



Rational Empiricism and the Scientific Method

Rational Empiricism

Even though historically it appears to have other meanings, I ([Paul Antonik Wakfer](#)) will use the term ***rational empiricism*** for the name of the epistemological method which is the foundation of all current knowledge and continuing knowledge advances in science, technology and philosophy. The methods of rational empiricism have been honed over millenia to their current state of refinement, yet these methods are not a finished product; they continue to evolve, and to be further refined in order to achieve greater efficacy as an aid to human understanding of reality and to the security that such understanding is really valid. However in spite of millenia of refinement, the methods of rational empiricism are still not too complex for most humans to understand, for they are, in fact, nothing more than the rational processing by the human brain of the data of experience (the sensory input to the body) for the purpose of understanding the organization, order and predictability of reality. Both the sensory input and the rational processing have been aided increasingly by the machines which have been created for that purpose. Formally, rational empiricism is a subset of rational thought (the logical integration of the evidence of one's senses into the mind's model of reality and the resulting evaluations, conclusions and decisions) of which the ultimate purpose is to maximize one's lifetime happiness.

Scientific Method

For the purpose of practical technological progress, the most important method of rational empiricism is the *scientific method*, those methods of rational empiricism which deal with the parameters of reality which are measurable in an [objective](#) manner with respect to some well accepted standard of measurement. As the reader will see below, this means that science consists of the body of knowledge of a portion of that which is also generally called *physical reality*. The term *portion* is used because knowledge is forever incomplete even though the size and scope of any given portion of reality about which we have scientific

knowledge is constantly being expanded by the methods of science. However, this does not mean that many events of reality which are not **currently** objectively measurable are not real and therefore knowable. The reason for this is twofold. First as has already been noted, rational empiricism applies to all of reality, and by means of the application of pure logic one can thereby gain knowledge of portions of reality which are currently unmeasurable and therefore outside the domain of the scientific method. Secondly, anything which exists is ultimately measurable in some fashion; the effects of its existence imply that because those effects are a kind of "measurement" of it even if we do not yet have an objective standard for such measurement. We, at MoreLife, not only think that the events and structure of physical reality is all that exists, but that the [epistemological](#) principle known as [Occam's Razor](#) compels us to act only on the results of our rational thought about the events and structure of physical reality. However, the scientific method does not include only those sciences in which controlled experiments are possible, but also includes such non-experimental sciences as geology, epidemiology, paleontology, anatomy and astronomy. This is because controlled experiments are not the only method of testing an hypothesis. An hypothesis may be also tested by deducing effects from it that were not observed prior to its formulation and then observing to see that such effects are valid. Mathematics, logic, and praxeology do not rely on measurable data and hence do not use the scientific method, but they may still be tested by these non-experimental methods and are part of rational empiricism.

The Methods of Rational Empiricism and Scientific Method

Definitions

In order to have clarity of thought and a chance to achieve common understanding, the terms which one uses must be defined by the use of even clearer and more commonly understood words and all terms must be used consistently throughout all analysis and explanations. This is a major reason why MoreLife includes a [Glossary of Technical Terms](#). It is also why the [Natural Social Contract](#) must necessarily begin with a major set of definitions for the terms used therein. Because the definitions of the Natural Social Contract must be unambiguous, they are not the only meanings that those terms have in the vernacular usage and therefore, most of them have not been included in the Glossary of Technical terms.

Observation

This part and the next four are yet to be filled in.

Hypotheses

Axiomatic Theories

Evidence

Validity Testing

Objective vs Subjective

It is a principle of most philosophical foundations, and most people unfortunately, that certain types of observations are *more objective* than other types, and the scientific method is only applied to those observations which are completely *more objective*. In particular, such things as the measurement of physical parameters (within certain accuracy limits) are held to be fully objective, and thus are the basic data with which the scientific method deals, whereas the effect of a piece of art on one's mood, say, is held to be **subjective** because first, there is currently no method by which to measure (quantitate) such an effect, second (and related) people will generally not agree on the description of such an effect, and third (and also related to non-measurability), the effect being "determined" is directly related to the observer and cannot therefore be observer independent.

Note several things here about the nature of observation and evidence:

1. Few disagree that all persons will have the same matter and energy impinging upon them from the same physical event, only differing because of relative location in space/time. Some subjectivity can be introduced by the differing physiological properties of the sense organs of different observers, but this can be generally corrected by objectively measuring and correcting for these differences. Much more serious is the subjectivity which is introduced **after** sensory input, by the mind's filtering and evaluative modification of that input. However once again, with training an observer may learn to "see" the details of unfiltered input and avoid such mental biasing for any particular instance of sensory input.
2. Given that the advances of human knowledge of reality and of the human body/brain will continue to increase, it makes sense that more and more of those things which are currently deemed to be subjective will come to be

seen as objective, albeit related to a highly complex set of sensory experiences, and moderating memories and thoughts. At the same time, it also makes sense that a highly rational person who is very clear about his own value hierarchy, and very focused in observation may train himself to be objective more often than someone who lets his unanalyzed emotions rule his life.

3. Finally, it is also clear that even for the most objective and rational observer, the mind does do filtering and evaluating of every input (otherwise it would be continually swamped), at least with regard to what it presents to the consciousness. The fact of this fundamental subjectivity of all sensory input is one of the major reasons for the scientific method being as complex as it is today.

On Opinions

Using one's cognitive processes to exercise the powers of judgment, conception, or inference, is the definition of "thinking". However, firstly one cannot think about anything without having some facts with which to apply one's thoughts. Secondly, there is the question of whether one's factual basis is adequate to reach a logical conclusion and to make a decision based on such thought

As an example, take the situation where an individual reasons as follows:

"I have been on daily doses of resveratrol for over three years. I take my first Resveratrol on an empty stomach. I want my resveratrol to infiltrate my body chemistry First. So taking a dose first thing am before I wake up is my preferred... I take a 30 mg dose at around 5:00 am and go back to sleep. When I wake up I take a 16 mg and 100 mg dose first. A Full stomach might waste my precious resveratrol."

The problem with this thinking, and the resulting decision, is that there are, to my knowledge at this time, no facts regarding under what digestive conditions resveratrol is best absorbed and least changed in form, ie. most effective for the desired purposes. It might be more effective taken on an empty stomach as is true for some nutrients. Or it might be more effective taken with food, with some fat say, as is true for some other nutrients.

This is a scientific question that requires a scientifically tested experiment to answer rather than mere thought. Opinion (sometimes referred to as thought without adequate, or sometimes even any, factual basis) will not help.

On The Lighter Side

Graphics when well done can definitely increase understanding of a complex subject for many people. Cartoons take the same serious subject and inject a bit of humor; the best of these do not lose the initial message - a good example on the subject of [science \(reason\) vs faith](#).

The author(s) of [not just a theory.com](#) while not actually humorous in his/her (or their) manner of explaining the differences between theory and law, does take a lighter approach than I do typically in my writings. The explanation is well done, especially for those who do not realize the fundamental differences. (My only criticism is that the author(s) has not identified him/herself (themselves?).)

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