Mysticism and logic

Bertrand RUSSELL
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éd° double day anchor
recueil de dix textes écrits en 1901-1902 et 1910-1915

1-31 Mysticism and logic

(*Hibbert Journal*, July **1914**)

12-13 INSTINCT & RAISON

Instinct, intuition, or insight is what first leads to the beliefs which subsequent reason confirms or confutes; but the confirmation, where it is possible, consists, in the last analysis, of agreement with other beliefs no less instictive. Reason is a harmonizing, controlling force rather than a creative one. Even in the most purely logical realm, it is insight that first arrives at what is new.

[…] Instinct, like all human faculties, is liable to error. […] a wrong impresion may be given by reserve or flattery; and in matters less directly practical, such as philosophy deals with, very strong instincitve beliefs are sometimes wholly mistaken, as we may come to know through their perceived inconsistency with other equally strong beliefs. It is such considerations that necessitate the harmonising mediation of reason, which tests our beliefs by their mutual compatibility, and examines, in doubtful cases, the possible sources of error on the one side and on the other. In this there is no opposition to instinct as a whole, but only to blind reliance upon some one interesting aspect of instict to the exclusion of other more commonplace but not less trustworthy aspects. It is such one-sidedness, not instinct itself, that reason aims at correcting.

17 RAISON & RELIGILON

In advocating the scientific restraint and balance, as against the self-assertition of a confident reliance upon intuition, we are only urging, in the sphere of knowledege, that largeness of contemplation, that impersonal disinterestedness, and that freedom from practical preoccupations which have been inculcated by all the great religions in the world. Thus our conclusion, however it may conflict with the explicit beliefs of many mystics, is in essence, not contrary to the spirit which inspires those beliefs, but rather the outcome of this very spirit as applied in the realm of thought.

23 PENSÉE = INSTANTANÉE IMAGINAIRE DU FLOT DE LA VIE

Life, in [the "philosophy" of evolution], is a continuous stream, in which all divisions are artificial and unreal. Separate things, beginnings and endings, are mere convenient fictions: there is only one smooth unbroken transition. The beliefs of to-day may count as true to-day, if they carry us along the stream; but to-morrow they will be false, and must be replaced by new beliefs to meet the new situation. All our thinking consists of convenient fictions, imaginary congealings of the stream: reality flows on in spite of all our fictions, and though it can be lived, it cannot be conceived in thought. […] Logic, mathematics, physics, disappear in this philosophy, becase they are too "static"

24 PHILOSOPHIE, VÉRITÉ, HOMME DE SCIENCE

if philosophy is to attain truth, it is necessary first and foremost that philosophers should acquire the disintersted intellectual curiosity which caracterises the genuine man of science.

30 ÉTHIQUE SCIENTIFIQUE

The submission which religion inculcates in action is essentailly the same in spirit as that which science teaches in thought; and the ethical neutrality by which its victories have been achieved is the outcome of that submission.

The good which it concerns us to remember is the good which it lies in our power to create–the good in our own lives and in our attitude towards the world. Insistence on belief in an external realisation of the good is a form of self-assertion, which, while it cannot secure the external good which it desires, can seriously impair the inward good which lies within our power, and destroy that reverence towards fact which constitutes both what is valuable in humility and what is fruitful in the scientific temper.

32-43 The Place of Science in a Liberal Education

(*The New Statesman*, May 24 & 31 **1913**)

34 TROP DE PASSÉ TUE L'AVENIR

One defect […] does seem inherent in a purely classical education–namely, a too exclusive emphasis on the past. By the study of what is absolutely ended and can never be renewed, a habit of criticism towards the present and the future is engendered. The qualities in which the present excels are qualities to which the study of the past does not direct attention, and to which, therefore, the student of Greek civilisation may easily become blind. In what is new and growing there is apt to be something crude, insolent, event a little vulgar, which is shocking to the man of sensitive taste; quivering from the rough contact, he retires to the trim gardens of a polished past, forgetting that they were reclaimed from the wilderness by men as rough and earth-soiled as those from who he shrinks in his own day. The habit of being unable to recognise a merit until it is dead is too apt to be the result of a purely bookish life, and a culture based wholly on the past will seldom be able to pierce through everyday surroundings to the essential splendour of contemporary things, or to the hope of still greater splendour in the future.

36 DÉSIRS, SAGESSE, ÉDUCATION

although nature must supply the initial force of desire, nature is not, in the civilsed man, the spasmodic, fragmentary, and yet violent set of impulses that it is in the savage. Each impulse has its constitutional ministry of thought and knowledge and reflection, through which possible conflicts of impulses are foreseen, and temporary impulses are controlled by the unifying impulse which may be called wisdom. In this way education destroys the crudity of instinct, and increases through knowldege the wealth and variety of the individual's contacts with the outside world, making him no longer an isolated fighting unit, but a citizen of the universe, embracing distant countries, remote regions of space, and vast stretches of past and future within the circle of his interests. It is this simultaneous softening in the insistence of desire and enlargement of its scope that is the chief moral end of education.

42 ATTITUDE SCIENTIFIQUE

Philosophers and the public imagine that the scientific spirit must pervade pages that bristle with allusions to ions, germ-plasms, and the eyes of shell-fish. But as the devil can quote Scripture, so the philosopher can quote science. The scientific spirit is not an affair of quotation, of externally acquired information, any more than manners are an affair of the etiquette-book. The scientific attitude of mind involves a sweeping away of all other desires in the interests of the desire to know–it involves suppresion of hopes and fears, loves and hates, and the whoe subjective emotional life, until we become subdued to the material, able to see it frankly, without preconceptions, without bias, without any wish except to see it as it is, and without any belief that what it is must be determined by some relation, positive or negative, to what we should like it to be, or to what we can easily imagine it to be.

44-54 A Free Man's Worship

(written **1902**, *Independent Review*, 1903)

55-69 The Study of Mathematics

(written **1902**, *New Quaterly*, Nov. 1907)

55-56 L'enseignant ne doit pas oublier son but :

it is well to be reminded that not the mere fact of living is to be desired, but the art of living in the contemplation of great things. […] it is necessary to keep alive a knowldege of [the aims of those advocations], a clear prefiguring vision of the temple in which creative imagination is to be embodied.

The fulfilment of this need, in what concerns the studies forming the material upon which custom has decided to train the youthful mind, is indeed sadly remote–so remote as to make the mere statement of such a claim appear preposterous. Great men, fully alive to the beauty of the contemplations to whose service their lives are devoted, desiring that others may share in their joys, persuade mankind to impart to the successive generations the mechanical knowledge without which it is impossible to cross the threshold. Dry pedants possess themselves to the privilege of instilling this knowledge: they forget that is it to serve but a key to open the doors of the temple; though they spend their lives on the steps leading up to those sacred doors, they turn their backs upon the temple so resolutely that its very existence is forgotten, and the eager youth, who would press forward to be initiated to its domes and arches, is bidden to turn back and count the steps.

57-58 Beauté pure, froide, transcendant le réel

Mathematics, rightly viewed, possesses not only truth, but supreme beauty–a beauty cold and austere, like that of sculpture, without appeal to any part of our weaker nature, without the gorgeous trappings of painting or music, yet sublimely pure, and capable of a stern perfection such as only the greatest art can show. The true spirit of delight, the exaltation, the sense of being more than man, which is the touchstone of the highest excellence, is to be found in mathematics as surely as in poetry. […] Real life is, to most men, a long second-best, a perpetual compromise between the ideal and the possible; but the world of pure reason knows no compromise, no practical limitations, no barrier to the creative activity embodying in splendid edifices the passionate aspiration after the perfect from which all great work springs. Remote from human passions, remote even from the pitiful facts of nature, the generations have gradually created an ordered cosmos, where pure thought can dwell as in its natural home, and where one, at least, of our nobler impulses can escape from the dreary exile of the actual world.

58-60 Enseigner les maths : initier ?

How should the teaching of mathematics be conducted so as to communicate to the learner as much as possible of this high ideal? Here experience must, in a great measure, be our guide; but some maxims may result from our consideration of the ultimate purpose to be achieved.

One of the chief ends served by mathematics, when rightly taught, is to awaken the learner's belief in reason, his confidence in the truth of what has been demonstrated, and in the value of demonstration. This purpose is not served by existing instruction; but it is easy to see ways in which it might be served. At present, in what concerns arithmetic, the boy or girl is given a set of rules, which present themselves as neither true nor false, but as merely the will of the teacher, the way in which, for some unfathomable reason, the teacher prefers to have the game played. To some degree, in a study of such definite, practical utility, this is no doubt unavoidable; but as soon as possible, the reasons of rules should be set forth by whatever means most readily appeal to the childish mind. In geometry, instead of the tedious apparatus of fallacious proofs for obvious truisms which constitutes the beginning of Euclid, the learner should be allowed at first to assume the truth of everything obvious, and should be instructed in the demonstrations of theorems which are at once startling and easily verifiable by actual drawing, such as as those in which it is shown that three or more lines meet in a point. In this way, belief is generated; it is seen that reasoning may lead to startling conclusions, which nevertheless the facts will verify, and thus the instictinve distrust of whatever is abstract or rational is gradually overcome. Where theorems are difficult, they should be first taught as exercises in geometrical drawing, until the figure has become thoroughly familiar; it will then be an agreeable advance to be taught the logical connections of the various lines or circles that occur. It is desirable also that the figure illustrating a theorem should be drawn in all possible cases and shapes, that so [*sic*] the abstract relations with which geometry is concerned may of themselves emerge as the residue of similarity amid such great apparent diversity. In this way the abstract demonstrations should form but a small part of the instruction, and should be given when, by familiarity with concrete illustrations, they have come to be felt as the natural embodiment of visible fact. In this early stage proofs should not be given with pedantic fullness; definitely fallacious methods, such as that of superposition, should be rigidly excluded from the first, but where, without such methods, the proof would be very difficult, the result should be rendered acceptable by arguments and illustrations which are explicitely contrasted with demonstrations.

In the beginning of algebra, even the most intelligent child finds, as a rule, very great difficulty. The use of letters is a mystery, which seems to have no purpose except mystification. It is almost impossible, at first, not to think that every letter stands for some particular number, if only the teacher would reveal *what* number number it stands for. The fact is, that in algebra the mind is first taught to consider general truths, truths which are not asserted to hold only of this or that particular thing, but of any one of a whole group of things. It is in the power of understanding and discovering such truths that the mastery of the intellect over the whole world of things actual and possible resides; and ability to deal with the general as such is one of the gifts that mathematical education should bestow.

61-62 SERVIR À L'ESPRIT VIERGE DE L'EAU FRAÎCHE & CLAIRE, PAS LES NOTIONS MARÉCAGEAUSES D'ANTAN

By those who were educated on the old lines, the new work is considered to be appallingly difficult, abstruse and obscure, and it must be confessed that the discoverer, as is so often the case, has hardly himself emerged from the mists which the light of his intellect is dispelling. But inherently, the new doctrine of the infinite, to all candid and inquiring minds, has facilitated the mastery of higher mathematics; for hitherto, it has been necessary to learn, by a long process of sophistication, to give assent to arguments which, on first acquaintance, were rightly judged to be confused and erroneous. So far from producing a fearless belief in reason, a bold rejection of whatever failed to fulfil the strictest requirements of logic, a mathematical training, during the past two centuries, encouraged the belief that many things, which a rigid inquiry would reject as fallacious, must yet be accepted because they work in what the mathematician calls “practice”. By this means, a timid, compromising spirit, or else a sacerdotal belief in mysteries not intelligible to the profane, has been bred where reason alone should have ruled. All this it is now time to sweep away; let those who wish to penetrate into the arcana of mathematics be taught at once the true theory in all its logical purity, and in the concatenation established by the very essence of the entities concerned.

If we are considering mathematics as an and in itself, and not as a technical training for engineers, it is very desirable to preserve the purity and strictness of its reasoning. Accordingly those who have attained a sufficient familiarity with its easier portions should be led backward from propositions to which they have assented as self-evident to more and more fundamental principles from which what has previously appeared as premises can be deduced. They should be taught–what the theory of infinity very aptly illustrates–that many propositions seem self-evident to the untrained mind, which, nevertheless, a nearer scrutiny shows to be false. By this means they will be led to a sceptical inquiry into first principles, an examination of the foundations upon which the whole edifice of reasoning is built, or, to take perhaps a more fitting metaphor, the great trunk from which the spreading branches spring. At this state, it is well to study afresh the elementary portions of mathematics, asking no longer merely whether a given propositions is true, but alos how it grows out of the central principles of logic. Questions of this nature can now be answered with a precision and certainty which were formelry quite impossible; and in the chains of reasoning that the answer requires the unity of all mathematical studies at last unfolds itself.

63 NE PAS CASSER L'ÉLAN MATHÉMATIQUE, LE FONDER SUR DES PRINCIPES ESSENTIELS

in the greatest works, unity and inevitability are felt as in the unfolding of a drama; in the premisses a subject is proposed for consideration, and in every subsequent step some definite advance is made towards mastery of its nature. The love of system, of interconnection, which is perhaps the inmost essence of the intellectual impulse, can find free play in mathematics as nowhere else. The learner who feels this impulse must not be repelled by an array of meaningless examples or distracted by amusing oddties, but must be encouraged to dwell upon central principles, to become familiar with the structre of the various subjects which are put before him, to traval easily over the steps of the more important deductions. In this way a good tone of mind is cultivated, and selective attention is taught to dwell by preference upon what is weighty and essential.

67 OBJET SYNTAXIQUE

Whenever proofs depend upon some only of the marks by which we define the object to be studied, these marks should be isolated and investigated on their own account.

69 CULTIVER L'ESPRIT À TRAVERS TOUTE ÉTUDE

Every great study is not only an end in itself, but also a means of creating and sustaining a lofty habit of mind; and this purpose should be kept always in view throughout the teaching and learning of mathematics.

70-92 Mathematics and the Metaphysicians

(written **1901**, *The international Monthly* ("Recent Work in the Philosophy of Mathematics"))

71 INDÉFINISSABLES & IMPROUVABLES

mathematics may be defined as the subject in which we never know what we are talking about, nor whether what we are saying is true.

73 SYMBOLISME : RELIER LES ÉVIDENCES PAR DES PREUVES

It is not easy for the lay mind to realise the importance of symbolism in discussing the foundations of mathematics, and the explantation may perhaps seem strangely paradoxical. The fact is that symbolism is useful because it makes things difficult. (This is not true of the avanced parts of mathematics, but only of the beginnings.) What we wish to know is, what can be deduced from what. Now, in the beginnings, everything is self-evident; and it is very hard too see whether one self-evident proposition follows from another or not. Obviousness is always the enemy to correctness. Hence we invent some new and difficult symbolism, in which nothing seems obvious. Then we set up certain rules for operating on the symbols, and the whole thing becomes mechanical. In this way we find out what must be taken as premiss and whan can be demonstrated or defined. For instance, the whole of Arithmetic and Algebra has been shown to require three indefinable notions and five indemonstrable propositions. But without a symbolism it would have been very hard to find this out. It is so obvious that two and two are four, that we can hardly make ourselves sufficiently sceptical to doubt whether it can be proved. And the same holds in other cases where self-evident things are to be proved.

73-74 PREUVES & ÉVIDENCE

since people have tried to prove obvious propositions, they have found that many of them are false. Self-evidence is often a mere will-o'-the-wisp, which is sure to lead us astray if we take it as our guide. For instance, nothing is plainer than that a whole always has more terms than a part, or that a number is increased by adding one to it. But these propositions are now known to be usually false. Most numbers are infinite, and if a number is infinite you may add ones to it as long as you like without disturbing it in the least. One of the merits of a proof is that, it instils a certain doubt as to the result proved; and when what is obvious can be proved in some cases, but not in others, it becomes possible to suppose that in these other cases it is false.

87-88 MYTHE DE LA RÉALITÉ GÉOMÉTRIQUE : LIEN MATHS-SCIENCE

It was formerly supposed that Geometry was the study of the nature of the space in which we live, and accordingly it was urged, by those who held that what exists can only be known empirically, that Geometry should really be regarded as belonging to applied mathematics. But it has gradually appeared, by the increase of non-Euclidian systems, that **Geometry throws no more light upon the nature of space than Arithmetic throws upon the population of the United States**. Geometry is a whole collection of deductive sciences based on a corresponding collection of sets of axioms. One set of axioms is Euclid's; other equally good sets of axioms lead to other results. **Whether Euclid's axioms are true, is a question as to which the pure mathematician is indifferent**; and, what is more, it is a question which it is theoretically impossible to answer with certainty in the affirmative. It might possibly be shown, by very careful measurements, that Euclid's axioms are false; but no measurements could ever assure us (owing to the errors of observation) that they are exactly trye. Thus **the geometer leaves to the man of science to decide**, as best he may, **what axioms are most nearly true in the actual world**. The geometer takes any set of axioms that seem interesting, and deduces their consequences.

93-119 On Scientific Method in Philosophy

(Herbert Spencer lecture, Oxford, **1914**, pub. Clarendon Press)

120-139 The Ultimate Constituents of Matter

(*The Monist*, July **1915**)

140-173 The relation of Sense-data to Physics

(written Jan. **1914**, *Scientia*, n°4)

174-201 On the Notion of Cause

(Nov. **1912**, *Proceedings of the Aristotelian Society*, 1912-1913)

174 ILLUSION CAUSALITÉ

the business of those who wish to ascertain the ultimate truth about the world, [Dr James Ward] apparently thinks, should be the discovery of causes, yet physics never even seeks them. To me it seems that philosophy ought not to assume such legislative functions, and that the reason why physics has ceased to look for causes is that, in fact, there are no such things. The law of causality, I believe, like much that passes muster among philospoher, is a relic of a bygone age, surviving, like the monarchy, only because it is erroneously supposed to do no harm.

175-177 CAUSALITÉ *RELATIVE* : À QUOI ?

Baldwin's *Dictionary* gives the following:

"NECESSARY. That is necessary which not only is true, but would be true under all circumstances. Something more than brute compulsion is, therefore, involved in the conception; there is a general law under which the thing takes place."

[…] we should be led to the following definition:–

"NECESSARY is a predicate of a propositional function, meaning that it is true for all possible values of its argument or arguments".

Unfortunately, however, the definition in Baldwin's *Dictionary* says that what is necessary is not only "true under all circumstances" but is also "true". Now these two are incompatible. Only propositions can be "true", and only propositional functions can be "true under any circumstances." Hence the definition as it stands is non-sense. What is meant seems to be this: "A proposition is necessary when it is a value of a proppositional function which is true under all circumstances, i.e. for all values of its argument or arguments." But if we adopt this definition, the same proposition will be necessary or contingent according as we choose one or other of its terms as the argument to our propositional function. […] we thus arrive at the following definition:–

"A proposition is *necessary* with respect to a given constituent if it remains trus when that constituent is altered in any way compatible with the proposition remaining significant".

180-182 « MÊME CAUSE, MÊME EFFET » ?

an "event," in the statement of the law, is obviously intended to be something that is likely to recur since otherwise the law becomes trivial. […] An "event," then, is a universal defined sufficiently widely to admit of many particular occurences in time being instances of it.

[…]

it must, of course, be admitted that many fairly dependable regularities of sequence occur in daily life. It is these regularities that have suggested the supposed law of casuality; where they are found to fail, it is thought that a better formulation could have been found which would have never failed. I am far from denying that there may be such sequences which in fact never do fail. It may be that there will never be an exception to the rule that when a stone of more than a certain mass, moving with more than a certain velocity, comes in contact with a pane of glass of less than a certain thickness, the glass breaks. I also do not deny that the observation of such regularities, even when they are not without exceptions, is useful in the infancy of a science: the observation that insupported bodies in air usually fall was a stage on the way to the law of gravitation. What I deny is that science assumes the existence of invariable uniformities of sequence of this kind, or that it aims at discovering them. All such uniformities, as we saw, depend upon a certain vagueness in the definition of the "events." That bodies fall is a vague qualitative statement; science wishes to know how fast they fall. This depends upon the shape of the bodies and the density of the air. It is true that there is more nearly uniformity when they fall in a vaccum; so far as Galileo could observe, the uniformity is then complete. But later it appeared that even there the latitude made a difference, and the altitude. Theoretically, the position of the sun and moon must make a difference. In short, every advance in a science takes us farther away from the crude uniformties which are fisrt observed, into greater differentiation of antecent and consequent, and into a continually wider circle of antecedents recognised relevant.

The principle "same cause, same effect," which philosophers imagine to be vital to science, it therefore utterly otiose. **As soon as the antecedents have been given sufficiently fully to enable the consequent to be calculated with some exactitude, the antecedents have become so complicated that it is very unlikely they will ever recur**. Hence, if this were principle involved, science would remain utterly sterile.

186-187 HUME : PROBABILITÉ (ET NON NÉCESSITÉ)

if any such sequence has been observed in a great many cases, and has never been found to fail, there is an **inductive probability** that it will be found to hold in future cases.

[…]

the sequence, in any hitherto unobserved instance, is **no more than probable**, whereas the relation of cause and effect was upposed to be necessary.

[…]

any case of sufficiently frequent sequence will be casual in our present sense; for example, we shall not refuse to say that night is the cause of day.

187-190 / 197-198 LOIS = RELATIONS (MÊME NON FONCTIONNELLES). MÉTA-LOI = PERMANENCE DES LOIS

In the motions of mutually gravitating bodies, there is nothing that can be called a cause, and nothing that can be called an effect; **there is merely a formula**. […] There is no question of repetitions of the "same" cause producing the "same" effect; it is not in any sameness of causes and effects that **the constancy of scientific law consits**, but **in sameness of relations**.

[…]

The law makes no difference between past and future: the future "determines" the past in exactly the same sense in which the past "determines" the future. **The word "determine," here, has a purely logical significance: a certain number of variables "determine" another variable if that other variable is a function of them**.

[…]

Although the old "law of causality" is not assumed by science, something which we may call the "uniformity of nature" is assumed, or rather is accepted on inductive grounds. The uniformity of nature does not assert the trivial principle "same cause, same effect," but **the principle of the permanance of laws**. That is to say, when a law exhibiting, e.g. an acceleration as a function of the coniguration has been found to hold throughout the observable past, it is expectes that it will continue to hold in the future, or that, if it does not itself hold, there is some other law, agreeing with the supposed law as regards the past, which will hold for the future. The ground of this principle is simply **the inductive ground that it has been found to be true in very many instances**; hence the principle cannot be considered certain, but only probable to a degree which cannot be accurately estimated. [*commentaire nôtre* : ainsi la "loi des lois" posssède-t-elle le même fondement que ses filles – l'habitude]

[…]

What science does […] is to select the *simplest* formula that will fit the facts. But this, quite obviously, is merely a methodological precept, not a law of Nature. If the simplest formula ceases, after a time, to be applicable, the simplest formula that remains applicable is selected, and science has no sense that an axiom has been falsified. We are thus left with the brute fact that, in many departments of science, quite simple laws have hitherto been found to hold. This fact cannot be regarded as having any *a priori* ground

200 NÉCESSITÉ & DÉTERMINISME

The notion of *necessity*, which is often associated with determinism, is a confused notion not legitimately deducible from determinism. Three meanings are commonly confounded when necessity is spoken of:–

(α) An *action* is necessary when it will be performed however much the agent may wish to do otherwise. Determinism does no imply that actions are necessary in this sense.

(β) A *propositional function* is necessary when all its values are true. This sense is no relevant to our present discussion.

(γ) A *proposition* is necessary with respect to a given constituent when it is the value, with that constituent as argument, of a necessay propositional function, in other words, when it remains true however that constituent may be varied. In this sense, in a deterministic system, the connection of a volition with its determinants is necessary, if the time at which the determinants occur be taken as the constituent to be varied, the time-interval between the determinants and the volition being kept constant. But this sense of necessity is purely logical, and has no emotional importance.

200-201 RÉSUMÉ

We may now sum up our discussion of causality. We found first that the law of causality, as usually stated by philosophers, is false, and is not employed in sience. We then considered the nature of scientific laws, and found that, instead of stating that on event A is always followed by another event B, they stated functionnal relations between certain events at certain times, which we called determinants, and other events at earlier or later times or at the same time. We were unable to fund any *a priori* ategory involved: the existence of scientific laws appeared as purely empirical fact, not necessarily universal, except in a trivial and scientifically useless form.

202-224 Knowledge by acquaintance and Knowledge by Description

(*Proceedings of the Aristotelian Society*, **1910-1911**)

202-203 Connaissance ou présentation ?

to say that S has acquaintance with O is essentially the same thing as to say that O is presented to S. […] I prefer the word *acquaintnance* [to *presentation*] because it emphasises the need of a subject which is acquainted.

When we ask what are the kinds of objects with which we are acquainted, the first of most obvious example is *sense-data*.

206 Abstrait-concret & concept-percept ?

the disjunction "abstract-concrete" […] is not quite parallel with the opposition "concept-percept," because things remembered or imagined belong with particulars, but can hardly be called percepts.

208 Connaissance *simplement* descriptive

We shall say that we have "*merely* descriptive knowldege" of the so-and-so when, although we know that the so-and-so exists, and although we may possibly be acquainted with the object which is, in fact, the so-and-so, yet we do not know any proposition "*a* is the so-and-so," where *a* is something with which we are acquainted.

211 briques

in the case of particulars, knowledge concerning what is known by description is ultimately reducible to knowledge concerning what is known by acquaintance.

The fundamental epistmelogical principle in the analysis of propositions containing descriptions is this: *Every proposition which we can understand must be composed wholly of constituents with which we are acquainted*.

214-215 Connaissance : *objet* ou *idée* de l'objet ?

The view seems to be that there is some mental existent which may be called the "idea" of something outside the mind of the person who has the idea […]. But in this view ideas become a veil between us and ouside things–we never really, in knowledge, attain to the things we are supposed to be knowing about, but only to the ideas of those things. The relation of mind, idea, and object, on this view, is utterly obscure, and, so far as I can see, nothing discoverable by inspection warrants the intrusion of the idea between the mind and the object. I suspect that the view is fostered by the dislike of relations, and that it is felt the mind could not know objects unless there were something "in" the mind which could be called the state of knowing the object. Such a view, however, leads at once to a vicious endless regress, since the relation of idea to objet will have o be explained by supposing that the idea itself has an idea of the objet, and so on *ad infinitum*. I therefore see no reason to believe that, when we are acquainted with an object, there is in us something which can be called the "idea" of the object. On the contrary, I hold that acquaitance is wholly a relation, not demanding any such constituent of the mind as is supposed by advocates of "ideas." […] in judging, the actual object concerning which we judge, rather that any supposed purely mental entities, are consitutents of the complex which is the judgement.

216 Une même dénotation, plusieurs sens

when we say "Scott is the author of Waverley" or "men are the same as featherless bipeds," we are asserting an identity of denotation, and this assertion is worth making because of the diversity of meaning.