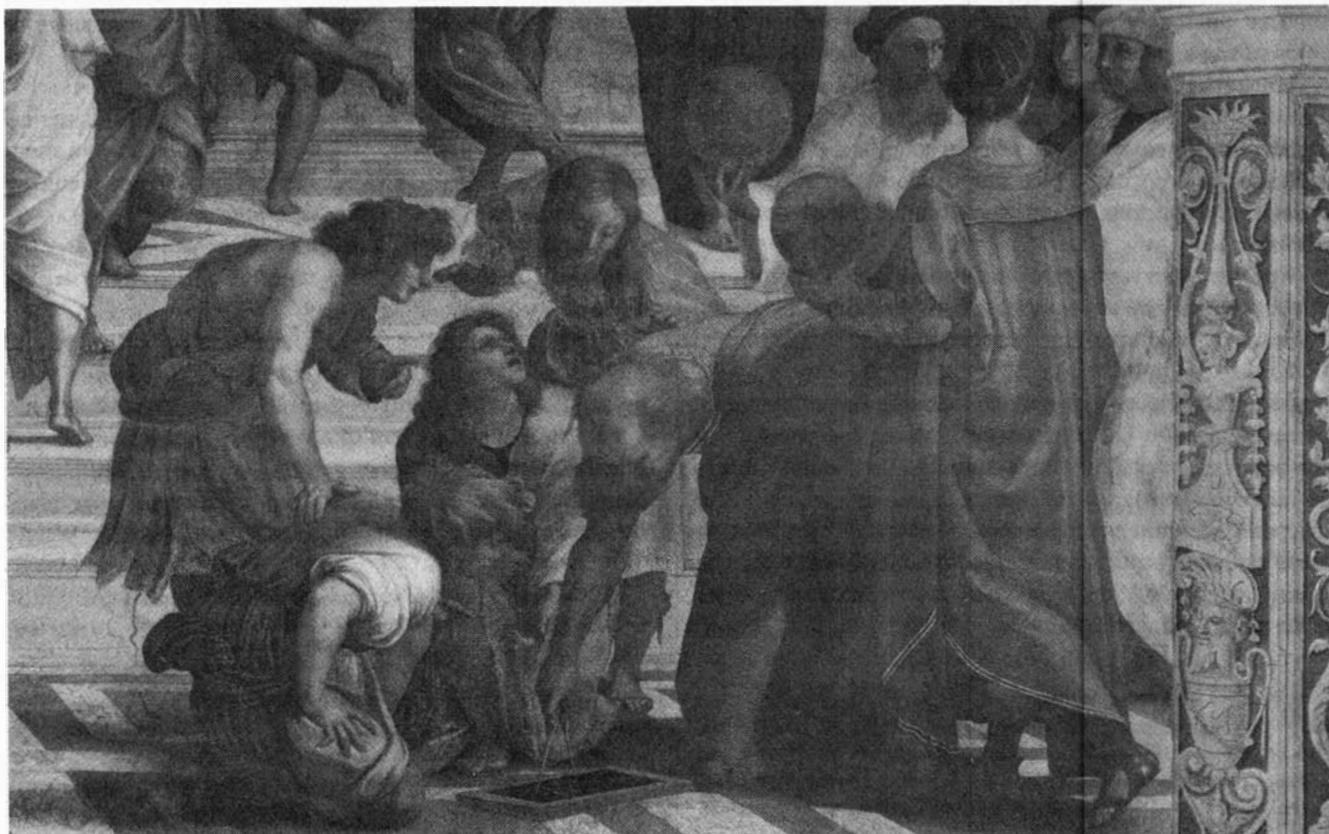


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This is a project which pertains to all kinds of tactical and strategic, educational, and scientific matters. It is stimulated partly by the work we are doing in the strategic area, as defined by a few electronic memoranda I have made on this recently. It reflects my struggling with some of the lingering problems in the scientific area of my work, which I have been reviewing afresh. recently. For example: Winston Bostick's sequel to his "Plasmoid construction of the superstring" prize essay, which I have been looking at; Daniel Wells's paper "On quantization effects in the plasma universe"; and various other things.¹ Similarly, an item recently came to my attention pertaining to the subject of noisy foam in astrophysical space; these matters are very messy; and the reason they are messy is obvious to me.

Then we have the problem, that people, sometimes, were a bit wild on geometry, ignoring what I had insisted earlier,

The topics



Raphael's image of ancient science centers around Archimedes teaching a geometrical proof to his students flanked by figures representing cosmology and geography (detail, "School of Athens," Rome, Vatican, ca. 1510). LaRouche's essential discovery in physical geometry is "that scientific conceptions are geometrically ordered in a transfinite way."

following upon as the ordering principle, an *hereditary ordering principle* in constructive physical geometry. Let me just emphasize that for a moment.

People say, "Okay, we are going to find a geometrical construction which conforms to a physical design; a physical concept." That seems to satisfy the requirement which Prof. Felix Klein had for his graduates back at Göttingen, but not quite. It certainly does not satisfy *my* design; and, it does not satisfy the requirements of physical science.

My essential discovery in physical geometry, and therefore, bearing upon physics generally, is that scientific conceptions are geometrically ordered in a *transfinite way*. That is, if you construct things, such that the same construction with one action added (one ply of action, to put it properly), in a multiply-connected manifold, this ply has the requirement not only of generating an additional singularity, but actually, or implicitly, re-defining the entire process, the entire nonlinear function. So, the rate of generation of singularities is increased.

That is, if we set up any kind of a notion of a constant, arbitrarily small length, we might take Prof. Winston Bostick's reference to the Planck length, 1.6×10^{-33} centimeters. Take a length like that, and say: *The increase of the density of singularities* within that arbitrarily chosen interval of action, is a measure of negentropy.

That obviously applies to Bostick's construction in all kinds of ways, provided you assume this is not a black hole. A Planck length is not really a very arbitrary choice of length, but will serve the same purpose as an arbitrary one. For that process, an increase of the density of singularities per unit of action, as referenced to that length, would do all kinds of wonders for that kind of representation; and it obviously is relevant.

The *hereditary principle* means that we start from the simplest notion of a multiply-connected circular action, with reference to the simple isoperimetric concept, but not limited to it.

I have emphasized earlier that that little critter is actually an envelope. We are obviously following the pathway of non-algebraic curvatures; and, continuing with all the things we have discussed, we are finding a pathway which is, for any point of reference, a consistent pathway of growth of density of singularities per interval of action. That would be a demonstration of, that would be a specification, a rigor for an hereditary principle.

1. Bostick's sequel, titled "How superstrings form the basis of nuclear matter," is being prepared for publication in the Fall 1990 issue of *21st Century Science & Technology* magazine. The paper to which it is a sequel is titled, "The plasmoid construction of the superstring: morphology of the photon, electron, and neutron," and will be published in the same location. Wells's paper appeared in *IEEE Transactions on Plasma Science*, 17:270 (April 1989). "Noisy foam in astrophysical space" is a reference to research subsequently reported in *New Federalist* newspaper, June 22, 1990, p. 11 ("Is the universe cellular in the large?").

You don't have to be perfect; but you always have to be moving in the right direction, and whatever you do has to be based on what has gone before. You can do nothing which is not based on what has gone before. Otherwise, you are cheating: When you jump up out of the sky, and say, "Ah, we can do this," you are cheating. If you do that often enough, you'll go absolutely mad; because cheating means thinking without a mooring; and the more attractive it is, the more dangerous it is. So, don't cheat; everything must go in a succession.

To that end, and to other ends, it is obviously my responsibility, my pleasure, my duty, to address what I said before, on various aspects of this, once again, perhaps in a clearer way than before.

We have two things to consider, primarily.

First of all, as we did in connection with the recent Martin Luther King Human Rights Conference,² the discussion of principles: the sovereign, creative-reason potential of the individual, and the relationship of that creative potential, as a sovereign capability, to the totality of existence. The immediate, non-mediated, relationship of that individuality to the totality, is the primary distinction which sets man apart from and above all other species.

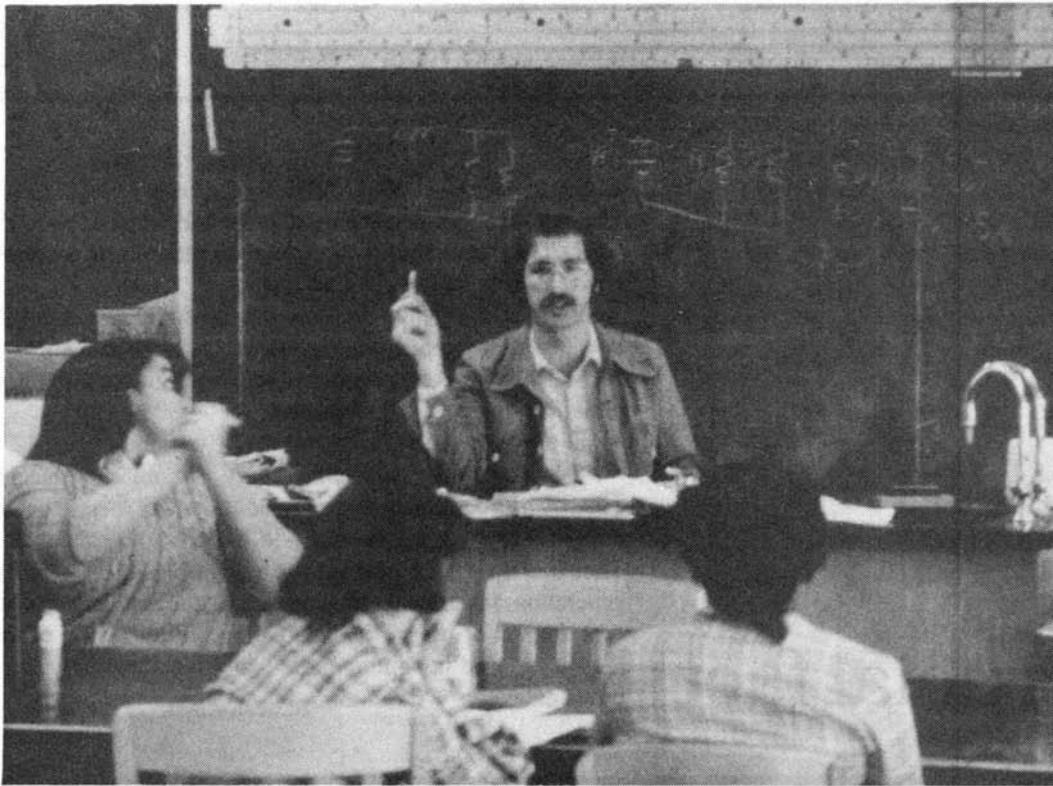
All law, all natural law, and all proper law otherwise, is derived from that consideration, *never goes away from it*, is always subject to it. So, any law which does not meet that requirement, or is inconsistent with that requirement, is to be nullified as unlawful; that is its character.

The second aspect to consider is: How do we describe the mapping of that mind which knows, or the activity of the mind which is in the process of knowing the universe, of knowing the law, of knowing art, and so forth?

I would emphasize again in this same setting the human factor, the individual human potential, the divine spark of reason.

Look at the physics of this. There can be no true law of physics which is not in conformity with what I have indicated. That is, the ability of the mind to understand the universe, from the standpoint of not merely abstraction, but for practice, depends entirely upon this capacity of the human being: this sovereign potential of creative reason, and primarily, the unmediated or direct relationship between that poten-

2. The Schiller Institute sponsored a conference of the Martin Luther King, Jr. Human Rights Tribunal on "Democracy Movements and the Fight Against Judicial and Political Repression" on June 2, 1990. At that conference, held in Silver Spring, Maryland, three panels discussed the connection of human rights and natural law. Mr. LaRouche submitted a paper, titled "On the Subject of Human Rights and in Honor of the Late Martyr, the Reverend Martin Luther King," the text of which was adopted as a resolution by the 500 persons in attendance, founding an international Human Rights Coalition. That resolution was motivated for passage by American civil rights leader Amelia Boynton Robinson, recently honored with the Martin Luther King Foundation Freedom Award for her work with Dr. King in Selma, Alabama, to bring about civil and human rights for all Americans during the civil rights movement of the 1960s.



A New York City high school physics class. Among thinking, rigorous people, most of the problems that arise, that are persistent, take the form of trying to adapt what we know, empirically, to the limitations of commonly accepted, classroom deductive mathematics.

tial and the whole, as well as all other kinds of relations. Therefore, there can be no law of the universe which is correctly presented in any contrary terms, which can be represented intelligibly in any contrary terms.

So, those are the two facets:

The one is the principle of law of the individual, the strategic implications of that as I have addressed that; and, second, as I have addressed earlier, the map of the mind in the act of knowing the lawfulness of the universe, including the lawfulness of physics, is of that form. There is no other way in which the mind could know the universe; therefore, all knowledge of the universe is expressed in that form.

This brings us back again to the sticking point: People say, "We must use accepted classroom mathematics to explain mathematical physics." Among relatively responsible,

thinking, serious, rigorous people, most of the problems that arise, which are vicious (that is, of a persistent nature), are all of the form of trying to adapt what we know, empirically, experimentally, to the limitations of what is commonly described as "commonly accepted, classroom deductive mathematics."

In no way can deductive method represent the process, except, as I show in *In Defense of Common Sense*, we can use the deductive method negatively. We can use the inductive method less reliably, but the deductive method negatively to show that what we are looking at is what it is not, what the deductive method is not.

That is the definition of the project; so, when I refer to "the project," please note that that scope of this introductory outline is that to which I refer.