Chapter 8. Inference

§ 1. Formal Inference

{259} INFERENCE is the conditional acceptance of a proposition, Assent is the unconditional; the object of Assent is a truth, the object of Inference is the truth-like or a verisimilitude. The problem which I have undertaken is that of ascertaining how it comes to pass that a conditional act leads to an unconditional; and, having now shown that assent really is unconditional, I proceed to show how inferential exercises, as such, always must be conditional.

We reason, when we hold this by virtue of that; whether we hold it as evident or as approximating or tending to be evident, in either case we so hold it because of holding something else to be evident or tending to be evident. In the next place, our reasoning ordinarily presents itself to our mind as a simple act, not a process or series of acts. We apprehend the antecedent and then apprehend the consequent, without {260} explicit recognition of the medium connecting the two, as if by a sort of direct association of the first thought with the second. We proceed by a sort of instinctive perception, from premiss to conclusion. I call it instinctive, not as if the faculty were one and the same to all men in strength and quality (as we generally conceive of instinct), but because ordinarily, or at least often, it acts by a spontaneous impulse, as prompt and inevitable as the exercise of sense and memory. We perceive external objects, and we remember past events, without knowing how we do so; and in like manner we reason without effort and intention, or any necessary consciousness of the path which the mind takes in passing from antecedent to conclusion.

Such is ratiocination, in what may be called a state of nature, as it is found in the uneducated,—nay, in all men, in its ordinary exercise; nor is there any antecedent ground for determining that it will not be as correct in its informations as it is instinctive, as trustworthy as are sensible perception and memory, though its informations are not so immediate and have a wider range. By means of sense we gain knowledge directly; by means of reasoning we gain it indirectly, that is, by virtue of a previous knowledge. And if we may justly regard the universe, according to the meaning of the word, as one whole, we may also believe justly that to know one part of it is necessarily to know much more than that one part. This thought leads us to a further view of ratiocination. The proverb says, "Ex pede Herculem;" and we have actual experience how the practised zoologist can build up some intricate organization from {261} the sight of its smallest bone, evoking the whole as if it were a remembrance; how, again, a philosophical antiquarian, by means of an inscription, interprets the mythical traditions of former ages, and makes the past live; and how a Columbus is led, from considerations which are common property, and fortuitous phenomena which are successively brought to his notice, to have such faith in a western world, as willingly to commit himself to the terrors of a mysterious ocean in order to arrive at it. That which the mind is able thus variously to bring together into unity, must have some real intrinsic connexion of part with part. But if this *summa rerum* is thus one whole, it must be constructed on definite principles and laws, the knowledge of which will enlarge our capacity of reasoning about it in

particulars;—thus we are led on to aim at determining on a large scale and on system, what even gifted or practised intellects are only able by their own personal rigour to reach piecemeal and fitfully, that is, at substituting scientific methods, such as all may use, for the action of individual genius.

There is another reason for attempting to discover an instrument of reasoning (that is, of gaining new truths by means of old), which may be less vague and arbitrary than the talent and experience of the few or the common-sense of the many. As memory is not always accurate, and has on that account led to the adoption of writing, as being a *memoria technica*, unaffected by the failure of mental impressions,—as our senses at times deceive us, and have to be corrected by each other; so is it also with our reasoning faculty. The {262} conclusions of one man are not the conclusions of another; those of the same man do not always agree together; those of ever so many who agree together may differ from the facts themselves, which those conclusions are intended to ascertain. In consequence it becomes a necessity, if it be possible, to analyze the process of reasoning, and to invent a method which may act as a common measure between mind and mind, as a means of joint investigation, and as a recognized intellectual standard,—a standard such as to secure us against hopeless mistakes, and to emancipate us from the capricious *ipse dixit* of authority.

As the index on the dial notes down the sun's course in the heavens, as a key, revolving through the intricate wards of the lock, opens for us a treasure-house, so let us, if we can, provide ourselves with some ready expedient to serve as a true record of the system of objective truth, and an available rule for interpreting its phenomena; or at least let us go as far as we can in providing it. One such experimental key is the science of geometry, which, in a certain department of nature, substitutes a collection of true principles, fruitful and interminable in consequences, for the guesses, *pro re natâ*, of our intellect, and saves it both the labour and the risk of guessing. Another far more subtle and effective instrument is algebraical science, which acts as a spell in unlocking for us, without merit or effort of our own individually, the *arcana* of the concrete physical universe. A more ambitious, because a more comprehensive contrivance still, for interpreting the concrete world is the method of logical inference. {263} What we desiderate is something which may supersede the need of personal gifts by a far-reaching and infallible rule. Now, without external symbols to mark out and to steady its course, the intellect runs wild; but with the aid of symbols, as in algebra, it advances with precision and effect. Let then our symbols be words: let all thought be arrested and embodied in words. Let language have a monopoly of thought; and thought go for only so much as it can show itself to be worth in language. Let every prompting of the intellect be ignored, every *momentum* of argument be disowned, which is unprovided with an equivalent wording, as its ticket for sharing in the common search after truth. Let the authority of nature, common-sense, experience, genius, go for nothing. Ratiocination, thus restricted and put into grooves, is what I have called Inference, and the science, which is its regulating principle, is Logic.

The first step in the inferential method is to throw the question to be decided into the form of a proposition; then to throw the proof itself into propositions, the force of the

proof lying in the comparison of these propositions with each other. When the analysis is carried out fully and put into form, it becomes the Aristotelic syllogism. However, an inference need not be expressed thus technically; an enthymeme fulfils the requirements of what I have called Inference. So does any other form of words with the mere grammatical expressions, "for," "therefore," "supposing," "so that," "similarly," and the like. Verbal reasoning, of whatever kind, as opposed to mental, is what I {264} mean by inference, which differs from logic only inasmuch as logic is its scientific form. And it will be more convenient here to use the two words indiscriminately, for I shall say nothing about logic which does not in its substance also apply to inference.

Logical inference, then, being such, and its office such as I have described, the question follows, how far it answers the purpose for which it is used. It proposes to provide both a test and a common measure of reasoning; and I think it will be found partly to succeed and partly to fail; succeeding so far as words can in fact be found for representing the countless varieties and subtleties of human thought, failing on account of the fallacy of the original assumption, that whatever can be thought can be adequately expressed in words.

In the first place, Inference, being conditional, is hampered with other propositions besides that which is especially its own, that is, with the premisses as well as the conclusion, and with the rules connecting the latter with the former. It views its own proper proposition in the medium of prior propositions, and measures it by them. It does not hold a proposition for its own sake, but as dependent upon others, and those others it entertains for the sake of the conclusion. Thus it is practically far more concerned with the comparison of propositions, than with the propositions themselves. It is obliged to regard all the propositions, with which it has to do, not so much for their own sake, as for the sake of each other, as regards the identity or likeness, independence or dissimilarity, which has to be mutually predicated of them. It follows from this, that the more {265} simple and definite are the words of a proposition, and the narrower their meaning, and the more that meaning in each proposition is restricted to the relation which it has to the words of the other propositions compared with it,—in other words, the nearer the propositions concerned in the inference approach to being mental abstractions, and the less they have to do with the concrete reality, and the more closely they are made to express exact, intelligible, comprehensible, communicable notions, and the less they stand for objective things, that is, the more they are the subjects, not of real, but of notional apprehension,—so much the more suitable do they become for the purposes of Inference.

Hence it is that no process of argument is so perfect, as that which is conducted by means of symbols. In Arithmetic 1 is 1, and just 1, and never anything else but 1; it never is 2, it has no tendency to change its meaning, and to become 2; it has no portion, quality, admixture of 2 in its meaning. And 6 under all circumstances is 3 times 2, and the sum of 2 and 4; nor can the whole world supply anything to throw doubt upon these elementary positions. It is not so with language. Take, by contrast, the word "inference," which I have been using: it may stand for the act of inferring, as I have used it; or for the connecting principle, or *inferentia*, between premisses and conclusions; or

for the conclusion itself. And sometimes it will be difficult, in a particular sentence, to say which it bears of these three senses. And so again in Algebra, *a* is never *x*, or anything but *a*, wherever it is found; and *a* and *b* are always standard quantities, to which *x* and *y* are always {266} to be referred, and by which they are always to be measured. In Geometry again, the subjects of argument, points, lines, and surfaces, are precise creations of the mind, suggested indeed by external objects, but meaning nothing but what they are defined to mean: they have no colour, no motion, no heat, no qualities which address themselves to the ear or to the palate; so that, in whatever combinations or relations the words denoting them occur, and to whomsoever they come, those words never vary in their meaning, but are just of the same measure and weight at one time and at another.

What is true of Arithmetic, Algebra, and Geometry, is true also of Aristotelic argumentation in its typical modes and figures. It compares two given words separately with a third, and then determines how they stand towards each other, in a *bonâ fide* identity of sense. In consequence, its formal process is best conducted by means of symbols, A, B, and C. While it keeps to these, it is safe; it has the cogency of mathematical reasoning, and draws its conclusions by a rule as unerring as it is blind.

Symbolical notation, then, being the perfection of the syllogistic method, it follows that, when words are substituted for symbols, it will be its aim to circumscribe and stint their import as much as possible, lest perchance A should not always exactly mean A, and B mean B; and to make them, as much as possible, the *calculi* of notions, which are in our absolute power, as meaning just what we choose them to mean, and as little as possible the tokens of real things, which are outside of us, and which mean we do not know how much, {267} but so much certainly as, (in proportion as we enter into them,) may run away with us beyond the range of scientific management. The concrete matter of propositions is a constant source of trouble to syllogistic reasoning, as marring the simplicity and perfection of its process. Words, which denote things, have innumerable implications; but in inferential exercises it is the very triumph of that clearness and hardness of head, which is the characteristic talent for the art, to have stripped them of all these connatural senses, to have drained them of that depth and breadth of associations which constitute their poetry, their rhetoric, and their historical life, to have starved each term down till it has become the ghost of itself, and everywhere one and the same ghost, "omnibus umbra locis," so that it may stand for just one unreal aspect of the concrete thing to which it properly belongs, for a relation, a generalization, or other abstraction, for a notion neatly turned out of the laboratory of the mind, and sufficiently tame and subdued, because existing only in a definition.

Thus it is that the logician for his own purposes, and most usefully as far as those purposes are concerned, turns rivers, full, winding, and beautiful, into navigable canals. To him dog or horse is not a thing which he sees, but a mere name suggesting ideas; and by dog or horse universal he means, not the aggregate of all individual dogs or horses brought together, but a common aspect, meagre but precise, of all existing or possible dogs or horses, which all the while does not really correspond to any one single dog or horse out of the whole aggregate. Such minute fidelity in the

representation {268} of individuals is neither necessary nor possible to his art; his business is not to ascertain facts in the concrete, but to find and dress up middle terms; and, provided they and the extremes which they go between are not equivocal, either in themselves or in their use, and he can enable his pupils to show well in a *vivâ voce* disputation, or in a popular harangue, or in a written dissertation, he has achieved the main purpose of his profession.

Such are the characteristics of reasoning, viewed as a science or scientific art, or inferential process, and we might anticipate that, narrow as by necessity is its field of view, for that reason its pretensions to be demonstrative were incontrovertible. In a certain sense they really are so; while we talk logic, we are unanswerable; but then, on the other hand, this universal living scene of things is after all as little a logical world as it is a poetical; and, as it cannot without violence be exalted into poetical perfection, neither can it be attenuated into a logical formula. Abstract can only conduct to abstract; but we have need to attain by our reasonings to what is concrete; and the margin between the abstract conclusions of the science, and the concrete facts which we wish to ascertain, will be found to reduce the force of the inferential method from demonstration to the mere determination of the probable. Thus, whereas (as I have already said) Inference starts with conditions, as starting with premisses, here are two reasons why, when employed upon questions of fact, it can only conclude probabilities: first, because its premisses are assumed, not proved; and secondly, because its conclusions {269} are abstract, and not concrete. I will now consider these two points separately.

1.

Inference comes short of proof in concrete matters, because it has not a full command over the objects to which it relates, but merely assumes its premisses. In order to complete the proof, we are thrown upon some previous syllogism or syllogisms, in which the assumptions may be proved; and then, still farther back, we are thrown upon others again, to prove the new assumptions of that second order of syllogisms. Where is this process to stop? especially since it must run upon separated, divergent, and multiplied lines of argument, the farther the investigation is carried back. At length a score of propositions present themselves, all to be proved by propositions more evident than themselves, in order to enable them respectively to become premisses to that series of inferences which terminates in the conclusion which we originally drew. But even now the difficulty is not at an end; it would be something to arrive at length at premisses which are undeniable, however long we might be in arriving at them; but in this case the long retrospection lodges us at length at what are called first principles, the recondite sources of all knowledge, as to which logic provides no common measure of minds,—which are accepted by some, rejected by others,—in which, and not in the syllogistic exhibitions, lies the whole problem of attaining to truth,—and which are called self-evident by their respective advocates because they are {270} evident in no other way. One of the two uses contemplated in reasoning by rule, or in verbal argumentation, was, as I have said, to establish a standard of truth and to supersede the *ipse dixit*of authority: how does it fulfil this end, if it only leads us back to first principles, about

which there is interminable controversy? We are not able to prove by syllogism that there are any self-evident propositions at all; but supposing there are (as of course I hold there are), still who can determine these by logic? Syllogism, then, though of course it has its use, still does only the minutest and easiest part of the work, in the investigation of truth, for when there is any difficulty, that difficulty commonly lies in determining first principles, not in the arrangement of proofs.

Even when argument is the most direct and severe of its kind, there must be those assumptions in the process which resolve themselves into the conditions of human nature; but how many more assumptions does that process in ordinary concrete matters involve, subtle assumptions not directly arising out of these primary conditions, but accompanying the course of reasoning, step by step, and traceable to the sentiments of the age, country, religion, social habits and ideas, of the particular inquirers or disputants, and passing current without detection, because admitted equally on all hands! And to these must be added the assumptions which are made from the necessity of the case, in consequence of the prolixity and elaborateness of any argument which should faithfully note down all the propositions which go to make it up. We recognize this {271} tediousness even in the case of the theorems of Euclid, though mathematical proof is comparatively simple.

Logic then does not really prove; it enables us to join issue with others; it suggests ideas; it opens views; it maps out for us the lines of thought; it verifies negatively; it determines when differences of opinion are hopeless; and when and how far conclusions are probable; but for genuine proof in concrete matter we require an *organon* more delicate, versatile, and elastic than verbal argumentation.

I ought to give an illustration of what I have been stating in general terms; but it is difficult to do so without a digression. However, if it must be, I look round the room in which I happen to be writing, and take down the first book which catches my eye. It is an old volume of a Magazine of great name; I open it at random and fall upon a discussion about the then lately discovered emendations of the text of Shakespeare. It will do for my purpose.

In the account of Falstaff's death in "Henry V." (act ii. scene 3) we read, according to the received text, the well-known words, "His nose was as sharp as a pen, and 'a babbled of green fields." In the first authentic edition, published in 1623, some years after Shakespeare's death, the words, I believe, ran, "and a table of green fields," which has no sense. Accordingly, an anonymous critic, reported by Theobald in the last century, corrected them to "and 'a talked of green fields." Theobald himself improved the reading into "and 'a babbled of green fields," which since his time {272} has been the received text. But just twenty years ago an annotated copy of the edition of 1632 was found, annotated perhaps by a contemporary, which, among as many as 20,000 corrections of the text, substituted for the corrupt reading of 1623, the words "on a table of green frieze," which has a sufficient sense, though far less acceptable to an admirer of Shakespeare, than Theobald's. The genuineness of this copy with its annotations, as it is presented to us, I shall here take for granted.

Now I understand, or at least will suppose, the argument, maintained in the article of the Magazine in question, to run thus:—"Theobald's reading, as at present received, is to be retained, to the exclusion of the text of 1623 and of the emendation made on the copy of the edition of 1632;—to the exclusion of the text of 1623 because that text is corrupt; to the exclusion of the annotation of 1632 because it is anonymous." I wish it then observed how many large questions are opened in the discussion which ensues, how many recondite and untractable principles have to be settled, and how impotent is logic, or any reasonings which can be thrown into language, to deal with these indispensable first principles.

The first position is, "The authoritative reading of 1623 is not to be restored to the received text, because it is corrupt." Now are we to take it for granted, as a first principle, which needs no proof, that a text may be tampered with, because it is corrupt? However the corrupt reading arose, it is authoritative. It is found in an edition published by known persons, only six years {273} after Shakespeare's death, from his own manuscript, as it appears, and with his corrections of earlier faulty impressions. Authority cannot sanction nonsense, but it can forbid critics from experimentalizing upon it. If the text of Shakespeare is corrupt, it should be published as corrupt.

I believe the best editors of the Greek tragedians have given up the impertinence of introducing their conjectures into the text; and a classic like Shakespeare has a right to be treated with the same respect as Æschylus. To this it will be replied, that Shakespeare is for the general public and Æschylus for students of a dead language; that the run of men read for amusement or as a recreation, and that, if the editions of Shakespeare were made on critical principles, they would remain unsold. Here, then, we are brought to the question whether it is any advantage to read Shakespeare except with the care and pains which a classic demands, and whether he is in fact read at all by those whom such critical exactness would offend; and thus we are led on to further questions about cultivation of mind and the education of the masses. Further, the question presents itself, whether the general admiration of Shakespeare is genuine, whether it is not a mere fashion, whether the multitude of men understand him at all, whether it is not true that every one makes much of him, because every one else makes much of him. Can we possibly make Shakespeare light reading, especially in this day of cheap novels, by ever so much correction of his text?

Now supposing this point settled, and the text of {274} 1623 put out of court, then comes the claim of the Annotator to introduce into Shakespeare's text the emendation made upon his copy of the edition of 1632; why is he not of greater authority than Theobald, the inventor of the received reading, and his emendation of more authority than Theobald's? If the corrupt reading must any how be got out of the way, why should not the Annotator, rather than Theobald, determine its substitute? For what we know, the authority of the anonymous Annotator may be very great. There is nothing to show that he was not a contemporary of the poet; and if so, the question arises, what is the character of his emendations? are they his own private and arbitrary conjectures, or are they informations from those who knew Shakespeare, traditions of the theatre, of the actors or spectators of his plays? Here, then, we are involved in intricate questions

which can only be decided by a minute examination of the 20,000 emendations so industriously brought together by this anonymous critic. But it is obvious that a verbal argumentation upon 20,000 corrections is impossible: there must be first careful processes of perusal, classification, discrimination, selection, which mainly are acts of the mind without the intervention of language. There must be a cumulation of arguments on one side and on the other, of which only the heads or the results can be put upon paper. Next come in questions of criticism and taste, with their recondite and disputable premisses, and the usual deductions from them, so subtle and difficult to follow. All this being considered, am I wrong in saying that, though controversy is both {275} possible and useful at all times, yet it is not adequate to this occasion; rather that that sum-total of argument (whether for or against the Annotator) which is furnished by his numerous emendations,—or what may be called the multiform, evidential fact, in which the examination of these emendations results,—requires rather to be photographed on the individual mind as by one impression, than admits of delineation for the satisfaction of the many in any known or possible language, however rich in vocabulary and flexible in structure?

And now as to the third point which presents itself for consideration, the claim of Theobald's emendation to retain its place in the *textus receptus*. It strikes me with wonder that an argument in its defence could have been put forward to the following effect, viz. that true though it be, that the Editors of 1623 are of much higher authority than Theobald, and that the Annotator's reading in the passage in question is more likely to be correct than Theobald's, nevertheless Theobald's has by this time acquired a prescriptive right to its place there, the prescription of more than a hundred years;—that usurpation has become legitimacy; that Theobald's words have sunk into the hearts of thousands; that in fact they have become Shakespeare's; that it would be a dangerous innovation and an evil precedent to touch them. If we begin an unsettlement of the popular mind, where is it to stop?

Thus it appears, in order to do justice to the question before us, we have to betake ourselves to the consideration of myths, pious frauds, and other grave {276} matters, which introduce us into a *sylva*, dense and intricate, of first principles and elementary phenomena, belonging to the domains of archeology and theology. Nor is this all; when such views of the duty of garbling a classic are propounded, they open upon us a long vista of sceptical interrogations which go far to disparage the claims upon us, the genius, the very existence, of the great poet to whose honour these views are intended to minister. For perhaps, after all, Shakespeare is really but a collection of many Theobalds, who have each of them a right to his own share of him. There was a great dramatic school in his day; he was one of a number of first-rate artists,—perhaps they wrote in common. How are we to know what is his, or how much? Are the best parts his, or the worst? It is said that the players put in what is vulgar and offensive in his writings; perhaps they inserted the beauties. I have heard it urged years ago, as an objection to Sheridan's claim of authorship to the plays which bear his name, that they were so unlike each other; is not this the very peculiarity of those imputed to Shakespeare? Were ever the writings of one man so various, so impersonal? can we form any one true idea of what he was in history or character, by means of them? is he not in short "*vox et*

prætera nihil"? Then again, in corroboration, is there any author's life so deficient in biographical notices as his? We know about Hooker, Spenser, Spelman, Raleigh, Harvey, his contemporaries: what do we know of Shakespeare? Is he much more than a name? Is not the traditional {277} object of an Englishman's idolatry after all a nebula of genius, destined, like Homer, to be resolved into its separate and independent luminaries, as soon as we have a criticism powerful enough for the purpose? I must not be supposed for a moment to countenance such scepticism myself,—though it is a subject worthy the attention of a sceptical age: here I have introduced it simply to suggest how many words go to make up a thoroughly valid argument; how short and easy a way to a true conclusion is the logic of good sense; how little syllogisms have to do with the formation of opinion; how little depends upon the inferential proofs, and how much upon those pre-existing beliefs and views, in which men either already agree with each other or hopelessly differ, before they begin to dispute, and which are hidden deep in our nature, or, it may be, in our personal peculiarities.

2.

So much on the multiplicity of assumptions, which in spite of formal exactness, logical reasoning in concrete matters is forced to admit, and on the consequent uncertainty which attends its conclusions. Now I come to the second reason why its conclusions are thus wanting in precision.

In this world of sense we have to do with things, far more than with notions. We are not solitary, left to the contemplation of our own thoughts and their legitimate developments. We are surrounded by external beings, and our enunciations are directed to the concrete. We reason in order to enlarge our knowledge of matters, {278} which do not depend on us for being what they are. But how is an exercise of mind, which is for the most part occupied with notions, not things, competent to deal with things, except partially and indirectly? This is the main reason why an inference, however fully worded, (except perhaps in some peculiar cases, which are out of place here,) never can reach so far as to ascertain a fact. As I have already said, arguments about the abstract cannot handle and determine the concrete. They may approximate to a proof, but they only reach the probable, because they cannot reach the particular.

Even in mathematical physics a margin is left for possible imperfection in the investigation. When the planet Neptune was discovered, it was deservedly considered a triumph of science, that abstract reasonings had done so much towards determining the planet and its orbit. There would have been no triumph in success, had there been no hazard of failure; it is no triumph to Euclid, in pure mathematics, that the geometrical conclusions of his second book can be worked out and verified by algebra.

The motions of the heavenly bodies are almost mathematical in their precision; but there is a multitude of matters, to which mathematical science is applied, which are in their nature intricate and obscure, and require that reasoning by rule should be completed by the living mind. Who would be satisfied with a navigator or engineer, who had no practice or experience whereby to carry on his scientific conclusions out of their

native abstract into the concrete and the real? What is the meaning of the distrust, which is ordinarily felt, of {279} speculators and theorists but this, that they are dead to the necessity of personal prudence and judgment to qualify and complete their logic? Science, working by itself, reaches truth in the abstract, and probability in the concrete; but what we aim at is truth in the concrete.

This is true of other inferences besides mathematical. They come to no definite conclusions about matters of fact, except as they are made effectual for their purpose by the living intelligence which uses them. "All men have their price; Fabricius is a man; he has his price;" but he had not his price; how is this? Because he is more than a universal; because he falls under other universals; because universals are ever at war with each other; because what is called a universal is only a general; because what is only general does not lead to a necessary conclusion. Let us judge him by another universal. "Men have a conscience; Fabricius is a man; he has a conscience." Until we have actual experience of Fabricius, we can only say, that, since he is a man, perhaps he will take a bribe, and perhaps he will not. "Latet dolus in generalibus;" they are arbitrary and fallacious, if we take them for more than broad views and aspects of things, serving as our notes and indications for judging of the particular, but not absolutely touching and determining facts.

Let units come first, and (so-called) universals second; let universals minister to units, not units be sacrificed to universals. John, Richard, and Robert are individual things, independent, incommunicable. We may find some kind of common measure between them, and we may give it the name of man, man as such, the typical {280} man, the *auto-anthropos*. We are justified in so doing, and in investing it with general attributes, and bestowing on it what we consider a definition. But we think we may go on to impose our definition on the whole race, and to every member of it, to the thousand Johns, Richards, and Roberts who are found in it. No; each of them is what he is, in spite of it. Not any one of them is man, as such, or coincides with the *auto-anthropos*. Another John is not necessarily rational, because "all men are rational," for he may be an idiot;—nor because "man is a being of progress," does the second Richard progress, for he may be a dunce;—nor, because "man is made for society," must we therefore go on to deny that the second Robert is a gipsy or a bandit, as he is found to be. There is no such thing as stereotyped humanity; it must ever be a vague, bodiless idea, because the concrete units from which it is formed are independent realities. General laws are not inviolable truths; much less are they necessary causes. Since, as a rule, men are rational, progressive, and social, there is a high probability of this rule being true in the case of a particular person; but we must know him to be sure of it.

Each thing has its own nature and its own history. When the nature and the history of many things are similar, we say that they have the same nature; but there is no such thing as one and the same nature; they are each of them itself, not identical, but like. A law is not a fact, but a notion. "All men die; therefore Elias has died;" but he has not died, and did not die. He was an exception to the general law of humanity; so far, he did not come under that law, but under the law {281} (so to say) of Elias. It was the peculiarity of his individuality, that he left the world without dying: what right have we to

subject the person of Elias to the scientific notion of an abstract humanity, which we have formed without asking his leave? Why must the tyrant majority create a rule for his individual history? "But all men are mortal?" not so; what is really meant by this universal is, that "man, as such is mortal," that is, the abstract, typical *auto-anthropos*; to this major premiss the minor, if Elias is to be proved mortal, ought to be, "Elias was the abstract man;" but he was not, and could not be such, nor could any one else, any more than the average man of an Insurance Company is every individual man who insures his life with it. Such a syllogism proves nothing about the veritable Elias, except in the way of antecedent probability. If it be said that Elias was exempted from death, not by nature, but by miracle, what is this to the purpose, undeniable as it is? Still, to have this miraculous exemption was the personal prerogative of Elias. We call it miracle, because God ordinarily acts otherwise. He who causes men in general to die, gave to Elias not to die. This miraculous gift comes into the individuality of Elias. On this individuality we must fix our thoughts, and not begin our notion of him by ignoring it. He was a man, and something more than "man"; and if we do not take this into account, we fall into an initial error in our thoughts of him.

What is true of Elias is true of every one in his own place and degree. We call rationality the distinction of man, when compared with other animals. This is {282} true in logic; but in fact a man differs from a brute, not in rationality only, but in all that he is, even in those respects in which he is most like a brute; so that his whole self, his bones, limbs, make, life, reason, moral feeling, immortality, and all that he is besides, is his real *differentia*, in contrast to a horse or a dog. And in like manner as regards John and Richard, when compared with one another; each is himself, and nothing else, and, though, regarded abstractedly, the two may fairly be said to have something in common, (viz., that abstract sameness which does not exist at all,) yet strictly speaking, they have nothing in common, for each of them has a vested interest in all that he himself is; and, moreover, what seems to be common in the two, becomes in fact so uncommon, so *sui simile*, in their respective individualities—the bodily frame of each is so singled out from all other bodies by its special constitution, sound or weak, by its vitality, activity, pathological history and changes, and, again, the mind of each is so distinct from all other minds, in disposition, powers, and habits,—that, instead of saying, as logicians say, that the two men differ only in number, we ought, I repeat, rather to say that they differ from each other in all that they are, in identity, in incommunicability, in personality.

Nor does any real thing admit, by any calculus of logic, of being dissected into all the possible general notions which it admits, nor, in consequence, of being recomposed out of them; though the attempt thus to treat it is more unpromising in proportion to the intricacy and completeness of its make. We cannot {283} see through any one of the myriad beings which make up the universe, or give the full catalogue of its belongings. We are accustomed, indeed, and rightly, to speak of the Creator Himself as incomprehensible; and, indeed, He is so by an incommunicable attribute; but in a certain sense each of His creatures is incomprehensible to us also, in the sense that no one has a perfect understanding of them but He. We recognize and appropriate aspects

of them, and logic is useful to us in registering these aspects and what they imply; but it does not give us to know even one individual being.

So much on logical argumentation; and in thus speaking of the syllogism, I speak of all inferential processes whatever, as expressed in language, (if they are such as to be reducible to science,) for they all require general notions, as conditions of their coming to a conclusion.

Thus, in the deductive argument, "Europe has no security for peace, till its large standing armies in its separate states are reduced; for a large standing army is in its very idea provocative of war," the conclusion is only probable, for it may so be that in no country is that pure idea realized, but in every country in concrete fact there may be circumstances, political or social, which destroy the abstract dangerousness.

So, too, as regards Induction and Analogy, as modes of Inference; for, whether I argue, "This place will have the cholera, unless it is drained; for there are a number of well-ascertained cases which point to this conclusion;" or, "The sun will rise tomorrow, for it rose today;" in either method of reasoning I appeal, in order to {284} prove a particular case, to a general principle or law, which has not force enough to warrant more than a probable conclusion. As to the cholera, the place in question may have certain antagonist advantages, which anticipate or neutralize the miasma which is the principle of the poison; and as to the sun's rising tomorrow, there was a first day of the sun's rising, and therefore there may be a last.

This is what I have to say on formal Inference, when taken to represent Ratiocination. Science in all its departments has too much simplicity and exactness, from the nature of the case, to be the measure of fact. In its very perfection lies its incompetency to settle particulars and details. As to Logic, its chain of conclusions hangs loose at both ends; both the point from which the proof should start, and the points at which it should arrive, are beyond its reach; it comes short both of first principles and of concrete issues. Even its most elaborate exhibitions fail to represent adequately the sum-total of considerations by which an individual mind is determined in its judgment of things; even its most careful combinations made to bear on a conclusion want that steadiness of aim which is necessary for hitting it. As I said when I began, thought is too keen and manifold, its sources are too remote and hidden, its path too personal, delicate, and circuitous, its subject-matter too various and intricate, to admit of the trammels of any language, of whatever subtlety and of whatever compass.

Nor is it any disparagement of the proper value of {285} formal reasonings thus to speak of them. That they cannot proceed beyond probabilities is most readily allowed by those who use them most. Philosophers, experimentalists, lawyers, in their several ways, have commonly the reputation of being, at least on moral and religious subjects, hard of belief; because, proceeding in the necessary investigation by the analytical method of verbal inference, they find within its limits no sufficient resources for attaining a conclusion. Nay, they do not always find it possible in their own special province severally; for, even when in their hearts they have no doubt about a conclusion, still

often, from the habit of their minds, they are reluctant to own it, and dwell upon the deficiencies of the evidence, or the possibility of error, because they speak by rule and by book, though they judge and determine by common-sense.

Every exercise of nature or of art is good in its place; and the uses of this logical inference are manifold. It is the great principle of order in our thinking; it reduces a chaos into harmony; it catalogues the accumulations of knowledge; it maps out for us the relations of its separate departments; it puts us in the way to correct its own mistakes. It enables the independent intellects of many, acting and re-acting on each other, to bring their collective force to bear upon one and the same subject-matter, or the same question. If language is an inestimable gift to man, the logical faculty prepares it for our use. Though it does not go so far as to ascertain truth, still it teaches us the direction in which truth lies, and how propositions lie {286} towards each other. Nor is it a slight benefit to know what is probable, and what is not so, what is needed for the proof of a point, what is wanting in a theory, how a theory hangs together, and what will follow, if it be admitted. Though it does not itself discover the unknown, it is one principal way by which discoveries are made. Moreover, a course of argument, which is simply conditional, will point out when and where experiment and observation should be applied, or testimony sought for, as often happens both in physical and legal questions. A logical hypothesis is the means of holding facts together, explaining difficulties, and reconciling the imagination to what is strange. And, again, processes of logic are useful as enabling us to get over particular stages of an investigation speedily and surely, as on a journey we now and then gain time by travelling by night, make short cuts when the high-road winds, or adopt water-carriage to avoid fatigue.

But reasoning by rule and in words is too natural to us, to admit of being regarded merely in the light of utility. Our inquiries spontaneously fall into scientific sequence, and we think in logic, as we talk in prose, without aiming at doing so. However sure we are of the accuracy of our instinctive conclusions, we as instinctively put them into words, as far as we can; as preferring, if possible, to have them in an objective shape which we can fall back upon,—first for our own satisfaction, then for our justification with others. Such a tangible defence of what we hold, inadequate as it necessarily is, considered as an analysis of our ratiocination {287} in its length and breadth, nevertheless is in such sense associated with our holdings, and so fortifies and illustrates them, that it acts as a vivid apprehension acts, giving them luminousness and force. Thus inference becomes a sort of symbol of assent, and even bears upon action.

I have enlarged on these obvious considerations, lest I should seem paradoxical; but they do not impair the main position of this Section, that Inference, considered in the sense of verbal argumentation, determines neither our principles, nor our ultimate judgments,—that it is neither the test of truth, nor the adequate basis of assent [Note].

Note

I have assumed throughout this Section that all verbal argumentation is ultimately syllogistic; and in consequence that it ever requires universal propositions and comes

short of concrete fact. A friend refers me to the dispute between Des Cartes and Gassendi, the latter maintaining against the former that "Cogito ergo sum" implies the universal "All who think exist." I should deny this with Des Cartes; but I should say (as indeed he said), that his dictum was not an argument, but was the expression of a ratiocinative instinct, as I explain below under the head of "Natural Logic."

As to the instance "Brutes are not men; therefore men are not brutes," there seems to me no consequence here, neither a *præter* nor a *propter*, but a tautology. And as to "It was either Tom or Dick that did it; it was not Dick, ergo," this may be referred to the one great principle on which all logical reasoning is founded, but really it ought not to be accounted an inference any more that if I broke a biscuit, flung half away, and then said of the other half, "This is what remains." It does but state a fact. So, when the 1st, 2nd, or 3rd proposition of Euclid II, is put before the eyes in a diagram, a boy, before he yet has learned to reason, sees with his eyes the fact of the thesis, and this *seeing* it even makes it difficult for him to master the mathematical proof. Here, then, a *fact* is stated in the form of an *argument*.