

out still more plainly the argument implied in the words after the dash. Aristotle finds an argument against the choice of magistrates by lot upon the analogous case of choosing as athletes, "not the ablest combatants, but any chance people upon whom the lot has fallen," or of "selecting the pilot from among the crew, on the principle that the right man is the one upon whom the lot has fallen rather than the one who possesses the requisite knowledge."<sup>1</sup>

Daniel Webster argues from analogy that the public lands within the territory of a new State belong not to that State, but to the general government:—

"The idea, that, when a new State is created, the public lands lying within her territory become the property of such new State in consequence of her sovereignty, is too preposterous for serious refutation. Such notions have heretofore been advanced in Congress, but nobody has sustained them. They were rejected and abandoned, although one cannot say whether they may not be revived, in consequence of recent propositions which have been made in the Senate. The new States are admitted on express conditions, recognizing, to the fullest extent, the right of the United States to the public lands within their borders; and it is no more reasonable to contend that some indefinite idea of State sovereignty overrides all these stipulations, and makes the lands the property of the States, against the provisions and conditions of their own constitution, and the Constitution of the United States, than it would be, that a similar doctrine entitled the State of New York to the money collected at the custom-house in this city [New York]; since it is no more inconsistent with sovereignty that one government should hold lands, for the purpose of sale, within the territory of another, than it is that it should lay and collect taxes and duties within such territory."<sup>2</sup>

<sup>1</sup> Aristotle: Rhetoric, book ii. chap. xx. Translated by J. E. C. Welldon.

<sup>2</sup> Daniel Webster: Speech at Niblo's Saloon, New York, March 15, 1837.

In the following passage, Mr. Balfour argues from analogy that the function of reason in the human mechanism is overestimated:—

"I have somewhere seen it stated that the steam-engine in its primitive form required a boy to work the valve by which steam was admitted to the cylinder. It was his business at the proper period of each stroke to perform this necessary operation by pulling a string; and though the same object has long since been attained by mechanical methods far simpler and more trustworthy, yet I have little doubt that until the advent of that revolutionary youth who so tied the string to one of the moving parts of the engine that his personal supervision was no longer necessary, the boy in office greatly magnified his functions, and regarded himself with pardonable pride as the most important, because the only rational, link in the chain of causes and effects by which the energy developed in the furnace was ultimately converted into the motion of the fly-wheel. So do we stand as reasoning beings in the presence of the complex processes, physiological and psychical, out of which are manufactured the convictions necessary to the conduct of life. To the results attained by their co-operation reason makes its slender contribution; but in order that it may do so effectively, it is beneficently decreed that, pending the evolution of some better device, reason should appear to the reasoner the most admirable and important contrivance in the whole mechanism."<sup>1</sup>

To a correspondent who asks "why the workingman should have a market value or figure for his services the same as [*sic*] you would put upon potatoes or any other commodity," the editor of "The Sun" replies by pointing out the analogy between all laborers and potatoes:—

"Because all men are alike, and as laborers, by their hands, or their heads, without any discrimination whatsoever, they are all commodities, with their worth measured by the market price just like a potato. There is no difference between high-priced goods like railroad Presidents, such as CHAUNCEY MITCHELL DEPEW of New

<sup>1</sup> A. J. Balfour: The Foundations of Belief, part iii. chap. ii. sect. ii.

York or GEORGE ROBERTS of Pennsylvania, and a potato. Each is traded in according to the market price. The big railroad men get great wages because the latter are necessary to allure them from other pursuits where their talents would bring them large returns. At every move in life, at every stage of the competition, they are but potatoes, absolutely. If Providence should suddenly inundate us with an army of men fit for railroad Presidents, their price would decline. If it should suddenly cut off our potatoes, substituting nothing for them, the price of potatoes would go up. Between the potato and the railroad President, or the great commercial magnate of any sort, there is no grade or sort of commodity, human or otherwise, which is not bought and sold by the market price. . . . We are all laborers, and, in respect of the market price of us, we are all potatoes. The man who feels his pride hurt when confronted by this unchangeable fact is a fool.”<sup>1</sup>

Another argument from analogy is given in the following passage:—

“The absolute right to strike is so generally assumed that we must pause a moment here. Has a surgeon a right to strike in the midst of an amputation? Has the crew of a ship the right to strike in a storm at sea? Had the engineer of the Ferris Wheel the right to strike with fifteen hundred people suspended in mid-air? Has a locomotive engineer a right to strike and leave his train between stations, imperilling hundreds of lives?”<sup>2</sup>

In the first class of arguments from example, — those in which specific instances are cited for the purpose of proving a general rule, — the danger lies in making a hasty generalization from insufficient data and ignoring whatever supports an opposite conclusion. This fallacy is committed by those who argue from the examples of Franklin and Lincoln that men who do not go to college are more likely to succeed in life than men who do, and by those who argue from a few

Fallacious arguments from example.

<sup>1</sup> The [New York] Sun, Feb. 9, 1895.

<sup>2</sup> Bishop Cyrus D. Foss: *The Old Pulpit and the New*. The North American Review, March, 1895, p. 298.

instances that the use or the non-use of tobacco, that marriage or celibacy, conduces to long life, that a quick temper goes with red hair, or good nature with blue eyes, that a college degree implies scholarship.

In the second class of arguments from example, — arguments from analogy, — the danger lies in basing an argument on a resemblance that is insufficient for the purpose for which it is employed. An argument of this kind was that by which Frenchmen were induced to invest their money in the Panama Canal. From the fact that the Suez Canal had been successful under the management of Ferdinand de Lesseps, it was inferred that the new enterprise, being under the same management, would also succeed; but attention was not paid to the existence of obstacles at Panama which had not existed at Suez and which finally proved insurmountable.

A false analogy has been made the basis of an argument in favor of despotic government. This form of government has been likened to that exercised by a parent over his children. Despotic government resembles parental government, however, only in its irresponsibility, — that is, in the fact that it is a despotism; whereas the beneficial working of parental government depends not on its irresponsibility, but “upon two other attributes of parental government, the affection of the parent for the children and the superiority of the parent in wisdom and experience.”<sup>1</sup>

The argument from analogy drawn from the examples of Cæsar, Cromwell, Napoleon, and Aaron Burr, by which some years ago partisan newspapers attempted to prove that President Grant meant to establish a despotism on

<sup>1</sup> J. S. Mill: *A System of Logic*, book v. chap. v. sect. vi. 16\*

the ruins of the American Republic, caused little alarm, because there was no evidence tending to bring Grant into the same class or under the same conditions with Cæsar, Cromwell, Napoleon, and Aaron Burr. On the other hand, the fears of patriotic civilians, including even Dr. Franklin, were aroused by the establishment in 1783 of "The Cincinnati," an association formed by the officers of the Revolutionary army of the United States for social and benevolent purposes; but the apprehension that the provision for transmitting membership to the eldest male descendants of the original members would prove to be the first step towards an aristocracy was groundless, because the analogy on which it was founded was false.

In each of the following passages the author points out a false analogy:—

"'If,' they say, 'free competition is a good thing in trade, it must surely be a good thing in education. The supply of other commodities, of sugar, for example, is left to adjust itself to the demand; and the consequence is, that we are better supplied with sugar than if the Government undertook to supply us. Why then should we doubt that the supply of instruction will, without the intervention of the Government, be found equal to the demand?'

"Never was there a more false analogy. Whether a man is well supplied with sugar is a matter which concerns himself alone. But whether he is well supplied with instruction is a matter which concerns his neighbours and the State. If he cannot afford to pay for sugar, he must go without sugar. But it is by no means fit that, because he cannot afford to pay for education, he should go without education. Between the rich and their instructors there may, as Adam Smith says, be free trade. The supply of music masters and Italian masters may be left to adjust itself to the demand. But what is to become of the millions who are too poor to procure without assistance the services of a decent school-master?"<sup>1</sup>

<sup>1</sup> Macaulay: Speech in the House of Commons, April 19, 1847. See also Matthew Arnold: Essays in Criticism; A French Eton, sect. ii.

"It would be admitted," says Whately, "that a great and permanent diminution in the quantity of some useful commodity, such as corn, or coal, or iron, throughout the world, would be a serious and lasting loss; and again, that if the fields and coal-mines yielded regularly double quantities, with the same labour, we should be so much the richer; hence it might be inferred, that if the quantity of gold and silver in the world were diminished one-half, or were doubled, like results would follow; the utility of these metals, for the purposes of coin, being very great. Now there are many points of resemblance, and many of difference, between the precious metals on the one hand, and corn, coal, &c., on the other; but the *important* circumstance to the supposed argument, is, that the *utility* of gold and silver (as coin, which is far the chief) *depends on their value*, which is regulated by their scarcity; or, rather, to speak strictly, by the difficulty of obtaining them; whereas, if corn and coal were ten times more abundant (*i. e.* more easily obtained), a bushel of either would still be as useful as now. But if it were twice as easy to procure gold as it is, a sovereign would be twice as large; if only half as easy, it would be of the size of a half-sovereign: and this (besides the trifling circumstance of the cheapness or dearness of gold ornaments) would be all the difference. The analogy, therefore, fails in the point essential to the argument."<sup>1</sup>

"Another example is the not uncommon *dictum*, that bodies politic have youth, maturity, old age, and death, like bodies natural: that after a certain duration of prosperity, they tend spontaneously to decay. This also is a false analogy, because the decay of the vital powers in an animated body can be distinctly traced to the natural progress of those very changes of structure which, in their earlier stages, constitute its growth to maturity; while in the body politic the progress of those changes cannot, generally speaking, have any effect but the still further continuance of growth: it is the stoppage of that progress, and the commencement of retrogression, that alone would constitute decay. Bodies politic die, but it is of disease, or violent death: they have no old age."<sup>2</sup>

<sup>1</sup> Whately: Elements of Rhetoric, part i. chap. ii. sect. vii.

<sup>2</sup> J. S. Mill: A System of Logic, book v. chap. v. sect. vi.

One who perceives many analogies is in danger of mistaking fanciful for real ones, of making a mere metaphor do duty as an argument. Mill cites Bacon as being "equally conspicuous in the use and abuse of figurative illustration."<sup>1</sup> Such is also Macaulay's opinion:—

"The truth is that his [Bacon's] mind was wonderfully quick in perceiving analogies of all sorts. But, like several eminent men whom we could name, both living and dead, he sometimes appeared strangely deficient in the power of distinguishing rational from fanciful analogies, analogies which are arguments from analogies which are mere illustrations, analogies like that which Bishop Butler so ably pointed out, between natural and revealed religion, from analogies like that which Addison discovered, between the series of Grecian gods carved by Phidias and the series of English kings painted by Kneller. This want of discrimination has led to many strange political speculations. Sir William Temple deduced a theory of government from the properties of the pyramid. Mr. Southey's whole system of finance is grounded on the phenomena of evaporation and rain. In theology, this perverted ingenuity has made still wilder work. From the time of Irenæus and Origen down to the present day, there has not been a single generation in which great divines have not been led into the most absurd expositions of Scripture, by mere incapacity to distinguish analogies proper, to use the scholastic phrase, from analogies metaphorical."<sup>2</sup>

The danger attending the attempt to treat fanciful analogies as if they were arguments is well presented in one of George Eliot's novels:—

"Mr. Stelling concluded that Tom's brain, being peculiarly impervious to etymology and demonstrations, was peculiarly in need of being ploughed and harrowed by these patent implements: it was his favourite metaphor, that the classics and geometry constituted that culture of the mind which prepared it for the reception of any subsequent crop. I say nothing against Mr. Stelling's

<sup>1</sup> J. S. Mill: *A System of Logic*, book v. chap. v. sect. vii.

<sup>2</sup> Macaulay: *Essays*; Lord Bacon.

theory: if we are to have one regimen for all minds, his seems to me as good as any other. I only know it turned out as uncomfortably for Tom Tulliver as if he had been plied with cheese in order to remedy a gastric weakness which prevented him from digesting it. It is astonishing what a different result one gets by changing the metaphor! Once call the brain an intellectual stomach, and one's ingenious conception of the classics and geometry as ploughs and harrows seems to settle nothing. But then it is open to some one else to follow great authorities, and call the mind a sheet of white paper or a mirror, in which case one's knowledge of the digestive process becomes quite irrelevant. It was doubtless an ingenious idea to call the camel the ship of the desert, but it would hardly lead one far in training that useful beast. O Aristotle! if you had had the advantage of being 'the freshest modern' instead of the greatest ancient, would you not have mingled your praise of metaphorical speech, as a sign of high intelligence, with a lamentation that intelligence so rarely shows itself in speech without metaphor,—that we can so seldom declare what a thing is, except by saying it is something else?"<sup>1</sup>

In an argument from SIGN, as has already been said,<sup>2</sup> one thing suggests another through the association of ideas. We argue from sign when, on seeing the flags flying on Osborne House or on the Capitol at Washington, we infer that the Queen is in her mansion or that Congress is in session. We argue from sign when from the fact that ice is forming we infer that the temperature is below freezing point. The traveller argues from sign when, on seeing a guide-board bearing the words "Groton 5 m." and a hand pointing in a certain direction, he infers that if he goes five miles in that direction he shall arrive at a place called Groton. A teacher argues from sign when from the fact that two of his pupils whispered during his lecture he draws the conclusion that they were not interested in what he was

<sup>1</sup> George Eliot: *The Mill on the Floss*, book ii. chap. i.

<sup>2</sup> See page 354.

saying. The people of Liège argued from sign when they inferred that, because Quentin Durward wore a bonnet with the Saint Andrew's cross and *fleur-de-lis*, he must belong to the Scottish Archers of King Louis's Guards.<sup>1</sup> Macaulay argues from sign that Sir Philip Francis wrote the "Letters of Junius":—

"As to the position, pursuits, and connections of Junius, the following are the most important facts which can be considered as clearly proved: first, that he was acquainted with the technical forms of the Secretary of State's office; secondly, that he was intimately acquainted with the business of the war-office; thirdly, that he, during the year 1770, attended debates in the House of Lords, and took notes of speeches, particularly of the speeches of Lord Chatham; fourthly, that he bitterly resented the appointment of Mr. Chamier to the place of Deputy Secretary at War; fifthly, that he was bound by some strong tie to the first Lord Holland. Now, Francis passed some years in the Secretary of State's office; he was subsequently chief clerk of the war-office; he repeatedly mentioned that he had himself, in 1770, heard speeches of Lord Chatham, and some of those speeches were actually printed from his notes; he resigned his clerkship at the war-office from resentment at the appointment of Mr. Chamier; it was by Lord Holland that he was first introduced into the public service. Now here are five marks [or *signs*], all of which ought to be found in Junius. They are all five found in Francis. We do not believe that more than two of them can be found in any other person whatever."<sup>2</sup>

The force of an argument from sign varies, of course, with the conditions of each case. We should require more evidence to convince us that a sea-serpent had been seen in Long Island Sound than that a school of blue-fish had been seen there. We should require an unusual amount of evidence to make us believe a story told by Defoe of a woman who had a third set of natural teeth at ninety and lived to be one hundred and

<sup>1</sup> See Scott: Quentin Durward, vol. ii. chap. ii.

<sup>2</sup> Macaulay: Essays; Warren Hastings.

twenty-seven years old. The force of an argument from sign depends, moreover, not upon the magnitude of that which serves as a sign, but upon the closeness of its connection with the thing signified. It matters not how trifling a circumstance is in itself if it is a link in a chain of evidence. A skilful forgery is detected by an inspection of small points; a mutilated body has been identified by a peculiarity of the teeth; a murderer has been tracked by the print of the nails in his shoe. The attempt to convict Bishop Atterbury of treasonable correspondence, on evidence drawn from his allusions to a lame lap-dog, was ridiculed by Swift; but the real question was not whether the lap-dog was important in itself, but whether it stood for the Pretender.

When the sign from which we argue bears to the thing signified the relation of effect to cause, the argument is stronger than if it rested on nothing but an arbitrary association of ideas; for in the former case the argument amounts to a true induction.<sup>1</sup> If, for example, on waking in the morning we find that ice has formed in the water-pitcher, we infer with absolute certainty that the temperature of the room has during the night fallen below freezing point, because the relation of sign to thing signified is that of effect to the only known cause. When, however, the sign from which we argue may be the effect of any one of several causes, the inference from sign to thing signified is far from sure.

In arguing from sign, a reasoner should beware of making an incorrect inference from sign to thing signified. Such a fallacy occurs in the following sentence in Grew's "Cosmologia Sacra":—

"It is clear from the quantity of canvas that that vessel possesses great velocity."

<sup>1</sup> See page 350.

Arguments  
from sign  
vary in force.

Fallacious  
arguments  
from sign.

Grew's fallacy<sup>1</sup> consists in the inference that a vessel which carries a great quantity of canvas must move rapidly through the water. The quantity of canvas may indicate that the wind is very light, or that the vessel is so clumsy that it can make no headway without an unusual press of sail.

An argument from sign which is valid in itself may be opposed and perhaps overcome by an argument from antecedent probability. Thus, in a thesis on the dialect spoken in a small Canadian district, which was settled by the French but which had for two centuries been cut off from the rest of the French-speaking world, a student argued from evidence obtained on the spot that this dialect closely resembles the Parisian French of to-day. To this argument from sign there is an obvious answer derived from the antecedent improbability that the language spoken in a remote corner of Canada would undergo exactly the same changes as that spoken in the capital of France. To overcome this argument from antecedent probability it would be necessary for the author of the thesis to prove that he thoroughly knew Parisian French, and that he made no mistake as to the Canadian dialect.

An argument of any one of the three classes just considered may be combined with other arguments of the same class or with arguments of one or both of the other classes, each separate argument strengthening the others and being strengthened in turn by them. Those who oppose the view that Bacon wrote the works attributed to Shakspeare argue from antecedent

<sup>1</sup> This fallacy is pointed out by Coleridge, who describes the vessel as "a clumsy Dutch Schooner heavily rigged, and wobbling on three knots per hour, under crowded sails." See "Marginalia Hitherto Unpublished." The [London] Athenæum, April 7, 1888, p. 435.

probability that no one man could have written all the works attributed to Shakspeare and all those attributed to Bacon, and that if Shakspeare had not written the works attributed to him he would not throughout his life have had the credit of writing them. They argue from sign that the works attributed to Shakspeare and those attributed to Bacon are too unlike to be the product of the same mind. To prove that a man brought up as Shakspeare was might have written the works attributed to him, they argue from example that, as Erskine, who had no legal education, yet became the first advocate of his time, and as Lincoln, though a man of small erudition, developed a literary style of great strength, and as Keats, in spite of many disadvantages, became a great poet at twenty-five, so Shakspeare, being a man of remarkable natural gifts, made the most of all the material that fell in his way and learned to write by writing.

In answer to a commonly-received view as to the extinction of inferior races, arguments from antecedent probability and from example are adduced in the following passage:—

"There exists a sentiment, for the most part quite unreasonable, against the gradual extinction of an inferior race. It rests on some confusion between the race and the individual, as if the destruction of a race was equivalent to the destruction of a large number of men. It is nothing of the kind when the process of extinction works silently and slowly through the earlier marriage of members of the superior race, through their greater vitality under equal stress, through their better chances of getting a livelihood, or through their prepotency in mixed marriages. That the members of an inferior class should dislike being elbowed out of the way is another matter; but it may be somewhat brutally argued that whenever two individuals struggle for a single place, one must yield, and that there will be no more unhappiness on the whole, if the inferior yield to the superior than conversely,

whereas the world will be permanently enriched by the success of the superior. The conditions of happiness are, however, too complex to be disposed of by *à priori* argument; it is safest to appeal to observation. I think it could be easily shown that when the differences between the races is [*sic*] not so great as to divide them into obviously different classes, and where their language, education, and general interests are the same, the substitution may take place gradually without any unhappiness. Thus the movements of commerce have introduced fresh and vigorous blood into various parts of England, the new-comers have intermarried with the residents, and their characteristics have been prepotent in the descendants of the mixed marriages. I have referred in the earlier part of the book to the changes of type in the English nature that have occurred during the last few hundred years. These have been effected so silently that we only know of them by the results."<sup>1</sup>

Arguments that strengthen one another are used in the following passage:—

"The ordinary observer has many proofs of the general spherical form of the earth, among which may be mentioned the following: (1) As a vessel sails away from the land, we first lose sight of her hull, next of her lower or main sails, and lastly of her topsails and pennants, thus clearly showing that she is passing over a convex or bulging surface. (2) The reverse of this also holds true; for the mariner, as he approaches the land, first sees the mountain-tops, and on gradually nearing it, the lower grounds stage by stage make their appearance. (3) Had the earth's surface been flat, it would have been all at once illuminated by the rays of the sun; but being convex or round, each place, as it turns from west to east, has its sunrise, noon, sunset, and night in succession — one half of the globe being thus always in light while the other is in darkness. (4) In travelling any considerable distance, either north or south, new stars gradually come into view in the direction to which the traveller is advancing, while others disappear in the direction from which he is receding. (5) Many navigators, by constantly sailing in one direction, or nearly so, whether due east or

<sup>1</sup> Francis Galton: *Inquiries into Human Faculty and its Development; Influence of Man upon Race.*

due west, have returned to the port from which they set out, thus making what is termed the *circumnavigation* of the globe. (6) In consequence of the round form of the earth, the dip or depression of the horizon is about eight inches per mile, and on this account engineers in cutting canals have to make an allowance for a dip of this extent in order to keep the water at a uniform level. (7) The shadow which the earth casts on the moon during an eclipse is always circular. (8) And lastly, the earth belonging to a system or brotherhood [*sic*], the other members of which are globular, the fair presumption is, that she [*sic*] also is of the same form."<sup>1</sup>

From all that has been said, it is plain that experience is the basis on which every argument rests. It is experience that puts us in possession of facts and teaches us how to draw valid inferences from them. Whether the foundations of belief rest ultimately upon something prior to experience or not, it is to experience that we habitually appeal. If, then, experience is, for practical purposes, the source of all arguments, it follows that absolute certainty is very rarely attainable; for there are few matters in which experience points one way and one way only. A reasonable probability sufficiently strong to act upon is, however, usually within our reach.

## SECTION V.

### ARRANGEMENT.

The object of every argumentative composition should be to prove, or to disprove, the proposition in dispute and that proposition only. Anything that does not help to prove, or to disprove, the proposition has no place in the argument; everything that does help should be so

<sup>1</sup> David Page: *Advanced Text-Book of Physical Geography*, revised and enlarged by Charles Lapworth, [chap.] ii.