

INTRODUCTION:
INDUCTION AND LOGIC

This is a lightly edited transcript of a text in Berlin's papers. James Chappel has checked and amended the transcript against the text, but more work is needed before Berlin's intentions are faithfully represented throughout. For the time being this version is posted here for the convenience of scholars. The bracketed numbers refer to the folios of the original text, which is partly typed and partly in MS. The first page and one or two other pages are missing, but some or all of these may yet turn up among Berlin's papers. H.H.

[1 *missing*] Briefly, it has consisted of three false assumptions: (a) a false view of meaning, (b) a false view of certainty, (c) a false view of logical form. To put it very briefly, the view of meaning which is false is that meaning consists of some kind of direct relation between symbols and thing or characteristics of things. The false view of certainty consists in supposing that it is possible to find a class of statements so certain that the validity and truth of all other statements can be judged, as it were, by comparison with this perfect type of statement and not only compared but classified and related in terms of this ideal model. The false view of logical form consists of supposing that differences of structure in the forms of statement or other symbolic expressions must either correspond to, or anyhow be derived from, differences of structure in reality – so that if two types of statement cannot be reduced to one another, that is a sure mark of categories of reality which, as it were, are its ultimate irreducible forms, universal and immutable, necessarily reflected to some degree in all forms of coherent speech and belief, most clearly reflected the more logically adequate a given language is – and this leads to the idea of the ideal, the perfect logical language, whose forms are accurately modelled upon the structure of reality, so that the characteristics of the language denote all the characteristics of reality, suggesting none that do not exist, and concealing none that do. These three

INDUCTION AND LOGIC

views which are very deeply embedded in many philosophical traditions seem to me to be false and to be responsible for a great deal of confusion and error. Before proceeding to unmask them, I should like to say something about the method by which such topics can nowadays be dealt with.

[2] [...] largely the work of Russell and his disciples, the chief technique of which has been not so much by providing better answers to traditional problems than previous answers considered as inadequate, but by showing that the problem itself rests on unexamined or unjustified assumptions or on muddles or confusions, therefore is not a question which in principle can be answered, because it is not a genuine question. All sorts of things *can* be asked which look like questions but aren't: e.g. 'are elephants elephants?' – are elephants mammals, are elephants expensive to buy, are elephants real, are elephants in space. All seem equally valid questions. But they aren't.

Example:

Has the universe a purpose? This problem which has tormented many generations can be shown to be unreal by examining the meanings of the words 'universe' and 'purpose'. We learn the meanings of words by discovering how they are used, by being shown contexts to which they are properly held to apply. If I say, 'Has this piece of wood a purpose?' that means has someone made it in order to do something specific with it, or does someone now use it for a specific purpose, or could it ever be employed for any possible purpose by any possible agent the speaker can think of. In other words, it was a different *sort of* question, from the question 'Is this piece of timber blue?' If I am asked how I set about discovering whether it is blue or not, I say that I do so by using my eyes, by looking, or if I am blind or when it is dark, by getting someone else to look at some other time or place and report to me, or by collecting evidence by way of light vibrations. If I am asked how do I know the purpose of this piece of wood – this desk, I can not do so simply by looking, for mere looking may tell me nothing. I can merely do so by asking other people or myself certain questions such as who made it, or who does what with it, or how have I used it in the past or how would I consciously or unconsciously assume that it could or should be used in the past or future, etc. This is how I find out what the purpose of an object is. If I am told that a thing is of such a kind as nobody, so far as is

INDUCTION AND LOGIC

known, has made and nobody has ever used or thought of using or would want to use or has behaved as if he himself or someone else could ever use (we say that a thing has a purpose not merely when we or others deliberately make use of it, but when we behave as if it served some human or animal purpose, e.g. the fresh air around us. We may never have given a thought to the fact that we breathe, but we have behaved as if it was always available and could be used as it is used, and are surprised if it is cut off etc. etc.), then we say this object has evidently no purpose; we don't need it; it is quite useless, etc. If we are told that the object is of such a kind that in principle it *cannot be the kind* of thing which anybody could be said to be able to employ for any purpose, then we say *not* that it is *false* that it has a purpose, but that it is *meaningless*, e.g. '3000 feet'. 'What is the purpose of 3000 feet?' is plainly a meaningless question. 3000 feet is not the kind of thing which is usable or unusable. From this it follows that to say of a thing that it has a particular purpose is to distinguish it from things which do not or cannot or might not have any particular purpose; unless the word 'purpose' here serves to discriminate one class of entities – those that do have a purpose, from other classes of entities, those that do not, the word has no function. From this another truism follows, namely, that the function of words – at any rate descriptive words is to classify, and that unless they draw a frontier between what they apply to and what they do not apply to, they perform no function at all. To say therefore that the word 'purpose' means something – can be used in significant speech, is to say that by means of it we classify things which do have a purpose and could in principle not have had one. Now, if we say '*everything has a purpose*,' what are we discriminating from what? What are the marks which a thing has to have if it is to be classified as having a purpose rather than as being purposeless? If everything in principle or fact has a purpose, it can be contrasted with nothing else. The word therefore ceases to have classification and function and with it a meaning. We can assert of things that they have a purpose only if we can conceive what it would be like for them not to have one, but if *everything* is said to have a given characteristic, including *everything* that can be imagined or conceived as well as everything that happens to exist, then *nothing* is being said of it. Supposing I were to say that *everything* is blue. You would protest that this could not be true because the word 'blue' only has a meaning in so far as it distinguishes certain things

INDUCTION AND LOGIC

from other similar ones which are green, yellow, etc., but if I were to say ‘that is true of the word “blue” as ordinarily used but that there is another, wider sense of “blue” in which everything whatever possesses this quality’, you would ask how do I tell whether anything, let alone everything, possesses this wider quality and I would have to answer that unfortunately it is so universal that I cannot provide you with a negative instance even in thought to compare with the ubiquitous positive instances of this quality. You would then reasonably answer that a quality which I say everything indifferently possesses is not what you or I mean by quality or a characteristic, since qualities and characteristics are what distinguish one thing from another. They are frontiers or they are nothing. ‘Blue’ entails ‘not red’. Straight entails not crooked. To say of something that it is at once blue and red, straight and crooked, in some sense is to be unintelligible: Every affirmation must entail some sort of negation. To say that *everything* has a purpose is to say that everything possesses a characteristic which distinguishes it from something i.e. that something is different from everything, which is absurd. But there cannot be such a something: the characteristic therefore differentiates from nothing. To be different from nothing is to be nothing. But the universe equals everything there is and that can be. Now to say that the universe has a purpose means as we use the word purpose that someone created the universe to perform this or that operation with it, or that someone or other is using or is behaving as if he were using the universe to perform some given operation or operations. This would be legitimate; but in that case, the someone, the creator or the user, is *ex hypothesi* outside the universe and is not himself part of what is said to have a purpose and so the universe is not ‘everything’, but everything except the creator or user. If the creator or the user himself has a purpose, that means that someone else has created or is using him to perform certain operations, etc. Something will always be left out, the behaviour of which can be contrasted or compared with what is said to have a purpose. To say that absolutely everything has a purpose – or has any other characteristic and add that nothing lacks it leads to one of two bad results. Either the word means what it usually means, in which case you are predicating of the whole that which serves to discriminate and contrast parts within it which is to misapply it, to attribute to the whole a character which its part is said to possess precisely because it is part of a whole and not the whole. This is a

INDUCTION AND LOGIC

contradiction in terms. Or else the word loses its limiting function, and so ceases to mean anything and in either case you say nothing

In asking, 'Has x a purpose?', what I am really asking is if it is like the sorts of things that I have already described as having a purpose, whatever those are, or is it more like the sorts of things I describe as not having a purpose? Just as when I say, 'Is x blue?' I am asking whether it is more like the standard examples of blue or is it more like the standard examples of some other colour. Now, in asking if the universe has a purpose, I should be asking, 'Is the universe to be classed with those parts of itself that have a purpose, or those parts of itself that have not?' But this is obviously meaningless. Since a whole of parts is not one of its own parts – the word 'purpose' serves to distinguish bits of a collection or whole, and cannot therefore be applied to the collection itself. If we have a collection of tin tacks, some of which are long and others short, it is absurd to ask whether the collection itself is long or short; but that is exactly what those are asking who ask if the universe has a purpose. Yet failure to realise this leads to such apparently appalling problems as, 'If the universe has a purpose, does it develop or grow? But since it is all there is and will be, where does the extra growth come from? If it does not grow, does it stand still? If so, whence does the illusion of change come about? But if it changes, whence comes that into which it changes? Where does the new shape of things come from? If from outside, how can there be something outside the universe when the universe is everywhere? If it is inside, it is already present: to say, like Aristotle, that it exists potentially, not actually, lurking as it were, in the womb of things, waiting to be born, is saying to talk obscurely: what is a potential entity? Can I count potential chairs? Is not anything = anything else (potentially)? Hence material kinds: restrict 'potentiality' has to be got rid of as mental habit before evolution hypothesis even intelligible: the worst of such modes of thought is that they inhibit imagination in certain directions: their destruction has a very liberating effect: new ways of seeing and explaining. Anyway whence does the cause come which turns potential into actual?

[5B] [insert for p. 2] If 'outside' – whence? And if inside, what causes *it* to act? etc. etc. All these problems to which the solutions are Aladdin's Cave of hidden objects – are due to the application of concepts which apply *within* a system and describe elements *in* a

INDUCTION AND LOGIC

system, to the whole of the system; or to some system to which they have no natural i.e. usual application: in the case of 'purposely' classifying and distinguishing the universe' from some other system while in the same breath denying that there is or could be any other system. The misapplication of concepts is at the root of many bad intellectual habits. It breeds monsters some of which acclimatise themselves too easily, and become too familiar and tend to be exceedingly difficult to exorcise and become great obstacles to the discovery of the truth: e.g. the view of the political state as a super-individual organism, or of the mind as the ultimate plastic stuff of which everything is made.

After this analysis people see more clearly that purpose is what some things have and others do not have, and that the question 'Has the universe a purpose?' means nothing. While it was always clear that it could not be finally answered, nobody could quite put their finger on the reason why. 'Everything has a purpose' may have an emotive meaning – indicating a search for emotional satisfaction of some kind in the actual relations which things are found to have to one another. But to say that everything has or has not a purpose, and mean to describe something literally with these words is to destroy that difference between purposeful and purposeless instances which alone gives these words their meaning. Yet what an acute and apparently profound problem this used to be regarded as and how much energy and genius was wasted upon attempts to solve it. This is the typical kind of purge of bogus questions which the new logical instruments have made possible. When Russell said, early in the century, that the new logic liberated human thought from the straitjacket in which the Aristotelian logic had placed it, the French mathematician Poincaré said ironically, 'Mr Russell says that the new logic has given us wings; where are the wonderful flights? What are we waiting for?' The dissolution of such problems as those of universal teleology or natural kinds is a considerable flight and modern logic has no reason to be ashamed of its achievements. The modern efforts to analyse such obscure words as substance, cause, reality, number, infinity, etc, has been performed with arrestingly fruitful results. Problems have either been exposed as muddles or else have been reformulated in such a way that it becomes clear what concrete steps would have to be taken to arrive at a solution.

INDUCTION AND LOGIC

Fallacy of Reducion

Now to embark upon the particular fallacy which concerns us here, which has wrought terrible havoc with empiricists and metaphysicians alike. I shall call it the *fallacy of reduction* because it consists of reducing things which are different from one another to one another by violent means in order to conform to an ideal itself founded on a fallacy. The ideal consists of believing that both thought and the objects of thought can be reduced to single ultimate constituents, the arrangement of which accounts for, or is, the world. Sometimes these ultimate constituents are metaphysical, non-sensible atomic entities which nobody ever has or can experience, with mysterious, occult properties. Sometimes, they are empirical but terribly short-lived and fugitive, hard to examine and classify. In the realm of logic, it takes the form of trying to show that all propositions are really of the same kind, that all categorical propositions, for example, are really hypothetical, or that all hypothetical propositions are really so far as they are propositions at all a kind of categoricals, or that imperatives, or expressions of wishes, are really a funny kind of descriptive proposition or conversely that descriptive propositions are really a funny kind of imperative, and so on. Now it is often the case that things do turn out to be other than what they seem, that verbal or grammatical forms are very misleading, that very different verbal or grammatical forms do conceal identical logical structures and that the same grammatical and verbal forms conceal identical differences of logical structure and all this needs to be brought out and clarified, and triumphs of modern logic largely consist in just such exposure and elucidations; but whenever all of a certain sort of thing, whether in logic or in nature, is said to be a funny form of something else – that, unobvious as it may seem, it really must be different from what it looks – because otherwise difficult or insoluble problems will arise – and this funny or unpalatable translation of one thing into something which does not self-evidently fit it, is, although a little awkward, the lesser evil – whenever that is recommended, it is wise to be on one's guard. If the new logical shoe is obviously tight and does not fit, that is too often a symptom that something is being wilfully ignored or neglected, that some misfit is being palmed off to save intellectual exertion, and this is bound to lead to much worse trouble later on, usually in order to save some preconceived, uncriticized, dogmatically held theory. I shall endeavor to prove that there is a

INDUCTION AND LOGIC

current fallacy consisting in the reduction of propositions and entities to one another and that it has arisen in order to preserve a false theory of what words and symbols mean.

If I ask what happens when I use words to assert that something is the case, i.e., descriptively, the most obvious, simple answer which occurs to most common men, and even to most uncommon men, when they start philosophising, is that we use certain marks on paper, or noises, in accordance with certain conveniently fixed rules, to stand for or refer to objects, entities, situations in the outside world or in our common daily experience. This relation of *standing for* or *referring to* is at first conceived as something relatively simple though unique, rather like an act of pointing. The words, 'There is a wooden desk here now' stand for a material object during a certain part of its existence in a simple, uncomplicated, unambiguous fashion. Either I can say, 'There is a desk here' or I can simply point to the desk – in either case I am drawing your attention, in the way that I want, to the object I wish you to contemplate. And the words are felt to be like conventional signposts which direct attention to the object, or even like so many little caps which fit on the right-shaped heads when they are properly constructed and fitted. 'There is a desk here' is a collection of caps, rightly constructed and combined for their purpose, i.e. they 'fit the facts' as a cap fits a head. 'There is an elephant here' possesses at least one little cap for which there is not an available head, the word 'elephant' doesn't fit, it is a square peg, when all the holes are round or triangular. The same defect mars 'There is no desk here,' or 'There are four million desks here,' and so on. Now what is felt is, I think, that if all propositions were of the form, 'There is a wooden desk here' and there always was a wooden desk when that was said, there would be no problem and no theory of knowledge to try and solve it. This is a kind of ideal model of the perfect, non-trouble-giving situation – I say 'there is a wooden desk here'. You all look and see the desk. You understand and you accept my words as being the appropriate noises – appropriate to refer to the situation you find here, and all seems well. There is no complication, everything fits, would that it were always so. But alas, this is not the whole story. This happy state of affairs is disturbed very quickly; supposing I say, 'There is a round desk here.' Do I mean something? Obviously I do, and you think you understood me perfectly. That means that my symbols, the noises I have uttered, refer to something. To what do they refer?

INDUCTION AND LOGIC

Not to the desk before us, for that is not round, it is square. To some other desk then, but to what other desk? Perhaps there is no round desk in existence in the universe at this moment – but even if there were not, my sentence is still significant. Then perhaps it refers to something ‘in my head’. Whatever that may mean, the answer will not do. I may have an image of a round desk or I may not, when I say that this is a round desk. I certainly do not intend to refer to any image in my mind when I say ‘here’ for if I were referring to an image, I should not be saying that it is ‘here’ in front of me and in front of you. Whatever is the answer to, ‘Where are images to be found?’ Supposing I am deliberately seeking to deceive you by saying ‘There is a round desk here’, I am certainly not referring to an image – wanting you to understand there is an image I am talking about – for in that case I should not be deceiving you. But, in any case, I may not be having an image at all: if I say not ‘There is a round desk here’ but ‘There is no desk here’, what image is that about? I do not have an image of an entity called ‘no-desk’, not-a-desk, a-not desk etc. There are not entities called ‘not-desks’ of which I do or do not form images, and of which I could say, ‘I believe there are 47, possibly 48, not-desks here.’ Clearly I am saying that something is here which is in fact not here, and my sentence is meaningful although something is missing to which it is supposed to be referring. The sign post points, but there is somehow nothing for it to point to; the cap is being fitted, but there is no head, either real or imaginary, to receive it, even to reject it. Something has gone wrong. Worse still, if I say, ‘None of the desks in this room are covered with alligator skin,’ no doubt this is perfectly true. But what sort of entity is ‘none of the desks’ and why cannot we come across these alligator skin covered entities? But if you say this is really pettifogging and unworthy pedantry, because we can turn it into ‘all the desks in this room have as a positive property – non-alligator-hide covers.’ Then what does ‘all the desks in this room’ refer to? Not, certainly, this desk and this desk and this desk, for at the end of the process of counting, I can say ‘Are these *all* the desks there are?’ and if you say, ‘Yes’, I shall ask what the word ‘all’ refers to? Not surely the specific desks in this room taken as a collection, because more desks may be added, or some desks taken away from the existing desks, and still the word ‘all’ will contrive to refer to them legitimately, which it could not do if it referred only to the actual

INDUCTION AND LOGIC

ones, (christened to [] them) that happened to be here. (explain difference between a collective name and a general term).

Supposing I say, 'If an elephant were to charge into this room, it would upset most of the desks.' What does this refer to? What elephant? Where is this animal now? If words stand for entities what entity does 'an' or 'any' or 'some' elephant stand for? If words are caps or signposts, where are the objective constituents of the meaning complex – the things, the material objects, which a hypothetical proposition of this sort, even if true, points at: Where is the 'hypothetical elephant' and his 'hypothetical charge'? By calling the elephant hypothetical, we are, as it were, saying that we are not intending to refer to any actual beast in India, in Africa, or the zoo, not even to the elephant in my imagination for that is not a beast which could upset the desks. An imaginary elephant is no danger to university property, nor the picture of one, nor the word 'elephant'. At this point, I sigh wistfully for the original, good, untroublesome sense, 'There is a wooden desk here' – the words of that sentence were like what William James speaks of as a kind of conceptual fishing net. We plunged it into the sea and it duly came up with the fish it was meant to catch; the verbal glove fitted the hand: the bullet hit the target. That is what we thought we meant by calling the sentence significant, or true, or possibly both, we are not yet clear which. But the negative or general or hypothetical sentences are certainly just as significant, mean something, and yet don't seem to terminate in a satisfactorily solid, three-dimensional piece of furniture like the desk that is here. We look for the material objective entity to correspond to the hypothetical proposition, about what the elephant would do if it came here, in the way that this desk so neatly corresponded to our original sentence, and we find nothing that will do. But we are loathe to abandon our original notion that meaning is not somehow a direct relation between symbols and things or symbols and events, bits of experience, tables, desks, thunderclaps, sunsets, thoughts in our minds, moods of gaiety or depression – anyhow something we come across and identify. Hence, we ask ourselves how the difficult, troublesome sentences – the negative or the hypothetical or general – which don't seem to refer to bits of things or events in this straightforward way – differ from the good, satisfactory, sentence about the desk. And the model proposition now seems to turn out to have certain properties which the others lack; it is categorical and not hypothetical; it is singular and not

INDUCTION AND LOGIC

general; it is simple and not complex nor disjunctive; it is affirmative and not negative (illustrate this) it is true and not false; we investigate further and find that in addition it is about the present and not about the past – for where is the past? – not here somehow, to be identified by being pointed to like the desk – or about the future – for where and what is the future? Moreover it seems to be about the external world, or else about my experience and not someone else's, for I don't feel quite clear about what or where other people's experiences are. The cap that fits, the signpost that successfully guides the way to the objective now turns out to be rigidly delimited; affirmative, singular, categorical, simple, true, about some public object or event, about here and now. All other sentences seem to raise worrying problems. And yet they form the greater part of what we say: Try to confine yourself to this little group of 'good' sentences and see how far they will take you. So hence paths diverge. One school of philosophers concentrates on looking for entities in the world to correspond to non-singular, non-categorical, non-affirmative, etc., sentences [and] begins an extraordinary process: they discover, or say they discover, such unusual entities as: universals, hypothetical facts, negative facts, false facts or propositions, unreal and half real and $\frac{3}{4}$ real things (Plato, Sophist and []), simple and compound ideas, actual and possible sense data, subsistent entities, objects of belief, ideals and patterns etc., universes of discourse, real but unactualized possibilities, etc. They *say* they discover these, but their opponents accuse them of inventing; indeed of forging, of inflating the currency shamelessly. The other school does not multiply worlds but looks on these troublesome sentences as somehow defective and queer, as degenerate forms of the good, untainted, fact stating singular true categoricals; only they – let us call them 'categoricals' for short – only they are 'really' genuine propositions: hypotheticals are propositions too, they must be really categoricals with something wrong about them, poor categoricals but categoricals still, or else not propositions at all. They therefore are obliged to indulge in the most fantastic acrobatic contortions whereby they try to fit hypotheticals, negatives, etc., as dependencies of, as warped, funny forms of the only truly meaningful sentences there are, sometimes they try to explain that they are like cheques drawn upon the real, solid gold provided by categoricals – this breeds theories about logical constructions, sense data, causal or hypothetical propositions are

INDUCTION AND LOGIC

not propositions but imperatives, or rules or habits etc., and confuses thinkers as clear-headed as Cook Wilson, Russell, Ramsey, Wisdom and even Professor Price and others in the most fatal manner. In other words, both sides recognize the distance between the 'sound' and the 'queer' sentences: The first school, which we may call the Expansionist or Inflationary school, seeks to escape by manufacturing virtually as many entities as there seem to be meaningful forms of speech – and in answer to Occam who uttered warning against multiplying entities beyond necessity, they would plead that the necessity is dire indeed – that unless some such way out is found the greater part of our prima facie significant utterance will be convicted of meaninglessness – which is itself absurd – and the extremer adherents like Meinong claim actually to be able to *inspect* the queer entities they put forward as objectives of meaningful expressions. The Second school are narrow, deflationary, original purity fanatics holding the view that only the basic categoricals are genuine, that all other expressions claim to be meaningful only by proving their derivation from these privileged basic ones, and to the extent they differ they do describe nothing – if meaningful then in some unusual way, emotively, or the like. They stand to the Expansionists as Little Englanders to Imperialists: perhaps we ought to call them Contractionists: the methods they use are often Procrustean, the expedients by which they try to save expressions which they value from being condemned, by proving descent from the small select group of the original genuine ones, are often heroic.

But schools of thought start from the common premises that experiences or meaningful symbolic wholes may be distinguished into the normal and the queer. The first school maintains that queer phrases stand for – symbolize – queer entities. The Second School denies queer entities and says that short phrases stand for normal entities in a queer way.

On the whole, as between the two tendencies, the tendency to breed entities or to misrepresent what exists by giving it odd 'status' so that it conforms to the theory, is more widespread than the opposite vice, that of misrepresenting logical structure. In either case facts have to be pulled and twisted in order to fit this dogmatic belief or obsessive mental habit. The belief or habit is, once again, a belief that a genuine judgment or proposition or meaningful assertion is something which *precisely fits* the object about which it is said to be – so that if in looking for an object

INDUCTION AND LOGIC

which the proposition or judgment is about, you find an object which does *not* fit, then you decide either that there must exist somewhere some other object shaped in such a way that it *is* a perfect fit, or else that the alleged proposition or judgment is *not* a genuine proposition or judgment at all, but a decadent or degenerate form of expression which appears to be saying something, but not in fact asserting it, and only appearing to assert as much as it does because of some peculiar relation which it has to a genuine proposition or judgment. This leads us to the introduction either of ‘funny’ facts and of ‘funny’ objects, or of ‘funny’ propositions. There is a feeling behind this whole approach that all assertions other than those expressed by true and categorical, simple and affirmative, singular and outward pointing, propositions need some sort of special explanation – some sort of distortion or abnormality has taken place somewhere needing a special hypothesis to act for it – either the facts have an abnormal shape or the vision of them is peculiar, a kind of squinting occurs instead of looking straight, the logical analogue to perceptual illusions. *Excursions on Search for Security*. Austere, but true: poor thing but authentic. *Descartes*.

This distinction, between the sheep and goats, – and goats in sheep’s clothing – is a great fallacy, which is responsible for such queer views as Descartes’ simple substances and simple ideas, Leibniz’s monads and theory of symbols, Locke’s simple and complex ideas, Russell’s and Ayer’s basic propositions. The language of practical sentences, and atomic facts, and logical constructions, etc. etc. all [] reality. Naturally if you believe there is a class of *privileged* proposition or judgments by likeness to which other judgments or other forms of speech are to be classified, you may be tempted to believe that there is a perfect class of entities in the world by relation to which all other entities in the world will be classified. A complicated, verbal expression, according to this theory, can be properly understood only if it can be analysed without residue into constituents each of which has that relation to the facts – the direct fitting, the cap relation – which is the perfect paradigm of meaning at its best, and this is a very powerful factor influencing philosophers towards views that the world is composed of simple entities to each of which there corresponds its appropriate, simple, true judgment or proposition annexed to it as a kind of inseparable ghost or shadow which belongs to it and it alone. These ghosts or shadows sometimes supply theories about

INDUCTION AND LOGIC

representative perception and ideas intermediate between the real object and the observer – all forms of philosophical dualism – sometimes turn into linguistic or logical theories which presuppose the possibility of an ideal logical language which consists of nothing but absolutely simple elements, arranged as their clients, the facts of the world, are, called by some philosophers atomic proposition, by others basic or primitive or incorrigible, and of their compounds and combinations. That it *is* a fallacy – the Meaning is *not* a direct symbol – to – for relation remains to be shown. Meanwhile let us look at some of the vagaries of this view. Let me begin with the Inflationary, entity manufacturers: Expansionists: mythologists.

This is particularly clear in the case of Descartes and Leibniz.

(1) *Descartes*. What are Descartes' simple ideas which we find scattered throughout the 'Meditations' and 'The Discourse on Method'? Without going into the elaborate divisions into ideas as necessary, adventitious, factitious, etc., it is quite obvious that, in his theory, both of the perception of the physical world and of true philosophy and metaphysics, he maintains that what occurs is a coming together in the mind of entities called ideas, which in the case of sense perception have no intrinsic connection with each other, but come tumbling in anyhow, and are true if the pattern usually formed is similar to something in the real world, false if dissimilar, while in the case of logic or metaphysics, these ideas are connected with each other by special links – logical or metaphysical necessity – which the eye of non-sensuous intuition alone can detect so that anything that is known to possess any of the characteristics which one of these ideas resembles – here the relation is still resemblance though no longer sensuous resemblance – must possess also all the other characteristics connected with it by the link of necessity, itself a non-sensuous idea. Now it is by now notorious what appalling difficulties this leads to, as so triumphantly demonstrated by Berkeley: e.g. how odd it is to say that ideas resemble objects outside them which cannot be perceived directly because they are not themselves sensible, for if the ideas themselves are sensible and the objects are not, how can ideas resemble the objects? The idea is pure sense, the object pure nonsense. What can they have in common? If the objects are excluded from our vision by the screen of intermediate ideas, what do we mean by saying of something that it is an object – when we have never met anything like it face to face, and even if

INDUCTION AND LOGIC

we meant something, how can we possibly tell if behind the screen which we cannot possibly penetrate there is something called the real object of which the screen is a reliable or unreliable representation and, if you cannot be sure, how can we ever make more sure? What could ever be evidence for or against the existence of something in principle impossible to express, something like nothing that we can express, when our very notion of evidence – our notion of what kind of thing is to be taken as evidence of what others – when *that* is taken from the world in which both lots of things, both the evidence and what it is said to be evidence for, occur on equal terms and are equally parts of ordinary experience. But this is beside the point which I wish to make. My point is not that the theory of representative perception is faulty or meaningless, it is not even a theory of why it should have arisen, it is rather why it should ever have been thought plausible to believe that not only the hidden reality but the screen, the intermediate screen, which shuts out reality, should be regarded as compounded of a collection of simple entities, little uniform bits and pieces. After all, it is *prima facie* a very queer view; do we see simple bits? Attention to the character of our experience would present us with a flow or succession of variegated items, some of which are more motley, more broken, or complicated, heterogeneous or diversified than others, all of them – the items – have dates, last for some time, are successive to or simultaneous with others; very few of them obey this chessboard-like pattern of being composed like a uniform collection of monotonously similar, endlessly repeated homogenous units, each of which can be labelled as a separate, simple idea, each of which can be observed as it enters into any combination with other simple ideas, still carrying the original label on its neck like the sort of rings that people attach to fish in the sea when they wish to trace the path of a migration, and watch in order to note in what waters fish labelled in the Mediterranean will ultimately fetch up and in what company. What on earth is meant by saying that the colour red is more simple (because there is a simple idea of red) than an elephant – there is no simple idea of an elephant? A red patch is certainly more uniform in colour, has fewer distinguishable characteristics than an elephant, but it has some. It must, if it is perceptible at all, have special characteristics, have a right and a left side, a top and a bottom, it must last through a period of time, it must succeed something and precede something

INDUCTION AND LOGIC

and be different from other colours and other shapes or other places in the world of my experience if it is to be labelled and described at all, if it is clearly to be called 'red' or 'a patch'. There is a vague idea that to be simple is to possess simply one characteristic, that a simple idea is the thought or perception of an instance of one characteristic at a time, but that is not what happens and it is almost meaningless to suggest that it can. Obedient to seventeenth century prescriptions, I try to contemplate a simple idea. I clear my mind of all the irrelevant thoughts and images which happen to be passing through it and try to isolate a simple, specific characteristic. I think of something as simple as I possibly can make it, a uniform pink hue which covers my entire sense field or image space, or I think of a flutey sound of unvarying pitch, tone, timbre, etc. I cannot contemplate anything much simpler than this, and still it is in some sense complex, if by complex you mean a related whole of parts, a togetherness of discriminative elements and if by simple is meant something without relations so that it cannot be analysed into further constituents. The flutey sound has a duration, a before and after sections. In calling it a flutey sound, in isolating it at all, is saying that I am conscious of it. I provide it with a context. Nor am I quite clear where it ends and its context begins. The flutey sound can best be heard in a surrounding silence. Is the surrounding silence part of the sound's being the sound it is? If there were other noises going on, gradually growing louder, would there be a flutey sound at all? The frontiers are fuzzy between the sound that is flutey and the sound that is not so much flutey as reedy, and if the flutey sound gradually changes into a reedy one, is there a succession of isolable, simple entities, each of which can be cut out of the continuum and served up as the original, simple idea? How do I cut? Where are the grooves and seams? What is the average life span of a simple idea? Is a flutey sound which lasts for two minutes two simple ideas, each of which lasts one, or four simple ideas, each of which lasts thirty seconds? How short does the sound have to be to remain simple? How pure does its timbre have to be to stay simple and not be sophisticated or complex? If I am asked how many simple ideas I have been having for the last three minutes, even if I am asked to be very alert and careful and count the simple ideas I am likely to have during the new few minutes, how can I set about doing so? What, in short, is *the test* for having one simple idea as opposed to two, or absolutely simple as

INDUCTION AND LOGIC

opposed to nearly but not *absolutely*, nearly but not *quite*, simple? No one has ever explained this or is likely to explain. Berkeley thought he obtained the answer by speaking of *minima sensibilia* or smaller discriminable entities. These could be counted precisely: at least in principle. This led him into absurdities: e.g. a line composed of 17 minimal data could not, in principle, be bisected since there would be 8 single ideas on one side, 8 on the other, and the central bit being single is indivisible, but anyway objections:

- (1) If A is *not* different from B and B *not* different from C, but A *is* from C, how many ideas? Depends on *test*: but this is arbitrary? Could be *any* test.
- (2) Speckled Hen, or stars. How many? How do we settle?
- (3) Whole notion of *measuring number* of sense data absurd.

Like measuring dream objects. How many simples did the orange in my dream consist of? Was it bigger or smaller than a real orange? *Must* be comparable if all simple ideas uniform. – Whole idea of *enumeration* – numbers and measures drawn for material objects and inapplicable to flow of consciousness. I *can* invent ‘visits’ of dream objects: but queer to call them simple ideas, considering that I can cut as I *like*: no *natural* seams. Because this is so, because simple ideas as elements out of which our experience is composed is such a patent absurdity and because there are nevertheless certain psychological causes – inducing and inveigling us into believing simple ideas – to which we shall come in a moment – there is a shift in the meaning of simple idea, and in Locke as well as Descartes, it begins to mean not a particular but a universal, not a thing but an absolutely specific characteristic, not red but crimson, not crimson but this specific crimson, which this specific petal of this particular rose exhibits, a hue which a million other petals of other roses may exhibit so like the original petal that the hues are indiscriminable to the naked eye. This [] is more interesting but like other universals it will not do, and we shall come to it by and by. For the moment let us go back to what induced philosophers to indulge in the analysis of experience into collections of simple particulars.

Now I should like to suggest that one of the strongest motives for this extraordinary view is that which I have mentioned – the analysis of meaning as a simple, dyadic relation, one to one relation, between two terms, the mind and the object or, in more

INDUCTION AND LOGIC

sophisticated versions which you find in all the modern logic books, a three-cornered relation between the mind and the symbol and the object. I am told that I mean something if and only if I am using a symbol – a sound, a mark on paper, a gesture, to stand for, to refer to an object. The object is called the referend. It follows that unless there is a mind, there is nothing that can do the business of meaning something. If there is no symbol, there is nothing to do it with. But, and this is more dramatic and exciting, if there is no entity which the symbol symbolizes, there is nothing for the mind to mean, nothing for the mill to grind. Therefore, it follows triumphantly that whenever I am indubitably meaning something – and on the whole I *can* tell whether I mean something or not, although I may not know whether it is true or false – when I know that I am *not* uttering meaningless signs, not using words for fun, because of their beauty of sound, or in order to produce a purely emotional effect, or in order to learn the pronunciation of a language, or other non-descriptive purposes – when, in short, I am using words to *convey* something to somebody, to *assert* that something is or is not the case, then it must follow that *all three* constituents must be present: the mind, i.e., I who do the meaning; the symbol, i.e., the uttered sound, inscribed mark on paper; and finally, the objective. What makes a symbol a symbol and not a mere meaningless mark, is the bull's eye which it perforates, the head on which the cap fits. But what *is* this entity? It cannot always be an object in the real world for otherwise all meaningful statements would be true. We saw this before. I say, 'There is an elephant in this room' when there is, in fact, no elephant here. My saying that there is an elephant in this room is certainly meaningful. It cannot need the presence of a real elephant in the room to be meaningful, for if it did, it would be meaningless in the absence of the elephant, but it is false and misleading precisely because it is *not* meaningless – if it were, no one would understand it and so be misled into error. What then does there have to be other than a real elephant to give it meaning? It is at this point that simple ideas make their fateful appearance. No real elephant may indeed be about, but an idea, simple or complex, is what the symbol 'elephant' stands for or means. The idea differs from the real elephant in all kinds of curious ways, e.g. it does not occupy space, though it seems to occupy time, and it is 'private' to each thinker so that if three persons think there is an elephant here, there are three ideas of elephant about. Moreover, the idea has a

INDUCTION AND LOGIC

shorter life span than the average elephant, and so on. But if false though meaningful propositions are made meaningful solely because there are ideas for the symbols to refer to, so must true propositions, since they are equally meaningful, and since on the face of it, in the majority of cases, a sentence does not bear the guarantee of its own truth or falsehood, but only if its meaningfulness. For this reason, true propositions, no less than false, must refer to ideas – the symbol cannot have reference directly to an object in nature for the object in nature may disappear or be destroyed with our knowing it. If propositions depend on their meaning on existence of objects you were contemplating the proposition alone you ought to notice a subtle but automatic change of quality by which, it turns from true to false every time the object disappears. Yet, if the meaningfulness of a true proposition depended on its having a relation to an object in nature, to which it referred, the disappearance of that object would automatically make that proposition meaningless – supposing I were thinking that there were three red-faced men now standing outside this hall, then if the meaningfulness of my proposition, provided it is true, depended on there actually being three such men there, and supposing there were three such men there and the proposition therefore was true, I should have an easy way of finding out whether they were still there five minutes later by asking whether the proposition was still meaningful, a question I could easily settle without going out to inspect the quad as one does when looking for material objects, but *via*[?] introspection alone since that is all I need to discover whether what I say means anything or not. And if the men have moved away, my sentence would automatically turn meaningless within me. But this is obviously not true. It goes on being meaningful, whether it is true or not, whether the men are there or not. Hence sentences which state true propositions no less than false must in the first instance refer to something other than the real objects although true propositions may have some additional property. This something other is *ideas*. My sentence asserts the truth if the ideas have a certain relation, sometimes called correspondence, to the events or facts the sentence purports to be about, false if they lack this relation. Where do ideas come from? The older empiricists said ‘from experience’. There are memories or faint impressions left upon us of experiences we have had. Where do we get the idea of ‘reading’, of ‘hot’, of ‘big’? Only those who have the required

INDUCTION AND LOGIC

senses can have done so. A blind man cannot have come by the idea of red, nor a man who lacks a sense of touch the idea of hot, etc. The ideas come to us from experience. They reproduce themselves in a mysterious way in the imagination. They act as referends for our acts of meaning, for our symbols. Sentences composed of symbols are true when the ideas they refer to correspond to reality, false when they don't. What happens when they do not correspond to reality? After all, all ideas are derived from experience of reality in some sense – it means that they have been shuffled the wrong way round. The idea of red which corresponds to something similar in reality has been misapplied, i.e., compounded with other ideas in an order which the original of these ideas fails to have reality. Falsehood, error, is due to the ideas' being miscompounded, shuffled wrong, but now a complex idea which is falsely asserted, say the existence of a unicorn, is a case of other constituent ideas being shuffled not in accord with reality. There are horns and there are horses in reality, but no horses with horns. But if compound ideas can be miscompounded, their ultimate ingredients must in some sense be incapable of conveying error. The unicorn is a false combination of a horse and a horn. The horse may be a false combination of physical shapes in a country, or at a time, where there are no horses. By whittling and whittling in this way, I reach the ultimate constituents which are derived directly from experience and cannot, therefore, be false. They cannot be taken to pieces and cannot, therefore, be shuffled rightly or wrongly. These are the ultimate constituents upon which all possibility of meaning must depend, the basic stuff, the atomic indivisible entity without parts, and the simple idea corresponding to it must correspond to an equally simple ingredient of reality, the simple sense datum, or the simple metaphysical substance. The proposition which alone cannot be false because it is in some sort of direct relation to reality is that which refers only to absolutely simple and therefore incorruptible ideas. It is our old friend the categorical, true, affirmative, singular, absolutely simple proposition needing an absolutely simple idea as the objective which it means. But if meaning did not need objectives, this particular argument for existence of ideas would disappear. A great deal previous criticism has concentrated on the inadequacy of the theory of ideas, representative they of perception etc., but they are in reality a by-product of a false theory of meaning. It is not gratuitously invented ideas that confuse the theory of thought or

INDUCTION AND LOGIC

meaning but vice versa. A false theory of meaning has invented ideas as an inevitable, mythological answer to a false problem – what does original[?] symbol stand for – that it has created.

Here is the familiar Lockean statement, all my propositions are about the circle of my ideas. They really do exist. I can be sure of them. And yet, when it is examined, this view is so unpalatable that it is difficult to see how it could ever have been considered not merely true but as self-evident (for example, by Locke). The patent absurdity of this view and the difficulties often concealed, but adherence to which leads to fallacies will form the substance of the rest of these lectures. It entails nothing less than that all forms of statements, hypothetical, negative, general, statements about the past, about the future, about thoughts in other people's heads, statements about physical objects, about the entities of the physical sciences, etc., are all reducible to statements about what I at this moment am here experiencing – are either reducible to singular, affirmative, categorical descriptions about a narrow strip of experience bounded by what I am conscious of at any given moment – or else are not descriptions of anything at all, are pseudo-descriptions, verbal expressions masquerading as propositions, not asserting what they purport to assert, or indeed perhaps asserting anything at all. If I am saying that if Hitler had conquered Russia, German would have been the official language of Siberia, I am in the last analysis saying something, the meaning and truth of which depend entirely upon something which is happening to me virtually at the moment of speaking – sense data which I am observing, or images which are passing through my head, or emotions which I am feeling, etc., and that because only what is now here happening to me – only that – is thought to exist – this alone is available for my symbols to pin themselves onto – the rest, Hitler, Siberia, the Russian language, the conquest of Russia which never took place, etc., these are not available when I look for them in the way in which Hume looked for the self. They are not there. I cannot touch them, see them, hear them, get hold of them, point to them, be face to face with them; yet if meaning is a direct relation between the symbol and what is symbolized, the second term in the relation – the objective – must exist, must occur and be met with, faced, be the object of an act of inspection. But events which never occurred but *would have occurred*, if something else *had* occurred which did *not*, are very queer inhabitants of the world, one does not come across them as one

INDUCTION AND LOGIC

comes across headaches, or books, or old friends. Negative facts are equally queer – that Hitler did *not* conquer Russia is difficult to point to with one's finger. You could in a way point to Hitler in 1941. You could point to Russia, and you see that the place where Hitler was was not identical with those parts of Russia where he would have been if he had conquered it. But how am I to point to what is denoted by the word 'not', to Russia's *not* being conquered? I say, 'Red is *not* blue' or even, 'Red is *never* blue'. I can point to instances of red to teach you the meaning of the word 'red' in English. Equally, I can teach you, by pointing, the meaning of the word 'blue'. Is there also something I can point to to teach you the meaning of the words 'is not'? An idea? Simple or otherwise? Certainly nothing that obviously comes to mind. And if there were an entity corresponding to the symbol 'is not', so that 'red is not blue' would stand for something whose name is 'red', something whose name is 'blue', something whose name is 'is not', and supposing perversely I wish to *deny* this proposition, 'Red is not blue', i.e. 'Red is not blue' is *not* true, would I have to introduce another entity to correspond to this second 'is not'? But this is absurd; the denial of 'Red is not blue' is simply the assertion that 'Red is blue' so that, whereas one 'is not' corresponds to an entity in the outer world, two 'is nots' correspond to nothing. We could go on like this. Supposing I discover that a proposition I used to believe is false, then do the entities to which my symbols used to point, do they disappear? But if they disappear, the symbols will refer to nothing and so even to deny anything will be meaningless. The propositions must mean something if only to mean it falsely. What is the 'it' which is false? Do I come across false objects, false tables and chairs, false historical facts, false Hitlers and false Siberias, distinguishable from real Hitlers and real Siberias only in respect of being false like a fake Van Dyke? What are two objects like whose attributes are exactly similar save that one is true and one is false? If there are false objects in the world – and Plato and Professor Stout both seem to think so – then what happens if I hold a false belief or make a false statement about *them*? Do they become doubly false? Do objects acquire successive coats or shells of falseness in proportion as people make mistakes about their nature? What about non-existence? If I say that there is a unicorn in that corner, and there is in fact no unicorn there, how does the idea of unicorn help me? Does my symbol 'unicorn' stand for a real unicorn? No, there is none. Well, then a fabulous, non-existent

INDUCTION AND LOGIC

unicorn? Are there really non-existent unicorns in the universe? How many? Are they multiplying or diminishing? And yet similar difficulties crop up with regard to objects in the past and in the future. Where are Caesar and Napoleon now? The flesh and blood figures whom we speak of? 'Dead and gone,' you say. But what does that mean? What do the names, which are the symbols for them, denote? I.e., on this theory, into what pincushion do I stick these symbol-pins? – dead and gone is dead and gone, in some sense *is not there*, not available for me to stick my symbols into, to attach my labels to. And if it is difficult to deal with the snows of yesteryear, it is at least as puzzling to find a 'status' for those of tomorrow. 'There will be a heavy snowfall tomorrow,' I say, and everyone understands what I mean, but if my symbols must correspond to something here and now because my sentence is intelligible here and now, tomorrow's snowfall must be here and now. But if it is tomorrow's, it is one thing that I am saying it is not. And what if tomorrow is fine? Then where is the snowfall? And if it does not exist, is it nothing? If so, what does the symbol refer to? Is it something? If so, what kind of something? A non-existent something? Is the world full of these non-existent snowfalls? How many? How deep? How cold, etc? And yet serious philosophers from Plato in 'The Sophist' to Russell and Meinong, Brentano, Stout etc., have believed in something called the subsistence – the existence not in time and space, but in separate worlds of their own of hypothetical entities and negative entities, and past and future entities, and false and possible and probable and imaginary and even self-contradictory entities, worlds filled with every variety of ghostly object, to a belief in which Leibniz also lent some authority. In these worlds, accommodation could be found for everything, the entities of mathematics, the might-have-beens of history, the prediction of prophets and the lies of the liar, the fantasies of children, the characters invented by playwrights and fabulists and novelists, everything in short which is called unreal and in the same breath real enough in order to function as the objective for our words and thoughts. Many fallacies have been bred by this doctrine – the belief in degrees of reality, and the ontological argument – founded on the supposition that something might not exist yet be real.

But it is true we evade[?] this by reminding ourselves that Russell killed all this by his analysis of existential propositions. The shortest way of stating the argument is that to say of something

INDUCTION AND LOGIC

that it exists is not to attribute the property to it, because to deny that it exists is not to deny property to it but to deny *it*. If I say, 'The tree is green,' that only has a meaning because the tree might not be green and still be a tree and be some other colour, say brown. But to say, 'The tree exists' is *not* to say something about the tree, although it seems to do so. For if the tree did not exist, there would be no tree for not-existing to be an attribute of. Therefore, we say, 'The tree *exists*,' as a proposition not about the tree but about the words, 'the tree' or the image, and we say of them that they do refer to something in the universe, 'not nothing' – and similarly, 'The tree does not exist' is not about a non-existent tree for a non-existent tree is not a kind of tree; botany does not specify non-existent trees among the kinds of trees there are. It is saying that the words 'the tree' in fact refer *to nothing* in this case. That being so, these many words of non-existent entities are blown up by a simple, logical analysis, and the symbols treated as pins stuck into them, or labels on their necks, now are evicted again and become a problem once more.

But while this disposes of non-existent entities which are said to exist – by saying that existential propositions are really not about their grammatical subjects but about something else which *does* exist – *this is not enough*. It is clearly fatal to define symbols as marks on paper or sounds attached to corresponding appropriate bits of experience or parts of the world. Too many symbols cannot find their corresponding bits. These homeless entities far outnumber the others. As a general theory of meaning, this approach clearly does not work.

There are two other sources whence this dyadic fallacy proceeds.¹

¹ The following passage appears in the typescript at this point, but has been marked for omission by IB:

Theory of Descriptions

The theory of descriptions by which this is done is one of the major achievements of modern philosophy. It was due mainly to Russell (Moore, *Mind*, N.S. 18, 'The Conception of Reality', (and also in *Philosophical Studies*); Russell, *Principles of Mathematics*, p. 449, and *Principia*, Introduction, and Chapter 3; Miss Stebbing, *Modern Introduction of Logic*, Chapter 9; Gilbert Ryle, *Systematically Misleading Expressions*, *Proceedings of Aristotelian Soc*), and yet this theory is not quite sufficient for our purpose. What does the theory prove? This: if I say 'I am going to climb a golden mountain, but it does not exist', that is meaningless, whereas to say, 'I think of a golden mountain but it

does not exist' is perfectly intelligible and that, therefore, the first proposition, 'I am going to climb a golden mountain, etc.' is about a mountain and absurd if there is no such mountain for it to be about, whereas the second sentence, since it is not absurd even if there is no golden mountain, cannot really be about a mountain, and must be about something else, namely, a set of words or images or other symbols which would describe a mountain if there were a mountain to describe, but in the absence of such a mountain describe nothing but a perfectly good symbolic expression concerning which the statement – which is officially about the mountain – in fact turns out to be. But this, though true so far as it goes, doesn't for our purposes go quite far enough. Our problem is, what is the sentence about the non-existent mountain 'really' about. We are still regarding the verbal phrase as a kind of fishing line with a hook on the end which does not, indeed, get hold of the golden mountain – for there is none – but if it is to mean anything, must fish up something, i.e., images or words or thoughts. What it comes to is that propositions about real mountains are about something which consists of earth or rock or ice etc., or, according to phenomenologists, about my and/or other people's sense data and memories and expectations and fears and hopes and so on, whereas these 'funny' propositions are about something else, namely, images and words and memories of fairy tales and so on. A 'real lion' is compounded out of what I have seen and may expect to see again, growling or roaring sounds which I have heard and may hear again, fears of being eaten alive and so on, whereas unicorns differ from lions not in being nothing, but in being a bundle not of things seen and things anticipated, but of images and words and recollections of illustrations to mythological or heraldic books. Again if I ask, 'Who is Pickwick?', I am told that Pickwick is a pseudonym: i.e. not the name of a real man – because propositions about Pickwick are not propositions about a man but about something else less obvious, namely, Dickens's thoughts, purposes, images and words, other people's reactions to and images caused by those words, etc. I thought I was talking about a man called Pickwick and that he was imaginary. I am told, quite rightly, that men are not classified into real and imaginary, because imaginary men are not kinds of men at all. But then in answer to the question, 'What, then, am I talking about?' I am told that I am really talking about Dickens and what he thought and what people understood him to say and so on. So that my mistake lies in having mistaken for 'real' entities a collection of mental events or objects. Some thinkers go further and in order to bridge the dualism between 'real' and 'mental' beings – Churchill and Pickwick – try to reduce all to mental entities and say, that perhaps all the world is composed of such mental events, not, indeed, invented by my mind or your mind, but by God's mind, as Berkeley and, in some moods, the Cartesians supposed, or in a universal mind as Spinoza and the followers of Hegel and perhaps to some extent Kant thought. Into that, we need not go, I only wish to note that it springs from the view that all propositions have to be about something because some existential propositions which purport to be about things turn out to refer to ideas, thoughts, symbols; go on to suppose that the mental events are the ultimate kind of stuff to which propositions which can refer to nothing else must refer to – the last resort of what they are about if they are about anything at all – and, therefore, that we have here perhaps the long-sought-for universal stuff to which, in the last

INDUCTION AND LOGIC

(1) The development of mathematics and analytic definitions. Without going into this matter too deeply, it may be noted that

analysis, everything can be reduced. For we are still in the grip of the terrible dyadic fallacy, still supposing that a sentence, if it is to mean, must be categorical because it must correspond to something which is what it means – ‘the meant’. Hence pseudo-existential propositions can be rescued only if they can be shown to be categorical in the sense that they are about a real something – not what you thought it was – e.g., not a man called Pickwick, not an actual unicorn – a spatio-temporal horse-like animal with a single horn sticking out of its forehead – but another kind of inhabitant of the world or event, namely, a slice of Dicken’s life or of his readers’ experiences, or of what the author of fairy tales or of books on heraldry thought or wrote or painted. So we have our tight little entities after all, which the funny propositions fish up. But this will never do: It is not intrinsically plausible: understanding fictional propositions is not thinking about authors’ and readers’ lives: but anyway what do we do with hypothetical, general, negative, disjunctive propositions, etc? They are palpably not about something which exists even in people’s heads: to say that ‘If this room were hit by a bomb, we should all be destroyed’ is not to say that anything has happened or is happening or will happen. I am not saying that a bomb will strike this room, or that we shall be destroyed, nor am I saying that anyone has thought, or is thinking, or will think or say anything of the kind – of course, I have said this very thing just now, but to say it is not to say that I have said it, for what is the ‘it’ which I say I have said? The ‘it’ is ‘If a bomb, etc.’ and this, I repeat, does not refer to any past or present or future event. If, to be meaningful, a proposition has to be connected in some way with something which actually is part of the inventory of the world – something which was or is or will be – then hypothetical propositions are meaningless; for by their very structure they mean to differ from categoricals – and their whole peculiarity is that they do not mean necessarily to refer to any actual thing, to anything that was or is or will be. ‘If’ latter then away from what is, was, will be. And the same *mutatis mutandis* applies to general propositions and negative ones and disjunctions and so forth. We may, by straining a great deal, appear to rescue propositions about the past and future or about the imaginary entities by turning them into propositions about actual entities – people’s thoughts or words or images – and even that will be immensely implausible, because when I say that there are seven unicorns in the Quad, I certainly do not think I wish to say anything about the words ‘seven unicorns’ or about my image of seven unicorns, as I must according to the theory – but, be that as it may, the theory, in any case, does not help us with non-categoricals. I do not wish to diminish its crucial importance: it illuminated certain facts about the use of words like ‘exists’, ‘is real’ etc., and proved that many propositions which purported to be about a non-sensible reality or existence, because they weren’t about sensible things, were really about sensible things like words or thoughts; the Theory of Descriptions, in this way, became the most powerful weapon in the hands of philosophers from Kant to Russell, in killing metaphysics. But it implies a view of language which breeds its own fallacies, namely, the tendency to reduce all propositions to categorical assertions about – attached to – actual entities in the world.

INDUCTION AND LOGIC

this sprang largely from Descartes' brilliant reduction of geometry to analytic algebra – whereby something which was previously regarded as a semi-empirical description of the space which people saw, or thought they saw, around them became a purely deductive calculus of the behaviour of symbols, according to fixed rules and axioms which might or might not apply to a given situation of experiences. This famous new technique consisted largely in rules whereby certain primitive, simple, mathematical signs, Xs, Ys and Zs, could be combined into complexes which in their turn could be manipulated as single units and in their turn combined into other more elaborate complexes, it always being possible to take the complexes to pieces again and reduce them to their original simple components. And, indeed, this is how geometry, algebra, arithmetic and all procedures founded on a quantitative basis – mathematical physics, chemistry, etc., – operate. Everything is either an irreducibly simple entity with which you start, your original counters, or combinations made up out of them. To each are assigned numerical values, the property of numbers being that they can be analysed into such simple constituents and combined into complexes according to fixed rules. Such was the influence of the great success of mathematical methods that in Descartes' and Leibniz's minds there was a tendency to treat mathematics as a descriptive language, as a means of describing something about the world. All languages began to be regarded as good and bad, clear and obscure, in proportion as they approximated the pure condition of mathematics. As mathematics consists of combinations of symbols and the rules for their shuffling – combining and separating – there was a tendency to look on ordinary language as tending to that ideal too. And if language, both mathematical and everyday, purported to describe a reality, there was a natural tendency to look on reality too as composed of simple elements in various actual and possible combinations, of which mathematical notation was the clearest symbolization.

The error consists in pre-supposing that mathematics describes objects. Even if three, or six, or twenty may seem to describe material objects in the way that 'blue' or 'heavy' or 'expensive' do, this breaks down almost at once. The square root of two is not a possible number of the apples on my table, nor minus two, nor a recurrent decimal, nor any of the more esoteric mathematical symbols. The way in which mathematics applies to reality is another story. Something here on applicability – interpreting

INDUCTION AND LOGIC

contents. Suffice it to say here that if we had nothing but mathematical symbols at our disposal and the rules which govern them, we could not convey factual information of any kind – mathematics in that sense is not a language – but a formal calculus; and no calculus, either mathematical or logical (or the rules of chess), can convey information. Let those who doubt it try to do so. But the picture of reality as uniform units – simple ideas or simple substances entering into an infinite number of combinations which can be analysed back into the original simple entities – is a mathematical fantasy and a misapplication of what applies to mathematical language, to the experience to which descriptive language applies.

[(2)] Ionianism: Another source of this fallacy is a question which seems to persist in human enquiry: ‘What is everything made of?’ From the Ionians onwards that question goes on being asked. The ONE BENEATH the MANY. It is thought that beneath all the varieties of experience there must be *some one* uniform stuff, the shapes and forms of which are responsible for the variegated nature of our experience. The table has a shape and a size and a colour. You could remove these and reduce it to something more primitive, so much sawdust, and this sawdust in turn could be boiled down to its constituent molecules, from the molecules to atoms, and the atoms to electrons, and these to still more primitive components until we reach the final goal, the ultimate stuff of which the world is made, that which has no qualities, that is the universal substratum of all characteristics. And this substratum is sometimes conceived of as a finite or infinite collection of simple entities. So simple and so bare are these entities that they cannot be described – because they have no qualities – but can only be pointed at, pronged, as it were, by names like ‘this’ and ‘that’ or ‘it’. and this too supports the confused belief that words and symbols refer to complexes of physical simples, and the proper analysis of meaning of words into those simpler and simpler words which progressively stand for the simpler and simpler constituents of the world, ending finally with absolutely simple symbols symbolizing absolutely simple things. Again, without going into the question of what physicists mean by their terminology, it is enough to say that the concept of absolutely simple, basic stuff is meaningless. If it is *so* simple that *nothing* can be said about it, for to say *something* about it is to distinguish it from something else which it is not, if there is no something else, there is nothing to distinguish it from then

INDUCTION AND LOGIC

nothing can be said about it, for whatever we say will serve to discriminate some quality of it, but *ex hypothesi* it has no qualities – Berkeley’s arguments against Locke are conclusive on this point. To say that there is something which, in principle, *cannot* be referred to by words, is to refer by words to something alleged to be indescribable. If you *cannot* describe a thing, you cannot describe it by calling it indescribable, for that too is a kind of description. If you really mean that you cannot describe it, then there is no ‘it’ to describe or not to describe. For, to say that *something is*, is to say *that much* about it. And if we are not allowed to say *anything* about it, you can not significantly assert even that it exists, even that it cannot be described. The notion of an indescribable something is, therefore, not a notion. The words stand for nothing. For as soon as they stand for something, that something is to that extent described, distinguished from, not nothing, not from a complete vacuum, but by primitive attributes e.g. by occupation of space or time which nothing else can occupy, or the like. This too has contributed its share to the confusion about the absolutely simple objectives of symbols into which everything else must be reduced or else be cast out as in some way queer or meaningless.

These three views, then, (a) the theory that symbols are labels either of simple concepts or simple particular or else that propositions are labels of simple or basic facts, plus (b) the second view that mathematics is a language and that its primitive terms or propositions must correspond to equally simple entities in reality, plus (c) the third rule that everything in the universe must be made of some simple, ultimate stuff, the differences being due to different combinations of its parts, these three separate views, fallacious in themselves, and producing a total confusion by being combined, led to the extraordinary view of the world with which Descartes, Leibniz and Locke have equally infected modern philosophy.

Fallacy of Substances, deriving from Dyadic Fallacy.

Descartes’ simple substances – [which] are all 3: labelable by [], necessary[?] correspondence[?] and ultimate stuff – of which the real world consists – are in the first place entities all of whose attributes are self-contained, which need nothing else in the world for their being, insulated islands, such that their logical analysis into their component elements, each of which is some sort of simple idea or necessary logical connection between simple ideas,

INDUCTION AND LOGIC

does not entail the existence of anything outside itself. Without going into Cartesian metaphysics in general and the remarkable view that the question of whether anything *exists or not* is the *same as* the question of whether its *definition* is entailed logically by the definition or properties of something else which already is known to exist – this familiar identification of the logical relation of ground and consequent with the time and space relation of cause and effect – without touching on this, it may be enough to say that the fatal notion here is that of a self-contained substance. This derives from *Aristotle*, who looked upon the world as consisting of something called substances, qualified by attributes which belong to them necessarily; words if properly used could be made to reflect the precise way in which each substance, which is a kind of nucleus, is surrounded or connected with its particular attributes. The relations between the words will then automatically reveal the relations between the substances. Thus, grammatical substantives are looked on as proper verbal reflection of metaphysical substances; adjectives and adverbs of attributes, verbs of the activity within substance which turns everything which it contains potentially into actuality, and so forth. The perfect form of the proposition is our old friend the affirmative, categorical statement which asserted that something is the case. This view, which is also held by Descartes and Leibniz *and*, in a confused form, by Locke, has an important and fatal corollary – the famous doctrine called *praedicatum inest subjecto*, i.e. every subject owns exclusively its own predicates and nothing else can have them. For supposing there is a substance *A* with attributes *X*, *Y*, and *Z*, and supposing there is something *B* which also possesses, say, *Y* and *Z*, then it would be impossible to analyse the true nature of *A* merely by examining *A*, since at some stage *B*, sharing as it does characteristics *Y* and *Z*, would inevitably have to be brought in. But this would contradict the principle that there were in the world many entities for each of which there was a proper symbol, and each of which was what it was, did what it did, because of its own internal structure. The whole of rationalism rests on the view that one can discover the truth by obtaining an intuitive insight into any real object under contemplation by asking what is its proper nature; that is how geometry is alleged to proceed; you discover that the radii of a circle are equal by bending your attention onto the nature of circularity – to the geometer's trained gaze, a circle, which is a mere round shape to the untutored eye, yields up its secrets, its

INDUCTION AND LOGIC

logical structure. If a circle does this, so the triangle or the cone; so do the entities of physics which are but embodied mathematical attributes. So do the other real components of the world, the human soul, the moral attributes, such as goodness and perfection, and indeed everything else that has real being: a confused sort of pattern may be provided by the senses but the true structure can be revealed only to a special metaphysical insight which detects not merely what properties or attributes the given object possesses but also why it possesses those attributes and not others and why only *it* possesses them and not something else. I cannot here go into the radical question of what makes the question 'Why?' which is, in a sense, the whole of metaphysics, difficult, if not meaningless, in connection with natural objects – perhaps I said enough in the analysis of the notion of purpose. Suffice it to say that on this view each predicate must belong to one substance and one substance only which makes unintelligible what is normally called relations. If each true symbol is to stand for one and one entity only, if each proposition is to assert one complex or characteristic in the world and one only, since meaning is a direct relation between the symbol and the reality which it labels, Leibniz is quite right in saying that the proposition, 'David is the father of Solomon' *cannot possibly be the same as*, 'Solomon is the son of David.' If David is an independent substance, and if to know what David truly is, like knowing what a circle truly is, is to apprehend the necessary connection holding between the simple, irreducible elements which compose David and compose him necessarily so that he must be as he is, then fatherhood of Solomon is one of these elements and belongs to David alone (if it belonged to something else as well as David, the question, 'Why is David uniquely as he is and not otherwise?' could not be answered. Each attribute is as it is because it entails the other attributes as it does. If any of David's attributes were met with outside David, they would necessarily entail all the other attributes which they entail within David, i.e., we will get a duplication of David and he is not unique); but Solomon is also a substance, and his sonhood to David is as intrinsic to him as his fatherhood of Solomon was to David; David and Solomon being two separate substances cannot touch at any point. Thus we get the extraordinary consequence that the proposition, 'David is the father of Solomon' must be logically independent of the proposition, 'Solomon is the son of David'. But it is obvious to the meanest intelligence that the relation is

INDUCTION AND LOGIC

identical, that we are saying the same thing in saying that David is the father and Solomon the son. Yet this was hotly denied implicitly by Descartes, openly by Leibniz. In Leibniz's case, it led to his theory of windowless monads, windowless precisely because all the attributes are contained within a substance which is a kind of complex cocoon excluding other cocoons. In Descartes, it led to the celebrated non-bridgeable mind-body dualism – derived from [] of exclusive substances of body and mind. What interests us is that this view of one symbol – one entity; one symbolic expression – one state of affairs; leads to the doctrine that relations are really qualities qualifying substances and therefore sets the problem of how the independent, self-contained entities of which the universe consists ever come to be inter-related at all. Now this has led to the most sinister consequences in all kinds of unexpected ways; it has led to extraordinary metaphysical, pseudo problems such as those posed by Hegel or, particularly, Bradley, namely, 'How can there be relations at all?' If you will look into 'Appearance of Reality', by Mr Bradley, you will find that his central paradox consists in asking, 'What are relations?' If they are something at all, if the symbols for them correspond to something, then do they not themselves require relations to relate them to their terms, and these relations in their turn would require relations to relate them to the terms, etc., and this is a vicious regress. Or if they do not require relations, then what are they? They cannot be spoken about at all. To be spoken about at all, they must have attributes, words require relations of their own to relate them to other entities. But this is a subtle fantasy founded on a belief that to be an entity you have to be surrounded by attributes which exclude other attributes and the entities which they cluster around, like bees round a Queen and this derives from the view that all words stand for either things or the elements or components of things or else stand for nothing. But perhaps the aberrations of Hegelian logicians might be regarded as a comparatively unimportant page of human thought. Yet the doctrine has led to far more disastrous results: the whole attitude of mind in which one can ask such questions as, 'How can I know anything beyond my own idea?' or, 'How can I tell what is going on in someone else's mind?' or, 'How do I know what that table really consists of – I can only see its surface, only touch its outside, only hear, smell, taste symptoms of it, but its inner composition is forever concealed from me.' It leads to the state of mind in which I can

INDUCTION AND LOGIC

wonder whether there is any shared – public – experience containing me: or whether experience is rather inside me – in my mind; in which I can wonder where, inside what, are to be found sense data, dreams, emotions – in short, the view of mind as a *box* sometimes conceived to be somewhere just at the back of my eyes, somewhere behind my forehead – (any who claim to be superior to that kind of crude piece of naiveté, think in those terms when off their guard.) All this derives from the view of closed substances, from the view that somehow things are real and their qualities are real but relations perhaps are not. The sea water exists and the moon exists but the relation of gravity between them which causes the tide is mysterious, intangible and somehow less real than the saltiness of the water or the brightness of the moon; I exist and the table exists but the relations between us are very precarious. I say, ‘The table is white and square’ but Locke whispers that perhaps the whiteness and the squareness are really in my head, in my mind, in my brain, etc. Perhaps the table is not like what it seems, the ‘seeming’ characteristics being somehow viewed by me within myself while the table, if it could see itself as it generally is, would have ideas of itself very different from mine. That is what is meant by people who complain that they see the table from outside, not from inside – that they know what it looks [like], but not what it would be like to *be a table* – and, of course, this problem obsesses people still more with regard to communication. ‘How do I know that when you use a word you mean by it what I should mean by it? How do I know that I do not systematically misinterpret all you say into my own system of meanings? How do I know that your world resembles my world? How do I know that when you say “blue” or “fine” you have ever experienced anything like what I have experienced in order to give a meaning to these words?’ The suspicion that persons and objects live, as it were, boxed up, each behind its own individual iron curtain, that life may be a dream, that I alone may exist in the world, or that minds alone exist but no bodies, etc., etc. All the varieties of idealism and solipsism and representative perception spread ultimately, from a substance view of the world – of so many hard kernels endowed each with its own set of unique qualities which makes it what it is, and the catalogue of which in its proper structure is the answer to the questions what and why and how, which leaves no room for relations with other entities, communication, interaction, etc. And this in its turn is based on a

INDUCTION AND LOGIC

view of meaning as a direct relation between linguistic units and units of reality, atom to atom, bullet to bull's eye.

Here perhaps one may be allowed a faint glimpse of the true story of how symbols mean – *not* by pointing, fishing up, aiming and hitting, being caps – perfect fits – being like, being photographs, but by being *used* in *certain* ways, by occurring as ingredients in certain mental events or acts, so that when they occur in one way we are said to be reflecting about the actual word, in another way, and we are said to be speculating about what will be, or might have been: – but let us leave this for later.

Universals

Let us now consider a characteristic major consequence of this view. Everyone has heard of the great controversies about universals – the realist, conceptualist and nominalist views of them in the ancient and medieval world, whether they are in things or outside them, in minds or outside them, whether they are a priori or empirical, whether they are concrete or abstract, and so forth. Now, I do not wish to devote myself to the analysis of universals. I admit there are grave problems with regard to general propositions or with regard to the relations of sensing to knowing, or sensing to thinking. What I am concerned with here is this: the most powerful impulse towards the view that there exist such entities as universals, whatever their status and however arrived at, seems to me to spring once again from the sheep and goat view of propositions. Sheep propositions, good, normal sentences, assert 'facts', and therefore there must *be* something which is what they mean. It seems plain that general propositions of the form, *All S is P*, or even, *Some S is P*, or, *Any S is P*, involve some general terms, – and in fact all propositions do that – (when I say 'This is a desk', the word 'desk' is a *general* classificatory symbol – for if the word 'desk' did not refer to something other than this particular material object before me – if it did not refer to its resemblance to other real or possible objects, in virtue of which they are all classified together under the common term 'desk' – if it did not do that, it would not be conveying information.) People noticed this and wondered what general terms 'stood for'. Now, I should like to maintain that the prejudice in favour of reducing all propositions to singular, categorical, non-complex, affirmative ones operated very strongly at all times among philosophers. Instead of asking, 'How do general terms work?', instead of asking, 'How are general

INDUCTION AND LOGIC

terms distinguished from particular ones? What relations do they require to have according to the rules of logic, or the rules of good English style, or of whatever other rules, in order to convey what such symbols are normally used to convey?’, instead of asking *that*, philosophers really answered the question what sort of singular categorical proposition a general proposition asserted. For that is what the demand for entities to correspond to general terms comes to. Unless a proposition is specifically a goat, i.e., a pure impostor, something which looks like a propositional sentence but in fact describes nothing – unless it is like that, it must be reducible or relatable to the sheep-like, singular, affirmative, etc. propositions. You seem innocently to be saying with Plato ‘I see the horse but not its horseness’. Really you are saying, ‘Supposing I have a general proposition on my hands and I am required to reduce it to the equivalent singular form, how do I do it?’ Well: I do it by converting the general term which seems to be the subject into something more like a singular term: for example, I start with the proposition, ‘All cows chew the cud’: now, who or what are ‘all cows’? As we said before, this cannot be made identical with a collection of actual cows, for it does not refer to a specific group of entities but to all present, past, future and, indeed, possible cows, however many, however few. ‘However many’ is the difficult term. It is not clear what it stands for, means, what bit of the world’s furniture it refers to. This is triumphantly solved by converting it into a categorical singular proposition: ‘Bovinity or Cowhood is co-present with cud-chewing’, where ‘Cowhood’ is a noun, and looks as if it stood for an entity just as the word ‘cow’ itself does. What sort of entity? Plainly that which all cows have in common, the cowhood which flows through them all, as humanity through men and women, the universal ‘cowhood’ or ‘bovinity’. It does not, indeed, exist in time or space, but it exists in its own peculiar way, timelessly, spacelessly, anyhow, whatever it may be, it is *something*, it can be aimed at by the arrow constituted by the symbol, it is the subject of predicates, it corresponds, in the real world, to what makes a singular sentence singular – namely, cowness. Sometimes cowness in this sense emerges as the generic term ‘the cow’ as in ‘the cow is a cud-chewing animal’ where ‘the cow’ does not refer to any particular cow but to ‘the cow’ of the zoological or agricultural handbook. ‘The cow’ looks singular and it performs everything that the troublesome old term ‘all cows’ ever did. ‘All cows chew the cud’ is logically equivalent to ‘The

INDUCTION AND LOGIC

cow chews the cud' or 'Cowhood is not found apart from cud-chewing'. The curse has been taken off the generality of the general term by turning it into a singular one, and then finding a curious entity – the universal – for the singular term to connect with. Of course, the solution turns out to be a remedy far more disastrous than the disease it is meant to cure. The relations between the universal cowness and its instances – the specific cows [-] is found to be obscure. This relation itself turns out to be a universal and needs equally drastic contortions to turn it in its turn into a singular term; the relations between two or more universals are equally difficult to determine and a literature of its own grows round this pseudo-problem. Do universals resemble each other in the same sense as that in which their instances do, or in some other sense? Is the relation of genus to species the same sort of relation as that of species to instance or is there a 'jump' between the infima species and the actual instance, – the experienced 'quale' – and if so, how is this jump effected? Do I see a quale – say a particular shade of pink – as well as the pink patch? Is *one* pink quale in 2 places at once? And what *is* a particular instance? Can anything be said about it as it *really is in itself*, or is saying something about it merely the enumeration of the universals of which it is an instance, and do words never get *through* to the particular instance itself? And if we cannot utter it because to speak is to classify, and to classify is to refer to universals, if we can never get through to it, what is it, what word will stand for it? Not even proper names, not even words like 'this', or 'that' will do the trick, for proper names and 'this' and 'that' are only useful if they refer to more than one object or more than one aspect of the same object, as 'John' refers sometimes to my brother, sometimes to my uncle. If 'this' refers sometimes to a book, sometimes to a house, how can I achieve the uniqueness which this particular instance, being one, and distinguishable from everything else, requires? I do it by gestures; but I am told that I cannot do this unless the gestures have their own implicit, understood convention, unless moving my finger is a sign of desire to indicate something, whereas moving my foot is not. But if gestures at once also become universalised, how am I do indicate their particularity by means of a necessarily generalised symbol? Yet I do so every day, and it occurs to no one but philosophers to find this strange. The particular is the only thing which exists in time and space, and yet it is the only thing which cannot be directly referred to at all, or

INDUCTION AND LOGIC

spoken of when met by itself in its original nakedness, unclothed by universals. Is there not some frightful paradox here which philosophers have in vain tried to solve? Is not the occurrence of so insoluble a problem perhaps a sign that there has been some confusion somewhere? One of the sources of confusion surely is the perfectly correct view that qualities and relations – characteristics, in short – must be characteristics of something – that is what is meant by calling them characteristics, that they characterise; provided that some entity is characterised by given qualities and relations, we do not feel worried. ‘This wooden desk is brown,’ if true, is thought to give no trouble, no one is unduly worried by the difference between the term ‘this desk’ which stands for the grammatical and logical subject about which we wish to say something, and ‘is brown’ which classified it, i.e., states that it resembles other coloured objects – namely, brown ones – and in a way in which it does not resemble other coloured objects, namely, blue ones. So far, so good. The fact that ‘brown’ is the name of a characteristic and not of a thing is not in itself a problem, unless you begin to think of characteristics as themselves a kind of thing. But why should you? To say that something is brown is to refer to a relation or resemblance which it has to something else, and resemblances are given directly to empirical inspection. There is nothing puzzling or mysterious about them as such (there are certain difficulties about whether resemblances themselves are said to resemble, over which Lord Russell keeps worrying, but this is irrelevant, and anyhow is capable of solution). This difficulty arises when general propositions are asserted about *all* desks or *all* cows; and the ascribed quality or relation does not seem to characterise a thing by a class of things or anyhow something qualified by the mysterious words ‘all’ or ‘every’ or ‘any’ or ‘some’ which don’t seem to stand for any one entity or object in the world. We therefore take the drastic and fatal course of inventing a thing or object for these words to denote, making the proposition singular and so sheep-like again. These things, or objects, are the mysterious universals and once we have admitted them as the entities corresponding to subjects of general propositions, they might as well do duty for subjects of hypothetical, disjunctive, conjunctive and other trouble-giving expressions as well as stand for the predicates of all propositions whose roots in the empirical relation of resemblance have by now been forgotten. Uncontrolled inflation now sets in. All words –

INDUCTION AND LOGIC

subjects, predicates, relations, even the copula, stand for universals. The real existence of universals beyond time and space now creates a world in which extraordinary entities such as 'black-and-white', 'either-red-or-blue', 'not-blueness', etc. are accommodated. These monsters have a perfect right of entry; if I say, 'All persons either below the age of 15 or above 60 are generally considered unfit for military service,' then 'either-below-15-or-above-60' being the subject of the sentence, has a right to a corresponding universal for which it stands and we get the extraordinary spectacle of entities not merely with no determinate characteristics, but with bifurcated ones, somehow in both and neither particular condition at once, as if I were to say about a man, 'He is a fool-or-knave,' not a fool, nor a knave, but a disjunctive bifurcation of the two.

Universals thus emerge as bogus creatures invented to correspond to general terms, made to look like singular ones in order to be fit to be the subject of the right kind of sentence. You transfer the generality of the sentence away from the words and on to things, and so get a monster, the *thing* whose essence it is to be *not* something *particular* but something *general*, the object which is not here or there, not now or then, but anywhere and any when, though not everywhere and everywhen. I cannot believe that if the temptation to find entities to take care of the subjects of general propositions were not so fatally strong, this mare's nest would ever have been stirred up. So much for universals.

But the same applies in even stronger measure to such peculiar entities as *hypothetical facts* and '*real possibilities*'. What are hypothetical propositions about? Even universals with all their splendid possibilities are not enough. Yet they are very accommodating entities: you can put anything you wish into them and there it stays, eternal, timeless and yet not there when not wanted, at your beck and call to act as target for queer symbols, yet not cluttering up the world in which you live, not likely to be stumbled across in the ordinary commerce of life but, like Aladdin's genie, appearing only when urgent, logical need arises, and then fulfilling all orders and requests, transforming himself into endless shapes to provide for the most eccentric requirements – even this maid-of-all-work will not entirely satisfy the insatiable appetite for new entities. General and hypothetical propositions are taken care of well enough: 'If wax candles are heated to 50° C they melt,' can be dealt with by means of a theory of universals

INDUCTION AND LOGIC

thus: ‘the universals “candleness” and “50 °Centrigradeness” are permanently connected with “meltingness”, or some such barbarism. If such universals exist, they must be given these clumsy names, and they will do the job. But even this drastic method will not work for singular hypotheticals. Thus, if I say, ‘If the Dalai Lama calls on me, I shall be surprised,’ I am not saying, of course, either that the Dalai Lama will call on me, or that I shall or shall not be surprised. But neither am I saying that the universals ‘being the Dalai Lama’ and the universal ‘or man’s being surprised’ are connected causally or otherwise, although I am implying this. For I am saying more. I am referring not to *any* Dalai Lama but to ‘the’, i.e., the actual, present, living one. I am not saying that *anyone* would be surprised who resembled me, although this is very likely true, but that I, in particular, would be so. What then is the subject of this obviously not meaningless sentence? Presumably, the hypothetical behaviour of the Dalai Lama is being related in some way to the hypothetical behaviour of myself. These hypothetical behaviours are not universals, they are ‘might have been’ or ‘might be’ or ‘would be’ particulars, at least logically or grammatically. If every logical type of subject of a proposition have to have a ‘real analogue’ we shall have to introduce over and above our over-worked universals a queer kind of particular-entities not out of the past nor out of the future, let alone out of the present, but out of the world of possibility – the unrealised possibilities of the past, and of the present, and the perhaps-to-be perhaps-not-to-be realised possibilities of the future. ‘If the Dalai Lama had called on me, I should have been surprised.’ *That* refers to an unfulfilled past *particular* bits of the Dalai Lama’s behaviour and of my behaviour respectively. Where do unrealised, possible acts, or events, or objects, reside? We speak about them, hence they must exist – that is really the assumption on which we have been working. When historians speculate on what *would have* happened if Alexander the Great *had lived* to old age, or if Lenin *had been* executed by the Tsarist police in 1917 – who or what are the subjects of the propositions, ‘*If* Lenin had been executed’ or ‘*If* Alexander were old?’ The executed Lenin, the old Alexander? Meinoy says non-existent entities or *possibilia*, outside time and space, each with its own particular characteristics. What science investigates the habits of non-existent particulars? Again, the remedy is worse than the disease. If separate entities are required to correspond to every movement of my speculative imagination,

INDUCTION AND LOGIC

not only will I have to find metaphysical ‘status’ –accommodation for the aged Alexander or the Lenin cut off before he could do anything effective, but supposing I speculate on how the aged Alexander would have behaved. Supposing I say he might have married the King of India’s daughter, then the non-actual marriage of the non-actual Alexander to the non-actual daughter of a non-actual king, acquires a kind of actuality too. Not only must I find room for the elderly Alexander, but also for his possible Indian bride whom the possible Alexander might, or might not, have married. New entities must come into being to meet all the possibilities, i.e., to act as analogues for all sentences that are not meaningless or self-contradictory. All false propositions are thus *true* of something; every lie has its true mate from which it is []. Photographic Views: Leibniz and Russell Fallacies [] (a) All propositions are [] necessity: and photographic but with both entities.

If we are to avoid a [] of non-intercommunion substances, composed out of isolated substances, we must turn to Spinoza’s single world substance, capable indeed of interaction and intercommunication because it is *one* and its parts are connected by an infinite network of necessary relations; but for this we have to pay with (a) the view that false = coupling of incompatibles = meaningless and (b) the admission that our everyday assumption that disconnections – absence of relations – is as real as relations, that the fact that I am *not* this desk, that I am *not* identical with any of you, that this desk has a history *independent of* the history of the Martyr’s Memorial, all this is an illusion, for *nothing* is independent of anything. But the only proposition which really corresponds to reality [] a proposition which asserts the necessary connection between attributes and the substances; if there is only one substance and one lot of attributes – the universe – and all it contains – there is only one true statement which can be made and that statement would state everything that could be stated and, *ex hypothesi*, no finite creature could assert it, for then it would no longer be finite but would see itself as part of the infinite whole and, therefore, only the universe itself could think it or assert it about itself; all *our* statements are necessarily incomplete, and in so far as they purport to be complete, over-ambitious and erroneous. This last view, while it corresponds to something which we feel about the development of the sum of human knowledge as an interconnected and expanding whole rests on two premises, both

INDUCTION AND LOGIC

of which I hold to be false: One is that all true propositions are necessary: otherwise I cannot prove them true. The second is that all true propositions copy reality. (1) [] – Spinoza – Hegel – Bradley. That to say of a proposition that it is true, indeed to say of the symbols that they mean anything – is to claim that it asserts a necessary relation, i.e., something guaranteed by a logical method, although there are no *de facto*, only *de jure* truths. This is not true if only because when we speak of necessary propositions, we mean to distinguish them from other kinds of propositions, otherwise the word ‘necessary’ would have no application. Leibniz recognised this by distinguishing between truths of reason which were necessary and truths of fact which were contingent. If all truths are in some ultimate sense necessary, what do we think we are saying when we are consciously uttering a contingent truth?

Spinoza says that I must always be seeking to make my truths true by a logical necessity: if I say that this desk is brown, not necessarily brown, but brown as it happens, and do not claim to suppose that this can be proved, or that it is necessitated to be as it is either causally or logically, and if I am then told that I am making a mistake, that all propositions must be necessary if they are to be true at all, what sort of mistake am I making? I am certainly saying something intelligible in the ordinary sense of ‘intelligible’, even if what I am saying is false; but provided it is intelligible, it must be such as could be true: this desk may have to be necessarily brown or necessarily not brown, but if I mean anything by saying that it is just brown and refuse to say what it must or must not be, I am, if I mean anything, referring, at any rate, to a logically possible state of affairs. If I am told that I am not, meaning anything, I must here take a stand and stoutly maintain that I *do* mean something very normal and intelligible when I say that the desk happens to be brown; that it might not, need not, could have been not brown but that it *is* brown. Even if I am wrong, and it is not brown, even if I am deeply wrong and in some sense it *could not* have been brown – still it makes sense to say, however falsely, however rashly, that it *is* brown, and to say that this is meaningless is to confuse what is meaningless and what is false, which deprives both of any use; finally that the confusion between what is false and what is meaningless, which always seems so queer, is almost invariably due to the same original sin – the supposition that symbols directly correspond to entities and that they break down, so to speak, when the entities to which they are

INDUCTION AND LOGIC

supposed to correspond, are absent. This breakdown is sometimes supposed to be what makes a sentence state a falsehood, sometimes a piece of nonsense. Hence, the confusion.

(2) Russell and Wittgenstein. The second premise which is false is this: that in order to describe the world correctly, the symbols have to bear to each-other some relation which corresponds to the relations of the entities symbolised. The chief perpetrators of this fallacy are Russell and Wittgenstein, but Leibniz is the true author of the doctrine. Of course, once you start from the assumption that the business of symbols is to be the name or photograph or in some way analogue of objects or things then corresponding to things or 'objects' there will occur, in the perfect language, symbols like nouns or substantives, corresponding to connections and relations, adjectives, adverbs, possibly verbs. Russell's theory of truth is entirely founded on this, so is Wittgenstein's, so is that of Leibniz. To refute this, there is no need to go further than we have already done in considering negative and hypothetical propositions.

The *relation* between [] *false* cannot itself be a symbol because (1) its presence [] What matters. (2) [] sentence meaningless: but [] is *precisely* what is lacking: hence all false propositions would be meaningless.

Russell's view [] to be somewhat of *this type*: in order to mean, a sentence has to consist of symbols; the symbols which compose a sentence are to be classified as constants and variables. The constants merely determine its logical form, they are words like 'all', 'if', 'when', 'about', and so on. The variables are the symbols which denote something in the world like 'table', 'blue', 'on the other side of', etc.

Leaving the constants aside, the variables must correspond directly to something in the world either by directly pointing to such entities or by being analysable into other symbols which do so. Grammatical and logical rules about the truth and falsehood of a proposition depend on the order in which the variable symbols in the sentence are arranged. 'The matchbox is in my pocket,' means something only because 'matchbox', 'in', 'my', 'pocket', all refer to discernible characteristics or things in reality. If I say, 'The matchbox is in my pocket,' the elements in the sentence are arranged in such a way as to reflect the order in which the actual entities are arranged in reality. In the sentence, 'The pocket is in my matchbox,' the same elements are arranged in an order

INDUCTION AND LOGIC

different from that which their analogues have in reality and that is the solution of the puzzle. To support his view, Russell says that every proposition which I can understand must be already composed of constituents with which I am acquainted. In another version, the constituents in question must be 'ultimately reducible to something with which I am acquainted.' This is as clear as can be: understanding a proposition – which is the same as saying that a sentence is meaningful – is to say that all its verbal constituents refer to real objects which I must have met in reality or have imagined, or at least be able to meet or imagine. [] *This will not do.* As a negative criterion, it may be well enough – that is, if an empirical sentence – which is what Russell is talking about – contains variables which do not refer to entities which I have or could meet, have or could imagine, have or could point the symbol to refer to – this sentence is to that extent unintelligible. As a negative criterion, it [] the [] of truth in Locke's analysis – that is the basis of all empiricism. It boils down to saying that, knowing what I or someone may be talking about, and knowing what I or somebody may be saying about it, is to say that I must in principle be able to [] the kind of situations which I have or could have been acquainted with or imagined as being the kind of situations to which I mean these words to apply and then anti-empiricists may argue that there are meaningful sentences which refer to something which I could not, in principle, experience or imagine, and then such sentences are said to contain a priori concepts. But that is not the subject I wish to discuss. What I wish to assert is that Russell's analysis will not do even for empirical sentences. This can be shown thus: if I say, 'The matchbox is in my pocket,' and it is not, everyone will admit that my sentence, though false, is intelligible. In mistakenly asserting that it is true, I am asserting what? According to Russell, that the order of my symbols does correspond to the order of the elements in reality. This sentence – a second order proposition states that the [] proposition is false, and that means, again applying Russell's criterion, that it refers to at least three entities which it has in its turn shuffled into the wrong order. Now, in the case of the original proposition, the three entities wrongly shuffled were 'my pocket', 'the matchbox', and 'is contained in', but in this case, what are they? Well, we have two at least – the terms of the relationship – namely, the sentence, 'The matchbox is in my pocket,' and the [] reality, whatever it may be, [] false [] i.e., that the matchbox is on the shelf or that I am

INDUCTION AND LOGIC

wearing a diver's suit and have no pockets or the like. But what of the third term, the relation 'corresponds to', which should be there though shuffled into the wrong order? Where is that? If the sentence is false – and that means that something has [] between the order of the sentence and the structure of reality, where is that lacking entity? Russell says in his 'Essay on the Nature of Truth and Falsehood' (*Philosophical Essays*, 1910) that a judgment is true if the relation which it asserts relates the objects it says it relates, if not, false. When the relation does not relate, where is it and what is it doing? Perhaps it is relating two other objects. Even if you can conceive relations as being something so material and thing-like that when they don't relate one couple of objects, it is because they are doing duty elsewhere in relating another and they can't be doing both at the same time – and that is an absurd view, hardly worth refuting (to be discussed if there is time). Its absence from the original complex asserted is what is supposed to make the sentence false. But the absence of a necessary ingredient makes symbols not false but meaningless: if you start out with the theory that all descriptive sentences or assertions operate with at least three elements, two terms and a relation, and you fetch up with a sentence with two terms and no relation, then according to the theory, such a sentence is meaningless. But this is what we have here. The sentence in question is, 'P is false when P consists of elements in a different order from that of their analogues in reality.' This means we have one term 'P', another term 'the reality', and the relation of 'difference-in-order', or 'non-correspondence with respect to order of elements'. But 'difference' and 'non-correspondence' are not relations at all. A sentence differs from, or fails to correspond to any number of entities – other propositions, real objects and events, etc. that by itself does not constitute a specific relation between it and anything. If a sentence could be false, though not meaningless, simply through non-correspondence with respect to order between itself and reality, we should get paradoxes. Supposing I say 'Three semi-colons have invested their money in Spanish tin mines,' we get all Russell's conditions theoretically fulfilled. 'Three', 'semi-colons', 'investing', 'money', 'Spanish tin mines', are all entities with which in some way we are acquainted. The relation of investing money, though real enough, i.e., to be found relating entities somewhere, fails to relate these entities. The sentence, therefore, should merely be false. But it is not, it is clearly gibberish. Though constructed in

INDUCTION AND LOGIC

accordance with the rules of grammar and the logical rules of propositional calculus whether of Russell or of Aristotle. What then is wrong? Only that the non-correspondence or non-preservation of the same order between symbols and reality is not enough to insure the intelligibility of the sentence. We need something more. It is quite clear what we need. When we know that a sentence is intelligible but false, we know more than that it is false. We know what it is false *about*. We know what the situation would be like if it were true. This knowing what a situation would be like is additional to a mere absence of something between the sentence and reality, it is knowing how the symbols might have been [] used in other crises, as well as how they fail to tell the truth in this particular case, it is knowing that they could be describing [] if a situation existed, which if the sentence is false, does not exist. This 'situation which could exist but does not' is not an entity but it is what makes a sentence intelligible at all. When I say, 'The matchbox is in my pocket,' even when it is not, that is intelligible because a matchbox could be in my pocket even though it is not. Hence the proposition is intelligible and I can go about investigating what it is true. But it does not follow that 'a matchbox' is an entity: exists. But if I say, 'There are nine semi-colons in my pocket,' then there is no way in which I can try to investigate to see what evidence there might be for this because, to put it in a slightly misleading way, semi-colons are not the kind of thing which, in principle, can be in pockets, or indeed outside pockets. This is misleading because semi-colons don't exist: so they can't have properties. It is a better way of putting this to say that 'the matchbox is in my pocket,' is an expression which we know how to apply, i.e., there is a convention about what kind of situation it is supposed to describe whereas there is no convention which tells us what kind of situation the sentence about the semi-colons is supposed to apply to. Now, from this, two important conclusions emerge: (1) that Russell is badly wrong in supposing that the difference between true and false propositions lies in the presence of something in a sentence which is absent in the reality (the something he selects for this is the relating function of the relation) for according to his criterion, if sentences are only intelligible if all their constituents stand for objects and acquaintance, the presence of something in the sentence, for which there is no corresponding object in reality, would ordinarily make the sentence not merely false but unintelligible. And yet we feel

INDUCTION AND LOGIC

that Russell is somehow right in saying that to call a sentence false is to point to some discrepancy, the absence of something between it and reality, it and the facts. That is another question to be dealt with in my final lecture. In the meanwhile, we may note that Russell's general error springs from a rooted tendency to regard meaning as a 1:1 correspondence between symbols and real objects. This makes his look for something to correspond to the meaning of false sentences while at the same time something must be taken away to account for the fact that they are false. If he leaves everything intact, then there is no way of explaining how a sentence could be false; shuffling things in the wrong order will not work because the wrongness of the order destroys the intactness – the wrong relation in which the verbal elements are assembled – this relation has nothing to correspond with in reality – but if reality fails to [] something to correspond to an element in the sentence – the relation of order of the elements of the sentence then something is missing on one side of the equation and the verbal side of the equation is unintelligible. Thus, if symbols to mean have to correspond to reality, all sentences, if intelligible, are true, and if false, are unintelligible. Which is absurd.

(2) Another interesting corollary which follows from Russell's view is this. Russell says that what makes a sentence false is that it asserts a relation which in reality fails to relate the elements between which it is asserted to be. It fails to relate them as a matter of fact, not of principle, that is what makes the sentence empirical: sometimes it relates, then the sentence is true, sometimes it does not, and then it is false. But now supposing that the question of whether the relation did or did not relate the terms in the way in which the sentence says it does, were not a matter of sometimes being the case and sometimes not, not a contingency but a necessity; so that you could tell whether the relation related as was asserted, not from looking at reality and finding out by experience or by somebody's telling you, but by thinking about the nature of the terms themselves, i.e., by considering how, the terms being what they are and standing for the entities they do, those entities could fail to be relating as the sentence asserts that they are related. This is precisely what metaphysics does: the sentence is only intelligible, precisely as Russell says, if all its constituents refer to, or are reducible to, entities with which I am acquainted. Only, acquaintance is interpreted no longer as empirical, no longer as based on sensation or introspection or imagination, etc., but is a

INDUCTION AND LOGIC

special, unique sort of activity or form of relation. But, whereas in the case of empirical acquaintance, nothing about the entities for which the symbol stands tells me whether the relation asserted to relate them must necessarily relate them or not. Otherwise, we would never except by mistake in logical calculation assert false empirical sentences – in the case of metaphysical assertion, the relations asserted are said to flow from the nature of the entities they relate: inspection of the object of metaphysical acquaintance reveals what relations it has with what other metaphysically revealed entities and, because the world of such entities is immutable, and governed by logical or quasi-logical, metaphysical necessities, for that is what metaphysical insight reveals – because of this, if a relation holds between any metaphysical entities, it holds of them forever and by necessity. Now, if my symbolism is to be adequate, i.e., if each distinction of reality is to be marked by a corresponding difference in the symbols and conversely if there are to be no distinctions between symbols to which there are no corresponding distinctions in the non-sensible reality, then in the perfect symbolic system, the symbols will be so constructed as to exhibit automatically those necessary relations to other symbols which correspond to the necessary relations of the corresponding realities to each other. If reality consists of non-further-splittable substances and its combinations, symbols, similarly, will consist of simple signs and their combinations; and there will be rules for the combination of symbols allowing only those combinations of which reality consists and forbidding those combinations which reality makes metaphysically impossible. In Algebra, we do have rules, e.g., that X and minus X cannot be combined into a positive symbol, or that if X and Y have different positive values, X^2 and Y^2 must have different values, or the X plus Y cannot equal a value different from Y plus X , etc. Now if each of these algebraic symbols corresponded to a real entity, the language of algebra would be a description of such entities, and if the rules of algebra hold by a logical necessity, then the relations between algebraic symbols correspond to similar relations between the real entities, the world of the real entities would be governed by the same inexorability as the system of algebra. If you wanted to know about one of these real entities occurring by itself or in a complex of other entities, whether it had this or that relation to some other entity or complex of entities, then, provided the algebraic system was guaranteed to fit the realities, you would not need to look at

INDUCTION AND LOGIC

the realities at all in order to get your answer. A merely algebraic calculation would suffice. If the algebraic sum came out, your assertion about reality was correct; if it was incorrect, the algebraic operation would automatically reveal the error because a contradiction would be revealed in the algebraic operation. The algebra is a reliable mirror of reality, an infraction of the rules of algebra would be a sufficient indication of an error in your assertion about reality. Leibniz thought exactly this: he [] that metaphysical insight existed, that real complexes could be split up into irreducible, simple entities and that a language which he called 'Characteristica' could and should be invented, such that each constituent of the language corresponded to the appropriate ingredient of reality, each rule of the language corresponded to a metaphysical law governing the reality, and the same combinations were possible and impossible in either. In the new logic which would reveal the nature of reality, which he called the 'Ars Combinatoria', simple entities would be represented by symbols called 'unions' which could not be further split up. Entities consisting of two elements would be represented by symbols called 'binions', those consisting of three elements by 'ternions' – and there would be quaternions, quinions, etc. Knowledge would become ludicrously easy and simple of obtain. You would set out your rows of symbols combining only what reality allowed you to combine, and whenever any question about reality was asked, you would make sure what the subject of discussion was, describe it in appropriate symbols and then look up the table of symbols to see what relations they had with other symbols – these relations would then be the relations which the reality in question had with other real objects. Thus knowledge would progress by means of a kind of automatically logical multiplying machine – every time you tried to say something false about reality, the machine would fail to produce the result in terms of symbols but would, as it were, decline to work or ring a bell of protest. This would, in the course of time, lead to infallible omniscience. Admittedly, this would not work for empirical statements since these are true not by necessity but as a matter of brute fact. But as Leibniz thought that empirical knowledge was only a confused form of the necessary metaphysical kind of knowing, this did not matter, as nothing could be stated correctly, in any case, in empirical terms. As knowledge advanced, empirical knowledge would gradually be clarified into this kind of algebra. If the correspondence theory of

INDUCTION AND LOGIC

symbolism and reality were correct, and if metaphysical insight into combinations of simple, real substances existed, Leibniz's dream could be easily realised. As it was, he laid the foundations of a symbolic logic, but valuable as it is, symbols do not refer to [] isolated, real, irreducible, atomic entities. They refer to anything you choose to refer them to. There is no metaphysical nexus tying symbols by necessity, by inner structure to a particular realm of reality. Whether as applied by Russell to the empirical world or by Leibniz to his metaphysical one, the experiment is equally disastrous. Instructive but disastrous.

And what applies to Leibniz and Russell, applies, in its own queer way, equally to Locke, Berkeley and Hume: they are all looking for something which all true, descriptive propositions will be about but they are further obsessed by the problem of verification, that is, they feel nervous of certifying anything as being true unless an empirical method can be provided for finding out whether or not it is true. Locke, who thinks that all that we can be certain of is something called our own ideas and who says, quite clearly, that if there are to be entities called ideas as well as realities, the ideas block our view of realities, and we cannot, therefore, compare the ideas with the realities for the realities are beyond our empirical ken, one has to invent a theory of truth which makes it consist of 'agreement and disagreement of our ideas' – exactly like Leibniz, except that ideas are empirical and rather like images. The ideas are what words correspond to. Now, Locke shows quite clearly – and this is a flash of genuine insight – that when we ask for a meaning of a word or group of words, the answer can be given either in terms of other words or in terms of some experience. It cannot be the case that the meaning of all words can be stated solely in terms of other words, for unless *some* – or [] of my words refer to experience, I would be not any nearer to understanding if you plied me with more and more words in answer to my questions; let us say that I am puzzled about the meaning of some expression; you supply some other expression which you think I shall understand better; but this is founded on the assumption that at least some verbal expressions convey something – some form of real or possible experience – to me. If I do not understand how words are used at all in referring to experience, a system where the only substitute for one set of words is another set of words will not help: that is what is called an uninterpreted logical calculus: a game without a meaning: a pure

INDUCTION AND LOGIC

algebra. If I ask, 'What does A plus B mean?' thinking that it is descriptive, describes something in the world, and you answer, 'It is equivalent to C plus D,' I am no better off however long you go on plying me with symbols equivalent to my original symbols. Some symbols in a descriptive language must refer, and be defined in terms of *experiences*. Locke showed genius in understanding that difference must either be nominal, i.e., in terms of other words, or else ostensive, though he did not call them that, i.e., in terms of some experience by pointing to which I can learn the meaning of a word. He also thought that there were real metaphysical definitions and here he may have been wrong. The point is that he understood that the blind man could never understand what the word 'crimson' referred to, however many words I substituted for his benefit, and might always go on thinking that it resembled the sound of trumpets. But here he made a gigantic blunder; words indeed are like this, either complex, i.e., analysable into other words which are substitutes for the original word, or else simple, i.e., labels which do refer to kinds of experiences in some way: that is what we mean by saying that definitions are of two kinds, interverbal and ostensive, and that no language which can describe anything can be wholly either. For if the meanings of words were given only by interverbal conventions, none of the words might mean anything – that is perhaps what Kant should have meant when he said that concepts without intuitions are empty; but the opposite extreme is equally fatal, for if all words were defined by pointing to this or that, as the word 'scarlet' is explained to a child by pointing to things whose colours resemble in that sort of way – and if no words were made equivalent to any other words, no word could ever be used twice. To use a word correctly more than once, we have to have a rule fixing how it is to be used, how its meaning is to be understood to differ from other words; such rules must necessarily be expressed in words or symbols, they can't be illustrated by pointing; without such rules, implicit or explicit, we should never know what any word meant more than once, and not that once, for even on that one occasion, we distinguish what we are doing from other things which we were or might have been or might be or will be doing on other occasions. That is what is meant by saying that all languages have to have general terms, that is what Kant should have meant when saying intuitions without concepts are blind. So far, so good. But where Locke's blunder emerges: words are indeed complex of interverbally defined,

INDUCTION AND LOGIC

simple if they can only be defined by pointing; words, yes, but not things, not ideas. Locke's [] meaning appears natural enough, for everyone suffers from it; with the representative nature of language, he constructed a psychological world similar to the linguistic one: as there were simple, unanalysable words, so there were simple, unanalysable entities; as there were complex takeable-to-pieces, unscrambleable words or expressions, so there were complex clusters or clumps of ideas. Some went with each other, some repelled each other, just as words do; that is all we knew, even if it was less than we needed to know if we were to know everything. Complex ideas could be analysed into their simple components and that was all there was. Because he was an empiricist, his world consists of simple, sensuous ideas or images. They are the analogues of all meaningful expressions, all meaningful sentences to be meaningful have to culminate in their appropriate ideas. Berkeley believed the same, except that there are beginnings of another view in the theory of Divine Symbolism, where one thing 'suggests another' –smoke is used by God to suggest fire to us although it does not stand for, correspond, or refer to it. But he never developed this. Hume similarly supposed the world to consist of hard entities called 'impressions' and softer entities called 'ideas' which were fainter, more decayed effects of the first. He does speak of the ideas of reason as not corresponding to impressions or ideas but these are not descriptive. Whatever is about the world and meaningful must correspond either to ideas or to impressions, and the ideas are ultimately reducible to some decayed condition, some enfeebled state of the impression. This is the great fallacy with which we shall have to contend throughout the Twentieth Century: there are 'hard' data of which everything is ultimately composed and they can be stated in 'hard' sentences which refer to them and are directly descriptive. And then there are 'soft' sentences which derive their descriptive capacity only to the degree to which they can be reduced to hardness. That is how Russell talks, and all his followers. This still suffers from the incurable defect that hypotheticals, negatives, etc. are left unaccounted for and on this fearful rock they are bound, in the end, to break. The pragmatists alone are reasonably free from it. The fallacy, I repeat, springs from a false theory of how words mean. If material objects and their relations fail to correspond to all varieties of symbolic expression, some other entities must be produced which do so

INDUCTION AND LOGIC

correspond – ideas, universals, objectives, empirical and non-empirical entities, and then to prevent an intolerable dualism, material objects must be reduced to these new, more flexible entities which we have in much ampler and more generous supply. Or else the varieties of verbal expression which made all this seem necessary, must be reduced in number and in form. With more entities than we seem to start with or fewer forms of expression, either hands must be produced to fit the many varieties of glove or the varieties of glove must be cut until only those remain which fit the few types of hand we have. Supply and demand must somehow be, by whatever means, made to fit and fit precisely.

We need not spend long on the theories which manufacture bogus or fictitious entities: we have already mentioned universals; the history of philosophy affords much more monstrous examples than this: the entire Pythagorean Platonic system according to which the universe in some sense consists of metaphysical ratios – cubes, triangles, etc. – is due to the belief that the metaphysical symbols which we manipulate in arithmetic and geometry stand for, or correspond to, ingredients of the real world. If this is so, if three-ness or triangularity or characteristics of things are not merely symbolic expressions in a calculus, then the paradoxes which arise become rapidly intolerable: 7 plus 12 may represent an operation which can be carried out with material objects but 7 minus 12, how many objects is that? Seven times 12 – can we multiply 7 chairs by 12 tables? If not, why not? The square root of 7, how many chairs or tables is that? We are faced with an absurd choice. Either we have to say that some numbers describe reality while other numbers are ‘irrational’, ‘imaginary’, ‘negative’, etc. and describe nothing and are, therefore, numbers only in some funny or derivative sense – that ‘plus’ is always about something real, ‘minus’ only sometimes, the multiplication and the square root signs never, and there will be worse difficulties with, for example, asymptotic series and recurrent decimals (illustrate), or else we have to say that no numbers will refer to realities at all, but being objects of thought must exist in worlds of their own, sometimes coming into mysterious association with the world of sense, sometimes, like the square root of two or the perfect circle, or the class of perfect circles, remaining equally mysteriously beyond any contact with the material world in a third realm of their own. Perhaps you have noticed this absurd dilemma neatly corresponds with our previous difficulties with propositions. There, only

INDUCTION AND LOGIC

categorical, affirmative, etc., propositions were respectable and genuine, the rest being problematical and suspect: here, only some numbers are in order, while others, differing from them in no way, are apparently incapable of applying directly to things, and therefore we sharply differentiate them as being somehow counterfeit or queer. The status of 7 minus 12, or the square root of 7, is like the status of a hypothetical proposition – the problem is, what is it about? The absurd dilemma is the same in both cases; how can there be minus 5 tables in this room? How could one find square root 7 apples on the plate? How many bits of wood is this desk composed of when I say, ‘All of it is wooden?’ and if I say, if there were a second desk here, ‘Where is it when it is not here?’ – the fallacy is plainly the same and so are the pseudo-solutions. It cannot on the one hand be right to say there is a metaphysical dividing line between the genuine and the bogus propositions for general propositions and hypothetical propositions are clearly as genuine as any others and, indeed, the attempts to construct a language which avoids them, keeping only the safe, categorical ones, must break down, for every proposition when pressed can be made to reveal dependence on general, hypothetical propositions which are parts of its meaning. But if there is a fallacy in dividing the alleged sheep from the goats in this manner – there is something absurd in saying that if I cut a loaf of bread in three, it makes sense to refer to each slice as one-third, but a metaphysical nightmare begins if I try to refer to them as .3 recurrent parts of the loaf. Because they obey the same rules and look and behave exactly the same way provided you do not ask what each entity corresponds to, it is at least as useless to try and relegate the goats into remote pastures of their own. Just as there is something absurd about worlds consisting entirely of hypothetical, negative facts, disjunctive facts, etc., so a world of pure mathematical entities, remote, harmonious, timeless and pure, lifted above earthly strife, however attractive psychologically, is equally unacceptable. In the first case, you have only to ask yourselves what would it be like for something to possess nothing but negative or hypothetical characteristics, for that is what hypothetical and negative facts are presumably compounded from, what would it be like for a thing to be merely ‘not blue’, ‘not here’, and ‘not the king of France?’ Or to be merely ‘hypothetically blue’, ‘hypothetically here or not here,’ and ‘hypothetically the king of France?’ How many such entities are there? What do they do when

INDUCTION AND LOGIC

not attended to? The same telltale questions can be asked of mathematical entities. Where is the square root of two? Does it really differ from the square root of four, because unlike the latter, it is unable to be the attribute of material objects and so is condemned to a sort of eternal celibacy? Is the decimal system something which exists or subsists whether or not anyone has thought of it, and are there as many real numerical systems as there are possible ways of devising them? You find something difficult about assuming that the size of a slice of bread could be $\frac{1}{3}$ recurrent of something, so you switch to another system of speech and speak of a third, which avoids the decimal system. Now, is the size of the slice of bread at once a virtuous third and a vicious $\frac{1}{3}$ recurrent? Do they live in the same universe, the third and the $\frac{1}{3}$ recurrent? What are their relations? Do rational numbers live in the same world with irrational numbers or elsewhere? How is this to be settled? What constitutes credentials for a genuine inhabitant of the timeless mathematical world, and is such a candidate as, say, the *indefinite* number of the speckles on the speckled hen an impostor or not? How do I determine the rules which enable me to distinguish between the inhabitants of the timeless, mathematical world and the attributes of material things like being three feet long or five inches thick? The same story repeats itself: either we condemn the vast majority of the expressions we use as being in some way illegitimate, or else we legitimise them by relegating them to an imaginary world, which, on inspection, turns out to mean nothing. We need not now catalogue these worlds. The non-natural worlds of mathematics and of logic, of ethics, of aesthetics, of hypothetical and negative facts, of the a priori concepts of physics and biology, inhabited by cause and substance, life and organism, etc., the motive for invention is always the same – the false theory of meaning which expels certain expressions in use from citizenship and either seeks to deprive them of normal rights, or else seeks to found some new state or states for them, remote metaphysical colonies tied to the mother country by mysterious metaphysical ties: you must read Professor Stout's account of real possibilities, even if you do not read Meinong, to realise the full absurdity of such procedures.

(Now we must turn to the final resort to which the dyadic fallacy conducts philosophers, namely, the reduction theory, in some ways the most dangerous avenue of all since it offers apparent economy and simplicity. The reduction theories all rest

INDUCTION AND LOGIC

on the old presupposition that there is only one valid class of propositions and that everything else that is meaningful must be reducible to that. Let us deal with three specimens of such behaviour: (a) Cook Wilson's and Ramsey's theories about hypothetical propositions; (b) the theory of logical constructions; (c) the behaviourist theory about other selves.)

[78 missing]

[79]

were not particulars but universals – if I say, 'Whatever is coloured is necessarily extended,' 'coloured' is the universal of which the ultimate instances are particular patches of colour, extension – [] ultimate instances – particular extended patches; to assert a necessary connection between the two is to assert that one universal cannot have instances without the other, being coinstantable with it – it is a universal which the instances of which are connections between other universals, and is therefore a special kind of universal connecting entities themselves universals. And still, with all this apparatus, Cook Wilson found hypothetical propositions an acute problem. The problem was this: when I say, 'If a stone hits this window, it will break it,' what am I asserting? No doubt my ground for making such a statement is the connection between the physical properties of stones, the physical properties of windows, and the physical properties of the situation called 'impact of stone on glass'. So far we are dealing with clumps of universals and asserting necessary relations between them. But I am saying more than this in asserting that if a particular stone hits this window, it will break it, for there is a difference between the proposition and its ground, between the proposition and evidence for it. In this case, the evidence is the most powerful possible, indeed, it is wrong to call it evidence. The physical properties of stones and windows are not *evidence* for what a stone might do to a window, it is *the ground* from which the sentence about the specific stone follows by logical entailment. It would be contradictory to say this stone is a real stone, the window is really made of glass, circumstances are what they normally are and that the stone could hit the window without breaking it. Nevertheless, I am not making a proposition about the ground, i.e. what makes me believe, what entails that the stone would break the window if thrown. I am trying to make it about a particular stone and a particular window.

INDUCTION AND LOGIC

If I have no good ground for making such a statement – e.g., if I am mistaken about physical properties of stones and glass, the effect of propulsion, the principles of ballistics, etc., then my statement about the stone is probably not true and anyhow rash. But to be rash, a statement must be meaningful, i.e., true or false. The statement is not about its own ground or the evidence for itself, for the ground and/or evidence may be false and the statement true – the ground entails the consequent but the consequent may be true and the ground false – what then am I saying about what? I say, ‘If I throw this stone, I shall break this window’: I commit myself to nothing about the behaviour of stones and windows in general. If I never do throw the stone, it seems impossible to discover whether my statement is in fact true or false; no doubt much evidence will be brought to bear in favour of the general proposition about stones and windows which entails my particular proposition; but to say that is only to say that it is probable or that it is rational to hold it, or absurd to disbelieve it. But even an incredible proposition must be meaningful, i.e., it must be true or false to be credible or incredible, and its truth or falsehood seem fundamental before any proposition about the evidence for it or its plausibility can be made at all. Yet Cook Wilson clearly saw what others had avoided, that there were no facts, no experiences, no entities, in the world, making singular, hypothetical propositions true or false in the way in which singular categoricals were or indeed, in Cook Wilson’s own view, general categoricals. There were no ‘if’ facts, as it were, yet there were true or false ‘if’ propositions. The same thing arose in connection with suppositions: if I am supposing that there is a golden mountain near Timbuktu, what is it that makes these words intelligible? True or false? Neither the existence of an empirical fact – the real golden mountain – nor the assumption of real universals, goldenness, mountainousness, etc. will suffice, for I am supposing a particular golden mountain and I am placing it near Timbuktu. On the assumption that propositions correspond to facts in a simple manner, there is indeed no answer to this problem, and Cook Wilson, therefore, took a heroic step. He said hypothetical propositions did not state what they seemed to state. What they asserted was not the existence of something but a connection between two questions. If I say, ‘If I throw this stone at this window, I shall break it,’ the proper analysis of this is, ‘Shall I throw this stone? Shall I break this window?’ An affirmative

INDUCTION AND LOGIC

answer is necessarily connected with the answer to the second – namely, it is affirmative too. By this means, Cook Wilson thought he was getting rid of the inconvenient, ungettable-at material equivalent of the hypothetical element in the proposition. This is what he called the deflationary theory or anti-expansionist theory. We are not manufacturing ‘funny’ facts to correspond to ‘funny’ propositions. We are saying that ‘funny’ propositions – e.g., hypotheticals – are a funny way of looking at ordinary facts, asking questions about them instead of asserting them and saying something about the connection between the questions: questions are not propositions and do not assert something true or false, and so don’t seem to require solid analogues in reality as propositions do: they are meaningful in a different sort of way: above all, they don’t assert and so we are relieved of the necessity of looking for what they assert in the real world. Of course, this solution breaks down at once: Cook Wilson is saying that singular, hypothetical propositions assert a connection between two or more questions, but this is not accurate. What it asserts is a connection between the answers to the questions. If I ask, ‘Will I throw the stone?’ there is no connection between that and any question about something which happens next. What there is the connection between the character of the answer to the first question which, on the basis of some general proposition, determines the answer to the second. If I held the correct causal view about stones and windows, and if the answer to the question, ‘Will I throw the stone?’ is that I will, then I can infer the answer to the question, ‘Will the glass be broken?’ by deductive inference, and if you like to say, like Collingwood, that all genuine propositions are answers to genuine questions – and there is no obvious harm in that – you can say if you like that a hypothetical proposition, insofar as it asserts connections between its two limbs which are themselves propositions, thereby asserts the connection between two answers to questions which have not been, but could have been, put but this is harmless and you gain nothing thereby, for the question which puzzled us about hypothetical propositions, namely, what made them true or false when there were no bits of reality to point to, remains precisely the same as if I ask what makes answers to questions true or false where there are no bits, etc. to point to. I gain nothing by calling my protasis and apodosis answers. If I don’t throw the stone, the answers become hypothetical. They are answers to the questions, ‘What would have happened if,’ and ‘What are the bits of reality

INDUCTION AND LOGIC

that correspond to that?' Moreover, the added difficulty that the truth or falsehood of hypothetical propositions does not depend on what people think or do not think; but there are no questions unless there are questioners: unasked questions which are required to make the unasserted hypothetical propositions true or false are a worse monstrosity than hypothetical facts. We have added a monster to the world and gained nothing by this process.

Ramsey's Theory. Ramsey's difficulty was, in principle, the same as Cook Wilson's. He had adopted something like the Russell-Wittgenstein theory of molecular and atomic propositions – that is, he believed that all significant assertions either stood for data of acquaintance of some sort, or could be analysed into complexes of such, tied together by logical constants and obeying a table of Truth Functions (explain notion of Truth Functions). His difficulty was to explain general and causal propositions which entail unfulfilled hypotheticals as well as inexhaustible general terms, as opposed to *de facto* conjunctions of singular propositions denied and asserted separately or together. His chief difficulty was to account for general propositions which are obviously not mere conjunctions of particulars. To solve this, he adopted a course no less heroic than Cook Wilson. Cook Wilson thought that general propositions were singular propositions asserting directly inspected necessary connections between universals, while singular hypotheticals were assertions of a connection between questions. Ramsey was a strict empiricist and did not recognise universals or necessary connections as entities presented to any act of direct inspection or apprehension; it was obvious that the notion of general or hypothetical real entities was never empirical and absurd; and offered the following solution: general, and particularly causal, propositions were not in the true sense propositions at all since there was nothing in experience which directly verified or falsified them – they were really rules or orders of a pragmatist kind. 'All Zulus are fierce' does not assert a predicate about an entity whose name is 'all Zulus'. 'If you meet a Zulu, expect fierce behaviour,' or 'In dealing with Zulus, adopt the policy of expecting to be treated savagely and you will do better than by adopting some other rule.' The first is an imperative or actual statement of the rule, the second adds a reason for adopting the rule. Causal laws are to be analysed similarly: 'Water boils at 100°' means 'If you put the water over a fire, expect bubbles etc., when the mercury reaches 100° on the thermometer dial.' If these general

INDUCTION AND LOGIC

propositions are not really propositions at all, but tips or maxims or suggestions about behaviour, then, Ramsey supposed, the problem of what it is that general or hypothetical terms stand for, will fall away by itself. Imperatives and rules are not true or false but wise or silly, useful or treacherous, etc. and don't require entities to 'correspond'. It is really a kind of inversion of our normal treatment of commandments. 'Do not steal,' is neither true nor false, and perhaps 'Stealing is wrong,' which looks like a proposition and is considered to be true or false, and because it in general leads to logical difficulties, really means no more than 'Do not steal.' If this is all it means, worries about its truth are misdirected. But if this does for so-called moral truths, perhaps it will do for so-called general or hypothetical truths. The conclusion will follow that what is miscalled the method of the verification of a general proposition is simply the question of how successfully the rule works. 'All Zulus are fierce,' is 'verified' if your treatment of Zulus in a certain way, i.e., with expectations of certain kinds of behaviour, is successful, i.e., does not land you in trouble with Zulus, makes you a good i.e. successful negotiator with them. General propositions are a misleading kind of way of recommending to people arts or knacks – what Professor Ryle has, in another connection, called 'Knowing how' rather than 'Knowing that'. It does not say that anything is or is not the case, it merely recommends a form of behaviour, formula for action. He has been misled into exaggerating the descriptive element of symbols – most symbols don't describe but instruct or exhort or train or create in people certain attitudes or aptitudes – 'All men are mortal' is (1) a rule about the use of the words 'men' and 'mortal' (2) a tip on not expecting men to live forever, etc. Now there *is* much in all this: Theories *are* often like this: they often are disguised ways of indicating what techniques lead to useful or desired results. It is true that to *believe* that the theory of evolution or psychoanalysis *is* to look for different results, assess the difficulty etc. and act differently to experience, hope to be made pleased not depressed by different phenomena, and not just about [] propositions. More like religious or metaphysical outlook, This approach to the problem would confine descriptive propositions to singular ones, while all other types of propositions will have to be denied the title of descriptive. But it is too easy to exaggerate this. To say all general propositions *are* expressions of an outlook or technique is false.

INDUCTION AND LOGIC

(a) For I can say, 'You tell me to treat Zulus in a certain way. How long am I to do so? And under what circumstances?' The answer is, 'Always,' or '*Always* unless conditions A, B, C, occur,' but what does '*always*' mean? I am saying that a given rule of conduct, or a general frame of mind is a valuable tip about the right technique in certain circumstances, that it will *always* work. This seems a perfectly good, normal kind of general proposition. Suppose I try in its turn, to turn it into a command or rule – ('Apply rule X always'): I have to say, 'There is a rule to the effect, "Treat X as valid under all circumstances,"' but then I can always ask how long this rule about the rule, this meta-rule, will hold forth and so on. And this is a vicious regress. What is wrong is that I am quite clear that to issue a rule is one thing, and to assert that something is the case, which alone justifies the rule, is another. Rules are not made useful by the issuance of other rules, rules are made useful by the existence of certain states of affairs, things, events. So long as the events occur as they occur, the rules work well. To say that they have begun working better is to say something about the change in the state of affairs whose stability or regularity is the sole guarantee for the continued use of the rules.

(b) Another fatal defect is that we normally think that a single negative instance is sufficient to refute a general proposition – 'All S is P' is false if one instance of S is not P; 'if S then P' is false if there is a single case of the presence of S and the absence of P, and so on. But this does not apply to rules. If I say, 'Treat all Zulus as homicidal,' and a given Zulu behaves in a mild and humane fashion, this does not make the *rule false* – rules are not true or false – but merely not wholly reliable. I record the fact that it did not work in one or two instances, but may go on using it if it works on the whole. It weakens my faith in the rule, that is all – I go on wearing an overcoat described as rainproof although it may have let through the water during a particularly fierce downpour – I become slightly more sceptical about the reliability of the label 'Rainproof', that is all. And this may be the case with scientific theories in general which I may continue to cling to despite one or two failures; but my faith in the raincoat or in the theory, although it may be called well grounded or ill considered, fruitful or sterile, cannot be called in the ordinary sense *true* or *false*. But it seems quite clear that a general proposition – say, 'All swans are white' is literally falsified by the discovery of one black swan; now the *rule*,

INDUCTION AND LOGIC

'Treat all swans as white,' is *weakened*, rendered less dependable, and when I ask the reason, it is because the proposition, 'Swans are white,' is not universally true, i.e. the general proposition, 'All Swans are white,' is false. One instance is enough to falsify a general proposition – but more than one as a rule to knock out a rule of action: the falsity of a general proposition does not *entail* let alone *mean* the uselessness or poor results of a rule.

(c) So long as I am dealing with practical life, the substitution of rules for general propositions may seem moderately plausible, but it becomes less and less so as the subject has less and less to do with practice: 'All pre-Semitic vocabularies found on tablets near Baghdad are cuneiform,' is supposed to mean, 'Expect, when looking for pre-Semitic writings, cuneiform.' I say, 'Why should I?' I am told, 'Because you will do well. You will achieve your purpose.' But what is my purpose? Presumably to find out what happened, i.e., to discover the truth. Unless all pre-Semitic writing is, in fact, in cuneiform script, obedience to the rule will not satisfy me; The truth of the general proposition – all pre-Semitic [vocabularies found on tablets near Baghdad] – is cuneiform – may be entailed by the proposition that the rule is infallibly useful but does not entail it – it may be true that cuneiform was so used, but this may give me no satisfaction, may not be useful. In the case of the Zulus, if I am asked, 'Why treat them in this or that way?' the answer is 'to gain what you want from them' or 'to save your skin' or the like, and there is then a perceptible distinction between practical purposes and the disinterested search for the truth. If my interest consists in the search for the truth for its own sake, nothing is gained and something is slurred over, by identifying the truth of the propositions in which I am interested with my success in acting upon them. The very fact that I distinguish between practical interest and a disinterested desire to know what is true, makes this difference. This is really stated by the old argument against pragmatism: crude pragmatism used to say X is 'true' equals 'it is useful to believe X,'; but it was correctly said against this that sometimes it was useful to believe falsehoods: only not useful to those who sought the truth: therefore true not = useful.

Ramsey's motive for wanting to say all this is partly a sound feeling that there *is* a great gulf between categorical and hypothetical propositions; since the first seems somehow to assert what was, is or will be, whereas the second does not, a feeling that the categoricals invite us to look for something in the world which

INDUCTION AND LOGIC

they purport to describe, whereas hypotheticals only suggest what might or would be, the logical force of these words being that nothing corresponding to them *is* asserted to be part of the real world. But also Ramsey's view springs from an unsound view of meaning as corresponding to atomic facts, hard bits of word stuff, which means that propositions which do not so correspond – general and hypothetical ones, for example – are a funny way of behaving towards these atomic facts, i.e. not of asserting them, but of relying on them, or doing something to them, or behaving towards them, or using them in some way.

It is time to come to a general conclusion. We have now dealt with the main types of theories founded on the correspondence theory of meaning which seems the most *prima facie* plausible one to Common Sense – the two great roads, both of which start from the assumption that if the proposition does not correspond as categoricals correspond, something is wrong either with the proposition or with the entities – which leads either to the manufacture of artificial entities to correspond to non-categorical propositions or to the expulsion of non-categorical propositions from the class of descriptive or declarative sentences. Both these methods end in similar bankruptcy. The artificial entities betray the fact that they are manufactured. On inspection, they are clearly seen not to exist and to lead not merely to mythology but to literal nonsense if assumed to do so. As for the branding of hypotheticals as non-descriptive, this seems to force us to say that we do *not* mean what in fact we know quite well that we *do* mean – we are describing something, but are told that we are issuing rules or giving tips to practical persons in search of a nostrum. One can only refute this by appealing to direct experience – when we say that all swans are green, we are saying something false in the ordinary sense of falseness, and not merely recommending a not-very-useful course of behaviour. What then are we to say about the nature of meaning where a problem seems to exist, since the only two apparently possible methods have led to an impasse. It is at this point that perhaps we begin to see that an unanswerable question is perhaps wrongly posed. It obviously cannot be the case either that the so-called facts on the one hand, or that the verbal expressions applied to them on the other, require suitable torture if a given theory is to be proved right. (Dr Popper on the a priori and 'carrying through'. Any theory, however dogmatic, can be 'carried through' if we are willing to swallow enough unpalatable

INDUCTION AND LOGIC

interpretation.) What mistake, then, have we committed? Surely the answer is this, that, as so often in the history and the science of philosophy, we have done the one unforgivable thing. We have taken the part for the whole, *pars pro toto*, and we have – a more venial offence, but distorting – assumed the world to be simpler than it is. The root fallacy is the representative theory of meaning, with the resultant selection of certain propositions and the attempts to *reduce* all other types of sentence to this. Now, it is perfectly true that *some* symbols do, in a sense, directly represent; *some* symbols may be said to perform a kind of ostensive or pointing function. ‘This book is coloured red,’ does, in a kind of way, point. Its meaning can only be explained – I mean if someone asks² – partly by an act of direct pointing in space, partly by a reference to the memory of our previous use of the term ‘red’, of the term ‘book’ etc., which is also a kind of direct memory acquaintance, if you like, a kind of mental pointing; but because some symbols only mean in the sense that they point, why should it follow that all symbols must be so defined? And because some meaningless expressions can be shown to be meaningless because there is nothing for them to point to, why should it follow that all meaning presupposes, as a necessary condition, some sort of pointing?

There are *two* problems before us, one a pseudo-problem which can, in principle, have no answer, the other a serious question to which there *is*, in principle, an answer, obscured by the assumption that the first problem was the genuine and central question. The pseudo-problem is this: How do all symbols mean? What is the function or process or activity in general called meaning? With what instruments is it carried on and how are the instruments used? This question is fallacious in much the same way as such questions as, ‘Where do trains in general go? What do all tools do? Where do all roads lead?’ Why cannot we answer the question, ‘What do all tools do?’ You can answer the question about a given tool; anybody can tell you how a chisel or an airplane or a seismograph is used, but this will lead you no nearer the answer to, ‘What do tools in general do?’ You will only get something like, ‘Tools are used by people to make things or get things done, or in

² Explain difference between meaningful use of symbols and explanation of *what* or under what conditions they mean. I’m not sure precisely where this belongs. JC

INDUCTION AND LOGIC

general for whatever purpose they are designed.’ How much light does this throw? It is like calling something an ‘object’. What qualities does a thing need to be an ‘object’? The fallacy is of the same kind as that contained in, ‘What is the purpose of everything?’ or ‘What is an entity?’ To call some thing an entity, or even a tool is not to indicate what precise function it performs, and to call something a word is equally not to explain how it means, if it means at all. It is not enough to say, as Mr Ayer correctly enough says in his inaugural London lecture, that meaning is intransitive, has no object, has no internal accusative, because this, although true, leaves us still frustrated. When I say, ‘This is red,’ and there is something red there, it does seem as if there is such an accusative, as if the words do directly point at something. Admittedly, this breaks down when the proposition is false. Hence it cannot be a satisfactory answer. Still, merely to say that meaning is meaning, that we must not ask how all words mean because they all mean differently, as different tools do different things, and are described in terms of what specifically they do, that different trains go in different directions – that is true enough but does not seem enough. The word ‘meaning’ must itself have a meaning to differentiate it from hearing or musing or despising. It seems too easy a way out simply to say that words mean as they mean, that hypotheticals mean hypothetically, imperatives mean imperatively and so forth. And yet, the answer is true, and nothing more exciting or compendious can ultimately be produced to satisfy our desire for a neat, general solution, but it must be explained before it can be accepted.

The point is this. Take the troublemaking hypotheticals in search of an object to mean; we ask what does it mean to say, ‘If I hear the clock strike one, I shall leave the room?’ First, I think of situations of which I apply the words, ‘I hear the clock strike one’ and that, if you like, is done by a kind of direct pointing. Then I think of situations which I describe by saying, ‘I leave the room’, also by a kind of pointing. So far, so good. But then, I still have to understand the ‘if’ sentence. It is true even if either limb is false. I must therefore ask, ‘What do I mean when I say, “I shall *not* hear the clock strike one” or “I shall *not* leave the room”?’ for the hypothetical proposition leaves these possibilities open. Now, if I say to myself, ‘What kind of hearing of the clock striking one is the not hearing of it striking one, what kind of leaving the room is the *not* leaving the room?’ I have made the question impossible for

INDUCTION AND LOGIC

myself to answer. It is an immediate mystery. If I say that the ultimate bricks out of which experience and meaning are composed are such positive events as hearing strokes or leaving rooms, and because that is all that exists – that is all that words can mean, negative propositions will become impossible to assert. I must get out of this difficulty by cutting the knot. I must say, ‘But I do mean something, and quite naturally, when I use negative expressions; they are not in the least obscure.’ Supposing I begin my analysis not with positive sentences but with negatives. Supposing I asked what happens when I meaningfully say, ‘I shall not hear the clock strike one?’ How would I teach a child the meaning of such a phrase? After all, children do not appear to experience metaphysical perplexity when they learn the use of negative terms, and I discover that I can give you instructions about how to use negatives with no greater difficulty than about how to use positives. How I do it does not matter so very much. Let us say that I draw a circle and put one dot inside it and one outside it and use the word ‘not’ to describe the relation of the outside dot to the inside of the circle; or I may use some other method. At any rate, at a certain stage of the child’s education, it gathers from experience under what circumstances it is proper to say ‘not’ and under what circumstances it is not to say ‘not’. To say of this, ‘But surely, the situation in which the use of “not” is valid, to which the “not-expression” applies, must itself be positive, a something or other, not a non-something or other, hence negative sentences describe positive entities and there must be such things as objects or entities to correspond to negative propositions, entities to correspond to hypothetical propositions, etc., which is what is so puzzling’ – that is a fearful muddle. The sense in which philosophers say that a sentence, if it is to mean anything, must be applicable to *some* situation – and all situations are positive – is purely tautological. For if all expressions have meaning only in so far as they refer or mean or have some relation to something and not nothing, the somethings to which they refer are not distinguishable from anything. If a positive proposition differs from a negative proposition in any way, then to say that a negative proposition is insofar as it is meaningful also *positive* in some sense, is to use the word positive, in two senses, a narrow and a wide. The word ‘positive’ in the narrow sense is contrasted with ‘negative’. But in the wider sense, any meaningful sentence, since it refers to *some* situation, is called in *that* sense positive: but in this

INDUCTION AND LOGIC

sense positive is contrasted with nothing, for in *this* sense, negative propositions are positive too. We are no forwarder. If all meaningful expressions are positive, and they all mean something, then 'positive' and 'something' have lost their meaning, for they are distinguished from nothing. We must go back, therefore, and ask what *does* distinguish a negative from an affirmative expression, or a hypothetical from a categorical. And there will be no general answer except that I can always explain how the expressions are used. I can always explain, that is, that, 'This is red' is used only when such and such a colour is present, by pointing to a good many resembling patches of colour and explaining that I call this kind of resemblance 'red'. And I can then produce colours that do not resemble the previous collection and teach you to say, 'This is not red,' when anything resembling the second set appears. And so on. Nobody but a philosopher would, at this stage, say, 'But I only understand what "red" means; "not-red" surely does not exist in its own right? All that exists for me so far is "red". Therefore, "not red" must be a kind of "red", at least a kind of colour, if it is to be anything. But that is absurd. So there is a problem.' The non-philosopher learns how to use 'red' and 'not red', 'here' and 'not here', 'there is' and 'there is not' in the same initial go, so to speak. The difficulty created by saying we know, are acquainted with, entities, but we have no acquaintance with non-entities, is due to philosophical superstition which says that all meaning must be pointing and that negative sentences do not point. *Why* should all meaning be pointing? Some is and some is not, and when it is not, it is not, and none the worse for that.

One of the cardinal axioms from which we start is that words classify or discriminate, that if they did not do that, they could never be used more than once, they would not be words. But if *all* words pointed, this cannot be. I can only explain how the words 'here' or 'red' are used by contrasting 'not here' and 'not red', 'not now' in terms of 'now'. But if I cannot define 'not now' in terms of 'now', if the chasm is unbridgeable, how do I ever come to be on one bank of it, since to say of a word that it is a word is precisely to say that it is the edge of a chasm of which there is another edge? 'Not here', 'not now', are concepts just as primitive as 'here' and 'now'. The mystery about them is only a mystery because we start with the primacy of 'here' and 'now' because we think we can point to them, but not to 'not here' and 'not now' – and all it shows is that pointing is not enough (Note on the

INDUCTION AND LOGIC

tortures with the ‘specious present’.) Indeed, pointing would be impossible if it did not select what was being pointed at from what was not being pointed at, but had to exist, if pointing, i.e. the meaning achieved by pointing, was to occur at all; the proposition that here and not here are complementary is analytic, not synthetic: it explains what we mean by general terms, words which refer to things or events or characteristics; *omnis determinatio est negatio* is an illuminating analytic proposition: another way of putting it would be: when the conditions under which it is proper to say that a thing is X are the conditions under which it is proper to say a thing is not-Y, X entails not-Y, and Y entails not-X.

And this is beginning to throw, I hope, some light on the situation. A sentence is meaningful when you understand it, and to understand it is to understand what the circumstances are under which it is proper to use the expression. Of course ‘understanding’ is as wide as ‘meaning’. It is ambiguous. I might wish[?] to reject[?] [it] like all useful words. He understands people, he has a deep understanding of politics, he understands the use of symbolism, he understands Greek, he understands me, and he understands this proposition, are all different. Take hypotheticals now, for example. It is plain from the very beginning that I cannot carve out what a hypothetical means out of what categoricals mean because that robs hypotheticals of precisely that which makes them hypothetical. If you ask me what kind of categorical is hypothetical, the absurdity comes out at once. But if a hypothetical is no kind of categorical because it is a hypothetical, but only categoricals really mean, then hypotheticals don’t mean, which is absurd. But if you ask me the far more intelligent question, ‘Is there something about hypotheticals which makes them mean in a different way from categoricals and can I say more about it than that they mean in the way in which hypotheticals mean and not in the way categoricals mean?’ then perhaps I could help you, for you are now asking me not, ‘Where do all trains go?’ or ‘Do all French trains go along the same routes as British trains, only in a French sort of way?’ Now you are asking me, ‘Is there anything that hypothetical propositions do that categoricals do not, and vice versa?’ And I say, ‘Yes. Categoricals, as a rule, that is, quite often but by no means always, tend to refer to something which has been or is or will be the case in the world, tend to describe actual events or things or characteristics. At least the existential ones do, whereas hypotheticals, because they say “if” or “provided” don’t

INDUCTION AND LOGIC

do that. They don't suggest that what they are asserting exists, has existed or will exist.' And then you say, 'Oh, but if what hypotheticals assert doesn't exist, what is it?' And now you are slipping back into the fallacy again of saying, 'If it doesn't exist, what sort of existent is it?' Since the question, 'What is it?' is an existential question, if you don't mean it existentially, what are you asking for? You are saying hypothetical propositions don't point as existential propositions do, yet meaning *is* pointing, so what *do* they point to? Until you stop asking this, you will get no satisfactory answer. What you must ask is not, 'What do hypotheticals point to?' but 'Under what circumstance is it proper to assert them? What are the situations which make them intelligible? In short, when do we use them and why? To whom, for what purpose, expecting what? With what evidence?' If I say, 'If Hitler had invaded England in 1940, he would have been repelled,' I cannot ask what *event* this points to because, *ex hypothesi*, the event did not occur, yet the meaning of the sentence is quite plain: we know how to use 'would have' and 'might have' although no pointing occurs: we can collect evidence for unfulfilled hypotheticals. We can consider it proper or improper, deduce its implications, examine its logical relations with general propositions which, in their turn, do not point at events and so on. An expression means when someone understands it. We say that sentences are meaningful in general when the average person in the society which uses the language can understand it or that it has a private meaning for X or Y when only X or Y can understand it. What is understanding? That is a very difficult question and it brings in too many psycho-physical conditions, relates to hypothetical behaviour, dispositions to act in certain ways, the presence of feelings, emotions etc., but the core of 'understanding' perhaps is not as dark as all that. Mr Hume and Mr Hampshire ('Facts, Propositions and Signs', Aristotelian Society, 1939) come near the truth when they say that to understand is to be able to imagine the situation which would falsify or verify a set of symbols, and 'falsify' and 'verify' here mean: such that if the situation occurred, those would be the symbols which would normally be considered to describe it adequately; and 'describe' would mean 'cause someone to recognise the situation for what it was, be aware of its characteristics in the way that we describe as knowledge'. But this is not enough, because 'imagine' is a treacherous word. I cannot *imagine* a million-sided figure but I

INDUCTION AND LOGIC

understand what the expression means; I cannot imagine a general fact, yet I know what a general term means. I can imagine what some hypothetical propositions refer to, but it is not my capacity for imagining it that makes them meaningful for me, because I can always say, 'Your description of the effects of the next war are literally beyond anything that I can imagine'; and I would not say that if I did not understand your meaning only too well. But neither will Mr Ayer attempt to say that understanding is a capacity to behave in a certain way, quite do either: in a way, I understand what is meant when I am told that to understand a sentence, an expression, a human character, or a scientific theory, is to be able to behave appropriately in the circumstances to which the expression or the theory refer. This makes understanding symbols referring to X identical with one's disposition to behave in this or that way if the X like situation occurs. This will not do because it is too behaviouristic: the calculating prodigy would behave *appropriately* to whatever mathematical problem you set him, but you would not say that he understands mathematics, or knows what the calculus is or *means*; animals, in that sense, understand more accurately than human beings. Yet to understand a scientific theory is more than to be able to apply it correctly, for this can be done without any understanding of what the theory is, like the man who talked prose without knowing it. Talking prose is one thing, understanding what prose is, is another. You can be a scientist of genius and unaware of what you are practising. I can only tentatively advance a suggestion of my own, namely, that understanding is *not* capacity to form images or form conceptions or liability to act in certain ways, but it is rather more a capacity to *recognise* the appropriate situation to which the word refers when it occurs. You all know the familiar conundrum about remembering forgotten names: I am trying to remember a name which I once knew. I am told, 'How can you? For either you know it already, in which case, what are you trying to remember? Or you do not know it, in which case, how would you know that it is the right name if you do remember it?' Nevertheless, this is plainly a sophism, and what we mean by saying that we can successfully wrack our memories is that there *is* a kind of click of verification – when the name appears, we say 'Ah, yes, that is it.' That is what I mean by recognition. We understand a sentence when we have a sense of the direction of it, so to speak, when we are able to give an answer, if we are asked, 'Would you recognise a situation, if it occurred, to

INDUCTION AND LOGIC

which this set of words is more appropriate than some other?' And say how you *would* recognise. And the forms which this recognition takes are as various and as vague or precise as the many possible kinds of intelligible groups of symbols. Hypotheticals and negatives, disjunctions and conjunctions, false and true, future and past, imperative and subjunctive, they all mean if, and only if, we are able to recognise the circumstances which they fit as well as those which they do not fit. No fixed criterion can, of course, be given between meaning and nonsense, because no criterion can be given for the kinds of recognition since obviously these are too many and too various and literally too inexhaustible to be capable of being listed. In principle, how can we legislate about this in advance? To say that a proposition in pure mathematics *means* is to say that there are substitutable for it other mathematical formulae. When this can be done, we recognise the situation under which it is proper to say, 'It is true', or 'It is false,' or 'It is demonstrated in mathematics.' But this will not do for material object language. Mere substitutability of two Chinese expressions means nothing to me who do[es] not know what either of them refers to in experience. If I am puzzled by the meaning of a hypothetical sentence, knowing it to be hypothetical, nobody can produce the fact in the past or present or future but I can nevertheless understand the hypothetical by being faced with certain types of situation to which they apply. And, by contrast, if I am puzzled about the meaning of a statement about the world, no amount of instruction about what words analyse into what other words, or the laws or general propositions of a game, or a scientific theory, will illuminate me. To each kind of proposition, its appropriate context, i.e., capacity for recognising situations in which the words to be explained apply or fail to apply, and this notion of recognition appears to me ultimate.

This may seem acutely disappointing and flat as an answer – we understand symbols when we can recognise the circumstances which the symbols are intended to make us recognise – yet consider to what fallacies simpler 'representation' views have led us. (1) The prisoner in the cave[,] solipsism, cocoon-like substance, the miracle of communication, the problem of how we know anything. (2) The reduction of everything to favoured propositions, empiricists choosing singular categoricals, idealists, general necessary propositions, each torturing the favoured propositions of the other. (3) Fatal quest for security, desire for

INDUCTION AND LOGIC

infallible criteria of sense and non-sense, verifiability too narrow for it leaves out general and hypothetical propositions, falsifiability equally leaves out hypotheticals – to say understanding is understanding and is unique is too wide because those who do talk nonsense profess to understand what they mean – recognition is a better word because it suggests an empirical test, namely, similarity to situations which occur in experience of which we say, ‘Yes, that is it, that is what we meant’, ‘all’, ‘not’, ‘if’ sentences mean as they mean – and how *could* they mean in the way that symbols meant to function in a way very unlike them, mean. If all meaning were pointing, how could I ever refer to something not here, not now etc.? but I *do*. *Why* is this a mystery? Only so if I have an a priori view that meaning *must* be pointing: but *why*?

© *The Isaiah Berlin Literary Trust 2005*

Posted 26 November 2005