Chapter III.

Fallacies Of Simple Inspection; Or *A Priori* Fallacies.

§ 1. The tribe of errors of which we are to treat in the first instance, are those in which no actual inference takes place at all; the proposition (it can not in such cases be called a conclusion) being embraced, not as proved, but as requiring no proof; as a self-evident truth; or else as having such intrinsic verisimilitude, that external evidence not in itself amounting to proof, is sufficient in aid of the antecedent presumption.

An attempt to treat this subject comprehensively would be a transgression of the bounds prescribed to this work, since it would necessitate the inquiry which, more than any other, is the grand question of what is called metaphysics, viz., What are the propositions which may reasonably be received without proof? That there must be some such propositions all are agreed, since there can not be an infinite series of proof, a chain suspended from nothing. But to determine what these propositions are, is the *opus magnum* of the more recondite mental philosophy. Two principal divisions of opinion on the subject have divided the schools of philosophy from its first dawn. The one recognizes no ultimate premises but the facts of our subjective consciousness; our sensations, emotions, intellectual states of mind, and volitions. These, and whatever by strict rules of induction can be derived from these, it is possible, according to this theory, for us to know; of all else we must remain in ignorance. The opposite school hold that there are other existences, suggested indeed to our minds by these subjective phenomena, but not inferable from them, by any process either of deduction or of induction; which, however, we must, by the constitution of our mental nature, recognize as realities; and realities, too, of a higher order than the phenomena of our consciousness, being the efficient causes and necessary substrata of all Phenomena. Among these entities they reckon Substances, whether matter or spirit; from the dust under our feet to the soul, and from that to Deity. All these, according to them, are preternatural or supernatural beings, having no likeness in experience, though experience is entirely a manifestation of their agency. Their existence, together with more or less of the laws to which they conform in their operations, are, on this theory, apprehended and recognized as real by the mind itself intuitively; experience (whether in the form of sensation or of mental feeling) having no other part in the matter than as affording facts which are consistent with these necessary postulates of reason, and which are explained and accounted for by them.

As it is foreign to the purpose of the present treatise to decide between these conflicting theories, we are precluded from inquiring into the existence, or defining the extent and limits, of knowledge *a priori*, and from characterizing the kind of correct assumption which the fallacy of incorrect assumption, now under consideration, simulates. Yet since it is allowed on both sides that such assumptions are often made improperly, we may find it practicable, without entering into the ultimate metaphysical grounds of the discussion, to state some speculative propositions, and suggest some practical cautions, respecting the forms in which such unwarranted assumptions are most likely to be made.

§ 2. In the cases in which, according to the thinkers of the ontological school, the mind apprehends, by intuition, things, and the laws of things, not cognizable by our sensitive faculty; those intuitive, or supposed intuitive, perceptions are undistinguishable from what the opposite school are accustomed to call ideas of the mind. When they themselves say that they perceive the things by an immediate act of a faculty given for that purpose by their Creator, it would be said of them by their opponents that they find an idea or conception in their own minds, and from the idea or conception, infer the existence of a corresponding objective reality. Nor would this be an unfair statement, but a mere version into other words of the account given by many of themselves; and one to which the more clear-sighted of them might, and generally do, without hesitation, subscribe. Since, therefore, in the cases which lay the strongest claims to be examples of knowledge *a priori*, the mind proceeds from the idea of a thing to the reality of the thing itself, we can not be surprised by finding that illicit assumptions *a priori* consist in doing the same thing erroneously; in mistaking subjective facts for objective, laws of the percipient mind for laws of the perceived object, properties of the ideas or conceptions for properties of the things conceived.

Accordingly, a large proportion of the erroneous thinking which exists in the world proceeds on a tacit assumption, that the same order must obtain among the objects in nature which obtains among our ideas of them. That if we always think of two things together, the two things must always exist together. That if one thing makes us think of another as preceding or following it, that other must precede it or follow it in actual fact. And conversely, that when we can not conceive two things together they can not exist together, and that their combination may, without further evidence, be rejected from the list of possible occurrences.

Few persons, I am inclined to think, have reflected on the great extent to which this fallacy has prevailed, and prevails, in the actual beliefs and actions of mankind. For a first illustration of it we may refer to a large class of popular superstitions. If any one will examine in what circumstances most of those things agree, which in different ages and by different portions of the human race have been considered as omens or prognostics of some interesting event, whether calamitous or fortunate; they will be found very generally characterized by this peculiarity, that they cause the mind to *think* of that, of which they are therefore supposed to forbode the actual occurrence. "Talk of the devil and he will appear," has passed into a proverb. Talk of the devil, that is, raise the idea, and the reality will follow. In times when the appearance of that personage in a visible form was thought to be no unfrequent occurrence, it has doubtless often happened to persons of vivid imagination and susceptible nerves, that talking of the devil has caused them to fancy they saw him; as even in our more incredulous days, listening to ghost stories predisposes us to see ghosts; and thus, as a prop to the *a priori* fallacy, there might come to be added an auxiliary fallacy of malobservation, with one of false generalization grounded on it. Fallacies of different orders often herd or cluster together in this fashion, one smoothing the way for another. But the origin of the superstition is evidently that which we have assigned. In like manner, it has been universally considered unlucky to speak of misfortune.

The day on which any calamity happened has been considered an unfortunate day, and there has been a feeling everywhere, and in some nations a religious obligation, against transacting any important business on that day. For on such a day our thoughts are likely to be of misfortune. For a similar reason, any untoward occurrence in commencing an undertaking has been considered ominous of failure; and often, doubtless, has really contributed to it by putting the persons engaged in the enterprise more or less out of spirits; but the belief has equally prevailed where the disagreeable circumstance was, independently of superstition, too insignificant to depress the spirits by any influence of its own. All know the story of Cæsar's accidentally stumbling in the act of landing on the African coast; and the presence of mind with which he converted the direful presage into a favorable one by exclaiming, "Africa, I embrace thee." Such omens, it is true, were often conceived as warnings of the future, given by a friendly or a hostile deity; but this very superstition grew out of a pre-existing tendency; the god was supposed to send, as an indication of what was to come, something which people were already disposed to consider in that light. So in the case of lucky or unlucky names. Herodotus tells us how the Greeks, on the way to Mycale, were encouraged in their enterprise by the arrival of a deputation from Samos, one of the members of which was named Hegesistratus, the leader of armies.

Cases may be pointed out in which something which could have no real effect but to make persons *think* of misfortune, was regarded not merely as a prognostic, but as something approaching to an actual cause of it. The {~GREEK SMALL LETTER EPSILON~}{~GREEK SMALL LETTER UPSILON WITH PSILI~}{~GREEK SMALL LETTER PHI~}{~GREEK SMALL LETTER ETA WITH OXIA~}{~GREEK SMALL LETTER MU~}{~GREEK SMALL LETTER EPSILON~}{~GREEK SMALL LETTER IOTA~} of the Greeks, and *favete linguis*, or *bona verba quæso*, of the Romans, evince the care with which they endeavored to repress the utterance of any word expressive or suggestive of ill fortune; not from notions of delicate politeness, to which their general mode of conduct and feeling had very little reference, but from *bona fide* alarm lest the event so suggested to the imagination should in fact occur. Some vestige of a similar superstition has been known to exist among uneducated persons even in our own day: it is thought an unchristian thing to talk of, or suppose, the death of any person while he is alive. It is known how careful the Romans were to avoid, by an indirect mode of speech, the utterance of any word directly expressive of death or other calamity; how instead of *mortuus est* they said *vixit*; and "be the event fortunate or *otherwise*" instead

of *adverse*. The name Maleventum, of which Salmasius so sagaciously detected the Thessalian origin ({~GREEK CAPITAL LETTER MU~}{~GREEK SMALL LETTER ALPHA~}{~GREEK SMALL LETTER LAMDA~}{~GREEK SMALL LETTER OMICRON WITH OXIA~}{~GREEK SMALL LETTER EPSILON~}{~GREEK SMALL LETTER IOTA~}{~GREEK SMALL LETTER FINAL SIGMA~}, {~GREEK CAPITAL LETTER MU~}{~GREEK SMALL LETTER ALPHA~}{~GREEK SMALL LETTER LAMDA~}{~GREEK SMALL LETTER OMICRON~}{~GREEK SMALL LETTER EPSILON WITH OXIA~}{~GREEK SMALL LETTER NU~}{~GREEK SMALL LETTER TAU~}{~GREEK SMALL LETTER OMICRON~}{~GREEK SMALL LETTER FINAL SIGMA~}), they changed into the highly propitious denomination, Beneventum; Egesta into Segesta; and Epidamnus, a name so interesting in its associations to the reader of Thucydides, they exchanged for Dyrrhachium, to escape the perils of a word suggestive of *damnum* or detriment.

"If a hare cross the highway," says Sir Thomas Browne,(230) "there are few above threescore that are not perplexed thereat; which notwithstanding is but an augurial terror, according to that received expression, *Inauspicatum dat iter oblatus lepus*. And the ground of the conceit was probably no greater than this, that a fearful animal passing by us portended unto us something to be feared; as upon the like consideration the meeting of a fox presaged some future imposture." Such superstitions as these last must be the result of study; they are too recondite for natural or spontaneous growth. But when the attempt was once made to construct a science of predictions, any association, though ever so faint or remote, by which an object could be connected in however far-fetched a manner with ideas either of prosperity or of danger and misfortune, was enough to determine its being classed among good or evil omens.

An example of rather a different kind from any of these, but falling under the same principle, is the famous attempt on which so much labor and ingenuity were expended by the alchemists, to make gold potable. The motive to this was a conceit that potable gold could be no other than the universal medicine; and why gold? Because it was so precious. It must have all marvelous properties as a physical substance, because the mind was already accustomed to marvel at it.

From a similar feeling, "every substance," says Dr. Paris,(231) "whose origin is involved in mystery, has at different times been eagerly applied to the purposes of medicine. Not long since, one of those showers which are now known to consist of the excrements of insects, fell in the north of Italy; the inhabitants regarded it as manna, or some supernatural panacea, and they swallowed it with such avidity, that it was only by extreme address that a small quantity was obtained for a chemical examination." The superstition, in this instance, though doubtless partly of a religious character, probably in part also arose from the prejudice that a wonderful thing must of course have wonderful properties.

§ 3. The instances of *a priori* fallacy which we have hitherto cited belong to the class of vulgar errors, and do not now, nor in any but a rude age ever could, impose upon minds of any considerable attainments. But those to which we are about to proceed, have been, and still are, all but universally prevalent among thinkers. The same disposition to give objectivity to a law of the mind--to suppose that what is true of our ideas of things must be true of the things themselves--exhibits itself in many of the most accredited modes of philosophical investigation, both on physical and on metaphysical subjects. In one of its most undisguised manifestations, it embodies itself in two maxims, which lay claim to axiomatic truth: Things which we can not think of together, can not co-exist; and Things which we can not help thinking of together, must co-exist. I am not sure that the maxims were ever expressed in these precise words, but the history both of philosophy and of popular opinions abounds with exemplifications of both forms of the doctrine.

To begin with the latter of them: Things which we can not think of except together, must exist together. This is assumed in the generally received and accredited mode of reasoning which concludes that A must accompany B in point of fact, because "it is involved in the idea." Such thinkers do not reflect that the idea, being a result of abstraction, ought to conform to the facts, and can not make the facts conform to it. The argument is at most admissible as an appeal to authority; a surmise, that what is now part of the idea, must,

before it became so, have been found by previous inquirers in the facts. Nevertheless, the philosopher who more than all others made professions of rejecting authority, Descartes, constructed his system on this very basis. His favorite device for arriving at truth, even in regard to outward things, was by looking into his own mind for it. "Credidi me," says his celebrated maxim, "pro regulâ generali sumere posse, omne id quod valdè dilucidè et distinctè concipiebam, verum esse;" whatever can be very clearly conceived must certainly exist; that is, as he afterward explains it, if the idea includes existence. And on this ground he infers that geometrical figures really exist, because they can be distinctly conceived. Whenever existence is "involved in an idea," a thing conformable to the idea must really exist; which is as much as to say, whatever the idea contains must have its equivalent in the thing; and what we are not able to leave out of the idea can not be absent from the reality.(232) This assumption pervades the philosophy not only of Descartes, but of all the thinkers who received their impulse mainly from him, in particular the two most remarkable among them, Spinoza and Leibnitz, from whom the modern German metaphysical philosophy is essentially an emanation. I am indeed disposed to think that the fallacy now under consideration has been the cause of two-thirds of the bad philosophy, and especially of the bad metaphysics, which the human mind has never ceased to produce. Our general ideas contain nothing but what has been put into them, either by our passive experience, or by our active habits of thought; and the metaphysicians in all ages, who have attempted to construct the laws of the universe by reasoning from our supposed necessities of thought, have always proceeded, and only could proceed, by laboriously finding in their own minds what they themselves had formerly put there, and evolving from their ideas of things what they had first involved in those ideas. In this way all deeply-rooted opinions and feelings are enabled to create apparent demonstrations of their truth and reasonableness, as it were, out of their own substance.

The other form of the fallacy: Things which we can not think of together can not exist together--including as one of its branches, that what we can not think of as existing can not exist at all--may thus be briefly expressed: Whatever is inconceivable must be false.

Against this prevalent doctrine I have sufficiently argued in a former Book,(233) and nothing is required in this place but examples. It was long held that Antipodes were impossible because of the difficulty which was found in conceiving persons with their heads in the same direction as our feet. And it was one of the received arguments against the Copernican system, that we can not conceive so great a void space as that system supposes to exist in the celestial regions. When men's imaginations had always been used to conceive the stars as firmly set in solid spheres, they naturally found much difficulty in imagining them in so different, and, as it doubtless appeared to them, so precarious a situation. But they had no right to mistake the limitation (whether natural, or, as it in fact proved, only artificial) of their own faculties, for an inherent limitation of the possible modes of existence in the universe.

It may be said in objection, that the error in these cases was in the minor premise, not the major; an error of fact, not of principle; that it did not consist in supposing that what is inconceivable can not be true, but in supposing antipodes to be inconceivable, when present experience proves that they can be conceived. Even if this objection were allowed, and the proposition that what is inconceivable can not be true were suffered to remain unquestioned as a speculative truth, it would be a truth on which no practical consequence could ever be founded, since, on this showing, it is impossible to affirm of any proposition, not being a contradiction in terms, that it is inconceivable. Antipodes were really, not fictitiously, inconceivable to our ancestors: they are indeed conceivable to us; and as the limits of our power of conception have been so largely extended, by the extension of our experience and the more varied exercise of our imagination, so may posterity find many combinations perfectly conceivable to them which are inconceivable to us. But, as beings of limited experience, we must always and necessarily have limited conceptive powers; while it does not by any means follow that the same limitation obtains in the possibilities of Nature, nor even in her actual manifestations.

Rather more than a century and a half ago it was a scientific maxim, disputed by no one, and which no one deemed to require any proof, that "a thing can not act where it is not."(234) With this weapon the Cartesians waged a formidable war against the theory of gravitation, which, according to them, involving so obvious an

absurdity, must be rejected *in limine*: the sun could not possibly act upon the earth, not being there. It was not surprising that the adherents of the old systems of astronomy should urge this objection against the new; but the false assumption imposed equally on Newton himself, who, in order to turn the edge of the objection, imagined a subtle ether which filled up the space between the sun and the earth, and by its intermediate agency was the proximate cause of the phenomena of gravitation. "It is inconceivable," said Newton, in one of his letters to Dr. Bentley,(235) "that inanimate brute matter should, without the mediation of something else, which is not material, operate upon and affect other matter *without mutual contact*.... That gravity should be innate, inherent, and essential to matter, so that one body may act on another, at a distance, through a vacuum, without the mediation of any thing else, by and through which their action and force may be conveyed from one to another, is to me so great an absurdity, that I believe no man, who in philosophical matters has a competent faculty of thinking, can ever fall into it." This passage should be hung up in the cabinet of every cultivator of science who is ever tempted to pronounce a fact impossible because it appears to him inconceivable. In our own day one would be more tempted, though with equal injustice, to reverse the concluding observation, and consider the seeing any absurdity at all in a thing so simple and natural, to be what really marks the absence of "a competent faculty of thinking." No one now feels any difficulty in conceiving gravity to be, as much as any other property is, "inherent and essential to matter," nor finds the comprehension of it facilitated in the smallest degree by the supposition of an ether (though some recent inquirers do give this as an explanation of it); nor thinks it at all incredible that the celestial bodies can and do act where they, in actual bodily presence, are not. To us it is not more wonderful that bodies should act upon one another "without mutual contact," than that they should do so when in contact; we are familiar with both these facts, and we find them equally inexplicable, but equally easy to believe. To Newton, the one, because his imagination was familiar with it, appeared natural and a matter of course, while the other, for the contrary reason, seemed too absurd to be credited.

It is strange that any one, after such a warning, should rely implicitly on the evidence *a priori* of such propositions as these, that matter can not think; that space, or extension, is infinite; that nothing can be made out of nothing (*ex nihilo nihil fit*). Whether these propositions are true or not this is not the place to determine, nor even whether the questions are soluble by the human faculties. But such doctrines are no more self-evident truths, than the ancient maxim that a thing can not act where it is not, which probably is not now believed by any educated person in Europe.(236) Matter can not think; why? because we *can not conceive* thought to be annexed to any arrangement of material particles. Space is infinite, because having never known any part of it which had not other parts beyond it, we *can not conceive* an absolute termination. *Ex nihilo nihil fit*, because having never known any physical product without a pre-existing physical material, we *can not*, or think we can not, *imagine* a creation out of nothing. But these things may in themselves be as conceivable as gravitation without an intervening medium, which Newton thought too great an absurdity for any person of a competent faculty of philosophical thinking to admit: and even supposing them not conceivable, this, for aught we know, may be merely one of the limitations of our very limited minds, and not in nature at all.

No writer has more directly identified himself with the fallacy now under consideration, or has embodied it in more distinct terms, than Leibnitz. In his view, unless a thing was not merely conceivable, but even explainable, it could not exist in nature. All *natural* phenomena, according to him, must be susceptible of being accounted for *a priori*. The only facts of which no explanation could be given but the will of God, were miracles properly so called. "Je reconnais," says he,(237) "qu'il n'est pas permis de nier ce qu'on n'entend pas; mais j'ajoute qu'on a droit de nier (au moins dans l'ordre naturel) ce que absolument n'est point intelligible ni explicable. Je soutiens aussi ... qu'enfin la conception des créatures n'est pas la mesure du pouvoir de Dieu, mais que leur conceptivité, ou force de concevoir, est la mesure du pouvoir de la nature, tout ce qui est conforme à l'ordre naturel pouvant être conçu ou entendu par quelque créature."

Not content with assuming that nothing can be true which we are unable to conceive, scientific inquirers have frequently given a still further extension to the doctrine, and held that, even of things not altogether inconceivable, that which we can conceive with the greatest ease is likeliest to be true. It was long an admitted axiom, and is not yet entirely discredited, that "nature always acts by the simplest means," *i.e.*, by those which

are most easily conceivable.(238) A large proportion of all the errors ever committed in the investigation of the laws of nature, have arisen from the assumption that the most familiar explanation or hypothesis must be the truest.

One of the most instructive facts in scientific history is the pertinacity with which the human mind clung to the belief that the heavenly bodies must move in circles, or be carried round by the revolution of spheres; merely because those were in themselves the simplest suppositions: though, to make them accord with the facts which were ever contradicting them more and more, it became necessary to add sphere to sphere and circle to circle, until the original simplicity was converted into almost inextricable complication.

§ 4. We pass to another *a priori* fallacy or natural prejudice, allied to the former, and originating, as that does, in the tendency to presume an exact correspondence between the laws of the mind and those of things external to it. The fallacy may be enunciated in this general form--Whatever can be thought of apart exists apart: and its most remarkable manifestation consists in the personification of abstractions. Mankind in all ages have had a strong propensity to conclude that wherever there is a name, there must be a distinguishable separate entity corresponding to the name; and every complex idea which the mind has formed for itself by operating upon its conceptions of individual things, was considered to have an outward objective reality answering to it. Fate, Chance, Nature, Time, Space, were real beings, nay, even gods. If the analysis of qualities in the earlier part of this work be correct, names of qualities and names of substances stand for the very same sets of facts or phenomena; *whiteness* and *a white thing* are only different phrases, required by convenience for speaking of the same external fact under different relations. Not such, however, was the notion which this verbal distinction suggested of old, either to the vulgar or to the scientific. Whiteness was an entity, inhering or sticking in the white substance: and so of all other qualities. So far was this carried, that even concrete general terms were supposed to be, not names of indefinite numbers of individual substances, but names of a peculiar kind of entities termed Universal Substances. Because we can think and speak of man in general, that is, of all persons in so far as possessing the common attributes of the species, without fastening our thoughts permanently on some one individual person; therefore man in general was supposed to be, not an aggregate of individual persons, but an abstract or universal man, distinct from these.

It may be imagined what havoc metaphysicians trained in these habits made with philosophy, when they came to the largest generalizations of all. *Substantiæ Secundæ* of any kind were bad enough, but such Substantiæ Secundæ as {~GREEK SMALL LETTER TAU~}{~GREEK SMALL LETTER OMICRON WITH VARIA~} {~GREEK SMALL LETTER OMICRON WITH PSILI AND OXIA~}{~GREEK SMALL LETTER NU~}, for example, and {~GREEK SMALL LETTER TAU~}{~GREEK SMALL LETTER OMICRON WITH VARIA~} {~GREEK SMALL LETTER EPSILON WITH PSILI AND OXIA~}{~GREEK SMALL LETTER NU~}, standing for peculiar entities supposed to be inherent in all things which *exist*, or in all which are said to be *one*, were enough to put an end to all intelligible discussion; especially since, with a just perception that the truths which philosophy pursues are *general* truths, it was soon laid down that these general substances were the only subjects of science, being immutable, while individual substances cognizable by the senses, being in a perpetual flux, could not be the subject of real knowledge. This misapprehension of the import of general language constitutes Mysticism, a word so much oftener written and spoken than understood. Whether in the Vedas, in the Platonists, or in the Hegelians, mysticism is neither more nor less than ascribing objective existence to the subjective creations of our own faculties, to ideas or feelings of the mind; and believing that by watching and contemplating these ideas of its own making, it can read in them what takes place in the world without.

§ 5. Proceeding with the enumeration of *a priori* fallacies, and endeavoring to arrange them with as much reference as possible to their natural affinities, we come to another, which is also nearly allied to the fallacy preceding the last, standing in the same relation to one variety of it as the fallacy last mentioned does to the other. This, too, represents nature as under incapacities corresponding to those of our intellect; but instead of only asserting that nature can not do a thing because we can not conceive it done, goes the still greater length of averring that nature does a particular thing, on the sole ground that we can see no reason why she should

not. Absurd as this seems when so plainly stated, it is a received principle among scientific authorities for demonstrating *a priori* the laws of physical phenomena. A phenomenon must follow a certain law, because we see no reason why it should deviate from that law in one way rather than in another. This is called the Principle of the Sufficient Reason;(239) and by means of it philosophers often flatter themselves that they are able to establish, without any appeal to experience, the most general truths of experimental physics.

Take, for example, two of the most elementary of all laws, the law of inertia and the first law of motion. A body at rest can not, it is affirmed, begin to move unless acted upon by some external force; because, if it did, it must either move up or down, forward or backward, and so forth; but if no outward force acts upon it, there can be *no reason* for its moving up rather than down, or down rather than up, etc., *ergo*, it will not move at all.

This reasoning I conceive to be entirely fallacious, as indeed Dr. Brown, in his treatise on Cause and Effect, has shown with great acuteness and justness of thought. We have before remarked, that almost every fallacy may be referred to different genera by different modes of filling up the suppressed steps; and this particular one may, at our option, be brought under *petitio principii*. It supposes that nothing can be a "sufficient reason" for a body's moving in one particular direction, except some external force. But this is the very thing to be proved. Why not some *internal* force? Why not the law of the thing's own nature? Since these philosophers think it necessary to prove the law of inertia, they of course do not suppose *it* to be self-evident; they must, therefore, be of opinion that previously to all proof, the supposition of a body's moving by internal impulse is an admissible hypothesis; but if so, why is not the hypothesis also admissible, that the internal impulse acts naturally in some one particular direction, not in another? If spontaneous motion might have been the law of matter, why not spontaneous motion toward the sun, toward the earth, or toward the zenith? Why not, as the ancients supposed, toward a particular place in the universe, appropriated to each particular kind of substance? Surely it is not allowable to say that spontaneity of motion is credible in itself, but not credible if supposed to take place in any determinate direction.

Indeed, if any one chose to assert that all bodies when uncontrolled set out in a direct line toward the North Pole, he might equally prove his point by the principle of the Sufficient Reason. By what right is it assumed that a state of rest is the particular state which can not be deviated from without special cause? Why not a state of motion, and of some particular sort of motion? Why may we not say that the natural state of a horse left to himself is to amble, because otherwise he must either trot, gallop, or stand still, and because we know no reason why he should do one of these rather than another? If this is to be called an unfair use of the "sufficient reason," and the other a fair one, there must be a tacit assumption that a state of rest is more natural to a horse than a state of ambling. If this means that it is the state which the animal will assume when left to himself, that is the very point to be proved; and if it does not mean this, it can only mean that a state of rest is the simplest state, and therefore the most likely to prevail in nature, which is one of the fallacies or natural prejudices we have already examined.

So again of the First Law of Motion; that a body once moving will, if left to itself, continue to move uniformly in a straight line. An attempt is made to prove this law by saying, that if not, the body must deviate either to the right or to the left, and that there is no reason why it should do one more than the other. But who could know, antecedently to experience, whether there was a reason or not? Might it not be the nature of bodies, or of some particular bodies, to deviate toward the right? or if the supposition is preferred, toward the east, or south? It was long thought that bodies, terrestrial ones at least, had a natural tendency to deflect downward; and there is no shadow of any thing objectionable in the supposition, except that it is not true. The pretended proof of the law of motion is even more manifestly untenable than that of the law of inertia, for it is flagrantly inconsistent; it assumes that the continuance of motion in the direction first taken is more natural than deviation either to the right or to the left, but denies that one of these can possibly be more natural than the other. All these fancies of the possibility of knowing what is natural or not natural by any other means than experience, are, in truth, entirely futile. The real and only proof of the laws of motion, or of any other law of the universe, is experience; it is simply that no other suppositions explain or are consistent with the facts of universal nature.

Geometers have, in all ages, been open to the imputation of endeavoring to prove the most general facts of the outward world by sophistical reasoning, in order to avoid appeals to the senses. Archimedes, says Professor Playfair,(240) established some of the elementary propositions of statics by a process in which he "borrows no principle from experiment, but establishes his conclusion entirely by reasoning *a priori*. He assumes, indeed, that equal bodies, at the ends of the equal arms of a lever, will balance one another; and also that a cylinder or parallelopiped of homogeneous matter, will be balanced about its centre of magnitude. These, however, are not inferences from experience; they are, properly speaking, conclusions deduced from the principle of the Sufficient Reason." And to this day there are few geometers who would not think it far more scientific to establish these or any other premises in this way, than to rest their evidence on that familiar experience which in the case in question might have been so safely appealed to.

§ 6. Another natural prejudice, of most extensive prevalence, and which had a great share in producing the errors fallen into by the ancients in their physical inquiries, was this: That the differences in nature must correspond to our received distinctions: that effects which we are accustomed, in popular language, to call by different names, and arrange in different classes, must be of different natures, and have different causes. This prejudice, so evidently of the same origin with those already treated of, marks more especially the earliest stage of science, when it has not yet broken loose from the trammels of every-day phraseology. The extraordinary prevalence of the fallacy among the Greek philosophers may be accounted for by their generally knowing no other language than their own; from which it was a consequence that their ideas followed the accidental or arbitrary combinations of that language, more completely than can happen among the moderns to any but illiterate persons. They had great difficulty in distinguishing between things which their language confounded, or in putting mentally together things which it distinguished; and could hardly combine the objects in nature, into any classes but those which were made for them by the popular phrases of their own country; or at least could not help fancying those classes to be natural and all others arbitrary and artificial. Accordingly, scientific investigation among the Greek schools of speculation and their followers in the Middle Ages, was little more than a mere sifting and analyzing of the notions attached to common language. They thought that by determining the meaning of words, they could become acquainted with facts. "They took for granted," says Dr. Whewell,(241) "that philosophy must result from the relations of those notions which are involved in the common use of language, and they proceeded to seek it by studying such notions." In his next chapter, Dr. Whewell has so well illustrated and exemplified this error, that I shall take the liberty of quoting him at some length.

"The propensity to seek for principles in the common usages of language may be discerned at a very early period. Thus we have an example of it in a saying which is reported of Thales, the founder of Greek philosophy. When he was asked, 'What is the *greatest* thing?' he replied '*Place*; for all other things are *in* the world, but the world is *in* it.' In Aristotle we have the consummation of this mode of speculation. The usual point from which he starts in his inquiries is, that *we say* thus or thus in common language. Thus, when he has to discuss the question whether there be, in any part of the universe, a void, or space in which there is nothing, he inquires first in how many senses we say that one thing is *in* another. He enumerates many of these; we say the part is in the whole, as the finger is *in* the hand; again we say, the species is in the genus, as man is included *in* animal; again, the government of Greece is *in* the king; and various other senses are described and exemplified, but of all these *the most proper* is when we say a thing is *in* a vessel, and generally *in place*. He next examines what *place* is, and comes to this conclusion, that 'if about a body there be another body including it, it is in place, and if not, not.' A body moves when it changes its place; but he adds, that if water be in a vessel, the vessel being at rest, the parts of the water may still move, for they are included by each other; so that while the whole does not change its place, the parts may change their place in a circular order. Proceeding then to the question of a *void*, he as usual examines the different senses in which the term is used, and adopts as the most proper, *place without matter*, with no useful result.

"Again, in a question concerning mechanical action, he says, 'When a man moves a stone by pushing it with a stick, *we* say both that the man moves the stone, and that the stick moves the stone, but the latter *more properly*.'

"Again, we find the Greek philosophers applying themselves to extract their dogmas from the most general and abstract notions which they could detect; for example, from the conception of the Universe as One or as Many things. They tried to determine how far we may, or must, combine with these conceptions that of a whole, of parts, of number, of limits, of place, of beginning or end, of full or void, of rest or motion, of cause and effect, and the like. The analysis of such conceptions with such a view, occupies, for instance, almost the whole of Aristotle's Treatise on the Heavens."

The following paragraph merits particular attention: "Another mode of reasoning, very widely applied in these attempts, was the *doctrine of contrarieties*, in which it was assumed that adjectives or substances which are in common language, or in some abstract mode of conception, opposed to each other, must point at some fundamental antithesis in nature, which it is important to study. Thus Aristotle says that the Pythagoreans, from the contrasts which number suggests, collected ten principles--Limited and Unlimited, Odd and Even, One and Many, Right and Left, Male and Female, Rest and Motion, Straight and Curved, Light and Darkness, Good and Evil, Square and Oblong.... Aristotle himself deduced the doctrine of four elements and other dogmas by oppositions of the same kind."

Of the manner in which, from premises obtained in this way, the ancients attempted to deduce laws of nature, an example is given in the same work a few pages further on. "Aristotle decides that there is no void on such arguments as this. In a void there could be no difference of up and down; for as in nothing there are no differences, so there are none in a privation or negation; but a void is merely a privation or negation of matter; therefore, in a void, bodies could not move up and down, which it is in their nature to do. It is easily seen" (Dr. Whewell very justly adds) "that such a mode of reasoning elevates the familiar forms of language, and the intellectual connections of terms, to a supremacy over facts; making truth depend upon whether terms are or are not privative, and whether we say that bodies fall *naturally*."

The propensity to assume that the same relations obtain between objects themselves, which obtain between our ideas of them, is here seen in the extreme stage of its development. For the mode of philosophizing, exemplified in the foregoing instances, assumes no less than that the proper way of arriving at knowledge of nature, is to study nature itself subjectively; to apply our observation and analysis not to the facts, but to the common notions entertained of the facts.

Many other equally striking examples may be given of the tendency to assume that things which for the convenience of common life are placed in different classes, must differ in every respect. Of this nature was the universal and deeply-rooted prejudice of antiquity and the Middle Ages, that celestial and terrestrial phenomena must be essentially different, and could in no manner or degree depend on the same laws. Of the same kind, also, was the prejudice against which Bacon contended, that nothing produced by nature could be successfully imitated by man: "Calorem solis et ignis toto genere differre; ne scilicet homines putent se per opera ignis, aliquid simile iis quæ in Natura fiunt, educere et formare posse;" and again, "Compositionem tantum opus Hominis, Mistionem vero opus solius Naturæ esse: ne scilicet homines sperent aliquam ex arte Corporum naturalium generationem aut transformationem."(242) The grand distinction in the ancient scientific speculations, between natural and violent motions, though not without a plausible foundation in the appearances themselves, was doubtless greatly recommended to adoption by its conformity to this prejudice.

§ 7. From the fundamental error of the scientific inquirers of antiquity, we pass, by a natural association, to a scarcely less fundamental one of their great rival and successor, Bacon. It has excited the surprise of philosophers that the detailed system of inductive logic, which this extraordinary man labored to construct, has been turned to so little direct use by subsequent inquirers, having neither continued, except in a few of its generalities, to be recognized as a theory, nor having conducted in practice to any great scientific results. But this, though not unfrequently remarked, has scarcely received any plausible explanation; and some, indeed, have preferred to assert that all rules of induction are useless, rather than suppose that Bacon's rules are grounded on an insufficient analysis of the inductive process. Such, however, will be seen to be the fact, as soon as it is considered, that Bacon entirely overlooked Plurality of Causes. All his rules tacitly imply the

assumption, so contrary to all we now know of nature, that a phenomenon can not have more than one cause.

When he is inquiring into what he terms the forma *calidi aut frigidi, gravis aut levis, sicci aut humidi*, and the like, he never for an instant doubts that there is some one thing, some invariable condition or set of conditions, which is present in all cases of heat, or cold, or whatever other phenomenon he is considering; the only difficulty being to find what it is; which accordingly he tries to do by a process of elimination, rejecting or excluding, by negative instances, whatever is not the *forma* or cause, in order to arrive at what is. But, that this *forma* or cause is *one* thing, and that it is the same in all hot objects, he has no more doubt of, than another person has that there is always some cause *or other*. In the present state of knowledge it could not be necessary, even if we had not already treated so fully of the question, to point out how widely this supposition is at variance with the truth. It is particularly unfortunate for Bacon that, falling into this error, he should have fixed almost exclusively upon a class of inquiries in which it was especially fatal; namely, inquiries into the causes of the sensible qualities of objects. For his assumption, groundless in every case, is false in a peculiar degree with respect to those sensible qualities. In regard to scarcely any of them has it been found possible to trace any unity of cause, any set of conditions invariably accompanying the quality. The conjunctions of such qualities with one another constitute the variety of Kinds, in which, as already remarked, it has not been found possible to trace any law. Bacon was seeking for what did not exist. The phenomenon of which he sought for the one cause has oftenest no cause at all, and when it has, depends (as far as hitherto ascertained) on an unassignable variety of distinct causes.

And on this rock every one must split, who represents to himself as the first and fundamental problem of science to ascertain what is the cause of a given effect, rather than what are the effects of a given cause. It was shown, in an early stage of our inquiry into the nature of Induction,(243) how much more ample are the resources which science commands for the latter than for the former inquiry, since it is upon the latter only that we can throw any direct light by means of experiment; the power of artificially producing an effect, implying a previous knowledge of at least one of its causes. If we discover the causes of effects, it is generally by having previously discovered the effects of causes; the greatest skill in devising crucial instances for the former purpose may only end, as Bacon's physical inquiries did, in no result at all. Was it that his eagerness to acquire the power of producing for man's benefit effects of practical importance to human life, rendering him impatient of pursuing that end by a circuitous route, made even him, the champion of experiment, prefer the direct mode, though one of mere observation, to the indirect, in which alone experiment was possible? Or had even Bacon not entirely cleared his mind from the notion of the ancients, that "rerum cognoscere *causas*" was the sole object of philosophy, and that to inquire into the *effects* of things belonged to servile and mechanical arts?

It is worth remarking that, while the only efficient mode of cultivating speculative science was missed from an undue contempt of manual operations, the false speculative views thus engendered gave in their turn a false direction to such practical and mechanical aims as were suffered to exist. The assumption universal among the ancients and in the Middle Ages, that there were *principles* of heat and cold, dryness and moisture, etc., led directly to a belief in alchemy; in a transmutation of substances, a change from one Kind into another. Why should it not be possible to make gold? Each of the characteristic properties of gold has its *forma*, its essence, its set of conditions, which if we could discover, and learn how to realize, we could superinduce that particular property upon any other substance, upon wood, or iron, or lime, or clay. If, then, we could effect this with respect to every one of the essential properties of the precious metal, we should have converted the other substance into gold. Nor did this, if once the premises were granted, appear to transcend the real powers of mankind. For daily experience showed that almost every one of the distinctive sensible properties of any object, its consistence, its color, its taste, its smell, its shape, admitted of being totally changed by fire, or water, or some other chemical agent. The *formæ* of all those qualities seeming, therefore, to be within human power either to produce or to annihilate, not only did the transmutation of substances appear abstractedly possible, but the employment of the power, at our choice, for practical ends, seemed by no means hopeless.(244)

A prejudice, universal in the ancient world, and from which Bacon was so far from being free, that it pervaded and vitiated the whole practical part of his system of logic, may with good reason be ranked high in the order of Fallacies of which we are now treating.

§ 8. There remains one *a priori* fallacy or natural prejudice, the most deeply-rooted, perhaps, of all which we have enumerated; one which not only reigned supreme in the ancient world, but still possesses almost undisputed dominion over many of the most cultivated minds; and some of the most remarkable of the numerous instances by which I shall think it necessary to exemplify it, will be taken from recent thinkers. This is, that the conditions of a phenomenon must, or at least probably will, resemble the phenomenon itself.

Conformably to what we have before remarked to be of frequent occurrence, this fallacy might without much impropriety have been placed in a different class, among Fallacies of Generalization; for experience does afford a certain degree of countenance to the assumption. The cause does, in very many cases, resemble its effect; like produces like. Many phenomena have a direct tendency to perpetuate their own existence, or to give rise to other phenomena similar to themselves. Not to mention forms actually moulded on one another, as impressions on wax and the like, in which the closest resemblance between the effect and its cause is the very law of the phenomenon; all motion tends to continue itself, with its own velocity, and in its own original direction; and the motion of one body tends to set others in motion, which is indeed the most common of the modes in which the motions of bodies originate. We need scarcely refer to contagion, fermentation, and the like; or to the production of effects by the growth or expansion of a germ or rudiment resembling on a smaller scale the completed phenomenon, as in the growth of a plant or animal from an embryo, that embryo itself deriving its origin from another plant or animal of the same kind. Again, the thoughts or reminiscences, which are effects of our past sensations, resemble those sensations; feelings produce similar feelings by way of sympathy; acts produce similar acts by involuntary or voluntary imitation. With so many appearances in its favor, no wonder if a presumption naturally grew up, that causes must *necessarily* resemble their effects, and that like could *only* be produced by like.

This principle of fallacy has usually presided over the fantastical attempts to influence the course of nature by conjectural means, the choice of which was not directed by previous observation and experiment. The guess almost always fixed upon some means which possessed features of real or apparent resemblance to the end in view. If a charm was wanted, as by Ovid's Medea, to prolong life, all long-lived animals, or what were esteemed such, were collected and brewed into a broth:

nec defuit illic Squamea Cinyphii tenuis membrana chelydri Vivacisque jecur cervi: quibus insuper addit Ora caputque novem cornicis sæcula passæ.

A similar notion was embodied in the celebrated medical theory called the "Doctrine of Signatures," "which is no less," says Dr. Paris,(245) "than a belief that every natural substance which possesses any medicinal virtue indicates by an obvious and well-marked external character the disease for which it is a remedy, or the object for which it should be employed." This outward character was generally some feature of resemblance, real or fantastical, either to the effect it was supposed to produce, or to the phenomenon over which its power was thought to be exercised. "Thus the lungs of a fox must be a specific for asthma, because that animal is remarkable for its strong powers of respiration. Turmeric has a brilliant yellow color, which indicates that it has the power of curing the jaundice; for the same reason, poppies must relieve diseases of the head; Agaricus those of the bladder; *Cassia fistula* the affections of the intestines, and Aristolochia the disorders of the uterus: the polished surface and stony hardness which so eminently characterize the seeds of the Lithospermum officinale (common gromwell) were deemed a certain indication of their efficacy in calculous and gravelly disorders; for a similar reason, the roots of the Saxifraga granulata (white saxifrage) gained reputation in the cure of the same disease; and the Euphrasia (eye-bright) acquired fame, as an application in complaints of the eye, because it exhibits a black spot in its corolla resembling the pupil. The blood-stone, the Heliotropium of the ancients, from the occasional small specks or points of a blood-red color exhibited on its green surface, is even at this very day employed in many parts of England and Scotland to stop a bleeding from the nose; and

nettle tea continues a popular remedy for the cure of *Urticaria*. It is also asserted that some substances bear the *signatures* of the humors, as the petals of the red rose that of the blood, and the roots of rhubarb and the flowers of saffron that of the bile."

The early speculations respecting the chemical composition of bodies were rendered abortive by no circumstance more than by their invariably taking for granted that the properties of the elements must resemble those of the compounds which were formed from them.

To descend to more modern instances; it was long thought, and was stoutly maintained by the Cartesians and even by Leibnitz against the Newtonian system (nor did Newton himself, as we have seen, contest the assumption, but eluded it by an arbitrary hypothesis), that nothing (of a physical nature at least) could account for motion, except previous motion; the impulse or impact of some other body. It was very long before the scientific world could prevail upon itself to admit attraction and repulsion (*i.e.*, spontaneous tendencies of particles to approach or recede from one another) as ultimate laws, no more requiring to be accounted for than impulse itself, if indeed the latter were not, in truth, resolvable into the former. From the same source arose the innumerable hypotheses devised to explain those classes of motion which appeared more mysterious than others because there was no obvious mode of attributing them to impulse, as for example the voluntary motions of the human body. Such were the interminable systems of vibrations propagated along the nerves, or animal spirits rushing up and down between the muscles and the brain; which, if the facts could have been proved, would have been an important addition to our knowledge of physiological laws; but the mere invention, or arbitrary supposition of them, could not unless by the strongest delusion be supposed to render the phenomena of animal life more comprehensible, or less mysterious. Nothing, however, seemed satisfactory, but to make out that motion was caused by motion; by something like itself. If it was not one kind of motion, it must be another. In like manner it was supposed that the physical qualities of objects must arise from some similar quality, or perhaps only some quality bearing the same name, in the particles or atoms of which the objects were composed; that a sharp taste, for example, must arise from sharp particles. And reversing the inference, the effects produced by a phenomenon must, it was supposed, resemble in their physical attributes the phenomenon itself. The influences of the planets were supposed to be analogous to their visible peculiarities: Mars, being of a red color, portended fire and slaughter; and the like.

Passing from physics to metaphysics, we may notice among the most remarkable fruits of this *a priori* fallacy two closely analogous theories, employed in ancient and modern times to bridge over the chasm between the world of mind and that of matter; the *species sensibiles* of the Epicureans, and the modern doctrine of perception by means of ideas. These theories are indeed, probably, indebted for their existence not solely to the fallacy in question, but to that fallacy combined with another natural prejudice already adverted to, that a thing can not act where it is not. In both doctrines it is assumed that the phenomenon which takes place *in us* when we see or touch an object, and which we regard as an effect of that object, or rather of its presence to our organs, must of necessity resemble very closely the outward object itself. To fulfill this condition, the Epicureans supposed that objects were constantly projecting in all directions impalpable images of themselves, which entered at the eyes and penetrated to the mind; while modern metaphysicians, though they rejected this hypothesis, agreed in deeming it necessary to suppose that not the thing itself, but a mental image or representation of it, was the direct object of perception. Dr. Reid had to employ a world of argument and illustration to familiarize people with the truth, that the sensations or impressions on our minds need not necessarily be copies of, or bear any resemblance to, the causes which produce them; in opposition to the natural prejudice which led people to assimilate the action of bodies upon our senses, and through them upon our minds, to the transfer of a given form from one object to another by actual moulding. The works of Dr. Reid are even now the most effectual course of study for detaching the mind from the prejudice of which this was an example. And the value of the service which he thus rendered to popular philosophy is not much diminished, although we may hold, with Brown, that he went too far in imputing the "ideal theory" as an actual tenet, to the generality of the philosophers who preceded him, and especially to Locke and Hume; for if they did not themselves consciously fall into the error, unquestionably they often led their readers into it.

The prejudice, that the conditions of a phenomenon must resemble the phenomenon, is occasionally exaggerated, at least verbally, into a still more palpable absurdity; the conditions of the thing are spoken of as if they *were* the very thing itself. In Bacon's model inquiry, which occupies so great a space in the *Novum Organum*, the *inquisitio in formam calidi*, the conclusion which he favors is that heat is a kind of motion; meaning of course not the feeling of heat, but the conditions of the feeling; meaning, therefore, only that wherever there is heat, there must first be a particular kind of motion; but he makes no distinction in his language between these two ideas, expressing himself as if heat, and the conditions of heat, were one and the same thing. So the elder Darwin, in the beginning of his *Zoonomia*, says, "The word *idea* has various meanings in the writers of metaphysics; it is here used simply for those notions of external things which our organs of sense bring us acquainted with originally" (thus far the proposition, though vague, is unexceptionable in meaning), "and is defined a contraction, a motion, or configuration, of the fibres which constitute the immediate organ of sense." Our *notions*, a configuration of the fibres! What kind of logician must he be who thinks that a phenomenon is *defined* to *be* the condition on which he supposes it to depend? Accordingly he says soon after, not that our ideas are caused by, or consequent on, certain organic phenomena, but "our ideas *are* animal motions of the organs of sense." And this confusion runs through the four volumes of the *Zoonomia*; the reader never knows whether the writer is speaking of the effect, or of its supposed cause; of the idea, a state of mental consciousness, or of the state of the nerves and brain which he considers it to presuppose.

I have given a variety of instances in which the natural prejudice, that causes and their effects must resemble one another, has operated in practice so as to give rise to serious errors. I shall now go further, and produce from writings even of the present or very recent times, instances in which this prejudice is laid down as an established principle. M. Victor Cousin, in the last of his celebrated lectures on Locke, enunciates the maxim in the following unqualified terms: "Tout ce qui est vrai de l'effet, est vrai de la cause." A doctrine to which, unless in some peculiar and technical meaning of the words cause and effect, it is not to be imagined that any person would literally adhere; but he who could so write must be far enough from seeing that the very reverse might be the effect; that there is nothing impossible in the supposition that no one property which is true of the effect might be true of the cause. Without going quite so far in point of expression, Coleridge, in his *Biographia Literaria*,(246) affirms as an "evident truth," that "the law of causality holds only between homogeneous things, *i.e.*, things having some common property," and therefore "can not extend from one world into another, its opposite;" hence, as mind and matter have no common property, mind can not act upon matter, nor matter upon mind. What is this but the *a priori* fallacy of which we are speaking? The doctrine, like many others of Coleridge, is taken from Spinoza, in the first book of whose *Ethica* (*De Deo*) it stands as the Third Proposition, "Quæ res nihil commune inter se habent, earum una alterius causa esse non potest," and is there proved from two so-called axioms, equally gratuitous with itself; but Spinoza ever systematically consistent, pursued the doctrine to its inevitable consequence, the materiality of God.

The same conception of impossibility led the ingenious and subtle mind of Leibnitz to his celebrated doctrine of a pre-established harmony. He, too, thought that mind could not act upon matter, nor matter upon mind, and that the two, therefore, must have been arranged by their Maker like two clocks, which, though unconnected with one another, strike simultaneously, and always point to the same hour. Malebranche's equally famous theory of Occasional Causes was another form of the same conception; instead of supposing the clocks originally arranged to strike together, he held that when the one strikes, God interposes, and makes the other strike in correspondence with it.

Descartes, in like manner, whose works are a rich mine of almost every description of *a priori* fallacy, says that the Efficient Cause must at least have all the perfections of the effect, and for this singular reason: "Si enim ponamus aliquid in ideâ reperiri quod non fuerit in ejus causâ, hoc igitur habet a nihilo;" of which it is scarcely a parody to say, that if there be pepper in the soup there must be pepper in the cook who made it, since otherwise the pepper would be without a cause. A similar fallacy is committed by Cicero, in his second book *De Finibus*, where, speaking in his own person against the Epicureans, he charges them with inconsistency in saying that the pleasures of the mind had their origin from those of the body, and yet that the

former were more valuable, as if the effect could surpass the cause. "Animi voluptas oritur propter voluptatem corporis, et major est animi voluptas quam corporis? ita fit ut gratulator, lætior sit quam is cui gratulatur." Even that, surely, is not an impossibility; a person's good fortune has often given more pleasure to others than it gave to the person himself.

Descartes, with no less readiness, applies the same principle the converse way, and infers the nature of the effects from the assumption that they must, in this or that property or in all their properties, resemble their cause. To this class belong his speculations, and those of so many others after him, tending to infer the order of the universe, not from observation, but by *a priori* reasoning from supposed qualities of the Godhead. This sort of inference was probably never carried to a greater length than it was in one particular instance by Descartes, when, as a proof of one of his physical principles, that the quantity of motion in the universe is invariable, he had recourse to the immutability of the Divine Nature. Reasoning of a very similar character is, however, nearly as common now as it was in his time, and does duty largely as a means of fencing off disagreeable conclusions. Writers have not yet ceased to oppose the theory of divine benevolence to the evidence of physical facts, to the principle of population for example. And people seem in general to think that they have used a very powerful argument, when they have said, that to suppose some proposition true, would be a reflection on the goodness or wisdom of the Deity. Put into the simplest possible terms, their argument is, "If it had depended on me, I would not have made the proposition true, therefore it is not true." Put into other words, it stands thus: "God is perfect, therefore (what I think) perfection must obtain in nature." But since in reality every one feels that nature is very far from perfect, the doctrine is never applied consistently. It furnishes an argument which (like many others of a similar character) people like to appeal to when it makes for their own side. Nobody is convinced by it, but each appears to think that it puts religion on his side of the question, and that it is a useful weapon of offense for wounding an adversary.

Although several other varieties of *a priori* fallacy might probably be added to those here specified, these are all against which it seems necessary to give any special caution. Our object is to open, without attempting or affecting to exhaust, the subject. Having illustrated, therefore, this first class of Fallacies at sufficient length, I shall proceed to the second.