Bertrand Russell

Evening Lecture
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Bertrand Russell (1872-1970)

- His grandfather was John Russell, twice prime minister of the UK

- By the time he was six, his sister, his parents, and his grandfather had all died, leaving him the care of his grandmother

- He was educated privately at home

- He found learning non-Euclidean geometry at the age of 11 “as dazzling as first love”

- Entered Cambridge, studying Mathematics and Philosophy in 1890

- Went to Brixton prison in 1918 for activities related to his opposition to World War I

- Awarded the Nobel Prize for Literature in 1950

- Was an activist in the 1960’s for banning nuclear weapons and ending the war in Viet Nam
https://www.youtube.com/watch?v=dsSCyNpo__I
Mrs. Whitehead was at this time becoming more and more of an invalid, and used to have intense pain owing to heart trouble. ... When we came home, we found Mrs. Whitehead undergoing an unusually severe bout of pain. She seemed cut off from everyone and everything by walls of agony, and the sense of the solitude of each human soul suddenly overwhelmed me. Ever since my marriage, my emotional life had been calm and superficial. I had forgotten all the deeper issues, and had been content with flippant cleverness. Suddenly the ground seemed to give way beneath me, and I found myself in quite another region. Within five minutes I went through some such reflections as the following: the loneliness of the human soul is unendurable; nothing can penetrate it except the highest intensity of the sort of love that religious teachers have preached; whatever does not spring from this motive is harmful, or at best useless; it follows that war is wrong, that a public school education is abominable, that the use of force is to be deprecated, and that in human relations one should penetrate to the core of loneliness in each person and speak to that. ... At the end of those five minutes, I had become a completely different person. For a time, a sort of mystic illumination possessed me. I felt that I knew the inmost thoughts of everybody that I met in the street, and though this was, no doubt, a delusion, I did in actual fact find myself in far closer touch than previously with all my friends, and many of my acquaintances. Having been an imperialist, I became during those five minutes a pro-Boer and a pacifist. (Feb. 1901)
This book is interesting as the work of a gallant divine who, in these tedious days of peace, has been driven to seek other methods of promoting Christian knowledge than those employed by the Royal Irish Rifles. He argues—rightly, as we think—that the spirit of Irish Protestantism (not mentioned by name, but implicit throughout the book) can find support in Bergson’s philosophy. Recommending Bergsonian intuition as against the mere intellect, he says:

When the call to arms came seven years ago, I doubt if many young men took a purely rational view of the situation. Very few of our young intellectuals stopped to weigh the “pros and cons.” ... The prudent calculations of intelligence went by the board when intuition spoke.

It is interesting to have this admission, from one who ought to know, that it was not intelligence that led people to decide against the conscientious objectors.
Bergson's "intuition", in the opinion of the present reviewer, is nothing but an invitation to abandon self-control in certain cases in which it is painful. Whenever we ardently desire to do something of which intelligence shows that the consequences will be disagreeable—e.g. to pull the nose of an offensive passenger in a tram—our desire at once suggests to us all sorts of "higher goods" which are to be secured by the vindication of right. Since the matter will not bear thinking out, we believe we have a mystic intuition, which sees deeper than the mere analytic intellect. Bergson's business is to flatter this belief, and thus encourage us to think that we are immortal and free, that all Germans are vile, and that Russians deserve nothing better than death by starvation. M. Bergson has been 1914. The reaction against reason and self-control began a good many years before 1914, and had a share in bringing on the war. It has gone on growing in strength ever since. The French have an "intuition" that the Germans can pay the sums demanded by the Treaty of Versailles. We had an "intuition" that Sinn Fein ought to be put down, until we found that doing so would add a shilling to the income tax. The world will not recover until such considerations as fear of a large income tax outweigh those "deeper" and "more idealistic" considerations to which the preachers of violence in all parties appeal. And this will not happen so long as people allow themselves to be flattered by talk about intuition being superior to intelligence.
I went out bicycling one afternoon, and suddenly, as I was riding along a country road, I realized that I no longer loved Alys. I had no idea until this moment that my love for her was even lessening. The problem presented by this discovery was very grave.
Philosophical turning-points

For two or three years, under his (McTaggart’s) influence, I was a Hegelian. I remember the exact moment during my fourth year [1894] when I became one. I had gone out to buy a tin of tobacco, and was going back with it along Trinity Lane, when suddenly I threw it up in the air and exclaimed: "Great God in boots! the ontological argument is sound!" (Autobiography)

It was towards the end of 1898 that Moore and I rebelled against both Kant and Hegel. Moore led the way, but I followed closely in his footsteps. (My Philosophical Development)

The most important year in my intellectual life was the year 1900, and the most important event in this year was my visit to the International Congress of Philosophy in Paris [from 1–5 August]. ... In Paris in 1900, I was impressed by the fact that, in all discussions Peano and his pupils has a precision that which was not possessed by others. (“My Mental Development”)
Absolute Idealism (Hegel, Bradley, Royce)

- Regarded itself as the culmination of the history of philosophy
- Form of **Idealism**—that reality is ultimately of the character of the mind or experience
- Form of **Monism**—that ultimately there is only one entity ("all is one")
- No judgment is absolutely true or absolutely false (degrees of truth/falsity)
- Judgment (belief) is only one stage in the development of consciousness
The Revolt Against Idealism

Moore took the lead in rebellion, and I followed, with a sense of emancipation. Bradley argued that everything common sense believes in is mere appearance; we reverted to the opposite extreme, and thought that everything is real that common sense, uninfluenced by philosophy or theology, supposes real. With a sense of escaping from prison, we allowed ourselves to think that grass is green, that the sun and stars would exist if no one was aware of them, and also that there is a pluralistic timeless world of Platonic ideas. The world, which had been thin and logical, suddenly became rich and varied and solid. Mathematics could be quite true, and not merely a stage in dialectic. (“My Mental Development”)
Moore and Russell: The revolt against Idealism

• Against Monism: Pluralism

Reality consists of distinct, independent entities standing in various relations with one another

Each complex entity is ultimately analyzable into its ultimate (simple) constituents
• Against Idealism

   The world contains mental and non-mental entities

   Among the non-mental entities are physical entities and also abstract entities (for example, numbers)

• Every judgment (or belief) is absolutely true or absolute false (e.g. “2=3=5”, “We should pursue what is good”, “There is absolute space”)

• We can attain knowledge of absolute truths (no need for transition to higher consciousness)

   Some beliefs are justified by other beliefs; ultimately, we reach beliefs that not justified by any other beliefs; the only evidence for these beliefs are themselves (“self-evidence”)
Sharp Separation between Philosophy and Science

[T]he business of philosophy is just the discovery of those simple notions, and those primitive axioms, upon which any calculus or science must be based.... [T]he problems of philosophy should be anterior to deduction. An idea which can be defined, or a proposition which can be proved, is of only subordinate philosophical interest. The emphasis should be laid on the indefinable and indemonstrable, and here no method is available save intuition. (The Philosophy of Leibniz)

The distinction of philosophy and mathematics is broadly one of point of view: mathematics is constructive and deductive, philosophy is critical, and in a certain impersonal sense controversial. Wherever we have deductive reasoning, we have mathematics; but the principles of deduction, the recognition of indefinable entities, and the distinguishing between such entities, are the business of philosophy. Philosophy is, in fact, mainly a question of insight and perception. ... A certain body of indefinable entities and indemonstrable propositions must form the starting-point for any mathematical reasoning; and it is this starting-point that concerns the philosopher.... All depends, in the end, upon immediate perception; and philosophical argument, strictly speaking, consists mainly of an endeavour to cause the reader to perceive what has been perceived by the author. The argument, in short, is not of the nature of proof, but of exhortation. (PoM)
By the end of August I had become completely familiar with all the work of [Peano’s] school. I spent the September in extending his methods to the logic of relations. ... The time was one of intellectual intoxication. My sensations resembled those one has after climbing a mountain in a mist, when, on reaching the summit, the mist suddenly clears, and the country becomes visible for forty miles in every direction. For years I had been endeavouring to analyse the fundamental notions of mathematics, such as order and cardinal numbers. Suddenly, in the space of a few weeks, I discovered what appeared to me to be definitive answers to the problems which had baffled me for years. And in the course of discovering these answers, I was introducing a new mathematical technique, by which regions formerly abandoned to the vaguenesses of philosophers were conquered for the precision of exact formulae. Intellectually, the month of September 1900 was the highest point of my life. (Autobiography)
Russell on infinity, continuity, and the irrationals, pre– and post–Peano

The mathematical theory of the transfinite may almost be said to begin with Cantor. The infinitesimal calculus, though it employs infinity, contrives to smuggle it out of the results, and deals with it as briefly as possible. ... Cantor has abandoned this cowardly policy, and has brought the skeleton out of its cupboard. He has been emboldened in this course by denying that it is a skeleton: In this however, we shall find reason to disagree. ... I cannot persuade myself that his theory solves any of the philosophical difficulties of infinity, or renders the antinomy of infinite number one whit less formidable. (Pre–Peano draft of PoM)

The mathematical theory of the transfinite may almost be said to begin with Cantor. The Infinitesimal Calculus, though it cannot wholly dispense with infinity, has as few dealings with it as possible, and contrives to hide it away before facing he world. Cantor has abandoned this cowardly policy, and has brought the skeleton out of its cupboard. He has been emboldened in this course by denying that it is a skeleton. Indeed, like many other skeletons, it was wholly dependent on its cupboard, and vanished in the light of day. Speaking without metaphor, Cantor has established a new branch of Mathematics, in which, by mere correctness of deduction, it is shown that the supposed contradictions of infinity all depend upon extending, to the infinite, results which, while they can be proved concerning finite numbers, are in no sense necessarily true of all numbers. (PoM, 305)
Zeno was concerned ... with three problems.... These are the problems of the infinitesimal, the infinite, and continuity. To state clearly the difficulties involved, was to accomplish perhaps the hardest part of the philosopher’s task. This was done by Zeno. From him to our own day, the finest intellects of each generation in turn attacked the problems, but achieved, broadly speaking, nothing. In our own time, however, three men—Weierstrass, Dedekind, and Cantor—have not merely advanced these three problems, but have completely solved them. The solutions, for those acquainted with mathematics, are so clear as to leave no longer the slightest doubt or difficulty. This achievement is probably the greatest of which our age has to boast; and I know of no age (except perhaps the golden age of Greece) which has a more convincing proof to offer of the transcendent genius of its great men. Of the three problems, that of the infinitesimal was solved by Weierstrass; the solution of the other two was begun by Dedekind, and definitively accomplished by Cantor. (Russell, 1901)
Consider

The set of natural numbers: \( \{1, 2, 3, \ldots \} \)

The set of even numbers: \( \{2, 4, 6, \ldots \} \)

Are there more natural numbers than even numbers? Are there the same number of natural numbers and even numbers?
The best way to limit the scope of the sciences is never to try to inquire about anything beyond us, which we cannot reasonably hope to be able to hope to understand. Of this type are all questions regarding God’s power, which it is ridiculous to try to confine within the narrow limits of the mind, and generally anything having to do with infinity. Because the mind is finite, it gets lost in and is dazzled by infinity, and remains overwhelmed by the multitude of contrary thoughts that infinite furnishes us.

There is a very practical and simple solution for steering clear of a great number of issues that we could always debate as long as we liked, because we would never arrive at knowledge clear enough to decide them and to make up our minds. Is it possible for a creature to have been created from eternity? Could God make a body infinitely large, a motion infinitely fast, a multitude infinite in number? Is an infinite number even or odd? Is one infinity larger than another? Whoever immediately says I do not know, will have instantly made as much progress as anyone who spends twenty years reasoning about these sorts of topics. The only difference between the two is that the person who tries to penetrate these issues is in danger of falling to a level even lower than simple ignorance, namely believing that one knows what one does not know. (Arnauld and Nicole, Logic or the Art of Thinking, 1662)
Cantor’s theory: even though the even numbers are a proper subset of the natural numbers, there are the same number of evens and natural numbers because they can be put in a 1-1 correspondence with each other. This contradicts the “Euclidean Axiom” that the “part is less than the whole”.
How these changes bear on his Moorean position

They call into question foundationalism

The proof of self–evident propositions [such as that two and two are four] may seem, to the uninitiated, a somewhat frivolous occupation. ... But ... since people have tried to prove obvious propositions, they have found that many of them are false. Self–evidence is often a mere will-o’-the-wisp, which is sure to lead us astray if we take it as our guide. For instance, nothing is plainer than that a whole always has more terms than a part, or that a number is increased by adding one to it. But these propositions are now known to be usually false. Most numbers are infinite, and if a number is infinite you may add ones to it as long as you like without disturbing it in the least. (1901)

[I]t [the “axiom” that whole cannot be similar to the parts] is an axiom doubtless very agreeable to common–sense. But there is no evidence for the axiom except supposed self–evidence, and its admission leads to perfectly precise contradictions [such as the one Leibniz presents]. The axiom is not only useless, but positively destructive, in mathematics, and against its rejection there is nothing to be set except prejudice. (PoM)

The possibility that the whole and part may have the same number of terms is, it must be confessed, shocking to common–sense. Zeno’s Achilles ingeniously shows that the opposite view also has shocking consequences; for if whole and part cannot be correlated term for term, it does strictly follow that, if two material points travel along the same path, the one following the other, the one which is behind can never catch up. ... Commonsense, therefore, is in a very sorry plight; it must choose between the paradox of Zeno and the paradox of Cantor [that the whole and part may have the same number of terms]. I do not propose to help it, since I consider that, in the face of proofs, it ought to commit suicide in despair. (PoM)

It should be observed ... that no peculiar philosophy is involved in the above contradiction, which springs directly from common sense, and can only be solved by abandoning some common-sense assumption. (PoM)
They call into question the early distinction between science and philosophy

It was formerly supposed that infinite numbers, and the mathematical infinite generally, were self-contradictory. But as it was obvious that there were infinities—for example, the number of numbers—the contradictions of infinity seemed unavoidable, and philosophy seemed to have wondered into a “cul-de-sac”. This difficulty led to Kant’s antinomies, and hence, more or less indirectly, to much of Hegel’s dialectic method. Almost all current philosophy is upset by the fact (of which very few philosophers are as yet aware) that all the ancient and respectable contradictions in the notion of the infinite have been disposed of once and for all. (Russell, 1901)

Most of the great ambitious attempts of metaphysicians have proceeded by the attempt to prove that such and such apparent features of the actual world were self-contradictory, and therefore could not be real. ... Now, however, owing to the labours of the mathematicians, notably Georg Cantor, it has appeared that the impossibility of infinite collections was a mistake. They are not in fact self-contradictory, but only contradictory of certain rather obstinate mental prejudices. Hence the reasons for regarding space and time as unreal have become inoperative, and one of the great sources of metaphysical constructions is dried up. (The Problems of Philosophy)
Logic has made, during the last sixty years, greater advances than in the whole previous history of mankind. These advances have all been made by men whose training was predominantly scientific or mathematical, and have been opposed or ignored by orthodox philosophers. ... [O]fficial academic philosophy, now as at the time of the Renaissance, is engaged in the endeavour to keep alive an antiquated technique, and to ignore the new knowledge which is rendering old problems trivial. Philosophy is associated traditionally with two studies with which it has no essential affinity, namely theology and Greek. If it is to become vital to our universities, it must come to be associated instead with science. But it would be almost as difficult to effect such a change as to carry it through the Social Revolution. (Russell, 1920)
[Broad] proceeds on the assumption that the business of philosophy is to clear up the fundamental ideas and beliefs of the special sciences.... It cannot be denied that there is an important study which has these functions, but whether it should be called “philosophy” may be doubted. Cantor in the last generation showed us what to mean by “infinity” and “continuity”; Einstein in our own time has shown that a physical law must be expressible in tensor form. These were philosophical results according to Mr. Broad’s definition, but Cantor and Einstein were not philosophers. The philosophers, in both cases, have done all that lay in their power to prevent the spread of new clear ideas—by fallacious refutation in the first case and fallacious interpretation in the second. On a behaviorist basis, philosophy is to be defined as what a philosopher does. This is not (except in a few cases like Mr. Broad’s) what Mr. Broad calls philosophy, which has been left mainly to mathematicians and physicists. I should myself, on behaviorist grounds, define “philosophy” as “the invention of fallacies to conceal or ignorance”; but that would compel me to deny Mr. Broad as a philosopher. (Russell, 1923)
I found that many of the stock philosophical arguments about mathematics (derived in the main from Kant) had been rendered invalid by the progress of mathematics in the meanwhile. Non-Euclidean geometry had undermined the argument of the transcendental aesthetic. Weierstrass had shown that the differential and integral calculus do not require the conception of the infinitesimal, and that, therefore, all that had been said by philosophers on such subjects as the continuity of space and time and motion must be regarded as sheer error. Cantor freed the conception of infinite number from contradiction, and thus disposed of Kant’s antinomies as well as many of Hegel’s. Finally, Frege showed in detail how arithmetic can be deduced from pure logic…. As all these results were obtained, not by any heroic method, but by patient detailed reasoning, I began to think it probable that philosophy had erred in adopting heroic remedies for intellectual difficulties, and that solutions were to be found merely by greater care and accuracy. This view I have come to hold more and more strongly as time went on, and it has led me to doubt whether philosophy, as a study distinct from science and possessed of a method of its own, is anything more than an unfortunate legacy from theology. (Russell, 1924)
Formerly, *a priori* logic was used to prove that various hypotheses which looked possible were impossible, leaving only one possibility, which philosophy pronounced true. Now *a priori* logic is used to prove the exact contrary, namely, that hypotheses which looked impossible are possible. ... Instead of being shut in within narrow walls, of which every nook and cranny could be explored, we find ourselves in an open world of free possibilities, where much remains unknown because there is so much to know. ... [L]ogic, instead of being, as formerly, the bar to possibilities, has become the great liberator of the imagination, presenting innumerable alternatives which are closed to unreflective common sense ... . (Russell, 1927)
Philosophic contemplation does not, in its widest survey, divide the universe into two hostile camps--friends and foes, helpful and hostile, good and bad--it views the whole impartially. Philosophic contemplation, when it is unalloyed, does not aim at proving that the rest of the universe is akin to man. All acquisition of knowledge is an enlargement of the Self, but this enlargement is best attained when it is not directly sought. It is obtained when the desire for knowledge is alone operative, by a study which does not wish in advance that its objects should have this or that character, but adapts the Self to the characters which it finds in its objects. This enlargement of Self is not obtained when, taking the Self as it is, we try to show that the world is so similar to this Self that knowledge of it is possible without any admission of what seems alien. The desire to prove this is a form of self-assertion and, like all self-assertion, it is an obstacle to the growth of Self which it desires, and of which the Self knows that it is capable. Self-assertion, in philosophic speculation as elsewhere, views the world as a means to its own ends; thus it makes the world of less account than Self, and the Self sets bounds to the greatness of its goods. In contemplation, on the contrary, we start from the not-Self, and through its greatness the boundaries of Self are enlarged; through the infinity of the universe the mind which contemplates it achieves some share in infinity. (Russell, *Problems of Philosophy*)
For this reason greatness of soul is not fostered by those philosophies which assimilate the universe to Man. Knowledge is a form of union of Self and not-Self; like all union, it is impaired by dominion, and therefore by any attempt to force the universe into conformity with what we find in ourselves. There is a widespread philosophical tendency towards the view which tells us that Man is the measure of all things, that truth is man-made, that space and time and the world of universals are properties of the mind, and that, if there be anything not created by the mind, it is unknowable and of no account for us. This view, if our previous discussions were correct, is untrue; but in addition to being untrue, it has the effect of robbing philosophic contemplation of all that gives it value, since it fetters contemplation to Self. What it calls knowledge is not a union with the not-Self, but a set of prejudices, habits, and desires, making an impenetrable veil between us and the world beyond. The man who finds pleasure in such a theory of knowledge is like the man who never leaves the domestic circle for fear his word might not be law. (Russell, *Problems of Philosophy*)