

## *Il Lume Naturale*

1891 | The Architecture of Theories | EP 1:287, CP 6.10

A modern physicist on examining Galileo's works is surprised to find how little experiment had to do with the establishment of the foundations of mechanics. His principal appeal is to common sense and *il lume naturale*. He always assumes that the true theory will be found to be a simple and natural one. And we can see why it should indeed be so in dynamics. For instance, a body left to its own inertia moves in a straight line, and a straight line appears to us the simplest of curves. In *itself*, no curve is simpler than another. A system of straight lines has intersections precisely corresponding to those of a system of like parabolas similarly placed, or to those of any one of an infinity of systems of curves. But the straight line appears to us simply, because, as Euclid says, it lies evenly between its extremities; that is, because viewed endwise it appears as a point. That is, again, because light moves in straight lines. Now, light moves in straight lines because of the part which the straight line plays in the laws of dynamics. Thus it is that, our minds having been formed under the influence of phenomena governed by the laws of mechanics, certain conceptions entering into those laws become implanted in our minds, so that we readily guess at what the laws are. Without such a natural prompting, having to search blindfold for a law which would suit the phenomena, our chance of finding it would be as one to infinity. The further physical studies depart from phenomena which have directly influenced the growth of the mind, the less we can expect to find the laws which govern them "simple," that is, composed of a few conceptions natural to our minds.

1893 | Grand Logic 1893: Division III. Substantial Study of Logic Chapter VI. The Essence of Reasoning | MS [R] 408:148-9

...there is a mysterious something determining a regularity in Inner Experience, analogous to that Nature which [is] our name for the corresponding mystery of the Outer World, No doubt, the two mysteries are in great measure at one. They must be so; for it is *il lume naturale* which, guiding the minds of Galileo and other inceptors of science, enabled them to make our first steps in dynamics, geometry, and in other branches of physics. There is no warrant for supposing that outward Nature and the inward Light are altogether at one. "Ten thousand pounds to one penny" they are not so. But doubtless they are so nearly so that were the Light of Nature only strong enough, the Hegelian dialectic or something like it would be a sound method of investigation. Men have an unconquerable natural inclination to think so. The Light of Nature itself represents itself as able to show how the Outward World is. But experience shows its forecasts are untrustworthy.

Inconsistent page numbers; the first page number appears to have been changed to 150, but the second is 149.

1896 | A Brief Preliminary and Hasty Syllabus of a book to be entitled Calculations of Chances | MS [R] 211

In the first guesses, there was no guide but what Galileo used to call *il lume naturale*, the Light of Nature. What is that light of nature but the analogy between our own mind and the mind of Nature?

Some men scoff at the idea of a *mind* in nature. [—] Whether or not there be any consciousness in or behind nature is beside our purpose; yet it is needful to recognize that Nature somehow generalizes.

1896 [c.] | Lessons of the History of Science | CP 1.80-81

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In examining the reasonings of those physicists who gave to modern science the initial propulsion which has insured its healthful life ever since, we are struck with the great, though not absolutely decisive, weight they allowed to instinctive judgments. Galileo appeals to *il lume naturale* at the most critical stages of his reasoning. Kepler, Gilbert, and Harvey - not to speak of Copernicus - substantially rely upon an inward power, not sufficient to reach the truth by itself, but yet supplying an essential factor to the influences carrying their minds to the truth.

It is certain that the only hope of retroductive reasoning ever reaching the truth is that there may be some natural tendency toward an agreement between the ideas which suggest themselves to the human mind and those which are concerned in the laws of nature.

1898 | Cambridge Lectures on Reasoning and the Logic of Things: Philosophy and the Conduct of Life | CP 1.630

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Reasoning is of three kinds. The first is necessary, but it only professes to give us information concerning the matter of our own hypotheses and distinctly declares that, if we want to know anything else, we must go elsewhere. The second depends upon probabilities. The only cases in which it pretends to be of value is where we have, like an insurance company, an endless multitude of insignificant risks. Wherever a vital interest is at stake, it clearly says, "Don't ask me." The third kind of reasoning tries what *il lume naturale*, which lit the footsteps of Galileo, can do. It is really an appeal to instinct. Thus reason, for all the frills it customarily wears, in vital crises, comes down upon its marrow-bones to beg the succour of instinct.

1898 | Cambridge Lectures on Reasoning and the Logic of Things: The First Rule of Logic | CP 5.589, RLT 176-177

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... The only end of science, as such, is to learn the lesson that the universe has to teach it. In Induction it simply surrenders itself to the force of facts. But it finds, at once - I am partially inverting the historical order, in order to state the process in its logical order - it finds I say that this is not enough. It is driven in desperation to call upon its inward sympathy with nature, its instinct for aid, just as we find Galileo at the dawn of modern science making his appeal to *il lume naturale*. But in so far as it does this, the solid ground of fact fails it. It feels from that moment that its position is only provisional. It must then find confirmations or else shift its footing. Even if it does find confirmations, they are only partial. It still is not standing upon the bedrock of fact. It is walking upon a bog, and can only say, this

ground seems to hold for the present.

1903 | Lowell Lectures on Some Topics of Logic Bearing on Questions Now Vexed. Eighth Lecture, Abduction | CP 5.604

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...general considerations concerning the universe, strictly philosophical considerations, all but demonstrate that if the universe conforms, with any approach to accuracy, to certain highly pervasive laws, and if man's mind has been developed under the influence of those laws, it is to be expected that he should have a *natural light*, or *light of nature*, or *instinctive insight*, or genius, tending to make him guess those laws aright, or nearly aright. This conclusion is confirmed when we find that every species of animal is endowed with a similar genius.

1908 | A Neglected Argument for the Reality of God (O) | EP 2:444, CP 6.477

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Modern science has been builded after the model of Galileo, who founded it, on *il lume naturale*. That truly inspired prophet had said that, of two hypotheses, the *simpler* is to be preferred; but I was formerly one of those who, in our dull self conceit fancying ourselves more sly than he, twisted the maxim to mean the *logically* simpler, the one that adds the least to what has been observed, in spite of three obvious objections: first, that so there was no support for any hypothesis; secondly, that by the same token we ought to content ourselves with simply formulating the special observations actually made; and thirdly, that every advance of science that further opens the truth to our view discloses a world of unexpected complications. It was not until long experience forced me to realize that subsequent discoveries were every time showing I had been wrong, - while those who understood the maxim as Galileo had done, early unlocked the secret, - that the scales fell from my eyes and my mind awoke to the broad and flaming daylight that it is the simpler hypothesis in the sense of the more facile and natural, the one that instinct suggests, that must be preferred; for the reason that, unless man have a natural bent in accordance with nature's, he has no chance of understanding nature, at all.

1909 | Studies of Meaning | MS [R] 630:6

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...it is very important to distinguish any light of nature or of grace from *experience*. Experience, in the proper sense of the term, is all that one has *gone through*. It consists in the *events* of one's life. But a "light" is a faculty enabling its subject to recognize the characters of what future experience may put before him. Neither the one nor the other, nor any combination of these two alone can *teach* him anything, if we understand by "teaching" the communication of the skill and power to conduct oneself so as to attain a desired result; although both are indispensable to such teaching.