§ 3. Natural Inference

{330} I COMMENCED my remarks upon Inference by saying that reasoning ordinarily shows as a simple act, not as a process, as if there were no medium interposed between antecedent and consequent, and the transition from one to the other were of the nature of an instinct,—that is, the process is altogether unconscious and implicit. It is necessary, then, to take some notice of this natural or material Inference, as an existing phenomenon of mind; and that the more, because I shall thereby be illustrating and supporting what I have been saying of the characteristics of inferential processes as carried on in concrete matter, and especially of their being the action of the mind itself, that is, by its ratiocinative or illative faculty, not a mere operation as in the rules of arithmetic.

I say, then, that our most natural mode of reasoning is, not from propositions to propositions, but from things to things, from concrete to concrete, from wholes to wholes. Whether the consequents, at which we arrive from the antecedents with which we start, lead us to assent or only towards assent, those antecedents commonly are not recognized by us as subjects for analysis; {331} nay, often are only indirectly recognized as antecedents at all. Not only is the inference with its process ignored, but the antecedent also. To the mind itself the reasoning is a simple divination or prediction; as it literally is in the instance of enthusiasts, who mistake their own thoughts for inspirations.

This is the mode in which we ordinarily reason, dealing with things directly, and as they stand, one by one, in the concrete, with an intrinsic and personal power, not a conscious adoption of an artificial instrument or expedient; and it is especially exemplified both in uneducated men, and in men of genius,—in those who know nothing of intellectual aids and rules, and in those who care nothing for them,—in those who are either without or above mental discipline. As true poetry is a spontaneous outpouring of thought, and therefore belongs to rude as well as to gifted minds, whereas no one becomes a poet merely by the canons of criticism, so this unscientific reasoning, being sometimes a natural, uncultivated faculty, sometimes approaching to a gift, sometimes an acquired habit and second nature, has a higher source than logical rule,—"nascitur, non fit." When it is characterized by precision, subtlety, promptitude, and truth, it is of course a gift and a rarity: in ordinary minds it is biassed and degraded by prejudice, passion, and self-interest; but still, after all, this divination comes by nature, and belongs to all of us in a measure, to women more than to men, hitting or missing, as the case may be, but with a success on the whole sufficient to show that there is a method in it, though it be implicit. {332}

A peasant who is weather-wise may yet be simply unable to assign intelligible reasons why he thinks it will be fine tomorrow; and if he attempts to do so, he may give reasons wide of the mark; but that will not weaken his own confidence in his prediction. His mind does not proceed step by step, but he feels all at once and together the force of various combined phenomena, though he is not conscious of them. Again, there are physicians who excel in the *diagnosis* of complaints; though it does not follow from this, that they

could defend their decision in a particular case against a brother physician who disputed it. They are guided by natural acuteness and varied experience; they have their own idiosyncratic modes of observing, generalizing, and concluding; when questioned, they can but rest on their own authority, or appeal to the future event. In a popular novel [Note 1], a lawyer is introduced, who "would know, almost by instinct, whether an accused person was or was not guilty; and he had already perceived by instinct" that the heroine was guilty. "I've no doubt she's a clever woman," he said, and at once named an attorney practising at the Old Bailey. So, again, experts and detectives, when employed to investigate mysteries, in cases whether of the civil or criminal law, discern and follow out indications which promise solution with a sagacity incomprehensible to ordinary men. A parallel gift is the intuitive perception of character possessed by certain men, while others are as destitute of it, as others again are of an ear for music. What common measure {333} is there between the judgments of those who have this intuition, and those who have not? What but the event can settle any difference of opinion which occurs in their estimation of a third person? These are instances of a natural capacity, or of nature improved by practice and habit, enabling the mind to pass promptly from one set of facts to another, not only, I say, without conscious media, but without conscious antecedents.

Sometimes, I say, this illative faculty is nothing short of genius. Such seems to have been Newton's perception of truths mathematical and physical, though proof was absent. At least that is the impression left on my own mind by various stories which are told of him, one of which was stated in the public papers a few years ago. "Professor Sylvester," it was said, "has just discovered the proof of Sir Isaac Newton's rule for ascertaining the imaginary roots of equations ... This rule has been a Gordian-knot among algebraists for the last century and a half. The proof being wanting, authors became ashamed at length of advancing a proposition, the evidence for which rested on no other foundation than belief in Newton's sagacity." [Note 2]

Such is the gift of the calculating boys who now and then make their appearance, who seem to have certain short-cuts to conclusions, which they cannot explain to themselves. Some are said to have been able to determine off-hand what numbers are prime,—numbers I think, up to seven places. {334}

In a very different subject-matter, Napoleon supplies us with an instance of a parallel genius in reasoning, by which he was enabled to look at things in his own province, and to interpret them truly, apparently without any ratiocinative media. "By long experience," says Alison, "joined to great natural quickness and precision of eye, he had acquired the power of judging, with extraordinary accuracy, both of the amount of the enemy's force opposed to him in the field, and of the probable result of the movements, even the most complicated, going forward in the opposite armies ... He looked around him for a little while with his telescope, and immediately formed a clear conception of the position, forces, and intention of the whole hostile array. In this way he could, with surprising accuracy, calculate in a few minutes, according to what he could see of their formation and the extent of the ground which they occupied, the numerical force of armies of 60,000 or 80,000 men; and if their troops were at all scattered, he knew at once how

long it would require for them to concentrate, and how many hours must elapse before they could make their attack." [Note 3]

It is difficult to avoid calling such clear presentiments by the name of instinct; and I think they may so be called, if by instinct be understood, not a natural sense, one and the same in all, and incapable of cultivation, but a perception of facts without assignable media of perceiving. There are those who can tell at once what is conducive or injurious to their welfare, {335} who are their friends, who their enemies, what is to happen to them, and how they are to meet it. Presence of mind, fathoming of motives, talent for repartee, are instances of this gift. As to that divination of personal danger which is found in the young and innocent, we find a description of it in one of Scott's romances, in which the heroine, "without being able to discover what was wrong either in the scenes of unusual luxury with which she was surrounded, or in the manner of her hostess," is said nevertheless to have felt "an instinctive apprehension that all was not right,—a feeling in the human mind," the author proceeds to say, "allied perhaps to that sense of danger, which animals exhibit, when placed in the vicinity of the natural enemies of their race, and which makes birds cower when the hawk is in the air, and beasts tremble when the tiger is abroad in the desert." [Note 4]

A religious biography, lately published, affords us an instance of this spontaneous perception of truth in the province of revealed doctrine. "Her firm faith," says the Author of the Preface, "was so vivid in its character, that it was almost like an intuition of the entire prospect of revealed truth. Let an error against faith be concealed under expressions however abstruse, and her sure instinct found it out. I have tried this experiment repeatedly. She might not be able to separate the heresy by analysis, but she saw, and felt, and suffered from its presence." [Note 5] {336}

And so of the great fundamental truths of religion, natural and revealed, and as regards the mass of religious men: these truths, doubtless, may be proved and defended by an array of invincible logical arguments, but such is not commonly the method in which those same logical arguments make their way into our minds. The grounds, on which we hold the divine origin of the Church, and the previous truths which are taught us by nature—the being of a God, and the immortality of the soul—are felt by most men to be recondite and impalpable, in proportion to their depth and reality. As we cannot see ourselves, so we cannot well see intellectual motives which are so intimately ours, and which spring up from the very constitution of our minds; and while we refuse to admit the notion that religion has not irrefragable arguments in its behalf, still the attempts to argue, on the part of an individual *hic et nunc*, will sometimes only confuse his apprehension of sacred objects, and subtracts from his devotion quite as much as it adds to his knowledge.

This is found in the case of other perceptions besides that of faith. It is the case of nature against art: of course, if possible, nature and art should be combined, but sometimes they are incompatible. Thus, in the case of calculating boys, it is said, I know not with what truth, that to teach them the ordinary rules of arithmetic is to endanger or

to destroy the extraordinary endowment. And men who have the gift of playing on an instrument by ear, are sometimes afraid to learn by rule, lest they should lose it.

There is an analogy, in this respect, between Ratiocination {337} and Memory, though the latter may be exercised without antecedents or media, whereas the former requires them in its very idea. At the same time association has so much to do with memory, that we may not unfairly consider memory, as well as reasoning, as depending on certain previous conditions. Writing, as I have already observed, is a *memoria technica*, or logic of memory. Now it will be found, I think, that indispensable as is the use of letters, still, in fact, we weaken our memory in proportion as we habituate ourselves to commit all that we wish to remember to memorandums. Of course in proportion as our memory is weak or over-burdened, and thereby treacherous, we cannot act otherwise; but in the case of men of strong memory in any particular subject-matter, as in that of dates, all artificial expedients, from the "Thirty days has September," &c., to the more formidable formulas which are offered for their use, are as difficult and repulsive as the natural exercise of memory is healthy and easy to them; just as the clear-headed and practical reasoner, who sees conclusions at a glance, is uncomfortable under the drill of a logician, being oppressed and hampered, as David in Saul's armour, by what is intended to be a benefit.

I need not say more on this part of the subject. What is called reasoning is often only a peculiar and personal mode of abstraction, and so far, like memory, may be said to exist without antecedents. It is a power of looking at things in some particular aspect, and of determining their internal and external relations thereby. And according to the subtlety and versatility of their gift, are men able to read what comes before {338} them justly, variously, and fruitfully. Hence, too, it is, that in our intercourse with others, in business and family matters, in social and political transactions, a word or an act on the part of another is sometimes a sudden revelation; light breaks in upon us, and our whole judgment of a course of events, or of an undertaking, is changed. We determine correctly or otherwise, as it may be; but in either case, it is by a sense proper to ourselves, for another may see the objects which we are thus using, and give them quite a different interpretation, inasmuch as he abstracts another set of general notions from those same phenomena which present themselves to us also.

What I have been saying of Ratiocination, may be said of Taste, and is confirmed by the obvious analogy between the two. Taste, skill, invention in the fine arts—and so, again, discretion or judgment in conduct—are exerted spontaneously, when once acquired, and could not give a clear account of themselves, or of their mode of proceeding. They do not go by rule, though to a certain point their exercise may be analyzed, and may take the shape of an art or method. But these parallels will come before us presently.

And now I come to a further peculiarity of this natural and spontaneous ratiocination. This faculty, as it is actually found in us, proceeding from concrete to concrete, is attached to a definite subject-matter, according to the individual. In spite of Aristotle, I will not allow that genuine reasoning is an instrumental art; and in spite of Dr. Johnson, I will assert that genius, as far as it is manifested in ratiocination, is not equal to all {339}

undertakings, but has its own peculiar subject-matter, and is circumscribed in its range. No one would for a moment expect that because Newton and Napoleon both had a genius for ratiocination, that, in consequence, Napoleon could have generalized the principle of gravitation, or Newton have seen how to concentrate a hundred thousand men at Austerlitz. The ratiocinative faculty, then, as found in individuals, is not a general instrument of knowledge, but has its province, or is what may be called departmental. It is not so much one faculty, as a collection of similar or analogous faculties under one name, there being really as many faculties as there are distinct subject-matters, though in the same person some of them may, if it so happen, be united,—nay, though some men have a sort of literary power in arguing in all subject-matters, *de omni scibili*, a power extensive, but not deep or real.

This surely is the conclusion, to which we are brought by our ordinary experience of men. It is almost proverbial that a hard-headed mathematician may have no head at all for what is called historical evidence. Successful experimentalists need not have talent for legal research or pleading. A shrewd man of business may be a bad arguer in philosophical questions. Able statesmen and politicians have been before now eccentric or superstitious in their religious views. It is notorious how ridiculous a clever man may make himself, who ventures to argue with professed theologians, critics, or geologists, though without positive defects in knowledge of his subject. Priestley, great in electricity and chemistry, was but a poor ecclesiastical historian. The {340} Author of the Minute Philosopher is also the Author of the Analyst. Newton wrote not only his "Principia," but his comments on the Apocalypse; Cromwell, whose actions savoured of the boldest logic, was a confused speaker. In these, and various similar instances, the defect lay, not so much in an ignorance of facts, as in an inability to handle those facts suitably; in feeble or perverse modes of abstraction, observation, comparison, analysis, inference, which nothing could have obviated, but that which was wanting,—a specific talent, and a ready exercise of it.

I have already referred to the faculty of memory in illustration; it will serve me also here. We can form an abstract idea of memory, and call it one faculty, which has for its subject-matter all past facts of our personal experience; but this is really only an illusion; for there is no such gift of universal memory. Of course we all remember in a way, as we reason, in all subject-matters; but I am speaking of remembering rightly, as I spoke of reasoning rightly. In real fact memory, as a talent, is not one indivisible faculty, but a power of retaining and recalling the past in this or that department of our experience, not in any whatever. Two memories, which are both specially retentive, may also be incommensurate. Some men can recite the canto of a poem, or good part of a speech, after once reading it, but have no head for dates. Others have great capacity for the vocabulary of languages, but recollect nothing of the small occurrences of the day or year. Others never forget any statement which they have read, and can give volume and page, but have no {341} memory for faces. I have known those who could, without effort, run through the succession of days on which Easter fell for years back; or could say where they were, or what they were doing, on a given day, in a given year; or could recollect accurately the Christian names of friends and strangers; or could enumerate in exact order the names on all the shops from Hyde Park Corner to the Bank; or had so

mastered the University Calender as to be able to bear an examination in the academical history of any M.A. taken at random. And I believe in most of these cases the talent, in its exceptional character, did not extend beyond several classes of subjects. There are a hundred memories, as there are a hundred virtues. Virtue is one indeed in the abstract; but, in fact, gentle and kind natures are not therefore heroic, and prudent and self-controlled minds need not be open-handed. At the utmost such virtue is one only *in posse*; as developed in the concrete, it takes the shape of species which in no sense imply each other.

So is it with Ratiocination; and as we should betake ourselves to Newton for physical, not for theological conclusions, and to Wellington for his military experience, not for statesmanship, so the maxim holds good generally, "Cuique in arte suâ credendum est:" or, to use the grand words of Aristotle, "We are bound to give heed to the undemonstrated sayings and opinions of the experienced and aged, not less than to demonstrations; because, from their having the eye of experience, they behold the principles of things." [Note 6] Instead {342} of trusting logical science, we must trust persons, namely, those who by long acquaintance with their subject have a right to judge. And if we wish ourselves to share in their convictions and the grounds of them, we must follow their history, and learn as they have learned. We must take up their particular subject as they took it up, beginning at the beginning, give ourselves to it, depend on practice and experience more than on reasoning, and thus gain that mental insight into truth, whatever its subject-matter may be, which our masters have gained before us. By following this course, we may make ourselves of their number, and then we rightly lean upon ourselves, directing ourselves by our own moral or intellectual judgment, not by our skill in argumentation.

This doctrine, stated in substance as above by the great philosopher of antiquity, is more fully expounded in a passage which he elsewhere quotes from Hesiod. "Best of all is he," says that poet, "who is wise by his own wit; next best he who is wise by the wit of others; but whoso is neither able to see, nor willing to hear, he is a good-for-nothing fellow." Judgment then in all concrete matter is the architectonic faculty; and what may be called the Illative Sense, or right judgment in ratiocination, is one branch of it.

Notes

1. "Orley Farm."

2. *Guardian*, June 28, 1865.

3. History, vol. x. pp. 286, 287.

4. "Peveril of the Peak."

5. "Life of Mother Margaret M. Hallahan," p. [?].

6. Eth. Nicom. vi. 11, fin.