomies of their division.

And (because the motions which correspond to qualities do not interpenetrate): "The qualities of a substance do not interpenetrate."

Thus they will be broken up into parts corresponding with their motions. Even if you say that their motions are continuous, because Space-Time is continuous, you will still have the special discreteness of compounds on your hands. Professor Alexander says they do not matter.

"We need take no account of the purely empirical fact that within a substance which is compound there may be empty spaces or pores not included in the substance itself."[1]

The idea seems to be that if you have once called a thing a purely empirical fact it will cease to worry you. But surely it is glaringly evident that, from the point of view of continuity, the discreteness of substance matters very much indeed. At this rate the theory of Quanta will not matter. But it is supposed that the peculiar continuity of pure Space-Time is sufficient to tide the compounds over the gaps in their substance, because Space-Time *is* Substance.

Causality is easily defined as

"the spatio-temporal continuity of one substance with another." . . . "A cause is the motion of a substance, or a substance in respect of its motion." . . . "Causation is . . . the continuity of existents within continuous Space-Time as subsisting between substances, which are themselves motions or groups of motions."[2]

It will at once be admitted that Causality is pre-eminently a category where, if anywhere, the spatio-

[1] *Space, Time and Deity*, Vol. I, p. 277.
[2] The same, pp. 281, 284.

temporal theory might be expected to justify itself. Even with such a reservation as denying that Time can in any strict sense be said to be a cause, we may welcome its immense simplifications. It rules out for ever "the notion of power and necessity." But for those who obstinately deny the continuity of Space-Time, causality, if merely spatio-temporal, will be "infected with time's taint of relative unreality."

"There is,"

Professor Alexander says further,

"no causal relation between the infinite whole and any one of its parts. There is only such relation between one part and another. The whole system of things does not descend into the arena and contend with one of its creatures." [1]

In this case causality will be very powerfully tainted, broken up for ever into the sequences of event-particles. We are driven inevitably from this notion of cause to that higher concept of the ground which Professor Alexander repudiates. This concept does not, I think, mean that the whole system of things breaks loose like a lunatic and "descends into the arena to contend with one of its creatures." Nothing could well be farther from it than this image of descending and contending. It means, not that the whole universe has a being apart from its creatures, but that each creature is united with every other creature in the universe as their common ground. This can well be if in the whole universe there is but one stuff of all creatures. It could have well been on the assumption that Space-Time is that stuff, if Space-Time really provided the necessary continuity, and was really pregnant from the first with life, mind and Deity.

Causality brings us to Reciprocity. And reciprocity implies simultaneity. But on Professor Alexander's view

[1] *Space, Time and Deity,* Vol. I, p. 288.

"simultaneity is . . . an outcome of the successive character of Space-Time. . . . A Space-Time which is occupied by Time at various stages of the intrinsic succession of Time allows both for the persistence of Space and for its complete occupation at any one moment." [1]

And again it must be urged that Space at an instant would be completely occupied by all events present at that instant, and Space at the next instant by all the events then present, though they would not all be the same events. But at any instant, whatever the events may be, it is still all Space at an instant.

Quantity and Intensity are reducible without difficulty to Space-Time.

"Extensive quantity is the occupation of any space by its time . . . or . . . the occupation of any time by its space. Space as so occupied is an extension. Time as so occupied is a duration." . . . "Quantity is thus equivalent to the bare fact that Space is swept out in Time, or that Time is occupation of Space.

"Intensity or intensive quantity, on the other hand, is the occurrence of various spaces in the same time, or . . . the occupation of the same space by different times. The simplest case is the velocity of a simple motion . . . intensive quantity is the fact that Time may be filled by Space and Space by Time unequally." [2]

Intensities of sensation, on the theory, will be only particular instances of these spatio-temporal relations.

The derivation of Whole and Parts follows inevitably.

"Time disintegrates Space directly by distinguishing it into successive spaces; Space disintegrates Time indirectly by making it a whole of times, without which whole there would be no separate times either."

. . . "There would be no aggregate wholes composed of individuals were it not for the connecting Space-Time." . . . "The intrinsic resolution of Space-Time through the internal relation of Space and Time is the basis of all distinction of parts, no matter how loosely the whole is united of them." [3]

The only objection that the idealist can make here is that logical wholes are not spatio-temporal.

[1] *Space, Time and Deity*, Vol. I, p. 302.
[2] The same, p. 306.
[3] The same, pp. 312, 313.

Motion, the last and greatest category for Space-Time, is obviously spatio-temporal. What is not so obvious is that motion is a category, since motion *is* Space-Time and Space-Time is not a category. It seems to bear an amphibious character, half categorial, half empirical.

"But in fact, though every empirical existent is some sort of motion or other, it is the sort of motion that it is that makes it empirical. . . . That it is a motion or a space or a time is *a priori* or non-empirical; and in fact the category of motion is but another expression of the fact that every existent is a piece of Space-Time." [1]

"Motion is thus the border-line between the categorial and the empirical region." [2]

". . . in motion the full tale of the fundamental determination of Space-Time is told and motion is consequently the totality of what can be affirmed of every Space-Time." [3]

And point-instants also have this amphibious character.

"They are empirical, like the infinites, for each point-instant has its own individual character, is a 'this'. Yet since they are the elements of Space-Time which is the source of all categories, they illustrate that intimate connection of the non-empirical and the empirical which. . . . But they cannot be treated as finites, regarded as having a separate existence like ordinary finites. . . . Point-instants are real but their separation is conceptual."

And here Professor Alexander makes a tremendous admission.

"Real they are, but if the apparent contradiction may be pardoned, they are ideal realities." [4]

That is to say, the very elements of Space-Time are ideal, the matrix from which matter crystallises is ideal. The ideal is the ultimate reality.

Professor Alexander is aware that the admission is tremendous. "I do not attempt," he says, "to minimise the difficulties of this statement." It is enough

[1] *Space, Time and Deity*, Vol. I, p. 320.
[2] The same, p. 322.
[3] The same, p. 323.
[4] The same, p. 325.

for him that these ideal entities can be swept into the universal Space-Time. We cannot expect him to adopt the conclusion, inevitable for idealism, that if the very elements of Space-Time are ideal, Space-Time is itself an ideal construction and must be swept into the universal consciousness. For ideas, on the realist hypothesis, are non-mental. And when we come to mental Space-Time it cannot be said to give a handle to idealism either.

iii

Meanwhile the consideration of motion has raised again the more acute problem of quality. **Quality**

"There is a motion-quality as there is redness or sweetness. . . . But while all other, empirical, qualities are correlated with motions, the 'quality' motion is purely spatio-temporal, that of being a space-time." [1]

And presently we come to a hard saying. "Quality is not a category." It is not a category because it is not pervasive as the categories are; and it is not universal, it is not a plan.

"It may be answered that everything possesses some quality or other, and therefore quality is categorial; everything is a complex of Space-Time and to complexity corresponds quality, upon our own showing."

But no.

"Complexity in Space-Time makes everything a complex, but not a quality. . . . The quality of the colour varies with the wave-length of the vibration. Now every colour has some wave-length or other. . . . But length of wave is a quantity and not a quality . . . length of wave as such has no colour as such. . . ." [2]

Could there be a plainer statement of the inability of Space-Time to account for quality? A franker confession of the break-down of the Space-Time theory here? The murder is out. Quality is not reducible without residue to spatio-temporal terms and relations.

[1] *Space, Time and Deity*, Vol. I, p. 321.
[2] The same, p. 327.

It is not quantitative. Its correlations with quantity are themselves mysterious and irreducible. The most you can say is that quality belongs to things which are in Space-Time. It is miraculously and magically "there." But on Professor Alexander's own showing it will not fit into his spatio-temporal scheme.

And that is why it is denied its age-long status as a category. If it were a category it would make its occult and alien presence felt pervasively. This trouble Professor Alexander hopes to avoid by calling quality "empirical." This camouflages in a sense its obstinate recalcitrance. It is only empirical, poor thing, and knows no better. And still the problem remains of accounting for its queerness in a purely spatio-temporal universe. Quality is an eccentricity; or rather, since there is no universal quality, qualities are eccentricities, strange new crystallisations in the matrix. They belong but they are not reducible to Space-Time nor derivable from it. They have, all of them, just mysteriously and miraculously "emerged."

The problem becomes still more acute when we get to Change. Here the only happy line for Professor Alexander to take would have been to say that all change is motion and have done with it. But he cannot do this. For though all motion is change, all change is not motion.

"Primarily change is change of quality and quality is always empirical." [1]

And yet it *is* motion.

"Remembering that all existences, no matter what qualities they possess, are in the end complexes of motion, we may describe change as a species of motion which replaces one set of motions by another; it is grounded in motion and may be described as a motion from one motion to another. The nature of the transitional motion may be different in different cases. Thus one thought may lead on to another and the motion is experienced as a direct transition be-

[1] *Space, Time and Deity*, Vol. I, p. 328.

tween the two thoughts. . . . In every case we have not a mere difference but a motion which ends in the substitution of one empirical condition for another.

Change is then not categorial but empirical."[1]

Thus the qualitative character of change breaks through. Something changes; and its change is something more indirect and more complex than its movement. So that where change is movement, within the movement itself you have this mysterious and irreducible thing, quality.

We have yet to learn all the things which Space-Time is not.

Clearly it is not an existent. "Existence belongs to that which occupies a Space-Time"; and there is no Space-Time outside Space-Time which it could occupy.

When we ask if Space-Time is not a whole, and a one that includes many, and a substance, the answer is No.

"Space-Time is not a whole of parts." Superficially, this again is a hard saying, for Space-Time was distinctly stated to be the totality of all existents. It looks then as if existents within Space-Time were not its parts. But I think this is not Professor Alexander's meaning. Space-Time *has* parts. The parts of Space are spaces and the parts of Time are times; but Space-Time is not the whole of them. For this reason:

"Space-Time breaks up into parts and wholes of them as it lives and moves. . . . If Space-Time were such a whole it would be given all at once. But being Time, (or indeed Space for that matter) it is not . . . given altogether. To suppose so is to ignore the reality of Time, to fail to take Time seriously."[2]

Time drives Space-Time forward for ever to the redistribution of point-instants.

"For in the redistribution of dates among places, new existents are generated within the one Space-Time."[3]

[1] *Space, Time and Deity*, Vol. I, pp. 328, 329.
[2] The same, p. 339.
[3] The same.

I think an objection may be made to this argument. The point-instants are the parts of Space-Time. All that Time does is to redistribute them; it does not add more point-instants to the sum total. There is no sum total of point-instants if their number is infinite. Thus it is because its parts are infinite, and not because Time redistributes them that Space-Time is not a whole.

Again, to come to greater clarities, it is evident that Space-Time is not a substance, in spite of the previous definition of substance as Space-Time.

"For substance is an existent configuration of space in so far as it is the theatre of Time; it is a space with definite contour occupied by time, that is, a space enduring in time. But infinite Space has no contour and is thus no substance." [1]

And so of unity:

"In like manner Space-Time is in no case a unity of many things; it is not a one."

To be a unity, Professor Alexander says, would imply that it "can descend into the field of number, and be merely an individual, and be compared as one with two or three." But this is not what we mean by a unity. Truly,

"The universe is neither one in this sense nor many . . . it can only be described not as one and still less as one, but as *the one* . . . it is not so much an individual or a singular as the one and only matrix of generation, to which no rival is possible because all rivalry is fashioned within the same matrix." [1]

And surely this is precisely what we mean by a unity?

And the question is: Can Space-Time, with its antinomies, with its inimical attitude to quality, with the marks of Time's "restlessness" upon it, be truly said to be such a unity?

[1] *Space, Time and Deity*, Vol. I, pp. 339, 340.
[2] The same, p. 339.

iv

Professor Alexander finds the "clue" to the perplexing problem of quality in mind. Not in the sense that mind is in any way the creator of quality, that *it* brings quality into the outside world. In fact, it is not easy to see, on Professor Alexander's view of the relation of mind to its object, how, beyond the quality of not being an object, there can be any distinctive quality in mind. Consciousness

For the relation of mind to its object is one of pure "compresence." It is together with its object as two finites in Space-Time. Its consciousness of its object Professor Alexander calls "contemplation"; its consciousness of itself he calls "enjoyment." Mind does not contemplate itself, it cannot be an object to itself; and it is a little difficult to understand precisely what mental act or state Professor Alexander means by "enjoyment." It is evidently *some* state of awareness; perhaps "realisation" comes nearest to it. We can say that the mind realises itself and its togetherness with its object. Enjoyment is its realisation of its compresence. It would seem to be a unique relation.

But compresence, we are to understand, is not a unique relation. Any two finites connected together in Space-Time are said to be compresent with one another.

"Let A be a mind and B another finite distinct from that mind and of a lower order. Then A's compresence with B means that A is conscious of B. Cognition, then, instead of being a unique relation, is nothing but an instance of the simplest and most universal of all relations." [1]

"Now such a relation as exists in sensing a sensum is strictly comparable with the relation of two compresent physical finites, like the floor and the table, which are in causal relation." [2]

[1] *Space, Time and Deity*, Vol. II, p. 82.
[2] The same, p. 83.

"Thus the relation of the mind to its object *b* the table is precisely of the same order as that between the floor and the table. Only,"[1]

Professor Alexander adds naïvely, "the floor is not conscious."

To be sure he gives a sort of awareness to the floor.

"The material floor is assured of the materiality of the table."

But, if we were to take this view of consciousness seriously, the mind would have no more consciousness than the floor. And Professor Alexander tells us that to a higher order of intelligence, as might be an "angel" or "an infinite God,"

"there would be no doubt that the relation of mind to its object is only an example of the relation of any other finite to a second finite."[2]

Only as Professor Alexander himself is not an angel nor an infinite God, but only perhaps the first of living philosophers, you can but wonder how he knows it.

Self consistency cannot be expected of such a theory. Mind is said to be "a new thing" that emerges when conditions are favourable. But to call the relation of consciousness to its object compresence is to take from mind all its newness, and from consciousness all that distinguishes it from non-consciousness. There is no difference at this rate between a mind and a table or a chair. You would have thought that consciousness was what made the difference, and that the difference could not be defined as mere compresence. Perhaps it cannot be defined at all. If this is so, why not say plainly that it is a unique and indefinable relation?

But Professor Alexander will not have it so; and we are very far from discovering the distinctive quality of mind.

Yet when he is faced with Mr. E. B. Holt's "concept

[1] *Space, Time and Deity*, Vol. II, p. 103.
[2] The same, p. 105.

of consciousness," that beautifully innocent and simple concept of neural responses which are not acts of consciousness, a concept which turns consciousness itself out of doors among its objects, he finds something lacking in it, and no wonder.

"The doctrine fails to account for a vital feature in the cognitive situation, as we experience it, namely, that in being aware of the fire, the fire is before *me*, or it is *I* who see it, or it is in a sense *my* fire." [1]

Professor Alexander points out that, on Mr. Holt's theory,

"Consciousness then becomes the name of any field of objects to which anything whatever corresponds specifically. It becomes a mere name for compresence." [2]

Which is what Professor Alexander said it was! If we are to introduce self-consciousness into the situation, we shall be nearer the truth of it, but we can no longer say that consciousness is not a unique relation.

But I am anticipating.

Professor Alexander sets out by identifying mind with its neural basis.

"That which as experienced from the inside or enjoyed is a conscious process, is as experienced from the outside or contemplated a neural one." [3]

"A neural process of a certain level of development possesses the quality of consciousness and is thereby a mental process, and alternately a mental process is *also* a vital one of a certain order." [4]

"But while mental process is also neural, it is not merely neural, and therefore also not merely vital." [5]

. . . "What determines the difference of the psychical from the merely physiological process is its locality in the nervous system."

. . . "We may safely regard locality of the mental process as what chiefly makes it mental as distinct from merely neural, or what distinguishes the different mental processes from one another. . . .

[1] *Space, Time and Deity*, Vol. II, p. 111.
[2] The same, p. 113.
[3] The same, p. 5.
[4] The same, pp. 5, 6.
[5] The same, p. 6.

There is not, or not necessarily, to each neurosis a corresponding psychosis. The equivalent proposition is that while all psychoses are neuroses, the psychoses imply the emergence of a new feature, that of mind. It would follow that mental process may be expressible completely in physiological terms but is not *merely* physiological but also mental."[1]

And yet

. . . "there are not two processes, one neural, the other mental, but one."[2]

Again:

. . . "once we recognise that mental processes have no character, beyond the quality of being mental, other than such as all processes present, intensity or locality or velocity or the like, that is to say, empirical forms of categorial character, all reason is removed for supposing the mental process to be a different existent from the neural one."[3]

And yet

"Mental process is therefore something new, a fresh creation."[4]

We may ask how and if mental process is "completely expressible in physiological terms" it is not "*merely* physiological but *also* mental"; and how mind, if it is identical with neural process, can be a new creation? Professor Alexander seems to be wobbling here between his enforced acknowledgment that mind is something new, something *more than,* that is to say, something different from neural process, and his desire to identify it with neural process in order that he may localize it and thus bring it under Space-Time. If he fails to do this it is all up with his theory of Space-Time as the matrix and the stuff of all existents.

We may ask, for example, whether *meaning* is completely expressible in physiological terms? Professor Alexander has described meaning as "the whole complex that a thing stands for"; which takes it out of the

[1] *Space, Time and Deity,* Vol. II, pp. 6, 7.
[2] The same, p. 9.
[3] The same, p. 11.
[4] The same, p. 7.

region of mind. He then raises the question of its mental status.

"Now what is there in meaning as described which prevents us from believing that the conscious meaning corresponds to, is as I should say, identical with a certain neural process." [1]

He finds this identity in patterns which the neural processes trace. He may be using identity in some special sense which is not apparent. It is at any rate impossible, with the utmost good-will, to see how there *can* be identity of quality between conscious meaning and any neural pattern. The neural patterns may and probably do stand for conscious meanings, much as the type patterns on this page stand for words which stand for conscious meanings; with this difference that the print patterns can be read and the neural patterns cannot. The words mediate between the print patterns and the conscious meaning, but there are no mediators between it and the neural patterns. It seems to me that Professor Alexander ignores this question of quality. He says

"The mental processes are identical with their equivalent neural processes and are those processes as enjoyed." [1]

Now you never do enjoy (nor contemplate) your neural processes. The neural processes are not in consciousness at all. They are completely hidden from it. What is in consciousness is what the idealist calls its content and the realist calls its object; and according to Professor Alexander this is contemplated and not enjoyed. He has used the word enjoyment expressly to show that the neural process is not contemplated; but if it is enjoyed it must be an element of self-consciousness, of the awareness of the awareness. But can we say that it is that either?

[1] *Space, Time and Deity*, Vol. II, p. 16.
[2] The same, p. 38. Note.

At one point of his enquiry Professor Alexander raises the hopes of idealism high. He says

"Time is the mind of Space and Space the body of time." [1]

". . . even on the lowest level of existence, any motion has its soul, which is time." [2]

In the order of processes the next higher process is always the mind or soul of the next lower. Let L be a certain level, then

"A complex of processes on a level *L* with the distinctive property *l* becomes endowed within the whole *L*-thing or body, with a quality *l'* and the whole thing characterised by this quality rises to the level L'. The processes with the emergent quality l' constitute the soul or mind of a thing or body which is on the level *L* . . ."

"Thus the soul of each level is the soul of a body which is the stuff of which it may be called the form." [3]

". . . so that the course of Time issues in the growth of ever new types of soul, and in this way all nature is linked in a chain of affinity, and there is nothing which does not in virtue of its constitution respond to ourselves . . . so that there is nothing dead, or senseless in the universe, Space-Time being itself animated." [4]

" . . . bare Time is the soul of its Space and performs towards it the office of soul to its equivalent body or brain." [5]

Each phrase bursts like a flash-light over the darkness of Space-Time, and we think that we have come to the very heart of the matter. We think: Here at last is something to clothe the pure nakedness of Space-Time. If soul or mind is already in Space-Time we are absolved from the impossible problem of getting out of it what was never there.

But as this stupendous meaning strikes him Professor Alexander is visibly perturbed by his own statement and takes it all back. He didn't really mean it. All he meant was that Time performs on Space an

[1] *Space, Time and Deity*, Vol. II, p. 38.
[2] The same, p. 67.
[3] The same, p. 68.
[4] The same, p. 69.
[5] The same, p. 346.

operation something like the transactions of mind with body. These, he assures us over and over again, are purely spatio-temporal . . . "my mind is also a living material spatio-temporal thing." Why, rather than that we should believe anything so monstrous of his pure Space-Time he would put it that, so far from Time being the mind of anything, the mind itself is nothing but time.

"Rather than hold that Time is a form of mind, we must say that mind is a form of Time."[1]

Again:

"Time is an element in the stuff of which the universe and all its parts is made, and has no special relation to mind, which is but the last complexity of Time which is known to us in finite existence."[2]

And in this vehement repudiation the realist betrays his awareness of mind as the disturber of his intellectual peace. Mind is the crux of Space-Time realism. It is the recalcitrant element which will not fit in with the theory. Somehow or other it must be made to fit. So Professor Alexander docks it of every character which is extra-spatial and extra-temporal and identifies it with neural process.

"Each new type of existence when it emerges is expressible completely or without residue in terms of the lower stage, and therefore indirectly in terms of all lower stages; mind in terms of living process. . . ."[3]

And Professor Alexander's theory of Space-Time compels him not only to regard mind as extended in its neural basis but to bestow consciousness on neural tracts as spatial:

"in an extended sense of 'awareness' each point (to confine ourselves to Space) might be said to be aware of every other in the way in which minds are aware of one another."[4]

[1] *Space, Time and Deity*, Vol. II, p. 44.
[2] The same, p. 345.
[3] The same, p. 67.
[4] The same, p. 144.

Thus:

"For clearness sake let us take a particular case and suppose a line of colour *ab* which we see. It excites through our eyes a certain spatial tract in the visual region . . . and that neural excitement of the centres is the consciousness of colour. Call the neural tract A B. The points or other parts of it are, *as* merely spatial, aware of *ab*. Moreover, they are aware, in the same extended sense of 'awareness', of the points in *ab* as being the origin of the whole transaction of light-movements which connect those points with the corresponding neural centres."[1]

All this is exceedingly difficult to follow. We have to account for the mind's consciousness of the place in space of *ab*. It is not an easy thing to account for on any theory, but even if we granted that the points of the neural tract A B *can* be aware (in Professor Alexander's extended sense of awareness which seems to be pretty extensive) of the points of *ab*, it is crediting the neural tract with supernatural intelligence to suppose that it refers the local excitement of its points to the "transaction of light-movements" along a line of colour which is outside it and far away. Whatever else it may be, the neural tract is not the place of the object, or the observer of the place of the object.

Professor Alexander says:

"Now if there were no consciousness belonging to the excitement of A B our minds would know nothing of the places of *ab*."

I cannot see how A B's excitement and consciousness of its excitement, if it *were* conscious, could help the mind which is *not* conscious of A B's excitement and consciousness, or of the existence of A B at all; especially as there is no sense in which A B can be conscious of *ab* as an object. Supposing that the special nature of A B's excitement, the pattern of the neural tract, corresponds with the qualities and the place and distance of objects, and causes the mind to be appropriately conscious, it can only do this by, as it were, giving the mind a jog in the right direction; but since

[1] *Space, Time and Deity*, Vol. II, p. 145.

this neural jog is a material jog and not a mental jog, and a jog of which the mind remains totally unaware, it is not easy to see how mind responds to it, especially if consciousness is nothing but compresence. The neural jog cannot be said to make consciousness more compresent than it was before. This is of course the reason why Professor Alexander bestows awareness (in the extended sense) on the neural tract. And this is equivalent to an admission, by which idealism profits, that if you don't put it in you will certainly never get it out.

But, on the theory, whatever the neural processes and the sense-organ have to do with consciousness, they have no conscious business with the object.

In this connection it should be noted that Professor Alexander rejects the theory of Psychophysical Parallelism on excellent grounds.

". . . the reason for it disappears so soon as it is recognised that what corresponds to the mental is not merely physiological but the bearer of a new quality." [1]

And yet it is this new quality that he reduces "without residue" to neural process. And on page fourteen of Volume Two he talks about "substantive processes of mind like perceptions or images . . . corresponding to things in the object world." If this is to be taken seriously it implies a substantive content of mind such as he repudiated on page eleven.

He further denies that sensory qualities depend on sense-organs. But his objections to physiological subjectivity apply with equal force to Space-Time realism. The "fundamental difficulty" of relativity to a sense-organ lies in supposing that

. . . "out of physico-chemical substances, the external thing and the bodily organ, life can create a new quality of colour which is not itself physico-chemical." [2]

[1] *Space, Time and Deity*, Vol. II, pp. 9, 10.
[2] The same, p. 141.

How then are we to suppose that out of spatio-temporal elements, pure point-instants, or out of motions, Space-Time can create a new quality of colour which, as such, is not spatio-temporal?

This brings us to the consideration of Appearances.

It is admitted that in certain cases objects can be affected by the "intrusion of the mind." [1]

This sets up illusory appearances or illusions. For example, "colours seen by contrast, or the plane picture of a box seen solid."

Professor Alexander distinguishes further between "real" appearances of the thing, which belong to it though they may vary relatively to the distance and position of the perceiver, and "mere" appearances, which do not belong to the thing but arise from its connection with other things. These are all non-mental.

You might say that if anything was mental it was illusory appearances which are "introduced by the mind." But on Professor Alexander's theory illusory appearances are non-mental too.

"For they are *prima facie* on the same level as other physical appearances. . . . An illusory appearance is illusory only in so far as it is supposed . . . to belong to the real thing of which it seems to be the appearance. In so far as it is illusory it is not a revelation of that thing but of something else. The illusion consists in the erroneous reference of it to where it does not in fact belong." [2]

I do not think there is anything in this statement to hit idealism hard. To begin with, the idealist will agree with the realist that the illusion, the mental error, lies in the judgment, the false attribution of the appearance to another reality not its own. But it is mental exactly in so far as it is not in the object and is created or "introduced by" the mind. That "*prima facie* illusions are on the same level as other physical appear-

[1] *Space, Time and Deity*, Vol. II, p. 184.
[2] The same, pp. 185-186.

ances" only shows that physical appearances *can* be mental. Professor Alexander admits that illusions are mental when he says that "it is the mind itself which produces the distortion." On a strictly realist view, above all on Professor Alexander's own view of cognition as mere "compresence," the mind ought not to be able to do anything of the sort. It should have no grip whatever on the object. Illusions admitted to be mental are the thin end of the idealist's chisel, more fragile, if you like, than the assumption that secondary qualities, ideas or "memory images" are mental, but still strong enough to prize open the realist's cosmos and let mind in.

Professor Alexander says that what the mind does is not to create illusory appearances but "to choose them from the world of reality."

"The illusory object is as much non-mental as the real appearance. . . . The grey paper is seen green by contrast on the red ground. The paper itself is not green. But there is green in the world. . . ."[1]
. . . "My mental act brings me face to face with the green in the world."[2]

Now green may be in the world, but it is not in my bit of the world at my instant; no explanation will alter the fact that the green I see on the grey paper is not "there." Professor Alexander says:

"We combine elements not really combined, but both the elements and their form of combination are features of the real world when that world is taken large enough."[3]

But those features are in another space-time, another context; not in the space-time of the "real" grey. We are not at the moment "taking" that larger world at all.

[1] *Space, Time and Deity*, Vol. II, p. 214.
[2] The same, p. 215.
[3] The same.

What happens in illusion Professor Alexander says is that

"The mind squints at things and one thing is seen with the characters of something else."[1]

But, *again*, there was no green within my range of vision to squint at.

In the case of "real" appearance Professor Alexander admits—from a realist the statement amounts to an admission—that the mind "selects" special appearances relative to distance and position from among the real qualities of the thing. Take the hotness of the fire which diminishes or increases as we recede from or approach it. The hotness of the fire, Professor Alexander says, is in the fire itself. I gather that he ascribes to the fire a certain "real" standard hotness dependent on the "real motion" of the "fiery matter," hotness which can be calculated by means of "instruments of measurement which are relatively independent of our senses and certainly independent of our sensations of heat." Our sensations of heat, then, are what vary with our distance and Professor Alexander accounts for these differences by the "selection" of the mind.[2] Selection is a rather ambiguous term in this context, but I think we must understand by it that the mind, disregarding all other degrees of heat contained in the standard hotness, pays attention only to the exact degrees appropriate to its distance and position with regard to the fire.

This, I take it, because, on the theory, the empirical quality of hotness must be identified with the categorial spatio-temporal motions of the fire itself, which do not vary with the distance and position of the perceiver; and because the realist will not admit that the second-

[1] *Space, Time and Deity*, Vol. II, p. 216.
[2] The same, p. 187.

ary quality of hotness can be mental. The action of the mind, discerned as somehow responsible for the variation, is camouflaged as selection.

But let alone that a mind which selects, and selects in such a fashion as to affect the appearances of objects, is something more than merely compresent with its object, mere selection by the mind will not account for the thorough-going relativity of the appearances to the mind's distance and position. The *mind's* distance and position, observe, since Professor Alexander regards the mind as extended where its body is in space-time. At first it would appear that in giving this extension to mind he was making the world safe for new realism. But, when he comes to deal with appearances, sudden and horrible danger arises from this introduction of mind into space-time. Things in space-time can now become relative to mind; they can, contrary to the hypothesis, be affected by mind. Almost you could imagine that Professor Alexander was sorry that he had let mind into space-time like a body. But on the theory there was no other place for it to be in, and Professor Alexander has to make the best of it. This he does by introducing this non-committal (if surreptitious) idea of selection. The mind doesn't "do" anything to the fire; it only chooses from the standard hotness, the hotness you can measure with appropriate and incorruptible instruments, those degrees of hotness already contained in it which are (miraculously) relative to its distance and position.

Professor Alexander will not admit that the body and its sense-organs intervene between perception and its object. For this reason:

. . . "The action of the sense-organ is part of the process of sensing the sensum, not its object. The sense-organ cannot be treated as merely a thing which modifies the real thing in the way that motion added to a whistle modifies the pitch of its note or as spectacles, themselves coloured, discolour the world around us. The distort-

ing or qualifying thing must be either observed or observable in the sensible object. In truth all appearances are *prima facie* real ones, and later are sorted out."[1]

Now it is hard enough in all conscience to say in what way a sense-organ modifies a sense-perception—or its object. But we may be pretty sure it is *not* "the way that motion added to a whistle modifies the pitch of its note, or as coloured spectacles stain the visible world. It is not because our sense-organs move that we perceive motion, or because they are green that we perceive green, and not at all because they are objects to us (they are only objects to the physiologist) that they affect our perceptions of objects. The relativist does not contend, any more than Professor Alexander, that neural processes are part of the object, of the sensum.

It may or it may not be true that the distorting or qualifying thing must be "either observed or observable in the sensible object;" the idealist will agree that "in truth all appearances are *prima facie* real ones, and later are sorted out." But it is just possible that the sense-organs and the neural processes do some of the sorting. The idealist distinguishes between appearances and reality precisely as the realist distinguishes between them: by their behaviour and their context. The idealist admits that appearances are "real" in their own context; and the realist displays a certain perversity when he calls the world of idealism a world of hallucination. It is precisely the same world as his own, with no detail omitted, altered or distorted —all the correlations of Space-Time intact (indeed intacter). All that the idealist does is to recognise its ultimate quality as mind-stuff, and through its character as mind-stuff its dependence on mind.

Professor Alexander regrets that we cannot take the

[1] *Space, Time and Deity*, Vol. II, pp. 191-192.

way of idealism; it is so much easier. "The way of sin is always easy and that of virtue difficult." (We have seen some of the difficulties of virtue.) The easy way of idealism leads to destruction, the destruction of our faith in the veracity of the universe.

Now you can only test the veracity of the universe by the behaviour of the universe itself. There is no reality outside it to which we may appeal. Idealist and realist are in the same boat here. But the realist complicates his problem by separating consciousness from its object and then raising all sorts of questions about *its* veracity. And we are left with the contradictory problem of mind which is now said to be a new thing, and now reducible without residue to elements of Space-Time.

If this is not an "overwhelming difficulty" I don't know what is.

v

And when we come to the emergence of Deity the overwhelming is indeed upon us. **Deity**

Deity also is begotten by Time on Space-Time. This is the supreme instance of the causal character of Time. Time is not subject to Deity; Deity is subject to Time. Deity does not exist till Time calls it forth at its hour. In order to emerge it requires a special complexity of Space-Time in the form of mind or consciousness. But Deity is not mind or consciousness any more than mind or consciousness was life or life was inorganic matter. It is a new empirical thing.

"Deity in its turn is a quality of that which attends upon, or more strictly speaking, is equivalent to, previous or lower existences of the order of mind which itself rests on a still lower basis of qualities, and emerges when certain complexities and refinements of arrangement have been reached."[1]

[1] *Space, Time and Deity*, Vol. II, p. 347.

"The highest of these empirical qualities known to us is mind or consciousness. Deity is the next higher empirical quality to the highest we know; and . . . at any level of existence there is a next higher empirical quality which stands towards the lower quality as deity stands towards mind." [1]

"There is a nisus in Space-Time which, as it has borne its creatures forward through matter and life to mind, will bear them forward to some higher level of existence. . . . Time itself compels us to think of this later birth of Time." [2]

"Deity is thus the next higher empirical quality to mind. That the universe is pregnant with such a quality we are speculatively assured. What that quality is we cannot know; for we can neither enjoy nor still less contemplate it. Our human altars still are raised to the unknown God." [3]

Deity, as the next higher,

. . . "is therefore a variable quality, and as the world grows in time, deity changes with it. . . . On each level of finite creatures deity is for them some 'unknown' (though not 'unexperienced') quality in front, the real nature of which is enjoyed by the creatures on the next level." [4]

"We cannot tell what is the nature of deity, of our deity, but we can be certain that it is not mind . . . or any quality of the order of mind, deity is not spirit, but something different from it in kind. God, as the being which possesses deity must be *also* spirit, for . . . deity presupposes spirit. . . . But . . . his deity is not spirit." [5]

Unfortunately you can never have your deity here and now. At whatever level you are on, deity is always about to emerge on the next level. If it were not for this, Professor Alexander's concept of deity would be the sublimest that has yet come into philosophy. Perhaps, in spite of this, it is. And it should be said at once that it makes many things conceivable that were not conceivable on the older theory of the Absolute. God can be immanent in the universe in a clearly intelligible way, without compromising his deity.

[1] *Space, Time and Deity,* Vol. II, p. 345.
[2] The same, p. 346.
[3] The same, p. 347.
[4] The same, p. 348.
[5] The same, p. 349.

For it is the only concept of Deity that completely solves the problem of evil. If Deity has not happened yet, it is clearly not responsible for anything that has happened up till now. And since it has only come into the world subsequent to all regrettable incidents, it cannot be said to have had any knowledge of them. We have not got to reconcile God's fore-knowledge and our freedom, or his power and his goodness. He is completely absolved from all complicity as regards this sad, bad world, which he has not produced, which he had no intention of producing, which, on the contrary, has produced him.

And if the problem of evil were the only problem, it would be worth while closing with Professor Alexander's offer of his Deity. His Deity is, or rather will be, real and great beyond all the dreams of metaphysical imagination. We are not shut up with a God alleged to be all-good, all-powerful and all-knowing, who has yet turned out a universe which would be very creditable coming from a Deity who was something less than all that, but is, to say the least of it, somewhat disappointing as the achievement of all-knowledge and all-goodness, and all-power. Who can contemplate the world as it is and not say that an all-knowing, all-good and all-powerful Deity ought, with infinite time at his disposal, to have done a little better than that?

Still, there was one thing to be said for him. The existence of this God might be a perfect scandal, but he *was* supposed to exist. He was, at least, good for that. But Professor Alexander's Deity does not exist, and is not meant to exist. There are, as we shall see, grave metaphysical obstacles to his existence.

To begin with, there is a sense in which Professor Alexander's Deity is not immanent. Because of his theory of Space-Time, and of deity as an empirical

birth of Time, Professor Alexander is unable to speak of God as immanent and at the same time transcendent. Deity is "located in a portion only of the universe."

"Thus, empirical as deity is, the infinity of his distinctive character separates him from all finites."[1]

This, because if God were everywhere and everywhen, immanent in the whole universe here and now, he would, contrary to the "plan" of him, be existing here and now actually, and not as the assumed nisus or next higher empirical quality.

And Deity is not transcendent as regards Time since it is the birth of Time, and as the birth of Time it has all Space-Time behind and outside it.

And yet there is a sense in which this God is immanent and transcendent, too. As the *bearer of a new quality* he may be said to be transcendent as regards all lower qualities; and as the nisus in Space-Time driving on to the emergence of Deity God is immanent in Space-Time. As each lower level plays body to the "soul" of the next higher, so mind or spirit, and we ourselves as minds or spirits are the body of God.

"For him, therefore, . . . the distinction of organic and special sensa disappears. Our minds, therefore, and everything else in the world are 'organic sensa' of God. All we are the hunger and thirst, the heart-beats and the sweat of God."[2]

No criticism should overlook or fail to do justice to the metaphysical grandeur of this idea. The concept of Deity as the nisus is almost the answer to half the difficulties we have raised.

But it means that Deity is never realised here and now. "God, as the possessor of Deity . . . is a qualitied infinite." If he realised himself, he would instantly become finite; the succession of realisations would

[1] *Space, Time and Deity*, Vol. II, p. 358.
[2] The same, p. 357.

produce, not infinite Deity, but a succession of finite deities.

"The qualitied infinite, if the quality could be actually realised, would present overwhelming difficulties, when we ask if it is subject to the categories. . . . It is . . . not an individual, for an individual is the union of particular and universal. And realised deity is not universal, since, representing as it does the whole, it admits of no repetition. . . . Neither is it a substance . . . it admits of no relation to other substances, but is the whole of Space-Time on a reduced scale. In this break-down of the attempt to apply to it the categories . . . it betrays its merely ideal character of a picture and nothing more. The picture is not the less eminently worth drawing. Only nothing actual corresponds to it. . . . Deity is a nisus and not an accomplishment."[1]

If after these flat statements we still ask

"Does infinite deity exist?"

The answer is that

"the world in its infinity tends toward infinite deity, or is pregnant with it, but that infinite deity does not exist; . . . if it did, God—the actual world possessing deity—would cease to be infinite God and break up into a multiplicity of finite gods, which would be merely a higher race of creatures than ourselves with a God beyond . . ."

. . . "the attainment of deity makes deity finite" . . .

"God as an actual existent is always becoming deity but never attains it. He is the ideal God in embryo."[2]

Thus even that temporary and progressive realisation of Deity cannot be; because it would make Deity finite. We all have to give up something of our God. The absolutist cheerfully gives up God's morality to save his absoluteness. The pragmatist gives up his absoluteness to save his morality. It remained for Professor Alexander to make the supreme renunciation. He sacrifices God himself to save God's infinity.

Now Deity was only introduced into Space-Time as a concession to the religious consciousness. Profes-

[1] *Space, Time and Deity*, Vol. II, p. 364.
[2] The same, p. 365.

sor Alexander considers that the appetite for Deity should be satisfied.

But does this concept of Deity satisfy it? This unrealised ideal which is jam tomorrow, and better jam the day after tomorrow, but never jam today?

. . . "it is this distinctive religious appetite . . . which, though it does not make its object discovers it."[1]

How, since its object never is?

" . . . religious sentiment . . . is the feeling of our going out to something not ourselves and greater and higher than ourselves, with which we are in communion."[2]

With which we are certainly not in communion, since Deity hasn't happened yet. With which we never shall be in communion since, if it were to happen, it would always be a stage ahead of us. With which we need not hope to be in communion, since it never can happen.

Professor Alexander says of his non-existent Deity,

"If man wants God and depends on him, God wants man and is so far dependent" . . . "not only does he matter to us but *we* matter to him."[3]

This is admirable, but how can it happen, if God hasn't happened? The nisus on our level is just ourselves, straining forward to the Deity which is not yet, and never will be. How can this Deity help us, or we it?

Two final criticisms may be made here. This concept of Deity is open to the objections which Professor Alexander brings against the Fourth Dimension as a purely intellectual construction. It is a construction on precisely the same lines of formal analogy. Also, if the analogy were strictly held to, since the next higher levels to life and mind respectively are not life and

[1] *Space, Time and Deity*, Vol. II, p. 374.
[2] The same, p. 373.
[3] The same, pp. 386-388.

mind, the next higher level to Deity cannot be Deity. And this is to make Deity finite with a vengeance.

Once more, the religious consciousness is in a horrible position if it can only save God's perfection at the price of his existence, or his existence at the price of his perfection. The problem for the new idealism is to find, if it can, a way out of this dilemma; if possible to show Deity as in a living process of self-realisation, and yet keep the immensity of Professor Alexander's vision.

END OF BOOK ONE

BOOK TWO

RECONSTRUCTION OF IDEALISM

VI

SPACE, TIME AND CONSCIOUSNESS

i

The Problem

We can no longer doubt (if indeed it was ever doubtful) that the worst problems in philosophy arise from our fatal habit of abstracting. Hegel spent most of his time trying to prove that abstraction was the vice of all systems except his own; and his own failed chiefly owing to its inevitable divorce of thought from the sense-world of nature.

But it is on the problems of Space and Time that this and all other abstractions have borne most heavily. In the revulsion against this abuse of thought it has been assumed, as we have seen, that the antinomies of Space and Time were entirely due to our arbitrary tampering with their integrity and with the integrity of the cosmos as a whole. We have not only taken Space and Time as abstractions from the context of events, but we have taken them as abstractions from each other; and we have wondered at the contradictions which ensued. For all our conception of their unity, it is as if a man should turn his trousers inside out and marvel at the miracle of their still fitting him, or divide them back from front and either declare triumphantly that he has now two trousers, or else complain of the solution of continuity.

Most certainly solution of continuity did follow from the division of Space from Time, and by now it has become pretty evident that they must be taken together. Professor Alexander has shown most convinc-

ingly that Time enters into the very structure of Space, and that the unfolding of Space in three dimensions would be impossible without Time.[1] The whole trend of modern philosophy is in the direction of the synthesis of Time and Space since this conception first appeared in M. Bergson's system. It is the secret of Professor Whitehead's four-dimensional geometry and the foundation of his concept of nature. It underlies the equations of modern physics in which Space and Time appear as interchangeable terms. It is the principle of the Principle of Relativity. And, as we have just seen, the first great system of Realism, Professor Alexander's, is based on the essential unity of Time and Space.

All these theories differ very decidedly from each other as to the nature and the relations of Space and Time. Professor Whitehead regards both Time and Space as empirical relations of events, these being the ultimate realities. To Professor Alexander they are not relations; they are the ultimate terms to which all things are reducible; they are absolute and august and pure in their *a priori*ness. To Professor Einstein they are purely relative to bodies of reference and to each other. To M. Bergson serial time is a spurious sort of time which is really space; this spatial time is unreal time; to Professor Alexander Space-Time, or Time-Space is *the* reality, and there is no other sort of time or space. But they one and all agree that Space and Time must be taken together. One and all they insist (except Professor Einstein who doesn't worry about it) that if only, *only* you will take them together every contradiction will vanish from Space and Time. If you take them together Time will stop all the gaps in Space; Space will fill up the interstices of Time; events will step in, overlapping, and cover

[1] See Appendix II, pp. 315-317.

all the cuts of serial Time; Space will stretch Time out into duration, and Time will sweep Space out before it into extension.

Divide them and they at once fall apart into their point-instants.

But it has been made clear (at least I hope it has) that in the very systems that undertook to safeguard us from this catastrophe, the antinomies have burst loose again. The continuity of the compact series broke down under analysis. The continuity of Professor Whitehead's system of events and event-particles broke down. It left us with all nature at a moment still on our hands. Even in Professor Alexander's system, which certainly held out the greatest promise of security, which almost compelled us to believe in its solution, the antinomies burst loose, and Space-Time itself betrayed contradictions of its own.[1]

Now the one striking thing about all the solutions which were offered is that they are themselves abstractions. In all the theories we have considered consciousness has been left out. It has been left out on purpose, in accordance with the demands of realism. It has not been allowed to enter the tests lest it should pervert the conditions, and confuse the problem at the very start. And on the whole it has been a good thing for idealism that this experiment of keeping mind out should have been made. Mind ought not to be taken for granted; it ought not to be allowed to confuse the problem; it ought not to be brought in at all until other solutions have been tried and found wanting. Idealists should be grateful to realism for this drastic experiment; because the only chance for idealism was to leave mind out just for once and see what would happen.

We have been present at this experiment and we

[1] See above: "*Space, Time and Deity,*" pp. 162-213.

have seen what has happened. We have seen the obstinate resurgence of those contradictions which, making the reality of time and space and motion unthinkable, seemed to strike at the very foundations of mathematical and physical science. If mathematics and physics have survived the shock, it is because they have held themselves above the battle; they have refused to be involved in the contentions of philosophy. It is indifferent to mathematics and to physics whether mind is dragged in or left out. It is even more indifferent to them what view philosophy takes of their own particular assumptions and constructions. The behaviour and the relations of numbers and geometrical figures and bodies in motion will be the same whether realism or idealism is right as to the ultimate nature of space and time and matter. This is the sense in which what Professor Whitehead says is true, that "No perplexity concerning the object of knowledge can be solved by saying there is a mind knowing it." But I do not think that perplexities concerning the behaviour of objects and their relations among themselves are of the kind that metaphysics should be required to solve. That is what science is there for. What is required of metaphysics is rather the solution of precisely such problems as the antinomies of Space and Time, the origin of the categories and the relation of mind to nature, of consciousness to its object. And as you will certainly never solve the problem of consciousness by leaving finite consciousness out, so I think you will not solve the contradictions of Space and Time, or simplify the affairs of the categories, by leaving out ultimate mind. At any rate the experiment has been tried, and I think it has failed.

It is idealism's turn now. The idealist may have even worse luck—his is in all conscience a dangerous adventure—but the experiment is worth trying.

Some unkind person is sure to say that it has been tried before, and that if Kant and Hegel didn't succeed at it—The inference is distressing. And, arrogance apart, it isn't enough simply to go on assuming that Space and Time are ultimate forms of consciousness and see what happens. We have seen. Kant assumed it, and Hegel roped Space and Time in among the logical categories, and neither the *Critique* nor the *Logic,* nor Mr. Bosanquet and Mr. Bradley prevented New Realism from happening.

But Kant more or less left the matter there. He gave Space and Time a doubtful status somewhere between thought and sense. The *schemata* are amphibious organisms, hovering between two realms, and unfitted to survive. Kant did not go down into the thick of Space and Time and show that the presence or absence of consciousness made a difference. On the contrary, it was notoriously Kant who saddled idealism with his antinomies, and insisted on thought's powerlessness to solve them. As for Hegel, he contented himself with proving that Space and Time were as good categories as any other; and though in his system their contradictions follow all other contradictions to sublimation in the Absolute, the Absolute cannot be said to have extinguished them here and now.

Space and Time are in the melting pot.

And it is precisely because New Realism has happened that experiment is still possible.

If, as I believe, idealism, which has lost itself in Space and Time torn apart, is to find its way out through Space and Time taken together, that will be owing less to its own efforts in the past than to Professor Alexander, who has shown us how to "take Space and Time seriously"; shown that Space with Time cannot just be shoved away among the categories and left there, and that, when criticism has done

its worst, their status remains only one step removed from that of ultimate and supreme reality.

If they are not, as he holds, ultimates, they are at least penultimates, the simplest forms of consciousness.

ii

Let us begin, then, with the simplest things, pure point-instants in Space-Time.

Consciousness and Space-Time

We have seen how Time, taken with Space, breaks it up, and inflicts on it rupture in Time, the re-births of repetition. All Space, over and over again, instant after instant. For pure Space-Time there is no bridge from point to point; Time makes none; it only serves, in the form of motion, to pick out point from point, and thus draw attention to the discontinuity. The one instant that covers all points does not penetrate the gaps between them to join them up into a continuum; Time penetrates Space only to disintegrate it further. Time taken by itself, is utterly attenuated; so far from covering Space, it falls like a thin thread of rain, drop by drop, across that immensity and for ever. This is the old imperfect view of Time. But Time taken as Space tells off the universe, immensity after immensity, for ever.

And, likewise, for pure, mindless Time-Space there is no lien between its instants. Space only holds down one instant at that instant and lets go to hold down the next. Time can never hope to recover its own past or to grasp its own future. It knows nothing but the present, and the present is a vanishing point between a not-yet-existing future and a no-longer-existing past.

In the same way the body in motion lets go the past point-instant and has no grip of the future as such. It is at a point at an instant; at another point at another instant, and as far as the elements of time, space and

matter are concerned that is all that can be said about its motion. The change of point-instants which is the essence of the affair remains a miracle. You may as well say that the moving body is at rest and that its movement is due to the passage of Space-Time. And a body at rest is in no better case; the instant gone is gone for it utterly. In a sense, so far from being at rest, it would appear in its abstraction to be travelling with inconceivable velocity through time.

In all this we have had no body of reference, or rather, no mind of reference. We have been dealing with unreal abstractions, purely physical events happening impossibly "outside" mind.

And as a matter of fact, in our perceptual experience things do not happen so. There is an apparent continuity of point-instants; bodies do move through unmoving space in moving time; they do stand still in a moving time and unmoving space; and their movement is apparently continuous; it is Professor Montague's "uninterrupted and unitary slide."

And the fact that this does actually happen *in our perceptual experience* should give us pause. Is it a naïf idealism that wonders whether, after all, perception may not have something to do with it? Not more naïf, I think, than the realism which assumes that you can subtract perception and everything will go on as before, or add it and it will make no difference.

Only in unminded Space-Time, powerless to retain its own past and future, is there incurable disintegration. Introduce consciousness that joins instant to instant and holds past, present and future together in one duration; that joins point to point and holds length, breadth and thickness together in one extension; that links point with instant and point-instant with point-instant in one Space-Time; see Space-Time once for all as existing, not in and by and for itself,

but as the simplest and most universal form of consciousness, so that all events happening in Space-Time are, *ipso facto* happening in consciousness, and contradiction disappears. Consciousness secures to events their range in Space, their hold on Time, their past, their present and their future, in a word, their continuity.

In *minded* Space-Time motion becomes once more thinkable; bodies can and do move (relatively, if you prefer it to each other and the observer) in the finite Space-Time of perception, without let or hindrance from infinity. Zeno's Achilles will really overtake the tortoise, his arrow will fly, his approaching processions will really be in line, since consciousness keeps their positions for them, his diverging processions will cover their full sum of instants, because consciousness holds them in their past time. The world may have a beginning and an end in Space-Time, since consciousness began it and may end it; while consciousness, which the world is, will have no beginning and no end. Substance, or matter, will be discrete for abstract analytic thought, but continuous for concrete synthetic perception.

Consider change, the passing of events, without consciousness and with consciousness. Unminded change will have all the discontinuity of the Space-Time whose point-instants it in vain redistributes. And this, whether you take it as the pure passing of events, or as change of states in an object, of qualities in a substance. The unminded event when gone is gone, and might as well never have been; its trail in the present and the future is effaced so soon as made. Events do not of themselves recur. An event dies in space-time and is succeeded by another event, a miraculous new birth unrelated to its predecessor. Unrelated, because its point-instants themselves have perished, and Space-

Time in itself has no means of relating, of holding events together. The same thing applies to change of qualities in a substance. The substance in itself has no grip on its qualities; its past states are past for it; so far as it *is* its qualities, it is all impermanence. Its qualities co-exist in space; but only for an instant; they and it with them share the impermanence of time.

But *minded* change has not this utterly disintegrating character. In consciousness, which has both past and present in its hold and at least an outlook on the future, in consciousness the passing event is not dead, is not wholly past; it lives on in its successor. In the same way the object whose past states are held in consciousness endures as an object and is not lost with its changing states. And in the same way, again, the enduring state endures throughout its times, through consciousness that keeps all its times. For in consciousness and consciousness alone is there continuity; and only so far as Space-Time *is* consciousness has it duration.

I do not think you can exaggerate the importance of memory and anticipation as ensuring continuity. Only the bad habit of abstraction has made it possible to regard events and objects as existing on their own account in a real outside Space-Time existing on *its* own account. But a relentless analysis of this concept reveals its inherent contradiction.

Again, consider the perspectives of Space-Time; and take them with perceptual consciousness left out. We have then to conceive, as best we may, an infinite number of incompatible perspectives co-existing in the same Space-Time; that is to say, the outlines of figures overlapping and interpenetrating each other, and objects literally occupying each other's space-times in a way that does not happen in perceptual experience, and by all the known laws of mathematics and physics can-

not happen. Yet on the theory all these impossible things must be happening, for the simple reason that strict realism allows no other Space-Time but the one real one for things to happen in.

But admit that different perspectives may be the perspectives of different finite consciousnesses, each carrying its own finite space-time,[1] and the relevance of these problems disappears.

And there are certain facts of consciousness that on this view acquire a significance they would not have on any other.

We can be vividly aware of many percepts at the same time; but only of one distinct concept at one time. That is because our percepts are spread out all at once in our space; whereas our thoughts succeed each other in time. And this, whether we are perceiving objects in present time, or remembering, which is a way of perceiving objects in past time, or anticipating, which is a way of perceiving objects in future time. The number of objects that we can perceive at one time is limited only by our perceptual range and our capacity to attend to the content of consciousness. This capacity may cover all our world of sensation. For example, I am aware at this moment of a white page of paper with faint blue lines, of the table it is laid on, of vague mutilated pieces of furniture and curtain and window-pane on the outer ring of vision, of my hands and the sleeves of my gown, of my right hand with its pen moving over the paper, of the passage of an omnibus and the hooting of a taxi in the road outside. I am also aware of the contact of my fingers with the pen and of my hand and wrist with the paper and the table. And if there were a smell in the room I should be aware of that too. All these

[1] For the correlation of these perspectives, see below, "*Space, Time and Other Consciousnesses,*" pp. 245-259.

things are instantaneously together in the field of my awareness. And if, instead of being shut up in a small room with my head bent down, I stood out of doors looking at a wide landscape, I should see an immense number of things at any appreciable instant. But to set them all down in writing takes many instants. I can only write one word at a time, and I can only think one distinct thought at a time. I can only hold one concept (which may be a simple or a complex one) before me for contemplation at a time. If I lay out my complex concept into its elements, translating, say, "procrastination" into "putting-off-till-to-morrow," or more precisely, "pushing-away-from-now-till-the-day-after-to-day," I cannot do this all at once, each element demands its instant.

It is true that by visualising my concepts in the form of symbols, which may be either words or concrete images of the things they stand for, I can be aware of several at a time; for then I plant them out in space. This is the case with our geometrical concepts which we visualise as figures in space. But when we are, as it were, looking on at our concepts we are not using them, we are not *thinking*. The primary stuff of thinking is fluid. But the solid stratification of sensible experience is like a chord held down, while the play of thought, like a melody, runs on and over it with a varying tempo. As space takes the leading part in perceptual experience, so time takes the leading part in conceptual thinking. The passage of thought is the very passage of time itself.

Now on the realist theory it is of course clear why we should be able to perceive so many things at once, since our percepts are already laid out before us in the form of independent objects with which consciousness is merely compresent. But since, on the theory, we are equally compresent with our concepts and contemplate

them with the same detachment, it is not at all clear why we should be thus limited to one concept at a time. On the realist theory we look on at our concepts; so why, when perception is of things co-existent, should conception be only of things succeeding? Since concepts are out there, not in space, but in some region specified as non-mental, anyhow outside in the unminded world of reality, why should we not conceive co-existence?

And at first sight, if idealism is true and time *is* the form of thought, it seems a safe guess that this may be why our thinking should take time, and why, moving, it should only grasp one concept at a time.

But the matter is not so simple as all that. In the first place, time is not more the form of thought than space is, since at least our geometrical concepts are concepts of pure space. And space is not the only form of perception, since our extended percepts occupy time, and in each case we have to take time and space together. Nor is it entirely a question of more or less, more percept to space in less time, for we cannot, conversely, speak of less concept to time in more space, for the simple reason that our concepts need not be concerned with space at all and there will be no equation.

And, properly speaking, concepts in themselves are timeless and spaceless. Their stuff is pure thought and their habitation is the mind. Thus they will be as much part of the content of consciousness as our percepts are; only, unlike our percepts, they belong to that region of mind which is not included in space-time, and therefore we are not aware of them as extended in space.

But, though we cannot conceive more than one concept (whether complex or simple) at a time, this is only true of primary conception, the direct presenta-

tion of its concepts to the mind. We must distinguish between concepts conceived and concepts made use of. In a train of thought, a process of reasoning, an inference, a judgment involving many terms, the concepts do not constitute a one to one instant series, but there is a synthesis such that each concept of the series is caught up with the succeeding one and all with the whole. All consecutive thinking is of this type. As the separate notes are built up into the musical phrase, and the phrase into the tune, so the meaning of each separate word is caught up with the meaning of the next, they and all successive meanings rolling cumulatively into the total meaning of the sentence. Thus the movement of thought has thickness, it is three-dimensional in time, involving memory and anticipation, past, present and future; it is a perpetual return on itself to hold the meaning which is past, a perpetual reaching beyond itself to the meaning just ahead.

But this is not primary consciousness; it is not even pure conception; it is secondary consciousness, the play of the mind over and round about the solid primary block. Our entire consciousness, from moment to moment, goes, not on feet, but with a snake-like heaving of its whole body, dragging all its content, primary and secondary, along with it.

Now if consciousness were what the realist says it is, mere compresence with objects in the world outside it, we could hardly account for this cumulative movement of the whole block. It is more than the mere unminded movement of time in space. We found that time was in itself powerless to arrest time, and that unminded space performed this function most inadequately. Even if we could talk about simultaneous compresence with past and future objects, this synthesis of past, present and future goes beyond the state of compresence. It is consciousness doing something,

and doing something to the object, since the object is lifted up bodily out of its past into the present and carried on into the future.

If realism were true and compresence were the whole tale of consciousness, our consciousness would be very different from what it is.

iii

Consciousness and the Categories

Now realists may admit that this play of thought is mental, while they insist that it is a playing with non-mental entities, that the ultimate elements of thought, the categories, are non-mental.

But—even supposing that mental play with non-mental entities were possible—*are* they? Can we really think of the ultimate elements of thought, the categories, as non-mental? Even if we agreed that they were ultimately reducible to Space-Time, we should not on that account regard them as non-mental when we had reason to suppose that Space-Time itself is not non-mental. It wouldn't matter to idealism if everything in the universe were reduced to Space-Time, so long as Space-Time remained the ultimate form of consciousness.

But as we said, many of the categories: Identity, Diversity and Existence; Relation; Universal and Particular; Causality, Change; Number, the Whole; the One and the Many were not reducible to Space-Time. Above all, Quality was not reducible. That leaves nothing for Space-Time but Order, Quantity, Intensity, Motion, and such identity and diversity, such relation, such change and such qualities as are clearly spatio-temporal.

Are the categories, then, in themselves, apart from the mental character of Space-Time, reducible to terms of mind or consciousness? Not to such terms as are implied by simply saying that we "know" them—

realism has the most perfect right to protest against these definitions—but to terms of mind which will truly define their nature? I believe so.

To begin with Identity, Diversity and Existence. These categories are, I think, obviously deducible from or reducible to the concept of selfhood, which has nothing to do with occupying or not occupying one point-instant in Space-Time.

Each thing is itself, and other things are themselves as well as "other." This intrinsic, irreducible selfhood is beneath and behind all consciousness, and without it consciousness could not be, and without consciousness it would be unintelligible. If we say with Professor Alexander that things are identical, or the same, because they occupy the same space at the same time, and different if they occupy different spaces at the same time, we have yet to say what "the same" time and "the same" space are, as well as to provide for those things which continue in the same spaces at different times, or are in different spaces at different times. And we shall have to say what "different" spaces and "different" times are. So that we are thrown back on a sameness and a difference which are not definable in terms of Space-Time and *are* definable in terms of consciousness, being of the stuff of consciousness itself. Selfhood is the fundamental fact of consciousness. True, that in the dawn of our experience, we begin by identifying ourselves with our bodies which later we distinguish from surrounding objects; thus, for infants in arms identity, diversity and existence will have a purely spatio-temporal reference; and if philosophers choose to adopt the metaphysical views of an infant in arms there is nothing to prevent them. The older baby knows perfectly well that it is not its feeding bottle or its mother or its nurse. As consciousness advances the self is clearly distinguished from its

body and conscious states from bodily states, and this self-reference, this assertion of selfhood is the true metaphysical ground of identity, diversity and existence.

Existence is the union of identity and diversity. Everything that exists is self same and different from others.

And Universality is strictly deducible from Selfhood. The Universal is that which is one and the same in each of its particulars. Thus it is repeated in Space-Time; but this mere fact of repetition does not make it spatio-temporal and quantitative. The very essence of universality is quality. A thing has such and such qualities that together constitute its *kind*. And quality we found to be irreducible to Space-Time. Things which have the same qualities and correlations of qualities are of the same kind; and the essence of sameness we found to be selfhood.

And again, the thing essential to the universal is not repetition but recognition; its relation, not to Space-Time but to consciousness. It is the presence of the universal in the particular which makes knowledge, even in the lowest form of perceptual experience, possible.

The universal is thought itself incarnate in things, the chief witness to their mental character.

Now we cannot draw a hard and fast line between the universal and particular. Universal and particular are in the same boat. If the particulars are non-mental so are the universals, if one is mental both are mental. If we have reason to suppose that universals are supremely mental, particulars must be mental too. And, obviously, the individual will share their character.

I said a little while back that the highest universal is consciousness itself. But if the deduction of the

categories from consciousness is sound, the highest universal will be the univeral consciousness, the absolute Self.

So far, our idealist's career among the categories has been a fairly easy one. And according to the older tradition of idealism he should have no trouble at all with the category of Relation. The older idealism regarded all relations as thought-relations and left it at that. Now, clearly, they are not *sensa,* you can't see or touch or smell a relation as such; and this peculiar impalpability of relations seemed to set them apart as holy and dedicated to idealism. To be, is, as Lotze said, to be in relations; and since all relations were supplied by consciousness, clearly to be in relation was to be in consciousness. To be was to be related, and to be related was, *ipso facto,* to be known.

To the older idealism, the universe appeared as a collection of patches of colour, scattered sounds, wandering smells, of hard nubbly things tied together by invisible, intangible strings. The tighter you tied it to its terms the more impalpable and elusive the relation became, until for sheer subtlety it vanished into nothingness.

And if one thing seemed more certain than another it was that relations were not real in the realist's sense, but that they were "the work of thought." The older, logical idealism blinded itself to all other possibilities by concentrating on relations which were indubitably thought-relations: the subject-object relation, the subject-predicate relation, relations between categories and concepts, and relations between relations themselves, not anticipating the moment when all relations should be declared reducible without residue to Space-Time. Thus, by ignoring such humbler forms as "beside," "between," "to right and left of," "north-east by east of," "husband and wife," it gave an impres-

sion of having snared the entire universe in a net of logic. It was left for the realists of the twentieth century, notably for Mr. Bertrand Russell, to insist on the importance of these entities, so palpably independent of thought, and ask the idealist what he was going to do about it.

Now so long as the idealist confines himself to logic, so long as he regards Space and Time as mere categories, forms of thought like any other, there is nothing that he can do. Almost any relation he happens to hit on, the relation of his luncheon to his dinner, of his stud to his shirt front, of his cat and her kittens, of himself to his deceased wife's sister, will, if he lets himself dwell on it, be a crux to him. His system does not allow for those irrational sense elements which are the terms of half the relations there are. Simply saying that the terms are things of sense and the relations things of thought will not help him with the relation of his stud to his shirt-front. It is a relation of fastening, and you cannot say that fastening is a thought-relation. And an enormous proportion, perhaps the greater proportion, of relations are of this transitive and practical nature. They have to do with action and behaviour. If he is going to hang on to his epistemology like grim death, his only chance is either to draw a distinction between fastening and the relation of fastening, or to deny that fastening is a relation. And I think he will have difficulty in making a sound case either way.

Therefore the only safe course for the idealist is to abandon the epistemological account of experience as an exhaustive statement, and take his stand by the primary block of consciousness, which will be very largely a complex of sense-data in space and time, in which relations *may* be impalpable concepts, but are more likely than not to share the perceptual character

of their terms. The very worst that realism can do to him is to confront him with relations which are purely spatio-temporal; but this will not hurt him, since he has already settled his account with Space and Time.

This brings us to the contentious question of external versus internal relations: whether relations are or are not "grounded in the nature of their terms." Mr. Bradley has sufficiently exposed the dilemmas of relations.[1] If a relation is outside its terms it will have to be related to each of them, and *this* relation will be related, and will be external to its terms, and related to each of them in an infinite outside regress. If it is inside the nature of its terms, there must be a relation of the terms to their nature, which itself will depend upon the nature of its terms and set up a relation which will depend upon the nature—and so on in an infinite inside regress. I am not concerned at the moment with Mr. Bradley's dilemma.[2] There is only one theory of relation which idealism is compelled to dismiss as unsound, the realist theory of external relations. If the relation is an out and out external one, a non-mental reality detached from its terms, so far from relating them to each other it will have first to be related to each of them, thus setting up the infinite regress for which Mr. Bertrand Russell has blamed internal relations.

Now it is not the absolute idealist who is hit by the infinite regress. He positively thrives, like Mr. Bradley, on the dilemma. But the infinite regress is fatal to the realist. If his relation is to be a real relation of real terms it must relate, and it must do it at once. And that, because of its infinite regress, a purely external relation cannot do.

Equally, for any idealism which believes in the real-

[1] *Appearance and Reality*, pp. 25-34.
[2] See *A Defence of Idealism*, pp. 183, 184, 223, 238.

ity of its world, relations must relate. It must therefore find such a definition of the relation of relation to its terms as will exclude the infinite inside regress. By hook or by crook the relation must be made to relate. And this is not to be done by calling each and every relation the work of thought. The work of thought on terms which are not thoughts and have no connections in the world of thought will be an outside relation with a vengeance. If relation is to relate it must be immediate. It must get in first before the infinite regress has had time to start. "The work of thought" is not a wide enough description of relation. "The work of consciousness" is too wide. That is to say, every relation is not directly the "work" even of primary consciousness, and if it is to be real, if it is really to relate, it must in no case be the work of secondary consciousness. It must not be the mere play of consciousness on pre-existing stuff. The relation that relates must be of the stuff of consciousness itself; since all things are of that stuff.

The terms will, on the theory, be of that stuff, and you must look for the relations where the terms are: if in space and time, then in space and time; if in the world of thought, then in the world of thought; if in a mixed world, then in that world as it is mixed.

The relation can then be grounded securely in the nature of its terms, in the sense that the terms will "make a difference to" the relation; they will make the relation what it is. Thus the stud and shirt make their fastening what it is. Other terms, a button and button hole, a pair of apron strings, a railway coupling, make other relations of fastening what they are. The fact that there *are* other "fastenings" does not mean, as the realist will have it, that the relation of fastening is external to the stud and shirt. We are only considering that particular kind of fastening.

A relation may of course be so slender and partial that it will touch its terms on the most trivial side of their nature: all casual, temporary relations are of this sort. The realist makes out that all these are external relations, only because he is confusing the total complex of the persons or the things concerned with those parts of them which enter into the relation. The parts, however slender, are all that can be justifiably called the terms; and the relation, while and as it lasts, will be grounded in their nature.

In all experience of relations—and by experience I do not mean external knowledge; for example, the knowledge a physicist has when dealing with the relations of his subject matter; so let us say in all events into which primary consciousness enters, consciousness pins down the relation to its terms before the infinite regress can set in. The infinite regress is always an affair of secondary consciousness. So long as we take relation as an abstraction from the content of primary consciousness, the dilemmas of relation will arise. They are solved, as the dilemmas of Space and Time were solved, by taking relation and consciousness together.

Order we have already admitted to be spatio-temporal, at least in origin. But it is not on that account non-mental.

Quantity also, but not all quantity, and not all intensity; for intensities of sensation are not in themselves reducible to Space-Time: even if degrees of heat can be measured by points on the thermometer.

And quantity in the form of Number is not, I think, reducible at all. Neither are relations of number. For example, the relation of a square to its root is not spatio-temporal; nor are the purely numerical relations of measure, which would seem to rule number itself out of space and time. We can only dream of in-

cluding it if we confuse between real and psychological derivations (the ways in which we learn to count may be purely spatio-temporal), or between the behaviour of numbers themselves and the application we make of them, as in measuring.

Number is pure thought; all numerical, all mathematical laws and operations are laws and operations of pure thought; all geometrical constructions are constructions of pure thought. The fact that they are applicable to things of sense in Space-Time, that things in Space-Time are measurable and calculable, would in itself be sufficient indication that nature is not "closed to mind," but that thought saturates it through and through.

We found that Substance taken as Space-Time broke up into its parts and was lost, giving rise to Kant's antinomy. Unminded substance could neither support its parts, nor hold them together, nor maintain itself. But substance taken together with consciousness merges in the concept of Selfhood. The Self is not lost in its states of mind or states of will; it *stands under* them, holds them up and together, and gives them continuity.

Unminded Causality, in giving rise to unminded change, suffers, like change itself, from all the disintegrations of Space-Time. It can only preserve its continuity, its power to pass into its effect, as part of the movement of some ultimate primary consciousness. Taken together with consciousness, the concept of causality as the "total configuration of the universe" becomes intelligible. Space-Time could not give it this configuration, for Space-Time is not in itself the Whole; it has no grip of its own past and future. It may be objected that the concept of causality is not exhausted by the definition of total configuration. It cannot be less than that, but it is something more; it

is that which from moment to moment makes a difference to the Whole. Thus causality is process. But process as such disappears, like power and necessity, in the total configuration of the universe. And this is the contradiction of causality.

Now, if we had nothing but unminded causality in an unminded universe, we should have to choose between configuration and process, or put up with the contradiction.

The clue to the problem, I think, lies in the double aspect of mind. Mind is consciousness, and it is also will. In its more perfect forms it is conscious of its will. In its form of highest perfection, it wills its consciousness which is the universe. Will is pure causality; it is pure process; it is the universe of consciousness in the making. It is not subject to Space-Time, for Space-Time is a form of the consciousness it has created. It moves in the world freely among its own forms. Freely, because its own forms are its conditions. In this sense the cause is the sum of the conditions. It *is* its conditions, for it is subject to none that it has not itself imposed. And in this sense causality which is process, may be said without contradiction to be also the total configuration of the universe. For the total configuration of the universe is nothing but mind, the mainspring of whose unfolding consciousness is will. Mind is the only entity capable of literally containing its own process; of being at once process and total configuration.

A moment's reflection will show the possibility of this apparent paradox. It is more or less to be found in the experience of any finite consciousness that not only anticipates but has power, within limits, to shape its own future, that, in remembering, from moment to moment rolls up its past into its present and perpetually covers the process of its will.

And what applied to causality applies to Reciprocity, too.

We have seen already that the Whole as Space-Time fell asunder, like Substance, into its parts. Here again, ultimate consciousness is the only Whole that can maintain itself in unity with all its parts. It will not be a *logical* Whole, as the older idealism had it; for will and all sense elements stand outside that Whole. But it makes possible (and Space-Time does not) the existence of logical wholes as subordinate entities within itself.

The same consideration applies to the absolute One which is and contains the Many. Conscious Spirit is the only conceivable absolute One. If the many forms of the universe are not forms of the consciousness of absolute Spirit, they must fall apart into the endless plurality and absolute difference of their kinds; in which case the "kinds" themselves, and all subordinate unities which actually obtain, become unthinkable.

Motion has been already considered. It was seen to be only possible when "minded" by some consciousness.[1]

We have done with all the categories said to be reducible to Space-Time. There are three others: Contingency; Modality and Necessity. None of them are strictly spatio-temporal, and they are doubtful categories. Contingency falls under the head of Causality as Condition. Modality is a compound of particularity and quality. Necessity, dubious in itself, is another name for the uniformity of nature, which if it is not a law of consciousness, is simply an empirical fact, carrying with it no necessity.

Quality only remains; and it remains so persistently outside Space-Time that Professor Alexander will not

[1] See above, pp. 224-226.

allow it to be a category. It seems a rather high-minded proceeding thus to strip it of its ancient prestige. Surely Quality is a good enough category for anybody, seeing that, except bare Being, we cannot think of anything that has no quality at all. Even pure quantity, though it isn't quality, may *have* quality. There is a certain difference of flavour about finite and infinite numbers, or about square roots and cube-roots. Quality saturates all the things of consciousness. It is the name for all the charming unreasonableness of nature, for all that is rich and mysterious in thought. It is essentially primary.

Its mental character will be more apparent when we come to consider primary consciousness.

iii

Another problem of Space-Time has arisen with the appearance of Professor Einstein's theory of Special and General Relativity. **Relativity**

How does that theory affect the assumptions and conclusions of idealism? Does it make for idealism or against it?

It would only make against it if idealism assumed an absolute Space-Time which is the same for all observers, that is to say, for all consciousnesses under all possible conditions; or an absolute Time which is the same under all spatial conditions.

The foregoing chapters were written before I had read Professor Wildon Carr's *The General Principle of Relativity,* and I am glad to have the support of his authority for the view—disgusting to realists—which I have taken of consciousness as the continuum; and I wish that he had developed it more in detail. (It is not enough to state that consciousness is the continuum unless you show precisely how it is the continuum and

why.) I cannot, however, agree with Professor Carr that Relativity makes directly for idealism. So far as I understand Professor Einstein's theory—and Professor Einstein's equations are, I regret to say, a bar to perfect understanding—all that it undertakes to prove is that Time (and motion with Time) is relative strictly to position in Space. And that the size and shape of objects, so far as they depend on motion, and mass so far as it depends on motion will be relative too. I gather also that the age of an object, its duration in space-time, will depend on its velocity, the pace at which it goes through Space-Time, and be relative to the ages of other objects which have not gone the pace. Space-Time and motion through Space and in Time will not be independent entities; that is to say, they can only exist in relation to a "body of reference," and in the absence of a fixed body of reference real, absolute time, and real, absolute space there will be none.

Thus we hear a great deal about time-systems and bodies of reference. But Professor Einstein doesn't say a word about minds of reference; and if a realist chooses to insist that there is nothing here but the eccentricities of unminded Space-Time it would be hard to refute him out of Professor Einstein's mouth alone. Professor Einstein is concerned, not with space-time systems as occupying his observer's consciousness, but with his observer's body as occupying certain positions in a space-time system.

All the same, there is nothing in his theory which can be used as a refutation of idealism. For idealism each "observer" will carry with him his own space-time system based on his personal perspective; his body of reference will itself be part and parcel of his consciousness; and his consciousness will only not appear in the equation because it already contains the equation and its terms.

I think there is nothing in the Relativity theory that upsets this view. And incidentally this view supports the Relativity theory which involves a plurality of space-time systems. For according to idealism there will be as many space-time systems as there are consciousnesses, as many forms of space-time as there are forms of consciousness.

VII

SPACE, TIME AND OTHER CONSCIOUSNESSES

i

Forms of Consciousness

We can at least conceive the possibility of other forms of consciousness: 1. Forms in which both memory and anticipation are complete here and now, all space being known at an instant and all time at a point. 2. Forms in which memory is more extensive than our own; 3. in which memory completes itself by going back over the whole past of the universe. 4. Forms in which anticipation is more extensive than our own; 5. in which it will complete itself by going forward over the whole future of the universe. 6. Forms in which the same event will be happening for different observers at different times. 7. Forms in which the time series is reversible. 8. Many dimensional forms. 9. Forms in which points in space are reached without passing through intermediate space, 10. or in which bodies can occupy each other's space. 11. Or in which one time system is contained in another. 12. Forms correlated with other space-time systems. 13. Forms in which all space-time systems are correlated with each other.

The first and last forms, consciousness of all space at an instant and all time at a point, and consciousness embracing and correlating all space-time systems, are, if they exist at all, forms of the ultimate consciousness which is God.

Memory itself helps us to the second and third conceptions. The phenomena of premonition and second sight suggest the fourth and fifth.

A typical instance of the sixth form would be Professor Alexander's "event in Sirius" [1] which has actually occurred nine years before the inhabitants of the earth are aware of it. You can of course say that a light ray starting from Sirius is not the same event as the same light ray reaching the earth, that we have here two events separated by nine years. But this is unfair to the integrity of the ray and to its course through heaven, which is already broken into as many event-particles as there are point instants on its track. And supposing the star to have gone out any time within the last nine years, for a perception that responded to light faster than light can travel Sirius would be no longer seen, while he would still be twinkling away for other people. And we can imagine a form of consciousness entirely concerned with such events.

ii

Reversible Time Series

The seventh case, the reversible time series, is no more than an interesting speculation.[2] It is thinkable only if we take time, either in stratified blocks of duration, or in its literal sense of successiveness as a simple cardinal series of instants. That is to say the series 5,4,3,2,1, is as thinkable as the series 1,2,3,4,5; but even here, where we are dealing with instants which have all a similar content, the figures have not the same value, and we have more than a simple reversal of order. That is to say, 5 with 4,3,2, and 1 in front of it is a different complex from 1 with 2,3,4, and 5 in front of it. And when we come to complex qualities and events, their series, if taken in point-instants or event-particles, ceases to be reversible at all. I can take up one event in a solid block and place it in time before another

[1] See Appendix III, p. 317.

[2] See *Is the Time Series Irreversible,* by Dean Inge. "Proceedings of the Aristotelian Society," Vol. XX.

solid block of event that comes after it; but I cannot transpose their event-particles and at the same time preserve the integrity of the events.

That is to say, I cannot reverse the order of movements within events without changing their complex and their character.

For example, I cross my room from the fireplace to the writing-table, passing on my right three bookcases, a door, and a chair. Strictly speaking, to reverse the order of this series I should have to walk backwards, so that I may pass these objects in the reverse right hand order of chair, door, and bookcase, and keeping the fireplace behind me; for the fireplace, since I turned my back on it at starting, does not belong to the visual series. I cannot separate my movements from my surroundings in time and space, and if I turn round and walk forwards I shall face the fireplace, and have the chair, the door, and the bookcase on my left. But even so, I have not got a complete reversal, that is to say, the same movements in a different order; for walking backwards is not walking forwards.

I can, however, take my events in solid blocks and reverse their order. I can go to bed at eight o'clock in the morning, dine at one o'clock, lunch at eight in the evening, and breakfast at ten. But if I reverse the order of event-particles, the order of my knife and fork work, and of my throat movements, whatever I may be doing, I shall not be dining. So that, whether we can or can not make the pure time series stand on its head, the complete order of events in time is irreversible. It is strictly determined by the correlations of time with space.

The same is to be said of memory and anticipation. Every time we remember or foresee we are reversing some order of events; we are putting a past event, or

train of events, after the events which have followed it, or a future event, or train of events, before the events which should precede it. But we do not remember or foresee event-particles or the train of events in their reverse orders. The remembered or foreseen events have their own irreversible past, present and future. And the time we foresee or remember them in is our present.

iii

The eighth form, of many dimensional consciousness, is conceivable so far as the construction of the Fourth Dimension is conceivable. We cannot form any complete spatial image of four dimensional figures; but, even without helping ourselves to Time for the fourth dimension, we can make a pretty fair intellectual shot at it, by analogy with our constructions of the second dimension from the first, and of the third from the second.[1]

The Fourth Dimension

Thus: The line, turned on its end-points at right angles to itself, forms the plane surface square whose boundaries are lines. The plane square, turned on its bounding lines at right angles to its four sides, forms the cube whose boundaries are plane surfaces. By analogy the cube, turned on its bounding surfaces at right angles to its six sides, will form the fourth dimensional figure, or tessaract, whose boundaries are cubes.

The time factor is important, if we are to realise the possibility of this construction. Thus:

Suppose a creature whose perceptions were limited to one dimension. If a line were superimposed on his space he would see nothing. The points of the new line would have no duration in his space. But a red

[1] See *The Fourth Dimension*, by C. H. Hinton. Also *Flatland*, by Dr. E. A. Abbott.

line a foot long, moving in the second dimension across his space at the rate of one second per foot, would be seen as a red point that lasted one second. The duration of the red point would be the queer part of it, a sign that it had come into his space from a higher dimension, an unknown and inconceivable direction.

Again, suppose a two-dimensional creature with perceptions limited to plane surfaces. If an uncoloured plane square were laid down in his space, its boundaries and parts would have no duration in any point they covered. The two surfaces, having no thickness, would be perceived as one; there would be no pattern on his carpet. And suppose a red vertical plane set up at right angles to his horizon and moving across it, he would see a succession of instantaneous red points (each the end-point of the base line of the vertical plane) popping up, one after another, on his horizon line, but without duration.

But if a red cube a foot square rose in the third dimension like a sun above his horizon, at the rate of one second per foot, he would see a red line a foot long that lasted exactly one second. Its lasting would seem to him most uncanny, and if he were clever enough he would infer a third dimension.

Similarly, a tessaract, passing at the same rate through three-dimensional space, would be seen by three dimensional creatures as a square surface lasting, uncannily, just so many seconds longer than the plane surface of a passing cube as the tessaract has more sides than a cube. Or rather, all its three-dimensional parts would be seen moving, while the fourth dimensional side would be stationary so many seconds. A phenomenon that would certainly attract attention.[1]

[1] See Appendix IV, p. 318.

iv

With forms nine, ten and eleven we are already in some degree acquainted.

Dream Space-Time

In our Dream Space we go from point to distant point without traversing intermediate space. Our bodies pass through other bodies or occupy their spaces. Our Dream Time has a system of its own.

I have seen no adequate explanation of the fact that a train of dream events, which may take any dream time from *n*th hours to one minute, will happen in a few seconds by clock time. You are not explaining when you say that dream events and dream time are illusory, or that the sense of dream time is a false memory palmed off by waking consciousness upon the dream. For illusory events, like real events, take time. Everybody knows the dream of dressing for a party, of opening endless cupboards and endless drawers, turning over innumerable garments, rejected for some dream reason, and finally setting out, clothed in nothing but a simple handkerchief. In the dream it has taken endless time to find that handkerchief. And time taken is time taken.

As for false memory, how can you possibly remember a dream you haven't had? At that rate all our dreams would have to be invented in the first moment after waking, whereas we are very well aware that waking came last in the series of events. If we remember the dream then we have had the dream. More often than not we forget the dream events and yet remember that they took time.

The question is: *What* time did they take?

To say that the dream series is rattled off with an intense velocity may possibly help to fit the dream hours into the clock seconds; but the velocity itself would constitute a unique and independent dream

tempo. And the velocity theory is not borne out by the time sense of the dreamer, which stretches out the pace of events to normal. The only short cuts of the dream are the movements of the dream body in dream space; and these are not to be accounted for by any waking experience. They are independent and unique. So that the conclusion would seem to be that the space-time of dreams is not the space-time of waking life, but a unique and independent system, and that the time that dreams take is their own time.

V

Personal Perspectives

The twelfth case occurs in everyday experience when other people's personal perspectives are recognised and correlated with our own.

But if we have given up the external non-mental object, if we each carry about with us our own private Space-Time, in what sense can we be said to see the same objects and to inhabit the same world as other people? What sense that will not do violence to our experience?

Well, in the first place, our grounds for giving up non-mental space and time were that their non-mentality itself did violence. And it will be remembered that we gave up the non-mental objects because of the incompatibility of their many appearances. If all those appearances are to be outside realities their incompatibility becomes a downright serious thing. So does their multiplicity. We saw that their multiplicity was too much—in 1913—for even so devout a realist as Professor Broad. If they are relative to our sense-organs that is serious too; and if we adopt the "General Principle of Relativity" there will be no standard size, shape, mass, movement or position of any object. Discrepancies will be infinite. On the other hand, if

you say that they are *not* relative, that they are absolute, discrepancy becomes more serious still; and any correlation of discrepancies impossible. Experience is done violence to either way.

But—it may be objected—if it is all a matter of different sense-organs and different perspectives, why do we not see different objects in different worlds?

Or, if my space-time is my private affair and I am confined to my personal perspectives, how can I be assured of other people's perspectives, or of the existence of other people at all? If my neighbour's body is a phantom wandering about in my space-time, what guarantee have I of his reality, of anybody's reality except my own, or of my own reality, if it comes to that? For there will not be any reality for me outside my consciousness. And isn't this simply "subjective idealism," that easy prey of realists, the lunatic theory of Myself Alone?

Now, it is chiefly because my consciousness has the form of space-time that the reality of other consciousnesses is brought home to me. The behaviour of other people in space-time convinces me that their existence is as real, as self-contained and well-authenticated as my own. Most of their movements in my space-time are unforeseen by me, all are independent of me, and yet so strikingly like my own movements that I am convinced that I am dealing with selves as free and separate from my self as my self is from theirs. Their speech further persuades me that they are conscious as I am conscious, yet that their thoughts are not of my thinking; that each has a secret incommunicable self that does not come into my consciousness, yet whose reality I cannot doubt.

It would still be open to me to question these signs and regard other people and their speech and their behaviour as illusions of my solitary dream. But they

have every appearance of carrying about with them a Space-Time perspective which is not mine. And because it is not mine, because they have this indubitable air of being fellow spectators of the universe and of looking at the universe from a different angle, seeing a world that runs out with all its lines from a different centre from mine; because their hypothetical perspectives can be correlated with the only perspective I can be certain of, therefore I conclude that other people are entities as real as I am in a world as real as my own.

And I have reason to believe that I am known to them precisely as they are known to me, and that my body is a phantom wandering about in their space-time as theirs wanders in mine.

And that their space-time is not mine I also know because my body cannot stand where their bodies are standing at the same moment. I can only see the world as they have seen it if I stand where they have been standing. We shall never see the same world at the same time.

But in what sense consistent with idealism can I be said to stand where they have been standing, since, on the theory, they can only stand in their own space and I can only stand in mine? And in what sense is the world they saw the same world that I see, since our seeing is in different times as well as different spaces?

It is the same world, *no less and no more and in the same sense that* the house I see a mile off is the same house I see near, or the house I see cornerways the same house that I see frontways. No less the same—and no more. For the house I see a mile off is a very small house, and the house I see near, which I call "the same house," is a large one. And the house seen frontways is a square cube and seen cornerways is a triangular cube; and I have to correlate my own per-

spectives with each other very much as I correlate other people's with my own.

How is this possible?

It is *done* in all perceptual experience in ways of which optics give the correct scientific statement. But they do not profess to define the metaphysical grounds of the process or the ultimate character of its data. We have still to ask how is the correlation of perspectives thinkable?

To begin with we have to think of our personal space-times and the personal space-times of other people as "real" (or ideal) parts of a "real" (or ideal) space-time, which, if *it is to hang together*, must be the Space-Time of some ultimate consciousness. How are these parts to be fitted in?

The house I see a mile off grows larger and larger as I approach it. I can regard all my views of the house as strung like so many concentric rings on my line of vision which passes like an axis through their common centre; the smaller views telescoping into the larger as the line shortens. Besides shortening, this axis will swing with me as I move from right to left of the object; it will therefore be a variable, but its end-point in the common centre of the telescoping views will be a geometrical constant which determines the place of the house in real space-time, the space-time of which my own personal perspectives are parts.

In the same way the line of the projecting angle of the house will be common both to the front view and the corner view. It is a real (or ideal) line, a geometrical constant of the two perspectives, and fixes the place of the house in the real (or ideal) space-time of the ultimate consciousness.

And in the same way my neighbour's perspectives can be correlated with mine.

If he is standing close beside me I know that our

separate axes of vision will meet at an acute angle in the centre of his object, and if we are further apart, at an obtuser angle. If he takes my place I know that his axis of vision will swing to the position mine occupied, that it will lie in the same track and that its end-point will fix his object's position in real or ideal space. His "standing beside me" and "taking my place" mean that his position and mine are marked in real (or ideal) space, and that we are beside each other, or interchangeably, *there*. These relations will hold good also in our private spaces because these are parts of real (or ideal) space.

Similarly, if he takes the corner of the house while I take the square, the line of the projecting angle will be common to our two perspectives in real (or ideal) space.

The same thing will hold good for our times. What is a time for his space will be the same time for my space, so long as our spaces are correlated. For idealism this means that all personal space times are embraced in the Space-Time of the ultimate consciousness.

I have taken the simplest example of the correlation of personal perspectives, the simplest of geometrical constants. In reality pure Space in which "God geometrizes eternally" is filled with the pure geometrical figures of all objects of all possible perspectives. They are outlines which the individual consciousness fills with the hardness or softness, the roughness or smoothness, the colour and richness of its own *sensa*.

If this were all there would be nothing to distinguish them from Kant's *schema*, the motionless, ready-made framework into which the things of sense fit in a manner suggesting that they are already provided with shape, size and position. The Kantian *schema* was

only applicable to static objects; it had no hold on them as the nuclei of events in time. Thus through the changeless crowding of the Kantian perspectives in one time, there would be overlapping and intersecting such that material objects would be infallibly obliged to occupy each other's spaces. It had all the awkwardness of the realist's multiplied real incompatibles. But the *schema* we are contemplating is not of Space but of Space-Time. Consciousness in its form of Time divides the objects within these personal perspectives so that one is never inconvenienced by the other.

And Kant's *schema* was a form of sensible perception; and it is clear that sensible perspectives cannot have any points or lines in common, because these points and lines are the points and lines of bodies which cannot occupy each other's space. But the geometrical patterns of the geometrizing God are pure intellectual forms that know nothing of the jealous exclusions and mutual hustlings of the things of sense. They are one and the same for all personal perspectives by whomsoever perspected.

At the same time they must not be thought of as marking out in real-ideal space any standard shape or size; for there will be outlines of all figures of all possible perspectives. Only what I have called the geometrical constants will be common to any two or more perspectives; and what is a constant for any two or three perspectives may be a variable for a fourth. For example, the long, steep line common to the corner and square views of the house, will be shortened in the perspective of an observer posted high above the roof.

So far we have been considering the correlations of perspectives in the Space-Time of ultimate consciousness as conceived by a finite consciousness limited to its own personal perspective. If we ask how any object in Space-Time appears to the consciousness which

embraces all Space-Time, we ignore the very conditions of the problem. The ultimate consciousness is neither in the garden nor posted high above the roof. It presumably will not be limited by relativity to a sense-organ or by position of a body in space. My *sensum* is for all I know my private affair, and I have no business to attribute it to Deity if Deity hasn't any sense-organ to correspond.

On the other hand, we do not know the part actually played by a sense-organ. On the idealist theory the *sensum* blue is not generated by contact of a sense-organ with light waves of a certain length and rate of vibration. It is the response of the self to the stimulus of some consciousness "at the other end," semaphoring by means of molecules in motion. The sense-organs may be simply sorters out, and transmitters of the movements of molecules; not generators, but canalisers (as M. Bergson says) of sensation, distributing God's *sensa,* holding within bounds the otherwise intolerable inrush of divine experience.[1]

But supposing that an object in finite space-time appears to ultimate consciousness *at all* as it appears to finite consciousness, we may presume that the very least that ultimate consciousness can do will be to see it, not from any one perspective but from all possible perspectives except that of motion. It will be able to see it all round, and above and below, and outside and inside at the same time.

And as we could trace the beginning of the consciousness of all space at a moment in our own memory and anticipation, so in "visualising," when we are more or less free from the limitations of position, we do actually see all round an object and inside it at once. This depends upon the object. Thus there is difficulty in imagining the complete spherical aspect of

[1] See William James, *On Immortality.*

a monotonously coloured Association football. But let the object be large and let its four sides have each some vivid distinguishing mark, and the thing can be done easily enough. In imagination I can look at the front and the back of my house at once and through all the rooms that intervene. Suppose this sort of vision carried to the *n*th power?

If the universe exists solely through the will and in the mind of God, his consciousness of the universe will be perfect and whole, embracing all space-time systems. But, it is possible that he is not really conscious of the universe in any way even remotely like our own.

In the last chapter but one we shall consider what, on the theory, his way must be, what it may be, and what it cannot be.

VIII

DIFFICULTIES AND OBJECTIONS

i

The Challenge

I said Idealism must be proof against all attacks based on the behaviour of the world of "physical" things.

The challenge to the idealist, if you remember, was *to frame his theory so that its terms will be at once a better description and a better explanation of the facts;* better that is to say, than realism's account of them. To quote Professor Broad again:

> "Any alternative hypothesis about the real will have to rest its probability entirely on its ability to explain the perceived."

The implication being that you cannot do this in terms of perception.

The idealist's contention is that you cannot do this by leaving perception out. We have seen what difficulties and contradictions arise from the realist theory of unminded Space-Time, unminded categories, unminded objects and events, and from the theory of the "real counterpart." We found that the facts could be so re-stated in terms of consciousness as to avoid these difficulties and contradictions, and that, so far, idealism offered a better description and explanation.

Yet it must have remained apparent that idealism has at least two sides open to attack: one, its alleged fundamental assumption that being and being known are the same; and again, the relation of mind to its body, the plain fact that consciousness appears to be dependent on nerves and cerebral cortex.

The first line of attack is based on the self-evidence of the contrary. Being and being known are not the same. The processes of the cosmos are not the processes of thought, and you have not explained anything when you have said that somebody knows it. Not even when you have said that God knows it.

I shall take up this objection last, for the defence will rest mainly on the distinction between primary and secondary consciousness which will be dealt with in the two following chapters. Meanwhile it must be admitted that *the* crux for idealism is the relation between mind and body.

ii

Idealism assumes that all objects of perception, together with their spaces and their times, are the content of consciousness and dependent on it.

The Crux

Now the body is an object of consciousness. To idealism it is a content of consciousness and dependent on it. But in actual experience consciousness appears as dependent on the body. No sense-organ, no *sensum*. No cerebral cortex, no thought. In recent experiments made by Dr. Head, the correspondence has been found to be so close that certain discriminations between *sensa*, between degrees in the same kind of *sensum*, heat, cold, pain, intensities of colour and sound, taste and smell, certain rejections and selections, which we might suppose to be the work of consciousness, are in reality performed very efficiently by the sensory nerves themselves.[1] They have picked out their *sensa* even before their junction at the synapses. Similarly, the synthesis of sensations has been completed at the synapses before there is any question of the cerebral cortex and perception. For all these operations the help of consciousness is not needed. The appropriate nervous apparatus, with its up and down lines and its junc-

[1] *Studies in Neurology:* Sensation and the Cerebral Cortex.

tions, is at once a transport system, a sorting house and clearing station of sensations, before ever the terminus of the cortex has been reached. The work of consciousness has been done for it; everything has been accounted for—except consciousness itself. It has nothing to do but take a back seat and look on at the spectacle provided for it by the sense-organs.[1]

At first sight there is something very staggering in this discovery of Dr. Head's. And yet it is no more than might be expected once you have recognised that there *is* correspondence between our sensations and the neural processes in our bodies. The correspondence was once thought to be general. It is found to be particular, to hold good of the minutest differences, that is all. There is no more difficulty for idealism in admitting a special neural process for a special intensity of heat or pain, than in admitting different neural processes for sound and colour. The trouble is having to admit a correspondence at all, *if that correspondence is to be interpreted as causal connection.* If consciousness of things is caused by neural process then consciousness is dependent on neural process, and "things" cannot be dependent on consciousness. And if consciousness simply looks on at an outside spectacle, it will not matter to it a rap whether that spectacle is provided by neural processes, by the direct behaviour of the things, or by the behaviour of the things and neural processes combined. So that at first sight the realist seems safe and the idealist very badly hit.

But if the objection is to hurt, it must assume, not only that the correspondence *is* a causal one, but that the idealist supposes the dependence of content upon consciousness to be a causal dependence too, when the idealist position will be this: Consciousness is an effect

[1] *Studies in Neurology:* Sensation and the Cerebral Cortex.

whose cause is change in a body whose cause is consciousness. Thus we have a vicious circle. Mind is both the cause and the effect of its own body.

Now the consciousness we are considering as linked up with bodily processes is a purely finite consciousness, a consciousness limited to a certain kind and order of experience in which bodily states play an exceedingly important part. That experience, therefore, will include bodily states as part of the content of consciousness. Idealism regards this rôle of the body as played within mind in the mind's own theatre of space and time. It may even regard the body as being built up, cell by cell, by the psyche, for its own purposes, according to its need. But, in the first place, it does *not* regard the finite self as the ultimate cause of its own consciousness. To idealism the body is nothing but a complex of *sensa* like other *sensa* in finite consciousness; but finite consciousness itself is not the cause of its appearance there. And if there is no causal dependence of the body on finite consciousness there is no vicious circle.

But neither is the body the cause of consciousness. On any theory it is not possible to show any causal connection between the *sensa* and the motions of external molecules; or between neural processes inside the body and the *sensum* or percept outside it; or between percept and perceiving subject. Much less between molecules and mind. Dr. Head's experiments still leave it clear, as he tells us, plainly that the act of sensing is not neural but psychic.[1] What is more, neither external molecular motion, nor neural processes—and these are all the physical factors which can conceivably be concerned in the result—are ever in consciousness at all. So that even if a causal connection existed one way or other, finite consciousness is

[1] See Appendix V, p. 319.

not being invited to swallow up its own origin, or serve both as the cause and the effect of itself.

And the crux of idealism reduces itself to this: The sense-organs and their neural processes are "in" the body which is "in" space-time which is "in" consciousness, yet their presence or their absence makes such a difference to consciousness that without them consciousness, as we know it, cannot be.

Can idealism describe or explain this relation in terms which will not do violence either to itself or to the facts?

The problem is still difficult enough in all conscience, even if much of the difficulty disappears when it is agreed that the relation is not causal. The theory of psycho-physical parallelism expressly states that the relation is not causal, that there is no bridge from one parallel line to the other. It leaves its parallels running till the death of the neural processes ends the parallelism for good and all.

If we do not adopt parallelism, and there are grave metaphysical objections (and some psycho-physical ones) to that course, we must look for the cause of the correspondence elsewhere than in the mind alone or the body alone. And if we call in causality we are committed to that "total configuration of the universe," the system of all-embracing relations, for which we found ultimate consciousness to be the only adequate expression.

The position of idealism then is, that all objects and events that do not exist in finite consciousness exist in ultimate consciousness of which finite consciousness is a part. Spatio-temporal objects and events, which are not known in the space-time of finite consciousness, are known in the Space-Time of ultimate consciousness.

Molecular motions and neural processes are such

events. Therefore when the idealist agrees that molecular motions and neural processes make a difference to the content of a finite consciousness such that without them there would not be any finite consciousness at all, what he means is that the content of ultimate consciousness makes a difference to the content of finite consciousness, or even to finite consciousness itself.

Finite mind has not complete control over its own consciousness. If it is to be conscious of its body, its body must be "in" its consciousness like any other content. But its consciousness and its body are also "in" ultimate consciousness, as parts within the whole and ultimate consciousness *has* control over its parts, so that they exist in a relation of dependence on the whole. And this is the solution of the dilemma we encountered in Chapter III, in considering the status of the "real object" of perception.

If we deny its independence we shall have to admit between the whole and its parts a temporal cleavage fatal to their spatial integrity; that is to say, the parts —for example, each ellipsoid—will exist in dependence on a partial perception at a time previous to the existence of the combination, the whole.[1]

That is, supposing the whole to exist in our consciousness only after we have combined the parts. But if the whole exists already combined in the ultimate consciousness which idealism assumes, this particular dilemma will not arise.

We talk about the dependence of mind on body; but we now see what the real relation of dependence is. It is one that, without doing violence to a single fact, leaves idealism fairly in possession of the field. This is not saying that ultimate consciousness exists; only that if it did exist it would provide a reasonble solution of an otherwise hopeless problem.

[1] Above: *Some Realist Theories of Perception*, pp. 76, 77.

For the problem is hopeless for realism too.

There has been and will be so much unavoidable reiteration in this argument that I will not repeat what I have already said on this score.[1]

Professor Alexander is no doubt right when he says

> "If colour were, as it is alleged to be, the work of mind, we should have the unintelligible result that a set of vibrations is seen not as a set of vibrations but as colour."[2]

But supposing a set of vibrations to mean the movement of bodies in the Space-Time of ultimate consciousness, it will be itself the work of mind; and the mental result, colour, will not be unintelligible. If it is, I do not see what realism is to make of its own non-mental vibrations, and non-mental colour. And I do not see how molecular motions, inside the body, can set up a *sensum* in space outside it; nor yet, supposing the *sensum* to be there, already, full-blown and independent, how they can cause the mind to be conscious of it. And if, as Professor Alexander says, the mind *is* the neural process, then *it* is inside the body, and I cannot see how it can be conscious of the *sensum* outside, when the *sensum* is not the molecular motions and the mind is not conscious of them anyhow.

You may say the sensory nerve-endings are *not* inside the body; they are at the periphery, in direct contact with the outside molecules; they receive the messages of the *sensa*. But if the neural processes *are* the messages, or the continuation of the messages in neural terms, and the mind *is* the neural process, how on earth is it to know what they stand for, what it stands for itself? If they stand for anything they stand for it. The mind is conscious, and the neural processes are not its consciousness; they are molecular motions,

[1] Above: *Some Realist Theories of Perception*, pp. 76, 77.
[2] *Space, Time and Deity*, Vol. II, p. 244.

the very thing that consciousness is not and that the *sensa* are not.

The realist may say that the same thing applies to the idealist assumption. If consciousness and its content are identical, if the mind *is* the *sensa,* how can it know what they stand for? The obvious answer to that is: They needn't stand for anything but what they are, the content of consciousness. What may be behind them, what they conceivably may stand for in ultimate consciousness, is precisely what the mind does not and cannot know.

Again: If the inside neural molecular motions *are* continuations of the outside molecular motions, why is the mind not continued outside? And if they are not continuations where is the continuity of the process which begins in matter and ends in mind?

iii

Being and Being Known

But the realist's most frequent reproach against idealism is that it confuses "being" and "being known." He is never tired of showing up the absurdities of this position. He insists rightly that to be and to be known are two very different things and do not come into each other's categories at all; that it doesn't make a ha'porth of difference to being whether it is known or not; that quite obviously we cannot know things unless they exist; and that they do not exist because we know them but we know them because they exist. He points out triumphantly that by far the greater part of the universe is made up of things which are even now not known, to say nothing of the vast ages of geologic time before consciousness was born on this planet.

But as every word he uses in this connection makes clear that he is thinking of our consciousness alone, his

triumph is no more than the cheap triumph of common sense over the lunacy of solipsism. And as nobody takes solipsism a bit more seriously than he does, all his dancing and trumpet-blowing and flag-waving is performed upon a corpse. His argument may even be turned against himself. The universe cannot exist in our consciousness because we are not conscious of the greater part of it. Then, supposing we *were* conscious of the whole universe, supposing there *is* a consciousness that knows everything, everything may exist in that consciousness.

But the realist goes further. He maintains that, even if there were such a consciousness, the universe would not exist because it knew it. His assumption is that to be conscious of a thing is to assert its independent existence, to be conscious of the difference between it and consciousness. Knowing is an external relation between the knower and the thing known. Here are three distinct statements which the idealist may very well challenge the realist to prove. As yet the realist has not brought forward any proof. The three statements are supposed to be self-evident, or to rest upon a "feeling," an "intuition," an "assurance" given by consciousness itself. We have the word of consciousness for it. I shall return to these assumptions of realism later on.[1]

Realism, again, is within its rights when it contends that cosmic processes and processes of thought are radically different. There are irrational elements, *sensa* and the relations between *sensa,* which cannot be swept into the net of thought. As we have seen, by far the greater part of the universe is of this nature. Evolution does not proceed by a series of jumping syllogisms. The cause is not implied in the effect by

[1] Below: Chapter IX, *Primary Consciousness,* pp. 274 *et seq.*

way of judgment. The laws of motion are not the laws of thought. When we enlarge our knowledge by experiment and inductive reasoning we are not creating the content of our knowledge. The great generalisations of science are discoveries and not creations. In deductive reasoning we only enlarge our knowledge to the extent that we discover a thing to be a particular instance of a universal law; or we lay out our general knowledge into its elements which, again, we have not created but discovered. Idealism assumes that there are such things as synthetic judgments *a priori;* but if idealism is right and the judgment is really *a priori* it will be contained in the mind already and there will be no synthesis; if it is synthetic it will add something that was not there before, which consequently will not be *a priori.* We can only enlarge our experience empirically, and empirical knowledge is not creation but discovery.

Not one of these processes bears the remotest resemblance to any process of nature.

And here again realism scores a partial victory. But it is a victory over epistemological idealism only. And it is only a partial one.

To begin with, it either ignores all that idealism assumes, or it implies that ultimate consciousness "works" in the same way as finite consciousness, that it, too, acquires knowledge empirically; that it reasons, judges and infers; that it is limited in space and time; that it discovers and does not create; it does not know the whole universe completely; it is not an all-embracing consciousness. It is not absolute; it is not ultimate: it is not any one of the things which idealism supposes it to be.

We cannot blame realism for this. Idealism itself betrayed ultimate consciousness when it bestowed on

it the logical forms of the only consciousness we know. We have to admit that logical idealism is in a dilemma. It cannot stand on both legs.

But even logical idealism had at least one leg to stand on. For though thought is not constitutive of the whole universe it is constitutive of a large part of it. You cannot conjure away the categories. Nor, to do realism justice, does it attempt to conjure them away, or to deny their *a priori* character. But it does not regard these elements as *a priori* for us. The real, *a priori* elements, space, time and the categories, are not created by the mind but discovered. We have examined the difficulties which are involved in this view. We saw that you cannot take Space-Time, you cannot take the categories apart from mind, even from mind as we know it, and preserve their character. The contradictions which arose from the experiment were solved by restoring mind to its place in the problem. We need not go back over this ground.[1]

There is yet another difficulty. The devout idealist, in criticising Professor Whitehead's Concept of Nature, somewhat confidently stated that it contained a fundamental contradiction somewhere, and that a contradiction between nature and its concept is a contradiction within the whole of reality which is nature and thought taken together.[2] And it may be objected that this applies equally to the contradictions of finite consciousness which are contradictions within the whole. But this is the old problem of the finite perspectives, and we found that it was solved by correlating them with the "real" geometry of ultimate consciousness.

But since the logical dilemmas of idealism cannot be solved in this way, I see no course for idealism but to drop its logics and fall back on the distinction be-

[1] Above: Chapter VI, *Space, Time and Consciousness*, pp. 219, 245.

[2] Above: Chapter III, *Some Realist Theories of Perception*, pp. 109-111.

tween what I have called the Primary block of Consciousness and Secondary Consciousness. If it can be shown that this distinction is compatible with a true description of the facts, objections which are only damaging to epistemological idealism will not apply.

There remains the gravest charge of all against idealism: that it mixes up the *ratio essendi* with the *ratio cognoscendi;* that it thinks things *are* because they *are known.* Or rather that it pretends to think so; for realists will not admit that you could really think anything so preposterous.

This is a formidable criticism; and it is one that idealists have laid themselves open to by many an ill-considered statement of their position.

If I say that things are moving in space-time because I perceive them moving, I am taking the *ratio cognoscendi* for the *ratio essendi, and* I am not giving any account of things moving.

On the other hand, if I say with the realist that I perceive them moving because they are moving, I am taking the *ratio essendi* for the *ratio cognoscendi, and* I am not giving any account of perception.

But if I say, as I have said, unminded motion is as unthinkable as any other unminded category, *because* of its discontinuity; if I say that consciousness, in gathering up all past and present positions and carrying them on into the future, preserves the continuity of space-time, and saves motion from perishing with its perishing point-instants, I am not substituting a law of thought for a law of motion, or declaring my consciousness to be the cause of which motion is the effect, I am stating the *ratio essendi* of the continuum, *and* I am giving an account of the total complex: motion and consciousness. Consciousness is the continuum because without it motion will not conceivably hold together, but it is not the continuum because I know it.

The consciousness that "knows" in this sense is secondary consciousness.

Or, again, if I state the *ratio cognoscendi* thus: I perceive things moving because things moving are in my consciousness; I am offering a perfectly plausible reason for my perceiving them. My statement is only tautological if I refuse, as the realist refuses, to recognise the distinction between primary and secondary consciousness, between having a thing in consciousness, being aware of it, and being aware of the awareness. For by the time that I have begun to talk about my reasons for perceiving things I am aware that I perceive them, and this awareness belongs, not to the consciousness that contains but to the consciousness that contemplates.

In this little matter of the *ratio,* realism is only scoring one of its easy victories—over solipsism (again!) this time. It is clear to the very humblest intelligence that the reason why things exist is not because I perceive them existing, and that I couldn't perceive them if they didn't exist.

But it is a little matter that should be cleared up once for all, if realists and idealists are not to go on arguing forever at cross-purposes. Once for all, then, the sane idealist is not assigning his perception as a reason for the existence of things, or even his existence as a reason; though he may allege his belief in his existence as a reason for his belief in the existence of things.

And when the argument is carried into the region where it is relevant, the region of ultimate consciousness, even there the realist does not imagine that the universe exists because God knows it. He supposes it to exist because the consciousness of God is not merely contemplative but creative and includes his Will, and the universe is the content and the outcome of that

creative consciousness; it is a mode of God's existence as well as of his knowledge.

The case of idealism is not summed up in the simple statement: The being of things is to be known. That isn't allowing for the causality of God's Will.

The being of things is to be willed and their appearance is to be known.

IX

PRIMARY CONSCIOUSNESS

i

The Distinction

Realists, with their admirable passion for precision, are always asking us to distinguish; above all, to distinguish between consciousness and the object of consciousness.

In turn I invite them to distinguish between primary and secondary consciousness; to carry their passion still further, and distinguish between distinctions, between the distinctions they are really making and the distinctions they think they are making; between the distinctions they can and cannot make.

Now the idealist position will be, I think, secure when once the distinction between primary and secondary consciousness is made. It will then be seen that the more formidable statements of realism apply to secondary consciousness and to secondary consciousness alone, and that the idealist can make *his* statements good so long as he confines them to primary consciousness and gives realism its due. Until these two forms of consciousness are discriminated, realists and idealists will be arguing eternally about one when they mean the other.

I am convinced, not only that it is possible to make this distinction, but that it is the distinction the realist is really making when he thinks he is distinguishing between consciousness and its object. Primary consciousness is concerned with all the objects and events and relations and conditions which are immediately

present in it, whether *per*ceived or *con*ceived, remembered, anticipated or willed. It thus includes space and time, motion and all the other categories, all the empirical qualities of matter, all empirical quantities and intensities, all *sensa,* all percepts and concepts, all acts of will, all feelings, passions and emotions, when and as experienced, and all the raw material of judgment and reasoning. Primary consciousness is the whole block immediately present in consciousness, before reflection, or judgment, or any sort of secondary awareness has got to work on it.

The realist will, of course, quarrel with the definition. He will say that the block is not present *in* consciousness but *to* consciousness. He will say this because he has already made the distinction between this immediate stuff or content of consciousness and the awareness of consciousness which supervenes on it. And because this secondary awareness is of *consciousness and its content* (primary consciousness being indistinguishable from content), and because it is distinguishable from primary consciousness, it seems to the realist, who is confusing the two consciousnesses, that consciousness can be distinguished from its content. Ask the first realist you meet if he can distinguish between his primary and his secondary consciousness. If he says he can not, it will be clear that he has never attended to what happens when he is conscious. His secondary consciousness has been so busy philosophizing that it does not know what its primary consciousness is doing. Yet until the secondary act of reflection has taken place it is impossible to shave off the thinnest slice of pure consciousness from the primary block, so entirely is it one with its object. Object and consciousness are given whole in one indivisible act or state. This is true even of casual and comparatively shallow perceptions; but when consciousness is most intense, when its content is

most vivid, when consciousness has reached saturation point, its identity with its object is absolute. It is then impossible to divide what consciousness has joined. Yet it is at this point that primary consciousness is the intensest affirmation of the object's existence.

There is no reason why this should be so if realism is true. It holds good, not only of very near and diffused objects, such as tastes and smells, but of objects in perspective, and of sounds. These are facts which anybody can verify for himself by simply concentrating his attention on some object. Think, first of all, of some overpowering sensation or perception. When you see a flash of lightning, or hear the firing of two batteries, or feel the stab of toothache, how clearly do you distinguish between consciousness and its object? And in what terms are you going to describe the difference? You can refer the flash to its course in the sky, the firing to the French and German positions, and your pain to your tooth; but the sky and the positions and your tooth are all parts of the field of primary consciousness; and when once you start deliberately referring, secondary consciousness has set in. Where, in the overpowering moment, is your distinction between consciousness, and the flash, the shell fire, or the pain?

If realism were true, you would expect the very opposite results. The more intense, the more vivid, the more stupendous the object, the easier it ought to be to distinguish it from your consciousness of it, if realism were true.

Or consider the profound contemplation of some beautiful thing, or of some enthralling idea; or take ordinary, everyday perception, or ordinary, everyday thinking in its first innocence; at whatever stage discrimination comes, it comes too late to separate this pure, primary consciousness from its object. The razor blade of analytic thought can only get in between it

and the secondary act. It can, that is to say, only distinguish between consciousness and consciousness.

Because *this* distinction can be made, realists have jumped to the conclusion that the distinction between consciousness and its object can be made. Because the distinction is complete, and secondary consciousness, as mere awareness of awareness, is a very narrow margin, and a blank transparency at that, it has seemed possible to them to regard consciousness itself as a very narrow margin, and to describe it in terms which imply that it is nothing but a blank transparency. And because the relation of consciousness to consciousness is a relation of mere assenting compresence without content, it has seemed possible to Professor Alexander to define the relation of consciousness to its object as a relation of compresence of precisely the same kind that obtains between the table and the floor. The sameness is very far from perfect, seeing that the table and the floor have each a character, while the consciousness of realism has none.

Let us look more closely at these relations. Take the simple case of seeing a tree.

Professor Alexander says,

> "I am aware of my awareness as I strike a stroke or wave a farewell. My awareness and my being aware of it are identical. I experience the tree as I strike a man or wave a flag." [1]

If he admits that my awareness and my being aware of it are identical (which they are not), he admits that consciousness and the object of it can be, so far, identical.

My experience of a tree is my awareness of the tree. Quite obviously, mere awareness *is* awareness and it is not a tree. Awareness of awareness has no content but awareness; and in this logical sense the two are iden-

[1] *Space, Time and Deity*, Vol. I, p. 12.

tical. They are, that is to say, identical in essence but not in existence; for the two awarenesses are numerically distinct.

Again, tree has a different logical essence from mere awareness, awareness that can serve in different contexts.

The question is, has it a numerically distinct existence from awareness-of-tree? The realist's argument requires not only that the object should have this existence numerically distinct from awareness, but that awareness and awareness of awareness should be identical existences, which they are not. Professor Alexander says that they are identical, presumably because their logical content is identical; and he says that awareness-of-tree is different from tree presumably because their logical essence is different. It seems to me that he is thus confusing between essence and existence.

The idealist takes the two-fold opposite view of these relations. Unlike Professor Alexander, he distinguishes between awareness and awareness of awareness, on the grounds that you are here dealing with two numerically distinct states or acts of consciousness, with what I call primary consciousness on the one hand and secondary consciousness on the other. And he refuses to distinguish between tree and awareness-of-tree on the grounds that you have here one act and one content, which together are one existent, one indivisible state of consciousness. That is to say he treats the conjunction "of," which realists make such a fuss about, not as disjunctive, separating consciousness from its content, but as descriptive, qualifying consciousness as consciousness of tree. "Consciousness of tree" expresses the relation from the knowing side; the real or ontological relation would be expressed by "tree of consciousness," a term which, so far as I know, no idealist has yet had the courage to adopt.

The trouble is that it is not easy to define consciousness without begging either the idealist or the realist position. Professor Alexander says it is

> . . . "another general name for acts of mind, which in their relation to other existences, are said to be conscious of them as their objects."[1]

This definition is viciously circular, besides begging the question of the nature of consciousness. Consciousness may be a state and not an act. I might define it as the presence of any content within the mind, leaving unstated the nature of the content and the possible existence of any corresponding object "outside." This definition is open to the objection that it leaves out the distinctive character of consciousness. Yet if I define it as awareness of presence, or awareness of content, I am defining it by itself with the subtle suggestion of discrimination thrown in. Whereas, clearly, the presence or absence of consciousness is precisely the presence or absence of content, whether "content" (or its corresponding "object") is or is not present in the absence of consciousness.

And there is trouble with the very terms themselves. I have been using the term "consciousness" as interchangeable with "awareness." And I notice that realists are fond of saying "awareness" when they mean consciousness, where idealists say consciousness and mean it. It seems to me that this gives them a slightly unfair advantage in their argument, so far as awareness implies that supervening stage of discrimination, which, I believe, is not to be found in primary consciousness taken in its innocence. That is to say, by substituting awareness for consciousness, when we are talking about consciousness pure and simple, the realist is helping himself to the very discrimination which is

[1] *Space, Time and Deity*, Vol. I, p. 12.

in dispute. Therefore I prefer the less controversial term, and if the realist chooses to say I am taking refuge in vagueness, he may. I do not think I am taking refuge, and I am perfectly willing to talk about perceiving, feeling, sensing, or, if he likes, sense-awareness, while contending stiffly that, where these states can be said to be distinguishable from their content we are dealing with secondary and not primary consciousness.

Professor Alexander considers that the idealist position is based on a false inference from the fact that the mind can select the objects of its special attention.

> "This selectiveness of the mind induces the belief that objects of mind are made by it, so that they would not be except for the mind." [1]

Is this really the basis of idealism? The belief is surely due to the fact, not that the mind selects (for it only selects from among objects already "in" consciousness), but that it does not and cannot distinguish between object and consciousness in the primary block. Professor Alexander says that his experience "declares the distinct existence of the object as something non-mental." If by "experience" he means his primary consciousness, it declares nothing of the sort; it declares only the existence of the object. Even secondary consciousness, intervening, declares no distinction between primary consciousness and its content, neither does it commit itself to any statement as to the character of the object as non-mental. *That* is an assumption of speculative philosophers; a kind of tertiary consciousness. If common sense also assumes it, this does not mean that common sense does or can distinguish between primary consciousness and its object, but that it can and does distinguish between secondary (or ter-

[1] *Space, Time and Deity*, Vol I, p. 15.

tiary) and primary consciousness, and between objects with a definite position in space and time, and the self incarnate in a definite organism with a definite position in space and time. Common sense, if it thinks at all, thinks that it distinguishes between consciousness and its content in the primary block, because it falsely refers to the primary block the only distinctions it can and does make.

So when Professor Alexander says the distinct existence of my object from my mind is attested by experience itself, we can only ask him, by what experience? Or by experience at what stage? He says it is "a truth which a man need only open his eyes to see," whereas it seems to me rather an assumption, true or false, which a man is more likely to make with his eyes shut. When I open my eyes I see a field of yellow charlock, very bright in the sunshine, and beyond it a line of trees, and beyond the trees a steep range of many-coloured fields, and beyond the fields a very pale blue sky with shreds of white cloud drifting across it. It is not until there is a definite click in my consciousness and I am conscious of my consciousness, that I can distinguish between it and these things. And this, I maintain, is a distinction between consciousness and consciousness, and not as the realist assumes, between consciousness and things. That distinction is never given along with my perceptions in the primary block. I can only make it on reflection, by deliberately inserting the analytic blade between this superconsciousness and the original block; but the consciousness I thus separate off is a blank without form or quality or quantity; it is as near being a non-entity as anything can be which is the subject of intelligible propositions. The distinction is made within consciousness, and I am conscious of it as made and not given. The realist's error, as I take it,

arises from his assumption that objective content can only be given to consciousness by objects existing apart from it in an external field.

Professor Alexander's distinction between consciousness and objects of consciousness appears again as the distinction between what he calls "enjoyment" and what he calls "contemplation." "The mind enjoys itself and contemplates its objects." It is never an object of contemplation to itself. And he says that if you fail

> . . ."to find in your experiencing the act of experiencing the enjoyment, but find only the object and nothing else . . . the reason is that you are seeking for the enjoyed as if it were the object contemplated."[1]

To "assure yourself of the compresence of the nonmental object with the enjoyed mind" you must

> "seek for the enjoyment as something which you mind or live through, and which you are, and beginning with the acts highest in the scale like willing or desiring, where the enjoyed act is palpable, descend in the scale through constructive imagination to remembering, perceiving and at last to bare sensing of a sensum, where the enjoying act is least distinct." . . .[2]

Where, in other words, the distinction between consciousness and its object is least perceptible. So that this affair of distinguishing is by no means the simple, self-evident and immediate thing it was assumed to be; let alone that it reveals the fact (which should be disconcerting to the realist) that in willing and desiring at any rate, "the enjoyed act is palpable." You might as well say at once it is contemplated as much as the *sensum* is, so that mind can become on occasion its own object.

Further, on this view the relation of knower to thing known is a relation of "compresence"; the self-enjoy-

[1] *Space, Time and Deity*, Vol. I, p. 20.
[2] The same.

ing mind and the contemplated object are together. How is this relation experienced? Professor Alexander says this question is put "from the point of view of the being which has the experiencing, that is, the mind," and that therefore the relation is enjoyed, not contemplated; it is a subjective relation, a relation without reality in the external world; therefore, on the realist hypothesis, we have no guarantee that the assumption of this relation is a true one—and it is the assumption on which realism rests. It seems to me that this is serious—for the realist.

ii

If Professor Alexander's definition of the relation of consciousness to its object is peculiar, it is none the less the necessary and logical outcome of his theory of Space-Time. Space and Time have more to do with realism than even appears in Professor Alexander's philosophy; more than realists would care to admit when it is fairly put to them. If you tell a realist that when he thinks he is distinguishing between his mind and its object he is really distinguishing between the object and his body, he will probably ask you what on earth you mean, and protest that he is doing nothing of the sort. Yet it was precisely on this confusion that Professor Santayana's biological proof of realism was based.[1] **The Naïf Confusion**

And it is partly on this confusion that the plain man's naïf realism is based. The plain man will have to get out of his skin before he can see that the distance between his body and the church steeple is not a distance between the steeple and his mind. All the actions and reactions of his body in relation to things external to it confirm him in this confusion. He may have just

[1] *Essays in Critical Realism*, pp. 169-173.

sufficient discrimination to know that when, if ever, he says to himself "I am conscious that I am conscious of that tree," the tree has nothing to do with this secondary consciousness; but since, like a realist philosopher, he has already mistaken his primary for his secondary consciousness, it is no wonder if he thinks it has nothing to do with the tree.

iii

The Unperceived Reality; and the Crucial Relation

But realism, naïf or new, critical or spatio-temporal, is only partly based on these confusions and misplaced discriminations. The plain man and the philosopher can both point to one indubitable fact that apparently supports them. Objects exist when we are not conscious of them. But to prove that they must exist without some consciousness we should have to perform an operation on the universe, extract all the consciousness in it, down to the last spark of ultimate consciousness, and see how many objects would be left. The indubitable fact is only damaging to a theory which assumes that there is no consciousness in the universe but our own.

There are realities, then, which are not objects of perception or any primary consciousness. But of these realities which are not objects of perception some may be objects of scientific knowledge, and some may be objects of metaphysical speculation. There may be other realities which are neither objects of perception nor objects of scientific knowledge, nor objects of metaphysical speculation, and of these nothing can be said. The questions which concern us here are two: (1) What is the status of the reality which is not an object of perception but an object of science? (2) What is the status of scientific knowledge? Is it primary or secondary? Both questions belong properly to the following

chapter on Secondary Consciousness. But as the unperceived reality has bearings on the objects of primary consciousness it had better be considered here. It is impossible to separate primary from secondary consciousness altogether, or both from ultimate consciousness; though I am afraid the double treatment will entail much tiresome overlapping and repetition.

What is the status of the reality which is *not* an object of perception? To use Professor Broad's example, a light-wave or an electron?[1]

Neither is an object of possible perception, nor yet of primary conception or of any direct awareness, but each is an object of scientific contemplation, an object, that is to say, of consciousness in a sense, since it is before consciousness. It is, if you like, a purely hypothetical entity called in to account for a certain ascertainable behaviour of light or the motions of molecules. As regards reality it is in a very different position from the mere subject of a proposition. But it does not belong to that primary block of consciousness which is all that idealism dare affirm to be indistinguishable from its object. It is clear that we can distinguish between the object of scientific observation and the kind of consciousness concerned with it. And it may certainly be said to exist unperceived and to be real in this sense (which is Professor Broad's sense) of reality. Perhaps it never can exist as an object of any possible perception. It is even possible that it may not exist at all, and that some other entity is responsible for the behaviour it was called in to account for. It stands or falls as a reality by its ability to account for perceived events. Thus it is impossible to separate it altogether from the context of perceived events. It only exists in

[1] "All appearances are objects, but it does not follow that all realities are objects. For we might have grounds for believing in the existence of realities which we could never directly perceive. Such realities would be a light-wave or an electron." *Perception, Physics and Reality*, p. 8.

a certain definite relation to objects perceived, objects that we have agreed, on the idealist's theory, to have no existence when they are not perceived.

The crucial questions then are:

(1) Is that relation such as to compel us to revise our theory and to refer our perceived objects to the category of objects that exist unperceived?

(2) Or is it such as to preserve their seat in the primary block of consciousness intact?

(3) Is it such as to admit of our referring the whole system of unperceived realities themselves to a possible larger system of consciousness?

To fulfil the requirements of (1) it is not enough that the relations of the unperceived to the perceived object should be such that without them there would be no perception and no object perceived. For it might very well be that the behaviour of the unperceived entities is merely the spark that fires the train of perception; the perceived objects springing up in one indivisible generative mental act. It might be that the primary block of consciousness is the subject's response to the external stimulus. The perceived object must be shown arising directly from the stimulus without the collaboration of the mind.

And this cannot be shown. It is not possible to show any direct causal connection between, for example, light-waves of a certain length and rate of vibration and the *sensum* blue. Between the movements of light waves and neural molecular movement, if you like; but what are you to say of the leap from vibrations to blue? What relation have we here?

Well, idealism is bound to admit that we have a relation such that without it there would be no perceived object. No perceived object if the path of the vibration is blocked. No *sensum* blue if either cortex or optic nerve is destroyed or injured. There is an invariable

sequence between change in the cortex and the emergence of blue. How do we know that the sequence is a causal one, in the sense that it is a one line sequence going straight from stimulus to cortex, and from cortex to *sensum,* without the reaction of the subject? That the relation is such as to land the *sensum* outside not inside consciousness? We have no reason to suppose that what we have here is *nothing but* sequence, a simple linear relation or nerve-change to *sensum,* and not *correlation* of nerve-change-relation-to-subject with subject-change-relation-to-*sensum.* As long as the rôle of the subject remains uncancelled we are under no compulsion to hand over our perceived objects to the system of molecular motions.

(2) If these objects are to be ousted from their seat in the primary block of consciousness, we must be able to conceive motion not only as continuous throughout the system of extended matter, but as continuous throughout the *sensum* blue, in such a way that blue can be shown to be nothing but a mode or equivalent of motion.

Now, at first sight, so close is the correspondence between colours and rates of molecular motion, that it looks as if this transformation really could be shown; a certain equivalence is undeniably there. But can it be said that blue is nothing but a mode or an equivalent? Can we make the jump from rates of vibration which are purely quantitative to the unique, pure quality of blue?

Must we not rather say that rates of vibration act only within the closed system of the nerves and cerebral cortex, that they determine the route to be travelled by molecular discharges, but are powerless in themselves to determine what happens beyond the neural terminus, to create that incomparable, serenely static, and irreducible blueness of blue? If we are to

distinguish, let us begin by discriminating between quantities and qualities, between events which are motions and objects which are not.

Apparently the *sensum* is sustained in the field of consciousness by continual fresh impulses of matter in motion in the field outside it. At the same time, as far as we know, each successive impact ceases with the entrance of the *sensa* on the field of consciousness, and we are in the presence of a new order of events. Something has happened here which is not quite transparent. What has become of the original molecular motion? Of all those molecular motions which, mind you, are being incessantly renewed? Supposing the organism to be in a state of rest, and consciousness engaged peacefully in sustained contemplation of its *sensa,* are we to understand that the motions are discharging into consciousness in the form of *sensa?* This seems inconceivable, since neither consciousness nor its *sensa* are modes or any physical equivalent of motion. If we are to say that they are modes of energy, of which motion is itself a mode, we have, I think, got a fairly intelligible concept; but it is one which compels us to revise our concept of energy and regard it as anything but a physical thing. It is, I submit, inconceivable that energy on the physical level of molecular motion should thus transform itself into perceptions and objects perceived.

Still there *is* correspondence, and the idealist may very fairly be asked what he is going to do about it. There is that awkward matter of the cerebral cortex, which if it does not rule the subject out, does at any rate involve its action in a relation of apparent dependence upon stimulus? What does idealism make of the relation?

(3) Is the relation such as to admit of our referring the whole system of unperceived objects to a possible larger system of consciousness? Is the whole sys-

tem of matter in motion a closed system outside all consciousness? Or does it call for more and more consciousness to sustain it?

I think these questions were answered, as far as idealism can answer them, in the foregoing chapters on Space-Time, on the categories, and on the correlations of perspectives. According to the conclusions we have already reached, consciousness with all its *sensa* is responding, not to matter in motion, but to consciousness on some higher level acting through matter in motion. Matter in motion is strictly an affair of minded Space-Time; and Space-Time is nothing but the creative form of higher consciousness.

X

SECONDARY CONSCIOUSNESS

i

The Work of Mind

As primary consciousness is the whole block of experience, as it stands from moment to moment, before the mind has got to work on it, so secondary consciousness is that work of the mind. It is the first act which discriminates consciousness from consciousness; but it is not responsible for the original synthesis or the original discrimination of objects in the block. Neither is it that act of concentrated attention in which the existence of the object is intensely realised. That act we found to be purely primary and inexplicable on the realist view. For it is at that point of indissoluble union that consciousness most plainly asserts the existence of its object. But it, unlike secondary consciousness, cannot assert that existence as independent of itself.

It must be distinctly understood that secondary consciousness, in declaring its object independent of itself, is not declaring it independent of the primary consciousness in which it is found embedded. Once more, the distinction which secondary consciousness draws is not a distinction between consciousness and its object, but between consciousness and consciousness.

Secondary consciousness is always the work of the mind on the primary content, the play of the mind round about its object. It has its own concentration on its object in the form of *secondary attention.* It is comprehensive. It includes observation, reflection and

meditation; judgment, inference, and every form of reasoning, syllogistic or empirical; believing, disbelieving and opining; imagining; but not remembering, anticipating, dreaming, or day-dreaming, which are primary. Its object may be primary consciousness itself with all its content, percepts or concepts.

The percept or concept directly contemplated is the internal object of primary consciousness; the percept or concept *used* is the external object of secondary consciousness.

Or secondary consciousness may be its own object. It may turn on itself and analyse its own work.

At its highest it is *knowing,* as distinguished from simply *being conscious.* It is all logic and all scientific knowledge; and as such its objects may be realities unperceived. The whole region of discovery, of objects found and not created, belongs to secondary consciousness.

Primary consciousness never lies, because it never judges. Secondary consciousness is the source of all error. It bears the burden of all our falsehoods and our blunders. But, combined with primary consciousness, which is experience, it is the source of all truth, the mother of all science and all philosophy, so far as philosophy is truth.

ii

Its relation to primary consciousness will thus be a real relation of consciousness to its object, and its distinction from primary consciousness will rest, not only on its own unsupported assurance, but on the evidence of its work.

Relation of Primary and Secondary Consciousness

It does what primary consciousness cannot do.

By acts of secondary attention it can, within limits, select or reject, arrange and rearrange the content of

the primary block. It can, working together with the will, arrest or inhibit its own attention.

It finds and does not make the objects of memory; but it has a certain limited power over remembrance. It is secondary consciousness that drags up from the depths of memory certain past things for primary consciousness to contemplate. It works, here too, together with the will; but it has no control over involuntary memory or involuntary attention.

As regards Space-Time, it is not responsible for personal perspectives and their correlations; but it is aware of them as personal, and primary consciousness is not. Here again, it can fix attention on one perspective to the exclusion of another; within very strict limits, it can select, reject, inhibit, working hand in hand with the will.

The will, therefore, falls within secondary consciousness or primary according to whether its acts are premeditated or unpremeditated, deliberate or instantly decisive. Our experience of voluntary and involuntary acts, of acts instantaneous or deliberate, are sometimes so inextricably mixed that it is hard to disentangle primary from secondary consciousness here. But the act accomplished is always part of the content of primary consciousness, though the deliberations that led up to it may be secondary.

Again, all perception is involuntary; and all the objects of imagination, or at least their elements, have at one time or other been perceived; but the work of imagination on them is secondary. And when the work is accomplished the result may become a content of primary consciousness.

On the other hand, the objects of primary perception or conception may become the objects of secondary judgment, inference or reasoning.

Conversely, the objects of scientific discovery which

is secondary, when found, become objects of primary consciousness, conceptual or otherwise. The electron as a scientific object exists unperceived; as a concept it may be contemplated primarily. Radium before it is discovered exists as a secondary concept, a hypothesis, discovered it becomes a primary percept.

And primary and secondary consciousness work together in all creative art; but the finished work of art, the creation, becomes the object of primary consciousness.

Thus the two play into each other's hands; but there is no actual point in the game at which they resist separation.

iii

Realism and Idealism

The advantage of this separation is that it enables us to admit the truth of realism's most important statements—in their proper place. Applied to secondary consciousness every objection that realism brings against consciousness itself holds good.

Secondary consciousness is precisely that consciousness which can be distinguished from its object, that knowing which is not being, that work or play of the mind which Professor Whitehead will not allow to interfere with the concept of nature, that side of mind which it is so irrelevant to drag in. It is all those processes of thought which are not cosmic processes, which visibly do nothing to sustain the universe. It is thought as realism would have it, separated from things.

And it is as clearly dependent on primary consciousness as realism says consciousness should be on its object. It plays into realism's hands in attesting the existence of realities unperceived.

All idealistic logics and epistemologies belong to it. It is idealism's scapegoat that bears the burden of its sins, the brunt of realism's attack.

Against this attack primary consciousness is secure, and every statement that new idealism makes about consciousness will be true of it.

It is nothing but the cosmos of all experience as it exists from moment to moment, rolling on. For one primary block is not separable from the next, they are continuous, with the peculiar continuity which consciousness confers. It is all Space-Time as experienced from moment to moment. In it all matter in motion and all life have their own behaviour and their own laws, existing in perfect independence on secondary consciousness which can discover them but not create. Both inside the block and outside it the universe goes on its own way as if neither idealism nor realism had ever been.

Once admit that primary and secondary consciousness *are,* and are separable, two distinct though related acts of the undivided self, and you can afford to let both consciousness and the cosmos rip. Holding fast by the distinction, you can have all the idealism and all the realism you want.

XI

ULTIMATE CONSCIOUSNESS

i

As secondary consciousness is dependent on primary consciousness, so both are dependent on ultimate consciousness.

Necessity of Ultimat Consciousness

Some way back, in considering Professor Whitehead's Concept of Nature, we were faced with the problem of object and events. We found that the object had this two-fold contradictory character that it is the one permanent thing in the flux of events, which change it while they do not change. We asked whether the truth might not be that events as distinguished from objects, space as distinguished from time, reality as distinguished from appearance, and nature as distinguished from thought, are all abstractions from the unity of an all-embracing Self.

Considerations of Space-Time forced us to the same conclusion. We found that physical space-time and mental space-time are one and the same. (Indeed Professor Alexander says they are the same.) If so, by what right do you separate the act of knowing from the object known? The primal stuff of nature is the primal mind-stuff. All evolution is an unfolding and elaboration of the primal Space-Time stuff, therefore of the primal mind-stuff.

The realist really cannot make good his assumption of the extended nature of mind; and if he could it wouldn't help him; for on his own showing mind might know extension without being it. But once admit that mind-processes and mind-stuff are spatio-temporal and

you have done away with the distinction between mind and nature. There is then no reason why you should deny that mind contributes to its own experience, or that the whole of experience, the whole known universe, is mind-product, mind-stuff and mind-process. In the subject-object relation, instead of an unintelligible communion of incompatibles, you will have a mind to mind contact generating the universe; the universe will be just as much Subject-Object as it is Space-Time. In fact, this will be the more fundamental relation of the two. Space and Time will be what Kant said they were: the *a priori* form of consciousness; its universal and fundamental form.

All the same, we cannot think of the subject-object relation as preceding Space-Time, for this precedence would have to be in time, and it would presuppose an object existing out of space. We have to think of Space-Time as subsisting in and through the subject-object relation. Objections are only valid if we are in a position to deny that there is any Self in the universe higher than ourselves and more comprehensive than Space-Time.

This is, of course, the flight to God; but I do not see how it is to be avoided. Realists talk as if the idealist flew to God to stop a gap in a bad argument; whereas the proper use of a God is to stop the gaps between consciousness and nature and between nature and Himself, much as M. Bergson uses time to stop space with. What are we to do, unless we either fling up the problem as insoluble, or agree with Professor Alexander that the entire universe, and Deity with it, can be evolved out of the correlations of pure Space-Time? We saw the breakdown of the attempt to establish all-embracing relations within the bare concept of nature. One by one, all our mindless categories betrayed us. And as we can conceive no superior continuous unity

but that of conscious selfhood, we can but place reality under the highest category we know. Even the finite selves give continuous unity as far as they go, though their consciousness is closed to the greater part of reality.

Realism says this dragging in of God is entirely unjustifiable. We are not to help ourselves to anything that is not on the table. But in the end it has to help itself to Deity. Why not in the beginning, then, when Deity would do it some good? Because, Professor Alexander says, you can think away everything but Space-Time. So he thinks away everything and starts with bare Space-Time—well, not bare, packed with point-instants. If you ask him, What next? What can you get out of that? he says, Everything in time, if you give it time enough, and in Space, if you give it space enough. Everything happens; and he is not obliged to account for its happening; he is not concerned with the implications of its happening.

This attitude is entirely cynical.

If it comes to thinking, can you think away thought? And can you think the universe out of nothing but Space-Time? Space-Time holds everything together. But what holds Space-Time together? Can they be mutually assuming and supporting? By thinking of Time as pure succession can you deduce Space as its continuity? By thinking of Space as co-existence, can you deduce Time as its division? How does Professor Alexander arrive at his masterly correlations? By taking Space and Time together, as we find them in conscious experience, one instant of Time covering many points in Space, one point in Space enduring through many times. So that Space is the witness to past Time and the guarantee of the future. Every concrete event is made up of such endurance and such continuity. But the two do not logically assume and support one an-

other; they have not their ground in one another; you cannot pass from one to the other; and you can very easily think away their correlation. And, since they are only experienced in correlation, that is as good as thinking away Space and Time. If they are mutually supporting, in the sense that they prop each other up against otherwise inevitable collapse, are they trustworthy elements on which to build up the fabric of the world? Once more, What holds them together? The nature of the universe that springs from them? Or the nature of the mind that thinks them that way? Their synthesis is their correlation.

It is said that all relations of Space-Time are times and spaces. But this supreme correlation of objects and events in Space-Time is not spatial or temporal; it is qualitative; it is out of Space and Time. It is only to be conceived *sub specie aeternitatis*. It can only subsist in the unity of a spiritual Being which is neither Time nor Space.

Space-Time, empty of everything but point-instants, can generate nothing but more and more empty Space-Time; not even that without some creative energy behind it. If you say that energy presupposes Space-Time, you can only mean that it requires Space-Time to deploy in and cannot be thought of without it. If all energy is physical energy, then Space-Time will certainly have to exist before it can energise. You will have to conceive of Space-Time as generating energy, bursting into energy by a sort of spontaneous combustion, moving before there are bodies to move, generating matter in motion; Space-Time packed with all the properties and behaviour of matter in motion, and flowering into life, into consciousness, into Deity. Deity that never is but always is to be, in his perpetual effort to overtake himself.

Such a Deity we have seen to be neither immanent

nor transcendent. Not immanent, because he is not yet, and you can never say that at any moment he is. Not transcendent, because, belonging to the future, that is to say, to a non-existent present, he is perpetually transcended.

If Space-Time can thus evolve a universe, why drag in God? And, instead of dragging him in at the end, since dragged in he must be, "to satisfy the religious consciousness," why not drag him in at the beginning, assume that energy is essentially spiritual and that God is the spiritual being of Space-Time, and satisfy the metaphysical consciousness as well? Surely, this assumption is at least as legitimate as the other, and it gives immanent Deity a chance to emerge in life, in consciousness, in more and more perfect manifestations of itself, while preserving its inscrutable transcendence, out of Space, out of Time.

If I may adopt Professor Alexander's splendid phrases: The universe is begotten by Spirit out of Space-Time. Spirit spreads out the universe in its form of Space. In its form of Time it sweeps all things forward to change and generation.

Spirit is the unity of Mind and Will. Space, as pure co-existence, expresses its Mind; Time, as consciousness, its Will. Therefore Mind and Will are as indivisible as their manifestation in Space-Time, and like Space-Time, they are infinite in their being. The divided things, the divided selves, are finite, and this is their appearance, their existence. Their reality, their being, is the infinite and ultimate Self, which is God.

ii

Problems of God's Knowing

In short, idealism gets on very happily with its God so long as it only thinks of him as sustaining those parts of the universe which are unperceived by us. Its troubles begin when it comes to correlate God's con-

sciousness with ours and ours with his, assuming that our consciousness and our will do make a difference to the universe.

There is first the problem of knowledge, and there is the moral problem.

Professor Broad has published somewhere a very ingenious theory of consciousness: the theory of the neutral third which is neither mind nor matter. He suggests that mind, or consciousness, may be the result of the contact of matter with this unknown neutral X and that X may survive the dissolution of the body and be stirred to fresh consciousness by fresh contacts with matter. And there is no reason why this process should not be continued indefinitely, so that X may be said to be immortal.

Substitute an infinite Self, the ultimate spiritual substratum of matter for Professor Broad's physical matter, and a finite self, a spiritual entity, for his X, and let consciousness, the experienced universe, be the result of their contact. The body will be, not only that part of the experienced universe through which the passage from infinite to finite is made, through which contact is transmitted; it will be an insulator, inhibiting the total discharge of infinite on finite, ensuring that not all the sound, not all the light and colour, not all the impact of the universe shall beat on us at once, but only so much as a finite spirit can bear. Our growth will be in proportion to our ability to take on more and more of the infinite content of spirit, to perceive more and more, to create again within ourselves, increasingly, the relations and correlations of the universe. Our progress in science will be this creation of the universe again within us.

Realism is right in denying the human subjectivity of experience, wrong in denying the spiritual nature of reality.

This form of idealism at least gets over the difficulty of accounting in terms of our consciousness for the events of pre-human or pre-conscious time. The plesiosaurus will have disported himself on his mesozoic beach in God's sight, though God had not the happy idea of evolving human minds to enjoy the spectacle of him. Before life was, the earth will have whirled, burned, cooled, upheaved and subsided in the Space-Time of God's consciousness. If you ask what relation there can be between God's consciousness and all that whirling, burning, cooling, heaving and subsiding, the answer is: Considerably more than in the subject-object relation, or in all the correlations of knowing and the known. The universe moves and pulses and has its being in the energies which are forms of God's Will. It is the essence of all will that it creates. Even finite wills create new arrangements of given stuff, they bring new complexes into the world. My act in writing this sentence (even if the ideas are old) is a new act that has not occurred before and would not have occurred without me.

What idealism has always needed is some dynamic concept corresponding with the actual behaviour and relations of things.

Now the blank, contentless ego of realism, the form of potential knowledge, cannot be conceived as in relation with anything, much less as correlated with the universe. There is nothing for it to do. Its acts of knowing are not acts but passive states. They are not even states. You can no longer talk about states of consciousness.

But assume that I *have* states of consciousness. So far as they depend upon my will my states of consciousness are perpetually bringing new and very strange things into the universe. It is all very well to say that my consciousness is part of God's consciousness, and

that I see all things in God. If my consciousness is a part of his there must be a sense in which God sees my things in me.

In what way is my consciousness related to God's?

There are at least four possible ways. You may say that my consciousness *is* God's consciousness, that he is conscious *in* me, and that is all there is in it. Or you may take my experience twice over, once as mine and once as God's. Then either God knows all the things that I know as and when I know them; or he knows them all, but knows them in a different way.

Or he does not know them at all.

If our consciousness is God's as it stands, once for all, and is not to be taken twice over, we have all the difficulties of thorough-going pantheism. All our badness and our error, our obscenities and stupidities and madnesses, flourish as such in God's consciousness and his will. In us he will be incessantly doing bad things, and telling the most awful lies as well as knowing about them.

And suppose you take the same consciousness twice over, once in us and once in God. Suppose we see blue as God sees it and because he sees it; he creating what he sees and creating it again in us, infinite and finite seeing together in two coincident acts. Every finite consciousness would see all it sees in God as God sees it, each bringing his own perspective; and we should all see the same thing because it is God's thing, his consciousness being the ground of the identity of things. This is all right for us, but how about God? Equally he will see everything as we see it. He will still not only know and fore-know evil; he will be burdened with all our futilities and sillinesses and boredoms, the spectator of all scenes made by millions and millions of us—to say nothing of the animals—; the listener to millions and millions of idiotic conversations. What a life for a

God! It is preposterous that he should know all these things. It is even unlikely that he knows, say, all the European languages as well as he apparently knows mathematics.

But, if he does not know them, then I know something God doesn't know. I also will things he doesn't will; and so far I have the advantage of him.

Or you may say he knows our things, but knows them in a very different way from ours. How about appearances? Suppose we know nothing else? Suppose all our knowledge is relative to us, so that we never know reality, never anything as it exists in God's mind? It is possible that the finite mind may be creative in the sense that it limits, qualifies, alters or distorts reality. Possible that when we perceive the *sensum* blue it is blue to us and an unknown and unimaginable something else to God. And so on through all the primary and secondary qualities. We shall have then two separate universes of knowledge.

So I think we must reject that theory; for at this rate all the sensuous splendour of the universe will belong only to the finite selves. If ultimate consciousness exists, it must be aware of its own play; it must know what it is doing to the finite selves; if it does not see blue, it must know somehow that blue is seen. It must sustain blue in the universe. And there will be no need to assume a divine, unblue counterpart of blue. But what the real relation of ultimate consciousness to the *sensa* is we cannot tell.

And these are only the problems of God's knowing.

iii

Philosophers have created strange Absolutes. They have seen God as the parish beadle, as the President of the Ethical Society, as a mathematician geometrizing eternally, as a company of snow-white categories. **The Moral Problem**

Sir Isaac Newton thoughtfully provided him with the comfort of a sensorium—all space—much as he provided a big hole in the door for his cat and a little one for her kitten. Other philosophers have left God very poorly off in this respect.

But the last thing they will allow him to have is imagination.

Professor Alexander's Deity would be by far the most convincing, if only he could contrive to exist. But, on the whole, philosophers have refused to see God as he is: the wild poetic genius of eternity. Hence their utter inability to account for sense-data, or any other irrational elements of the cosmos. Hence—if they are not idealists—their impatience with the non-moralities, the contradictions and dilemmas, the happy little turns and surprises by which he has relieved the bare monotony of Space-Time. After all, the universe is not a set of equations. It has all the appearances of a romantic adventure.

The best of Pantheism is that it does give back to God his dithyrambic and adventurous character, his undying wildness.

Unfortunately, pantheism lands us in the most horrible moral mess. The identification of God with all the foolishness and badness in his universe.

This God is not by any means the worst God of all, since he is also identified with goodness; and the badness and the goodness may be conceived as cancelling out somehow in the Absolute. *And* they have no absolute reality. The worst God of all is the God of the older Christian theology: God the Father, the creator of evil, who in his all-power and all-knowledge deliberately plans a cruel universe bristling with traps for his creatures. The older theology thought of God as spending every moment of his eternity in eaves-dropping and spying on immoral man, haunting every bed-

room, listening to every obscene story, and equally observant of the murderer with his bloody chopper and the child with its fingers in the jam. Absolute Idealism knows nothing of this intolerable God.

But the God of pantheism is not much better. So that any philosophy which can do without God is happy inasmuch as it evades the moral problem. So long as we are only bits of Space-Time, our backslidings will not so much matter. A bit of Space-Time bashing in its wife's head with the kitchen poker in a two-pair back; a bit of Space-Time coming drunk out of the Bald-Faced Stag; a bit of Space-Time telling an improper story at its club is not so shocking to the religious consciousness as a bit of God doing all or any of these things. Somehow a bit of God telling that story seems the most incomprehensible phenomenon of all.

There is, however, a fifth possibility. God may be *able* to know these things, but he may not choose to know them.

iv

First of all, then, we shall have to revise our ideas of omniscience and omnipotence. Omnipotence will be simply the power to create, or to be, or to know everything. It need not be exercised. If God were bound to create everything he could create, to be everything he could be, to know everything he could know, he would be under the necessity of his omnipotence. He would not be free. Omnipotence, then, is omnipotentiality, not omniactuality. **Free Will**

But he *is* what is actual. He is the finite selves and the universe of the finite selves. They are parts of God,[1] their consciousness is part of his consciousness, their bodies are parts of God's body which is the uni-

[1] See Appendix VI, p. 319.

verse. He is everything that is. But he is not bound to be anything but what he is.

This is sufficient for pantheism.

And the same thing will apply to God's knowledge and foreknowledge. God *could* know everything; but he only knows what he wills to know. He need not listen to all those conversations.

It is at least possible that man's crimes and imbecilities and falsehoods are precisely what God doesn't know. And what he doesn't know he can't foreknow and so prevent. And if he hasn't foreseen evil, then he is not responsible for it. He doesn't foresee, not, because, like Professor Alexander's Deity, he doesn't exist, but because he happens to exist in a different way. We cannot have it both ways, an infinite God and a finite God. It is no good giving God one set of attributes and then bestowing on him another set utterly incompatible with the first. For, if idealism is true, God's consciousness is wholly concerned with reality, reality being what exists in God's consciousness; and badness and error are essentially finite and essentially unreal. The man in error and the bad man are hallucinated. And by a bad man I mean a really bad man, a man who takes badness for granted and looks for it in the constitution of the universe and not in his own hallucinated will.

You may say that human conditions are such that he hasn't a chance. But human conditions are the creations of human free will. And free will is free will. Man would not be a bit of God, he would not be a spiritual entity, if his will were not to some extent free. Here again, you cannot have it both ways, you cannot give man first one set of attributes and then another utterly incompatible set. If he is free in a finite world he is free to be as bad as he chooses. It is probably better for man to fight his way towards perfection

through blood and sweat and tears, in freedom, than to be tied to perfection with no will of his own; better to be free to make a brute-beast and devil of himself than to be the will-less slave of a Deity the sum of all perfections.

Not that we are bound to exclude from God's knowledge and foreknowledge all the voluntary works and thoughts of man. God's knowledge is of reality and of reality alone. It is absolute and perfect. But man is, after all, a spiritual being, born, like Professor Alexander's Deity, with a nisus towards perfection. There are, as we shall see, points—few and far between, or close and many—where his will and thought and passion touch reality. Let us say that whenever this happens God is conscious of them.

This is enough for Absolute Idealism.

V

So that there is yet a sixth alternative and a seventh.

Relation of Finite and Ultimate Consciousness.

God may know some of our things and not others. Or he may know some things in our way and some things in his own.

Say that the things God only knows are realities, and the things we only know, things relative to us, are appearances; then, if we only know our own things we shall never know realities.

But we found that in our experience of the world of Space and Time our personal perspectives could be correlated with real perspectives, so that we have a certain real knowledge of things in Space-Time. This knowledge may not be absolute; if Professor Einstein is right it will be purely relative, but it will be real as far as it goes, though its reality will not be ultimate. Where our knowledge is of reality on whatever level, we have literally communion with God.

And this is enough for the religious consciousness.

Is there any sense, satisfying to the religious consciousness, in which God may have communion with us?

We have to distinguish further between immanent God and transcendent Godhead. It is only God in his immanence who is the finite selves and whose body is his universe. Only this God is the sun and moon, the stone and the tree, the snake and the rabbit, the tiger and the deer; the murderer and the murdered, the sinner and his sin, the drunkard and the teller of the tale. He is they, because without him they would not be. But in his universe mere existence is the least important thing. There is a scale of values, and there are higher and lower intensities of Being. Not ethical values only—any rejoicing on the part of Philistines or Puritans is premature—not ethical values only, but every degree of perfection of every kind. Creatures low on the scale of one order may be high on the scale of another order. The lowest qualities in all orders, the creatures lowest in all qualities, exist on the extreme outside fringe of Being, yet sustained by its farthest, thinnest pulsation. The highest, the perfect qualities and creatures are those nearest to the heart of God. In between there will be entities living God's life in rising measures of intensity, as his being throbs through them with a stronger beat.

In this hierarchy of values the higher things will be the more real, because Reality itself lives in them in greater fullness and richness and intensity, because they are more highly charged.

Now the intolerable thing that pantheism forced on us was the destruction of all values within the being of God; the identification of God with the least valuable things in his universe. There was a hideous absurdity in the idea that God is vividly aware of our criminal

lunacies and idiocies. But suppose he is not vividly aware? Suppose these things exist on a level which is far below the height of God's transcendent consciousness, and that in this sense they are comparatively unreal? Suppose the universe to be literally the body of God, and that it contains our bodies as its parts, much as our bodies contain their cells and the life of the cells. Suppose God's mind to contain our consciousness much as our minds contain the memories and instincts of the cells. Suppose the life of persons lowest in the scale of values to correspond in God's consciousness with this organic cell life which we are hardly conscious of; we can then imagine that God is not more conscious of that pullulating cell life that we make for him within his vast organism. Our unspiritual states will be merely subconscious states of God.

On the other hand our spiritual states will be literally part of God's living consciousness. Our hate escapes him, but our love burns in him, flame for flame. Our spiritual suffering pierces to the very heart of God. He is joined with us consciously every time that we know reality, or create beauty, or will the good.

If this be so, our spiritual memories will endure in God's consciousness; all that is immortal in us will be remembered there. God will be literally our keeper. If this be so, there will be a divine, unending process, the advance of God's immanent life to higher and higher forms, in which the perfection of his transcendent Godhead is manifested in Time. Transcendent Godhead *is* what immanent God *will be.*

What is real for God is ideal for us. What for God is foreknowledge is destiny for us. What for God is an eternal state for us is process. We, ourselves, spiritual beings in a spiritual universe, are part of it. The spiritual movement of every individual, group, society,

State, or nation, is part of it. The religious sense discerns it as the more and more conscious coming together of God and man. The beginning is when we know ourselves and all things in God; its end when God knows himself in us.

XII

SUMMARY

i

The foregoing argument is based on the distinction between Primary and Secondary Consciousness. Therefore I might have been more in order if I had put Chapters IX and X first. But realism was so formidable an opponent that it seemed the safer course to show from the very beginning that its positions are not so impregnable as they look. And as realism has taught us the fundamental seriousness of Space and Time, it was necessary to examine the claims of unminded Space-Time before considering mind itself. **The Unsolved Problems**

We found certain glaring defects in the logics of the older idealism, and chiefly in their attempt to sum up the universe as a system of thought-relations.

New realism presented insurmountable difficulties in its absolutism; its theory of external relations; of consciousness without content; of memory, its identification of the thing remembered with the thing perceived.

The most important realist theories of perception, Professor Broad's real counterpart and Professor Whitehead's concept of nature, raised as many problems as they solved. Critical realism betrayed the first symptoms of an uneasy consciousness, the first doubt as to the soundness of the position; but the ingenious amendments of Professors Drake, Lovejoy, Pratt, Rogers, Santayana, Sellars and Strong, with their apparatus of "images," "logical essences," and

"mental states," added worse complications of their own. So far, realism proved powerless to guarantee the truth of its assumptions and assurances.

And the traditional antinomies of unminded Space and Time remained as insoluble as ever.

Like Professor Whitehead's event theory, Professor Alexander's theory of Space-Time failed to fulfil its brilliant promise of a solution. We found it impossible to reduce quality and all the categories to mindless Space-Time, or consciousness to compresence, or mind to its neural basis; impossible to conjure life and consciousness and Deity out of the lifeless and the unconscious.

ii

Primary and Secondary Consciousness

Still, the main objection of realism to idealism held. Being and being known are not the same. A line must be drawn somewhere. The question is, Where are you going to draw it?

The older idealism drew no line between consciousness and the object of consciousness, between knowing and the thing known. Its *reductio ad absurdum* is Solipsism. New realism draws the line stark between the knowing self and the whole cosmos of its knowledge, its experience; only excepting its acts (knowing, feeling, willing and so on). Thus we have a contradiction between the self as passive and the self as active. Consciousness will have objects but no content. Self-consciousness will have neither object nor content, it will be a pure blank.

The new idealism must draw the line somewhere else. Between consciousness and consciousness. Between primary consciousness and secondary consciousness. And not only between consciousness and consciousness, but between the processes and states of consciousness and the processes and states of things. Between things

before and after they "come into" consciousness. There is an order of cosmic happening, an order of cosmic evolution, which is not the order of our experience, of our consciousness and its evolution; not the order of our logical thinking, though when it is known our thinking must conform to it. All this is really "objective" to us. It has a previous existence, and is independent of our consciousness until the moment when it "comes into" it.

It is not entirely conditioned by our consciousness, by the mere formal act of knowing, as the older idealism supposed. Our consciousness is in a sense conditioned by it, from moment to moment, inasmuch as it carries a context which extends beyond our range in every conceivable direction. In another sense it *is* conditioned by our consciousness. All of it that "comes in" is part of the cosmos as perceived under the forms of a finite consciousness and from a given perspective in space and time.

So far from it being true that in this contact of perception with the thing perceived the two terms of the relation are preserved in consciousness, it is precisely in this contact that they are indissolubly fused. Separation comes later in the supervening act of secondary consciousness; and it comes too late.

In all this Space and Time are essential, more essential than the older idealism allowed. Time and space that seem to divide the self from its object really unite them. The correlation of its personal perspective with the "real" Space-Time of God's consciousness joins up the finite self with the universe and with God.

iii

With God, because there is no sanity in the idealism that conceives the world as arising in finite and terrestrial consciousness. At this rate the great saurians

God

would be the sustainers of the universe of their time.

We are driven to assume an ultimate consciousness to sustain the universe in the absence of any other; to hold Time and Space together and resolve their contradictions; to unite the personal perspectives of the finite selves. Here again the realist objection held. We found that it is not enough for God to know the universe; he has to will it before it can be. It is only for God, the Self immanent in the universe and transcending it, that being and knowing are the same, and this only because God's willing is itself part of his knowing.

Pantheism raised intolerable moral problems. It laid on God the burden of complicity with our guilt and communion with our imbecility. A possible solution was suggested in assuming the free will of the finite selves, the distinction between immanent God and transcendent Godhead, and the existence of a scale of values marking the ascending stages of God's manifestation.

This solution satisfies the religious consciousness. For human progress may be conceived as part of the manifestation. And ultimate reality is not something far off and outside us. Nothing can separate our selves from God's self, our being from his being. Only our minds and wills are not always there with us. Yet even they have not got to wait for some state of impossible perfection. Every finding of new truth, every creation of new beauty; every victory of goodness, every flash of spiritual insight and thrill of spiritual passion, is, while it lasts, a communion, here and now, with God.

APPENDIX

I

Page 57.

With regard to the tertiary qualities of pleasure and pain, Professor Broad maintains that the criterion of their reality is their relation to the will which seeks to remove pain and continue pleasure.

"I suspect that when a man says that he is immediately certain that an unfelt bodily pain cannot exist, what he means is that he is certain that this relation to the will would not exist unless he were aware of the sensible quality." (*Perception, Physics and Reality*: p. 69.)

"This does not seem to me to imply that the sensible quality that is located in the tooth when we do feel toothache cannot exist unperceived. It would only then not affect the will and so not be a pain." (The same: p. 70.)

Anything rather than allow that a sensible quality should depend on perception.

II

Pages 170 and 220.

Time is one-dimensional, successive, irreversible (asymmetrical), transitive, in the relations of its instants. (If A is before B and B before C, A is before C. If D is between B and E, and B and E between A and F, D is between A and F.)

Space is three-dimensional, reversible, symmetrical; its dimensions are independent, in the sense that position or direction in the one need not involve position or direction in the other; in fact, movement or direction uniquely in one will exclude movement or direction uniquely in the other, though movements and directions may be compounded. (A body may move diagonally in length and breadth, or in length, breadth and height together.)

But the three characters of time are also independent. That is to say, successiveness in itself is not irreversible; neither

II *Continued*

are transitiveness and betweenness in themselves. If it depended on relations of irreversibility, succession, or betweenness alone, time by itself might conceivably move backwards and forwards and between, and the total movement be irreversible though containing different (i. e. reversible) directions.

So that we may say that the three characters of Time and the three characters (dimensions) of Space, taking Time and Space by themselves, are both independent.

But between these independents there is a relation of *interdependence* such that "each new feature in Time is rendered possible by a new dimension of Space and conversely renders it possible." (*Space, Time and Deity:* p. 51).

Thus: "a one-dimensional Space would not suffice to secure" irreversibility of one-dimensional Time. For you will only have two one-dimensionals, each in the same boat. Let a*A* and *b*B be two point-instants. Their correspondence, though it may fix them as distinguishable entities, says nothing about their order and position. "So far as the points are concerned A might be before or after B in time." And as far as the instants are concerned *b* might be before or after *a* in space.

If you arrange your points one-dimensionally on a line

A	B
$a\ a^1\ a^2\ a^3$	$b\ b^1\ b^2\ b^3$

the *a*s and the *b*s might occupy any position on the space line, and the instants A and B any position on the time line. There will be nothing to distinguish a point a from a point a^1, both covered by the instant A, both, that is to say, enduring in the same time A; but, for all that the line ensures to the contrary, a^1 might be on the other side of b from a, and thus A might be before or after B.

"Hence, since the order is irreversible it follows that A cannot be repeated in the one-dimensional line *ab*."

Fig. I

A	B	A
a^2	a b	a^1

Fig. II

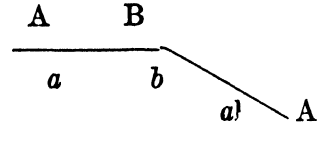

Fig. I. A cannot cover (be repeated in) a^2 or a^1 because B *may* come between, throwing a^2 and a^1 at different dates. They would be both before and after B, which is impossible.

Fig. II. But if you take A down into a second dimension it may very well cover both a and a^1, because in the second dimension a^1 is neither before nor after B; and B can come on in its irreversible place.

This is only the relation of besideness, or of before and after. The betweenness of Time involves a still further dimension of Space.

With two dimensions only we might have the partially reversible pendulum movement of Time. But with C (the third time-term that ensures betweenness) planted outside the plane *a b c*, B will fall irreversibly between A and C.

Similarly, the third dimension secures uniformity of direction. Time can move forward in one line because the points it covers are removed out of its way, so to speak, into other dimensions.

III

Page 247.

I may see an event in Sirius which, from my point of reference, may have happened nine years ago. And an event in Sirius may be occurring which from another point of reference is nine years later than the event I am aware of. There is a point of reference, therefore, from which two events will be contemporary, though, for observers on Sirius, they will be divided by eighteen years.

Professor Alexander argues that it is not the events in Sirius themselves which have become contemporary, only that the points at which they occur are differently dated in different perspectives.

> "In other words, the points of Space are filled with different instants owing to that re-distribution of instants among points which makes the history of Space-Time." (*Space, Time and Deity*: p. 78.)

But surely, if the events occupy the points in question they will be affected by the redistribution. They cannot, without forsaking their points, remain outside it, so that they, too, will be relatively contemporary, or relatively earlier or later, according to the perspective.

IV

Pages 249-250.

Visualized in three-dimensional space the cubes which are the sides of the tessaract would pass through each other, pressing into the space occupied by the original centre cube.

Similarly, visualized in two-dimensional space only, the rising plane squares which are the sides of the cube would pass on to each other, shifted forward into the space occupied by the original square; and for the same reason, because, confined to a lower dimension, we could not imagine a higher visible space for them to occupy.

We can now make certain deductions:

1. (As we have just seen) the movements of the eight cubes in turning at right angles to the directions of their six plane sides will be through each other in three-dimensional space. That means, in terms of three-dimensional space, that every four-dimensional boundary will fill the space bounds, and every part of every four-dimensional figure will displace every other part. We must therefore postulate an unknown direction (the fourth dimension) for the construction to deploy in.

2. Every four-dimensional figure will include figures of the third second and first and zero dimensions as its parts.

Consequently any four-dimensional figure invading three-dimensional space *would be perceived* as three-dimensional.

3. And as every three-dimensional figure in three-dimensional space is *seen by the eye* as two-dimensional only (in the flat on a Mercator's projection), so by analogy, every four-dimensional figure will be seen by the four-dimensional eye as three-dimensional, in the round.

4. As we have seen that the boundaries of all four-dimensional figures will be cubes corresponding with the three-dimensional planes, so the four-dimensional plane will correspond with the three-dimensional line, and the four-dimensional line with the three-dimensional zero point, and the four-dimensional point with an unknown position below zero.

That is to say, in the fourth dimension all three-dimensional powers will be raised one degree.

5. And as the zero point is the unit of three-dimensional space, an unknown position below zero will be the unit of four-dimensional space.

6. Thus, if we let analogy rip we are landed in sub-zero dimensional space the units of which will be the boundaries of points.

7. It is clear that the matter cannot end here. We are driven to a fifth dimension and to fifth dimensional figures whose boundaries will be tessaracts, with sub-sub-zero space at the other end of the scale.

And so on for ever and ever.

V

Page 263.

"The arrangement of the peripheral nervous system depends on structural and development conditions; that of the intramedullary level is essentially functional or physiological, whilst the final processes which underlie sensation are grouped according to categories that can be discovered by introspection."

Dr. Head (*Sensation and the Cerebral Cortex*):

"That is to say, when we reach the higher levels the processes cease to be physiological and become psychological.

"From the point of view of sensation anatomical representation ceases as soon as the first synaptic junction is passed" . . . "Sensation is a psychical act." (The same:)

VI

Page 305.

When we talk about the relation of the finite selves to the infinite Self we are at the mercy of finite categories which do not strictly apply. If we say that the finite selves are "parts" of God we are using a finite concept to symbolize an otherwise inconceivable relation. The relation of finite parts to a finite whole is such that if you remove them there won't be any whole at all. But if all the finite selves were removed, the Self in which they endured will still exist in itself, though not as a whole of finite selves. The finite parts are necessary to the finite whole. The infinite Self is necessary to the finite selves, but they are not necessary to it in the sense that without them it could not exist. In this relation the Whole transcends its parts. It is not only more than the sum of them, but it exists in complete independence beyond them.

INDEX

ABSOLUTE: 10, 12, 15, 17, 223, 300, 304.
—— Idealism: 4, 307.
—— not Thought only: 12.
—— Self: 235.
—— as the Whole: 242.
ÆSTHETIC emotions: 34 and Footnote.
AFTER-IMAGE: 136, 137.
ALEXANDER: Professor, Introduction, ix, xii-xiv, 21, 28, 33, 35, 142, 143.
—— 150, 162 *et seq.* 219, 221, 223, 234, 243, 266.
—— 277-288, 295, 297, 299, 312. Appendix II., pp. 315-317.
——'s solution of antinomies of Space and Time, 166.
——'s *Space, Time and Deity:* 162-215.
——'s view of Deity: 209-215, 298, 299. Objections to: 210-215. Deity not existent: 299. Not immanent: 298, 299. Not transcendent: 299.
ANTICIPATION: 27, 28, 112, 246, 248, 249, 291.
——: Object of, 27, 28.
ANTINOMIES of causality: 151, 152.
—— of Compact Series: 158 *et seq.*
——: Double-aspect theory of, 146, 147.
—— of Events: 102.
——: Kant's, 2, 18, 140, 141; unsolved: 160, 161.
ANTINOMIES of serial time: 148.
——: Solution of, Alexander's, 142-166.
——: Solution of, Boodin's, 147-158.
——: Solution of, Bergson's, 143.
——: Solution of, Bertrand Russell's, 18, 144.
——: Solution of, Cantor-Dedekind, 106, 107, 142, 144.
ANTINOMIES: Solution of, Hegel's, 142.
——: Solution of, Montague's, 143-147.
——: Solution of, Pragmatic, 152, 153.
——: Solution of, Whitehead's, 143
—— of Space and Time: 139-161. of Space-Time: 165, 166, 172, 173, 221.
——: Zeno's, 139, 140.
Antinomy: The, Professor W. P. Montague's, 143-147.
APPEARANCE: APPEARANCES: 16, 19, 42-44, 203, 206.
—— ——: Illusory, 205, 208.
—— ——: Real, 204, 205, 206, 209.
—— ——: Reality of, 19, 272.
——: and Reality, 64-68, 90, 91, 208, 209.
APPEARANCES: Unreality of, 67, 68.
See SUBSTANCE.
ART: Creative, 293.
——: Objective, 34.
ATOMISM: Logical, 31.
ATTENTION: 276, 290, 292.
——: Secondary, 290, 292.
ATTRIBUTES: 84. See SUBSTANCE.
AWARENESS: 277, 279.
—— of awareness: 277.
—— " contents: 279.

BEING: Absolute, 3, 312.
—— and being Known: 260, 261, 267-273.
—— and Will: 272, 273.
BERGSON: 143, 162, 220, 296.
BERKELEY: 2, 4.
BESIDENESS: 145, 146.
BETWEENNESS: 159, 160.
——: Dilemma of, 160.
BIFURCATION Theory: 86-89.
BIOLOGICAL Proof of Realism: 126.
BODY and Mind: 260, 261.
—— and Mind: Relation of, 265-267.

BODY and Mind: Relation of, to Spirit, 300.
—— and Mind: Relation of, to Ultimate Consciousness, 267.
BOODIN: Professor J. E., Introduction, xiii, 143, 161 (Footnote), 162.
BOODIN'S Theory of Space-Time: 150.
——'s Theory of Time: 147-158.
——'s Theory of Time: Objections to, 154-158.
BOSANQUET: Professor, 13, 223.
BRADLEY: Professor, Introduction, xii, 13, 223, 237.
BROAD: Professor, C. E., 21 (Footnote), 49-81, 162, 252, 260, 284, 300, 311. Appendix I, p. 315.
—— Professor, C. E., and the Real Counterpart: 49-81.

CANTOR-DEDEKIND: 106, 142, 143, 158.
CARR: Professor Willdon, 243, 244.
——'s *The General Principle of Relativity:* 244.
——'s Theory of Consciousness as the Continuum: 243, 244.
CATEGORIES: 2, 8, 28, 29, 179-194.
——'s Consciousness and the, 232-243.
——: Logical, *a priori,* 220.
—— not non-mental: 232.
—— not reducible to Space-Time: 233.
—— reducible to consciousness: 233-243.
—— reducible to Space-Time: 179 *et seq.*
——: Unminded, 270.
Categories: Knowledge and its, 127-131.
CAUSAL Theory of Perception: 61, 62, 64, 65, 67.
CAUSALITY: 151-153, 187, 240.
——: Antinomy of, 151, 152.
——: Minded, 240.
——: Time as, 151, 152.
—— as Total Configuration of the Universe, 240, 241.
——: Unminded, 240.
CEREBRAL CORTEX: 20, 24, 261, 262, 287, 288. Appendix IV, p. 319.
CHANCE: Time as, 151-155.
CHANGE: 96, 97, 177, 192.
—— as motion: 192.
——: Minded, 226, 227.
—— of quality: 192, 193.
——: Unminded, 226, 227.
——: Events do not, 96, 97.
COLOUR-BLINDNESS: 56, 57.
COMPACT SERIES: 18, 106, 142-144, 146, 158, 159.
—— ——: Definition of, 143, 158.
—— ——: Discreteness in, 146, 158, 159.
—— ——: Nextness in, 158, 159.
—— ——: Space and Time in, 142, 143.
—— ——: Objections to Theory of, 158 *et seq.*
COMPRESENCE: See CONSCIOUSNESS.
CONCEPT: 228, 229.
Concept of Nature: 81-114.
CONCEPT of Nature: 81-84, 91-95, 96, 109, 111, 311.
—— of Nature: Contradiction in, 109.
—— of Nature: Inadequacy of, 95, 96, 111.
—— of Nature: Inconsistency of, 95, 96, 111.
CONCEPTION: 28.
CONCEPTS, Primary: 230, 231.
——: Reality of, 28.
—— Timeless and spaceless: 230.
——: Vizualized, 229.
CONDITION: 342.
CONSCIOUSNESS: 16, 17, 31-34, 195-209, 279.
—— a blank Transparency: 36, 42, 45.
—— and the Categories: 233-243.
—— as Compresence: 34-37, 195, 197, 207, 231.
—— as Compresence: 232, 277, 282, 283.
—— as Compresence purely spatio-temporal: 195.
—— as Compresence not a unique relation: 195.
——: Content of, 31-33, 275, 279.
——: Content of, in Critical Realism: 132, 133.
—— contentless: 35.
—— as Continuity: 227.
—— as the Continuum: 113, 114, 243, 244, 271.
——: Forms of, 246-252.
——: E. B. Holt's concept of, 196, 197.

CONSCIOUSNESS and its object: 16, 34, 280, 282.
—— and its object, not distinguished in Primary Consciousness: 280-283.
—— and its object, distinction between an unproved assumption: 280-283; falls within consciousness: 281; is between consciousness and consciousness, not between consciousness and content: 281.
——: PRIMARY, 52, 236-239, 243, 274-283, 311.
——, —— and its content: 274, 275.
——, —— confused with Secondary: 280, 283, 284.
——, —— distinguished from Secondary: 52, 274-276, 290, 291.
——, —— indistinguishable from content: 274-275.
——: ——, intensity of, 275, 276.
——, —— invulnerable to realist attack: 294.
——: ——, Percept and concept in, 291.
——: ——, Relation of, to Secondary: 291, 293.
——: ——, Will in, 292.
——: SECONDARY, 52, 231, 232, 238, 239, 275-277, 290-294, 311.
——, ——, distinguished from Primary: 52, 274-276, 290, 291.
——, ——, distinguished from its object: 293.
——, ——, its object Primary Consciousness: 293.
——, ——, dependent on Primary Consciousness: 293.
——, ——, relation of, to Primary Consciousness, 291-293.
——, ——, synthesis of with Primary Consciousness, 232.
——: ——, Will in, 292.
——: Relation of to object of, 33, 195, 196, 278, 280.
——: Religious, not satisfied by unrealised Deity, 213, 214.
——: Rôle of in Nature, 113.
——: Space, Time and, 219-239.
CONSCIOUSNESS: Space and Time simplest forms of, 224.
——: Space-Time ultimate form of, 222, 223.
——: States of, 31, 32, 33.
——: Ultimate, 258, 259, 264-267, 272.
——: Ultimate, 295-310, 314.
——: Ultimate, Relation of body and mind to, 265-267.
——: Ultimate, Relation to finite consciousness: 303-305, 307-310.
——: Unity of, 17.
CONSCIOUSNESS: Space, Time and Other, 245-259.
CONTEMPLATION: 35, 195, 282.
CONTINGENCY: 242.
CONTINUITY: 17-18, 102-107, 142, 143, 175, 176, 178.
——: Consciousness as, 227.
—— in correlated Space-Time: 166, 167.
—— of events: 93, 102-107.
—— " minded Space-Time: 225, 226.
—— of Space-Time: 219, 220.
—— " Substance: 187.
—— " Time: 167, 168; objections: 168, 169.
——: Finite selves give, 298.
Continuum: The, 18, 102-107, 243, 244, 271, 272.
——: The, Professor Broad's theory of, 80.
——: The, *Ratio cognoscendi* of, 271.
——: The, *Ratio essendi* of, 272.
CORRELATION of besideness and succession: 145-147.
—— of personal perspectives: 254, 259.
—— of sight and touch: 71, 72.
—— space-dimensions with time: 169, 170. Appendix II, pp. 315-317.
—— of Space-Time: 150, 165-170, 297, 298.
COSMIC evolution: 312, 313.
Cosmic Evolution: Professor Boodin's, 147.
COSMIC processes: 9, 268.
COUNTERPART: The real, 61, 76, 77, 79, 80, 81, 311.
——: The real, Professor Broad and, 49-81.
CRITICAL Philosophy: The, 2.
—— REALISM: 114-138, 311.

CRITICAL REALISM: Affirmation of, 127, 128.
—— ——: Assumptions of, 125.
—— ——: Object and content in, 129-131.
—— ——: Objections to, 137, 138.
Critical Realism: The Approach to, 115-119.
—— ——: *Essays in,* 114-138.
—— —— *and the Possibility of Knowledge:* 122, 123.
CRITICAL realists: Introduction, ix.

DATA: Visual, not spatially related, 134.
DATUM: 115, 116, 132, 133, 134.
—— and the image: 115, 116.
——: Nature of the, 132-138.
—— and the object: 133.
—— not the object: 115-116.
Datum: The Nature of the, 132-138.
DEITY: 165, 209-215, 295-299.
—— begotten by Time on Space-Time: 209.
——: Concept of, solves moral problem, 211.
——: Infinite, 213.
—— next highest to consciousness: 210.
—— the *nisus:* 165, 210, 212, 213.
—— not existent: 210, 213.
—— not immanent: 211, 212.
—— not infinite: 212, 213.
—— unknown: 210.
—— unrealised: 213. See GOD.
DESCARTES: 2, 3.
DILEMMA of compact series: 159, 160.
—— of consciousness as blank Transparency: 42, 45.
—— of logical idealism: 270.
—— " realism: 76, 77.
—— " of relations: 237-239.
DIMENSION: The Fourth, 246, 249-250. Appendix III, p. 318.
DIMENSIONS of Space: 169, 170. Appendix II, pp. 315-317.
DIRECTION: Sense of, in tactual perception, 73.
DISCOVERY: 11, 17, 31, 269.
DISCONTINUITY: 112, 113, 140, 146, 158, 159.
—— of event-particles: 105, 106.
—— " Space-Time: 176.
—— " Substance: 187, 188.
—— " unminded Space-Time: 224.
DISCREPANCIES: 62, 252, 253.
DISCREPANCIES of appearances in space: 42, 43.
——: Spatial and temporal, 42, 43.
DIVERSITY: 176.
—— not reducible to Space-Time: 176.
—— reducible to terms of consciousness: 233, 234.
DIVISIBILITY of Space, Time and matter: 140, 141.
—— of space: 167.
DOUBLE-ASPECT Theory of space and time: 145-147.
—— —— Theory of mind: 241.
DRAKE: Professor, 116-120.
——'s Professor, *Approach to Critical Realism:* 116-120.
DREAMS: 52, 251, 252.
—— Space: 251, 252.
—— Time: 251, 252.
DUALISM: 2, 3.
DURATION: 102, 103.
——s: Parallel, 103-105.
Durée: 143.

EGO: 16, 17.
EGO-CENTRIC position: 16, 17.
EINSTEIN: 22, 220, 240-245.
Elan vital: 15.
EMPIRICAL facts: 7.
—— knowledge: 269.
—— truths: 7.
ENERGY: 147, 298.
——: concept of, 288.
—— patterns: 147.
"ENJOYMENT": 35, 195, 282, 283.
Enquiry Concerning the Principles of Natural Knowledge: 35, 82 *et seq.*
EPISTEMOLOGICAL Idealism: 236. See IDEALISM.
EPISTEMOLOGY: 2, 5, 12.
ESSENCES: Logical, 115, 116, 125, 128-134.
—— Logical, the data: 115, 116.
—— Logical, distinction between, and existence in cognitive relation: 278.
—— Logical, distinction between, and existence: 116.
—— Logical, distinction between, and mental states: 116.
—— Logical, imagined, not projected: 120.
——: Logical, inadequacy of, 117.
——, Logical, not existents: 115-116.

ESSENCES, Logical, not in space and time: 115-116, 132-134.
——: Logical, Objections to theory of, 117, 119-121.
—— and reality: 121-123. No guarantee of correspondence between, 120, 121-123.
——, relation of to object: 117.
——: Status of, 116.
EVENT-PARTICLES: 105, 106.
——-——: Discontinuity of, 105, 106.
EVENTS: 35, 36, 82-114, 90, 91, 93, 96, 97.
——: Causal character of, 90, 91.
——: Contradictory character of, 101, 102.
——: Covering, 106, 107.
—— of different dates: 177, 178.
——: Differentiation between, 105-107.
—— and objects: 84, 93, 94, 97, 98, 99.
——: Objects qualities of, 98, 99.
——: Qualitied, 172, 173, 175, 178.
——: Redistribution of, does not solve antinomy of Space-Time, 177, 178.
——, *Relata* of Space and Time: 83.
——: Situation of, 90, 91.
——: Space and Time relations between, 83.
——: Space and Time abstractions from, 83.
—— the ultimate elements: 82, 98.
——: Unoccupied, 100, 101.
EVENT-THEORY: 35, 82-114.
——-——: Contradictions in, 113, 114.
——-——: Objections to, 94-114.
EVIL: Problem of, 303-305.
——: God's foreknowledge not of, 306, 307, 309.
EXISTENCE: 180.
—— not reducible to Space-Time: 180.
—— reducible to consciousness: 234.
——: distinction between, and essence in cognitive relation, 278.
EXISTENTS: 115, 116 *et seq.*
EXPERIENCE: 12.
——: Perceptual, 44.
——: Spatial, 44, 45.
EXTENSION: 106, 107.
EXTENSIVE ABSTRACTION: Method of, 106, 107, 138 (Note).

FEELING: 34.
FINITE consciousness: 309, 310.
—— perspectives: 270.
—— selves: 297, 299, 306, 314.
——-——, parts of God: 306. Appendix V, p. 319.
their appearance: 299.
their reality: 299.
their being: 299.
FOREKNOWLEDGE: 303, 306, 307.
FREE-WILL: 305, 307.

GEOMETRICAL CONSTANTS: 255-257.
GOD: 212, 213, 295-300, 312-314.
——: Communion with, 307, 314.
——'s consciousness: 303-305, 309, 310.
—— and finite selves: 306, 314. Unity of, 314.
——'s foreknowledge: 303, 306, 307.
——'s free-will: 305.
——'s knowing: 299-303, 306, 307.
—— immanent: 308.
——: minds, organic sensa of, 212, 213.
—— of pantheism: 303, 304-306, 308, 313, 314. See DEITY and ULTIMATE CONSCIOUSNESS.
GREEN: Professor T. H., 13.
GROUND: 188.

HALLUCINATIONS: 57, 117, 118.
HEAD: Dr. Henry, 261, 262, 263. Appendix IV, p. 318.
——'s *Studies in Neurology* (Sensation and the Cerebral Cortex), 261-263.
HEGEL: Introduction, xii, 3, 4, 13, 142, 223.
——'s *Logic:* 3.
HOLT: Edwin B., 49, 196, 197.
HUMANISM: 15.
HUME: 2.

IDEALISM: 1 *et seq.*, 293, 294.
——: Challenge to, 62, 260 *et seq.*
——: Crux for, 90, 236, 261-267.
——: Difficulties and objections: 260 *et seq.*
——: Epistemological, 2, 5, 13, 269, 270, 271.
——: Future of, 13 *et seq.*

IDEALISM: The New, 1 *et seq.*, 13, 219-314.
——: The Old, 1 *et seq.*
——: Problem of, 62, 69, 70.
——: Reconstruction of, 219-314.
—— and Relativity: 244, 245.
IDEALIST solution of problem of spatial perception: 44, 45.
—— solution of problem of world before consciousness: 47.
—— theory of knowledge: 138.
—— theory of memory: 22, 23, 48.
—— theory of perception: 70, 71.
—— theory of perceptual experience: 44, 45. See PERSONAL PERSPECTIVES, SPACE, TIME AND CONSCIOUSNESS, and SPACE, TIME AND OTHER CONSCIOUSNESSES.
IDENTITY: 179.
—— not reducible to Space-Time: 179, 180.
—— reducible to consciousness: 233, 234.
—— of Space and Time: 178.
IMAGE: The, 115, 116.
in Critical Realism: 123 and *loc. cit.*
——: The, and the datum: 115, 116.
——: Memory, 22, 23.
IMAGINATION: 26, 27, 118, 119, 291, 292.
—— source of character — complex: 118.
——: How veridical?: 118, 119.
—— no criterion of correspondence with reality: 118.
——: real object of, 26, 27.
INCOMPATABILITY: 76, 116, 117, 119.
—— of geometrical properties: 55, 56.
—— of perceptions in one subject: 53, 54.
—— of perceptions in several subjects: 55, 56.
—— of primary and secondary qualities with logical essences: 119.
—— of sensations in one subject: 53, 54.
—— of sight and touch: 72, 73.
—— of tactual perception and real object: 72, 73.
INFERENCE: 291.
INFINITE: The, 212, 213.
—— regress: 237, 239.
INSTANT: All Space at an, 171-174, 176, 189, 246.
——: See COMPACT SERIES and POINT-INSTANT.
INSTRUMENTAL theory: 63, 64, 67, 68, 71.
INTENSITY: 179, 189, 239.
—— of Primary Consciousness: 275, 276.
—— reducible to Space-Time: 189.
——, how far reducible to Space-Time: 239.
INTUITION: 127, 128.
IRRATIONAL elements, 10, 11, 268, 269.

JAMES: William, 162.
JUDGMENT: 31, 73-75, 291.
—— involved in tactual perception: 73-75.
——s: Mathematical, 6, 7.
——s: synthetic *a priori*, 5, 6, 269.

KANT: 2, 13, 140, 141, 160, 161, 222, 223.
——'s antinomies: 2, 140, 141, 160, 161.
——'s *schemata:* 2, 222, 223, 256, 257.
Knowing: 16, 291.
—— and Being: 267-273.
——: God's, problems of, 299-303, 306, 307.
—— an external relation: 268.
——: relation of, 16, 31, 268.
KNOWLEDGE: 28 *et seq.*
—— in Critical Realism: 120-123, 127-131.
——: God's, 306-310. Not of evil: 309.
—— and intuition, distinction between in Critical Realism: 127, 128.
——: man's, of reality, 307.
Knowledge and its Categories: 127-131.
Knowledge: Critical Realism and the Possibility of, 120, 123.

LAIRD: Professor, 24-28, 47-49, 137.
——'s *A Study in Realism:* 24-28.
——'s Theory of memory: 24-28, 47-49, 137.
LIKENESS: 185.
—— of appearance to reality, 66.

LIKENESS of object to percept: 59, 60, 62.
—— of *sensum* to real object: 60, 61.
LOCKE: 2, 138.
LOGIC: 291.
Logic: See Hegel.
Logic and Mysticism: 42, 43.
LOGICAL Proof of Realism: 126.
—— processes: 31.
LOTZE: 31, 235.
LOVEJOY: Professor, 116, 311.

MANY: The, 15, 242.
MATHEMATICAL judgments: 6, 7.
—— space and time: 18.
MATTER: 164, 300.
—— crystallisation of space: 164.
MEANING: 42, 45, 198, 199.
—— as neural process: 198, 199. Objections to theory: 198, 199.
MEDITATION: 291.
MEMORY: 22-28, 47, 48, 111, 112, 246.
—— image: 22, 23, 173.
—— not mental: 24.
—— as perception of external object: 24, 25, 47, 48. Objections to theory: 47, 48.
—— and Space-Time: 166, 167.
——: idealist theory of, 23, 48, 137, 138.
—— Professor Laird's theory of, 24-28, 47.
—— materialist theory of, 22, 23.
—— realist theory of, 24, 47, 48.
—— and Time-series: 248, 249.
MENTAL states: 115, 116.
—— states: Distinction between and essences, 116.
—— states existents: 116.
—— states the sense-elements in perception: 115.
—— states, Logical essence given by means of, how?, 119.
MIND: 85, 86, 87, 89, 95, 111, 112, 164, 195-209, 299.
——: Double aspect of, 241.
—— as change: 226, 227.
—— the form of Time: 201.
—— a fresh creation: 198.
—— extended: 201, 202, 207, 295. Objections: 202, 203.
—— identified with neural basis: 197, 198, 201.
—— material and spatio-temporal: 201.
——: Nature closed to, 85, 86, 89.
MIND: Nature not closed to, 111, 112.
——: Neural basis of, 197, 198.
——: Place of, in problem of metaphysics, 221, 222.
—— reducible to Space-Time, 262.
——: Relation of, to body, 260 *et seq.*, 265-267.
—— Relation of, to its object, 195; the same as the relation of any two finites in Space-Time, 195-196. Objections, 196, 197.
——: Relation of, to sense-organ, 207, 208.
——: Relation of, to Space-Time, 178.
——: Space-Time independent of, 178.
—— as Total Configuration of the universe: 241.
—— as Will: 241.
MIND-process: 295, 296.
—— -stuff: 295, 296.
—— -Time: 111.
MINDED Change: 226, 227.
—— Space-Time: 225, 226.
MINDLESS motion: 271.
—— Space-Time: 224, 225.
MINDS "organic *sensa* of God": 212, 213.
MODALITY: 242.
MONTAGUE: Professor W. P., 49, 143-147.
MOORE: Dr. A., 30, 31, 51, 163.
MORAL problem: The, 303-305, 309.
MOTION: 18, 164, 177, 190, 271.
——: Molecular, 287, 288.
——: Reality of, 18.
——: Relativity of, 243-245.
——: Spatio-temporal character of, 190.
——: Time as, 164.
MOVEMENT in visual and tactual perception: 73, 74.
MULTIPLICITY of reals: 62, 67, 68.
—— of real counterparts: 79, 80, 81.

NAÏF confusion: The, 284.
—— realism: See REALISM.
NATURE: 81-114.
——: All, at an instant, 105, 107.
——: The Concept of, 81-114.
Nature: The Concept of, 81-114.
NATURE closed to mind: 85, 86, 89.
—— not closed to mind: 111, 112.
——: Passage of, 109, 110.

NATURE: Perception in non-mental, 111-113.
——: Ultimate entities of, 84.
NECESSITY: 151-153, 242.
—— and free-will: 151-153.
NEURAL basis of mind: 197, 198.
—— process: 201, 261, 262, 263, 264-266, 287.
—— process: Correspondence between, and *sensa*, 266, 267.
—— process: Correspondence between, and sensation, 262, 263. Not causal: 263.
NEUROLOGY: *Studies in*, 261-263. Appendix IV, p. 318.
NEXTNESS: 106, 158, 159.
NISUS: The, 210, 213.
NUMBER: 155, 156, 239, 240.
——: Professor Boodin's theory of, 155, 156.

OBJECT of anticipation: 27, 28.
——: Consciousness and its, 274-276, 278, 282, 283. Not distinguished in Primary Consciousness, 280, 282, 283.
—— and content: 132, 133.
——: Contradictory character of, 96, 97, 113, 114.
——: Distinction between, and consciousness of object, 274-276. Made within consciousness, 281.
—— of knowledge: 16.
—— of imagination: 26, 27.
——: Independent reality of, 63.
—— not the datum: 115, 116.
—— not distinguished in Primary Consciousness, 280, 282, 283.
—— not mental: 252.
—— not in Space and Time: 84, 87, 98.
——: Parts of, 97, 98.
—— perceived from different positions: 55, 56.
—— of perception, 52, 121, 122. Independent existence of, 52.
—— permanent: 84.
—— of Primary Consciousness: 293.
—— of Primary perception: 60.
——: Real, 60, 96, 265. Not independent of mind, 265.
—— if real more ultimate than events: 96.
——: Relation of, to events, 98, 99.
——: Relation of, to mind, 195, 196.
OBJECT: Scientific, 51.
——: Scientific causal character of, 99 *et seq.*
——: Scientific unperceived, 284.
——: Unperceived, status of, 284, 285.
——: Unperceived, relation of to object perceived, 285, 286.
—— of Secondary Consciousness: 293.
—— of Secondary perception: 60.
——: Situation of, 91, 92, 93.
—— and subject: 40, 45.
OBJECTIONS to Professor Alexander's concept of Deity: 210-215.
—— to Professor Whitehead's concept of Nature: 94, 111-114.
—— to Critical Realism: 117-120, 121-123, 125-128, 134, 135, 137, 138.
—— to Double-Aspect theory of space and time: 146, 147.
—— of realism apply to the consciousness of Logical Idealism: 293. Not to Primary Consciousness: 294.
—— to Realism: 37-48, 76, 80, 266, 267.
—— to scientific theory of perception: 69-71.
—— to theory of categories as reducible to Space-Time: 179, 189.
—— to theory of compact series: 158 *et seq.*
—— to theory of consciousness as compresence: 196, 197.
—— to theory of external relations: 237-239, 267.
—— to theory of mind identified with neural basis: 198, 199.
—— to theory of mind as extended: 202, 203.
—— to theory of mind reducible to Space-Time: 202.
—— to theory of physiological subjectivity: 44, 45.
—— to theory of real counterpart: 77, 79.
—— to theory of Space-Time continuity: 168-178.
—— to theory of Time as non-serial, as chance and causality: 154-158.
OMNIPOTENCE: 305, 306.
OMNIPOTENTIALITY: 305, 306.
OMNISCIENCE: 306.

ONE: The, 15, 194, 242.
——: The, as conscious Spirit, 242.
——: The, as Space-Time, 194.
OPINING: 291.
ORDER: 186, 239. How far reducible to Space-Time: 186.
——: moral, 186.

PAIN: 19. Not subjective: 19. Appendix I, p. 315.
PANTHEISM: 303-306, 308, 313, 314.
——: moral problem of, 303-305.
PARTICULAR: 182, 184, 234. See UNIVERSAL.
PARTS: See the WHOLE.
PASSAGE of Nature: 109, 110.
PERCEPT: 122, 123, 228-230.
—— laid out in space: 228.
—— not perceived: 122, 123. Objections to theory of, 122, 123.
—— in Primary Consciousness, contemplated: 291.
—— in Secondary Consciousness, used: 291.
PERCEPTION: 19, 42, 43, 85, 111-113, 115, 116.
—— of external world: 20.
——: Incompatibilities of, 53-56. And object perceived: 68, 252, 253.
——: Likeness of, to object, 59, 60, 62.
——: as memory: 24, 25.
—— within nature: 35, 85.
——: Object of, 64, 65, 121, 122. Not perceived: 122.
——: Primary, 60. See PRIMARY CONSCIOUSNESS.
—— of same things: 20-22, 28, 254-259.
——: Secondary, 60. See SECONDARY CONSCIOUSNESS.
——: Tactual, 54-61, 71, 75.
——: Tactual, Inadequacy of, 74.
——: Tactual, Incompatibilities of, 72, 73.
——: Tactual and scientific object: 72, 73, 74.
——: Tactual of three-dimensional shapes, 74.
——: Tactual Untrustworthiness of, 73, 75.
Perception, Physics and Reality: 49-81.
PERCEPTUAL experience: 225, 226.
PERCIPIENCE: 85.
PERCIPIENT event: 85, 111, 113.
—— object: 85.
PERRY: Ralph Barton, 34.
——'s Ralph Barton, *Realistic Theory of Independence,* 34.
PERSPECTIVES: 21, 22.
——: Finite, 252-259.
——: Other people's, 253, 254.
——: Personal, 252-259, 292.
——: Personal, Correlation of, 254-259.
——: Private, 21, 22, 252.
—— of Space-Time: 172, 173, 227, 228, 252.
—— of Space-Time: Consciousness and, 227, 228.
PHENOMENALISM: 51, 58, 59.
PHYSIOLOGICAL subjectivity: 42-45, 47, 203, 204.
—— subjectivity: Idealist objection to, 44, 45.
PLEASURE: 19.
PLURALISM: 16, 17.
POINT the ideal limit: 106, 107.
——: All Time at a, 172-174, 246.
POINTS: Immovability of, 170, 171.
POINT-INSTANT: 105, 139, 140, 143, 144, 177, 298.
—— - —— correspondence: 168, 169.
—— - —— correspondence: difficulty of, 169.
—— - ——: Ideal character of, 190, 191.
POINT-INSTANTS: Redistribution of, 170, 171, 174, 175, 193, 194.
—— - ——: Redistribution of, considered, 177, 178.
PRATT: Professor, 120-123.
——'s *Critical Realism and the Possibility of Knowledge,* 120-123.
PRAGMATISM: 15, 120, 121, 157, 158.
PRAGMATIC criterion: 120, 121, 157, 158.
PREMONITION: 246.
PRIMARY CONSCIOUSNESS: 274-283. See CONSCIOUSNESS.
PRIMARY and Secondary Qualities: 119.
—— and Secondary Qualities: Equal status of, 87.
—— and Secondary Qualities mere appearances: 66.

PRIMARY and Secondary Qualities not perceived in real cause: 66.
—— and Secondary Qualities some real: 66.
—— and Secondary Qualities: unreality of, 67, 68.
PRIVATE space: 252.
PROBLEM: The moral, 303-305, 308, 309.
PROCESS: 241.
—— and Total Configuration of the universe: 241.
——: Real, 153-158.
——: Real, prior to serial position, 154.
PROCESSES of thought: 9, 269.
PSYCHIC state: 135. See MENTAL state.
PYSCHOLOGICAL Proof of Realism: 126.
PSYCHO-PHYSICAL Parallelism: 203, 204, 264.
PUNCTIFORM theory: 143, 144.

QUALITY: 176, 182-184, 191-195, 242, 243.
—— as motion: 193.
—— not a category: 176, 191, 192.
—— not reducible to Space-Time: 191, 192.
QUANTITY: 189.
reducible to Space-Time: 189, 239.

Ratio cognoscendi and *ratio essendi:* 2, 16, 271, 272.
—— cognoscendi and *ratio essendi:* Confusion between, 271.
REAL counterpart: 49-81.
—— object: 265.
—— space: 44.
REALISM 1-215.
——: Assumptions of, 269.
——: Critical, 114-138.
Realism: Approach to Critical, 116-120.
——: *Essays in,* 114-138.
REALISM: Crux for, 90, 266, 267.
——: Dilemma of, 76, 77.
—— and distinction between Primary and Secondary Consciousness: 293, 294.
—— and Idealism: 293, 294.
——: Naïf, 51, 55-57, 283, 284.
——: Naïf, confuses mind with body, 283.
REALISM: The New, 1-215, 13, 15, 16, 17, 212.
Realism, The New, 34 (Foot-note).
REALISM: Objections to, 37, 38. See OBJECTIONS.
——: Strength of, 36, 37.
Realism: A Study in, 24-28.
——: Three Proofs of, 123-126.
REALIST theory of external reality of Categories: 29, 179-194.
—— theory of memory: 24-28, 47, 48.
—— theory of perception: 49-138, 312.
—— theory of relations: 29 *et seq.,* 40, 42.
—— theory of world before consciousness: 45-47.
Realistic Universe: A, 148 *et seq.*
REALITY: 15, 18, 19, 307.
—— of external world: 17, 18.
——: God's knowledge of, 307.
——: Man's knowledge of, 307.
—— Not directly perceived: 75, 76.
—— of relations: 29.
——: Relation of, to consciousness, 288, 289.
——: Relation of, to its whole, 76.
—— of space and time: 18, 84, 88. See SPACE-TIME. SPACE and Time.
——: Spiritual nature of, 300.
——: Ultimate, 314.
——: Unperceived, 63, 89, 90, 284-289.
—— and Values: 308.
REASONING: 291.
RECIPROCITY: 188, 189, 242.
RECOGNITION: 35, 36.
REFLECTION: 290.
REGRESS: The infinite, 237-239.
RELATION: 182-184.
—— of besideness: 145, 146.
—— " Knowing to known: 16, 31.
—— " mind to sense-organ: 207, 208.
—— not reducible to Space-Time: 183, 184, 186.
—— of Primary to Secondary consciousness: 291-293.
—— of subject and object: 40, 235, 296.
—— of subject and predicate: 30, 38, 39, 235.
—— of succession: 145, 146.
—— of ultimate to finite consciousness: 303, 307, 310.

RELATION of universal and particular: 184.
RELATIONS: Causal, 99 *et seq.*
——: external, 185, 186, 237-239.
——: external, do not relate, 37-40.
——: external and internal, 30, 31.
——: external reality of, 29.
—— not work of consciousness: 238.
—— not work of thought: 29.
——: Thought, 4, 8.
RELATIONAL theory of space and time: 143, 144, 220.
—— properties: 30, 40, 41.
RELATIVITY: 22 (Foot-note), 252, 253.
Relativity: General Principle of, 243, 244.
RELATIVITY: Principle of, 141. Note, 220, 243-245.
—— to sense-organ: 58, 59, 62, 63, 68, 69.
—— of space and time: 84, 88-90.
ROGERS: Professor, 116, 120, 311.
RUSSELL: Bertrand, 17, 18, 21, 22, 28, 37, 42, 43, 44, 143, 144, 158 *et seq.*, 162, 163, 236, 237-239.

SANTAYANA: Professor, 116, 120, 123-126, 311.
SCIENTIFIC object: 72, 73, 87, 88, 99 *et seq.*, 284-286, 292, 293.
—— Theory: 51, 68-71.
SECOND-sight: 246.
SECONDARY CONSCIOUSNESS: 290-294. See CONSCIOUSNESS.
SELECTION: 205, 206, 207.
—— of objects by mind, not basis of idealism: 280.
SELF: 233-235, 240.
—— the highest category, 297.
—— the highest universal: 235.
——: The Infinite, 300.
SELFHOOD: 233, 234, 240.
SELLARS: Professor, 120, 127-131, 311.
SELVES: finite, 297, 299, 305, 306, 309, 310.
SENSA: 20, 21, 22, 46, 58, 59-63, 68, 69, 261, 262, 266-269, 287-289.
SENSATION: 52, 53, 56, 57, 287-289.
——: Communicability of, 56, 57.
——: Correspondence between, and neural process, 261-263, 287, 288.
and cerebral cortex, 261, 262.
SENSATIONS: Incompatible, 55, 56.
SENSE-data: 42, 43, 133-136.
—— data not in space and time: 133, 134; yet appearing in space and time: 134; and spatially and temporally related: 134.
Sense-Data and Physics: 42, 43.
SENSE-organ: 20, 21, 46, 58, 59-62, 63, 68, 69, 203, 204, 207, 208, 258.
—— organ: Dependence of *sensa* on, 20, 21, 46, 58, 59, 63, 68, 69.
—— organ: Relation of mind to, 207, 208.
—— organ: Rôle of, in consciousness, 258.
SENSIBLES: 20, 22, 46.
SENSORY affections: 45.
SENSUM: 60, 61, 261, 266, 287, 288.
——: Relation of, to molecular motion, 287.
SERIAL time: See TIME.
SERIES: See COMPACT.
SIMULTANEITY: 188, 189.
SIRIUS: Event in, 247.
SITUATION: 90-93.
SOLIPSISM: 5, 16, 17, 253, 268, 272, 312.
SPACE: 162-213.
——: Private, 252.
——: Public, 22.
——: Real, difficulty of perceptual experience in, 44.
—— a system of co-existent series: 150.
—— temporal: 166, 167.
SPACE and Time: 6, 7, 14, 18, 21, 22, 82-84, 88-90, 312, 313.
—— and Time abstractions from events: 83.
—— and Time abstractions from Space-Time: 164.
—— and Time all-embracing relations: 88.
—— and Time: Antinomies of, 139-161. See ANTINOMIES.
—— and Time *a priori* forms of consciousness: 296.
—— and Time: Correlations of, 165-167.
—— and Time: Identity of, 176, 178.
—— and Time not all-embracing: 94, 95.
—— and Time relations between events: 83, 220.

SPACE and Time the ultimate elements: 164, 220.
—— and Time ultimate forms of consciousness: 222-224.
—— and Time: Unity of, 166, 167, 176, 219, 220.
SPACE-TIME: 162-213, 295-298.
—— - —— the *a priori* stuff, the matrix: 164.
—— - —— and consciousness: 253.
—— - ——: Correlations of, 166, 167.
—— - ——creative form of higher consciousness: 289.
—— - —— minded and unminded: 224-226, 312.
—— - —— not an existent: 193.
—— - —— not mental: 252.
—— - —— not self-subsistent: 298.
—— - —— not substance: 194.
—— - —— not a unity: 194.
—— - —— not a whole: 193.
—— - —— as the One: 194.
—— - ——: Perspectives of, 227, 228.
—— - ——: Physical and mental, the same, 295.
—— - ——: Pure, 165.
—— - ——: Redistribution of, 170 *et seq.*
—— - —— and Spirit: 299.
—— - ——: Stratified, 103, 104.
—— - —— subsists in and through subject-object relation, 296.
—— - ——: Supreme correlation of, 298.
—— - ——: Synthesis of, 298.
—— - —— systems: 245.
—— - —— ultimate form of consciousness: 232.
SPACE, Time and Consciousness: 219-239.
——, Time and Other Consciousness: 245-259.
SPACE, TIME and DEITY: 28, 162-213. See TIME.
SPATIO-Temporal relations: 236.
SPINOZA: Introduction, xii, 2.
SPIRIT: 299.
——: Relation of body to, 300.
—— unity of mind and will: 299.
—— the whole: 5.
STRONG: Professor, 116, 120, 132-138, 311.
SUBJECT-OBJECT: 40, 45, 235, 296.
—— and predicate. See RELATION.
SUBSTANCE: 83, 124, 125, 186, 187.
—— and appearances: 124-126; separate in existence and identical in essence: 124, 125; no guarantee of this: 125.
—— and attributes: 84.
—— minded and unminded: 240.
—— not in space: 84.
—— and its parts: 140, 141, 187.
SUCCESSION: 106.
——: Relation of, 145-147.
SYNTHETIC judgment *a priori:* 5, 6.

TACTUAL Perception: 54-61, 71-75, 80.
—— Perception: Real counterpart of, 79, 80.
TESSARACT: The, 249, 250. Appendix IV, pp. 317, 318.
THING and its Qualities: 39.
THING-in-Itself: 2, 3.
THINGS-in-Themselves: 40.
THOUGHT: 4, 5, 10, 12, 29, 30, 235.
——: Laws of, 269.
——: Process of, 269.
——-Relations: 4, 8, 29, 30, 235.
TIME: 87, 88, 89, 139, 140-194, 160, 161, 173, 174.
——: Absolute, 87, 88.
——: All at a point, 172-174, 246.
—— as causality: 151-153.
—— as chance: 151-158.
——: Dream-, 251, 252.
—— the "mind of Space": 200, 201.
—— as motion: 164.
—— a negative property: 149.
——: Non-serial, 93, 148, 149; gives continuity to space; 150.
——: Real, 143.
—— and reality: 147-158.
Time and Reality: 147-158.
TIME: Serial, an intellectual abstraction, 108-110, 143, 147 *et seq.*
——-Series: Reversible, 246-249.
—— and Space antithetical: 149.
—— spatial: 166, 167.
——-systems: Multiplicity of, 93.
—— unreal: 143, 220. See SPACE, SPACE-TIME, SPACE and Time.
TOTAL configuration of the universe: 240, 241; *versus* process: 241.

TOUCH: See TACTUAL perception.
TRIPLE Dialectic: 3, 142.

ULTIMATE Consciousness: 272, 295-314.
—— Consciousness: Necessity of, 295-299.
UNIFORMITY of knowledge: 22.
—— of nature: 2, 242.
UNITY of consciousness: 17.
—— of God and finite selves: 306, 314.
—— of Space and Time: 166, 167, 176, 219, 220.
UNIVERSAL: 180-182, 184, 185.
——: The concrete, 182.
—— as determination of Space-Time: 180, 181.
——: The highest, 182, 235.
—— Not reducible to Space-Time: 181-182.
—— and particular: 184.
UNIVERSE: 295, 296.
—— begotten by Spirit out of Space-Time: 299.
—— and Subject-Object: 296.
—— in Ultimate Consciousness: 301. See TOTAL configuration.

VALUES: 308, 314. And Reality: 308.
VITALISM: 15, 37.

WHITEHEAD: Professor A. N., Introduction, ix, x, xii-xiv, 21, 35, 37, 81-114, 142, 162-164, 220, 221, 295, 311.
——: Professor A. N., and the concept of Nature, 81-114.
WHITEHEAD: Professor A. N.'s *Concept of Nature:* 81-114.
——: Professor A. N.'s *Enquiry Concerning Principles of Natural Knowledge,* 81 *et seq.*
——: Professor A. N.'s solution of antinomies of Space and Time: 143 *et ante.*
WHOLE: The, 76, 240, 241.
——: The, independent of perception, 76.
——: The, not a reality, 76.
——: The, and the parts, 76, 189, 242, 265.
——: The, as Ultimate Consciousness: 242.
WHOLES: Logical, 242.
WILL: The, 5, 11, 241, 272, 292, 299.
——: The, in Primary Consciousness: 292.
——: The, as pure causality: 241.
——: The, in Secondary Consciousness: 292.
—— The, above Space-Time, 241.
——: Free, 305, 307.
WILLING: 34.
—— and Being: 272.
WOLF: 2.
WORLD before Consciousness: 45, 46, 47, 267, 301, 313, 314.
—— before Consciousness: Difficulty in realist theory of, 47.
—— before Consciousness: Idealist theory of, 46, 47.

ZENO: 139, 140.