Lies, Damned Lies, and Scientists : Summary and Context

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Summary

This document is a rush job to clarify a context for my dark and foreboding "Principle of Generality" (see the list below).

- **The Principle of Locality** - relates to a conventional (and personal) view of much of the science, provided certain preconditions apply.
- **The Principle of Generality** - relates to the catastrophic failure of [rational, logical, scientific] thinking of essentially all government and academic scientists in high-profile areas of high public interest. This is characterised by [dishonest, dysfunctional, delinquent, hypocritical, back-stabbing, cowardly] * [thinking, behaviours] that one think should be clear to all, but perhaps not to religious disciples of science fashions that have progressed through the cult stage to become full-fledged religions. Furthermore, this situation seems to be the rule rather than the exception, and peersists for [years, decades, centuries, millenia].
- **The Principle of Inadequacy** - a refutation of the idea that properly-defined "scientific" methodologies and thinking can even be an adequate approach to challenges that violate the general and severe [limitations, constraints] of [rational, logical, scientific] methodologies!
- **The Principle of Irrelevance** - basically refutes this whole document, but not the observations of deep problems with [science, scientists].
- **The Principle of Fun** - To some extent, perhaps good science is dependent on having fun doing it? But do modern approach to its [management, financing, policy-direction] and a "politically correct" attitude of the electorate and of modern scientists themselves, contribute to perverting this?

This document is NOT well supported by my analysis to date (provided in incomplete previous work), except in the area of climate science. But I've done a lot of reading, and a little bit of work, in fundamental theoretical physics, astronomy, and history, to the point where this theme is my priority scientific interest outsidce of the area of Computational Intelligence (more specifically artificial neural networks, and to a lesser extent evolutionary computation). Computational Intelligence also fit in well with the theme of this document, as it illustrated a far more general approach to thinking and analysis, effectively beyond what I consider to be a reasonable definition of science.

Definitely NOT correct - but possibly [more correct, less wrong] than mainstream thinking?

Status :

- 31Mar2015 - very [rough, incomplete, error-filled] first draft.

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Introduction

While I have not done "professional science" for decades (and never was a PhD "Research Scientist", instead being a Research Engineer" or"Physical Scientist"), I have managed, administered, and worked around it for a substantial chunk of my career, and besides travelling to visit family, science conferences are my second holiday priority, and my biggest hobby effort for several decades. Moreover, I really enjoy science and scientists.

I have been mulling over and discussing the soft versions of the rather dark and vindictive "Principle of Generality" as explained below since ~1988, when my work first ran up against "anomalous science" (dioxins, CFCs and ozone etc a bit later). But at that time I thought that I was looking at anomalies limited in [scope, time-scale, acceptance] made possible by the highly specialised science involved, and the ability of a few individuals or [science, environmental groups, government policy wonks] lobby groups to push an agenda based on huge sources of funding.

I relate totally to the theme of the "Principle of Generality", even though I don't trust it, and I've written several [presentations, documents], many emails, and I've had innumerous conversations (rants) about it. But that principle is only one part of a much greater picture that I have, and I certainly don't take it to be any kind of "truth". This document is a quick attempt to put it into context, which clearly shows the incoherence of my feelings about science, and about the concpets in this paper. Incoherent, weakly based, and relatively undocumented, but I feel strongly there is something huge there, far beyond conventional descriptions of scince and thinkers like Thomas Khune.

Nor, to me, are the principles in this document restricted to science - they seem to apply to all areas of human endeavor, although I have focussed only on science. Many, many scientists have alluded to the "religious nature" of the [thinking, behaviour] of [scientists, science], and to me that is a very workable metaphor!

For this document, it is important and useful to look more closely at the definition of science, or more importantly what scientists CLAIM that they are doing, as a bsis of judging what we actually see occuring. I have provided two examples in "Appendix I Definitions of Science". Both are rather

restrictive definitions, as required by the respective authors, and this serves as a reminder of the problems that occur when one sloppily pastes a wide range of approaches with the same label without properly re-thinking what the consequences are for the nature of the "truths or lessons" that emerge. In a similar vein, what I like to call "Saran wrap science" applies to the tendancy to overgeneralize theories. I feel that this problem, as related to the definition of science itself, and to the over-generaliztion of theories, is endemic to modern science and scientists.

Note that the definition of Science will also play an important role in the section "Principle of Inadequacy" below.

The Principle of Locality

Now I suggest a a definition of some of my expectations of scientific work :

> **"Compliant science"** : For the bulk of the papers that I go through in my interest areas, I feel strongly that the results :
> - are a successful manifestation of [rational, logical, scientific] thinking,
> - do follow (roughly, but not limited to as required) the scientific method, and that they react to failures and limitations of current scientific thinking
> - do reflect [honest, functional, thorough, self-judging, respectful, brave] * [thinking, behaviours]. By "functional", I am referring to qualities such as "competent, intelligent, creative, smart (as distinct from intelligent), common sense".

Now I use the "Principle of Locality" below as a big qualifier to help explain why many papers fall into this category, rather than within the "Principle of Generality" in the next section.

> ***Principle of Locality*** - As long as :
> - the nature of the challenge addressed by a paper complies with the general and severe [limitations, constraints] of [rational, logical, scientific] methodologies, AND
> - the [methodologies, concepts] upon which a paper is based fall well within the bounds of the [current, overwhelming, mainstream] scientific consensus (or consensus of an area of scientific thinking), AND
> - the results comply with strong beliefs in that area of science; AND
> - the content of the paper is not related to [high-profile, "politically correct"] areas of interest to the scientists or society,
>
> THEN then there is a good chance that the scientists' work and results exhibit the "Compliant science" characteristics as listed above.

Some areas of science are relatively immature or fast-moving, and in cases like this the "Principle of Locality" might also apply.

Unlike my work on the "Principle of Generality", I probably WON'T write up a detailed document on this "Principle of Locality", as I feel that it is the conventional way of looking at science, and that there are a huge number of papers and documents going into this theme, as well as an overwhelming richness of examples in science where this applies. However, a better characterisation of "Locality", and how

and where it succeeds and fails, is a subject for future work (if I ever get the time).

The Principle of Generality

The "Principle of Generality" is simplistically defined as being almost the polar opposite of the "Principle of Locality" as stated above.

> **"Non-compliant science"** : In spite of the great work and thinking at the level of much of what I read in scientific papers, in some (most) "over-arching" areas that I have looked at, mainstream consensus scientific thinking :
> - fails miserably to updohld the criteria of [rational, logical, scientific] thinking, often even at the simple, introductory] level,
> - often does NOT follow (roughly, but not limited to as required) the scientific method, and it does NOT react to failures and limitations of current scientific thinking,
> - reflects [dishonest, dysfunctional, delinquent, hypocritical, back-stabbing, cowardly] * [thinking, behaviours]. By "dysfunctional", I am referring to qualities such as "incompetent, psudo-intelligent, myopic, stupid, lack of common sense",
> - a trend to follow the path of "science fashions becoming science cults, which in turn become science religions", which may last [years, decades, centuries, millenia].

Now I use the "Principle of Generality" below as a big qualifier to help explain why many papers fall into this "non-compliant" category, rather than within the "Principle of Locality" in the previous section.

> ***Principle of Generality*** - As long as :
> - the nature of the challenge addressed by a paper requires thinking that is beyond the general and severe [limitations, constraints] of [rational, logical, scientific] methodologies, AND/OR
> - the [methodologies, concepts] upon which a paper is based fall well well outside the bounds of the [current, overwhelming, mainstream] scientific consensus (or consensus of an area of scientific thinking), AND/OR
> - the content of the paper IS related to [high-profile, "politically correct"] areas of interest to the scientists or society,
>
> THEN there is an obvious and catastrophic failure of [rational, logical, scientific] thinking, and a widespread failure to follow mis-extension of these forms of thinking to areas that violate their necessary preconditions.

Some ***Dissident or alternative theory papers*** have repeating characteristics that include (as a VERY incomplete list) :

- the results contradict strong beliefs in that area of science; AND
- the [methodologies, concepts] upon which "dissident papers" that are widely and fervently rejected by the mainstream are often based on firn and well established data

and analysis. Obviously, this applies only to a few of these papers, but perhaps to a higher portion than the mainstream?, AND

- the ojections raised are vehemently rejected by the mainstream, but usually without a sound base (especially with respect to the data and simple analysis)

This is purely based on my observations of the realities of science and scientists across a wide swath of high-profile, enormous public science initiatives, originating in the environmental sciences and bolstered by health sciences. But it became obvious over time that it seemed to apply to ALL areas of science that I looked closely at.

The Principle of Inadequacy

Having run out of time with this first draft, I will simply state the **"Principle of Inadequacy"** to be a refutation of the idea that properly-defined "scientific" methodologies and thinking can even be an adequate approach to challenges that violate the general and severe [limitations, constraints] of [rational, logical, scientific] methodologies!

While I don't reject that a "reasonable truth" emerges from [rational, logical, scientific] in areas of classical science of limited complexity, one does not achieve that in areas of moderate complexity, and certainly not for living systems, let along human systems.

Without going into detail here, and inspired by my thinking arising from my "priority interdst area" of Computational Intellignece" (especially Artificial Neural Networks (ANNs)), I maintain that while the following approaches are certainly great tools of science, they are [rational, logical, scientific] ONLY in their application, rather than being [rational, logical, scientific] in and of themselves :

data models, statistics, univeral function approximators, patern recognition, randomness, [cheating, game] theory

This list is FAR from complete, as is my explanation here!

A further line of "Inadequacy" relates to thinking that is a bit like Godel's two theorems of provability (or lack thereof). Agai , this, along with other concepts will have to wait [until, if] if find time to work on this. All in due course...

The Principle of Irrelevance

The "Principle of Irrelevance" is that I consider the themes of this document to be "incorrect", albeit no worse than any other thinking I've seen along these lines (eg references to Thomas Khune's work - although I don't want to go through that inb great detail until I've put my own thoughts down, so I can compare). The "Principle of Generality" and "Principle of Locality" are an intended dichotomy - and I see a two-fold purpose for dichotomoties in non-trivial areas : pedagogy and propaganda. That they are clearly contradictory to some degree is not a problem for me within a self-enforced practise of "Multiple Conflicting Hypothesis". So the intent and warning is to not take these too seriously, but to put some context around [strong, stunning,suprising, upsetting] observations of science and scientists.

The "Principle of Irrelevance" as stated above is horribly incomplete, but will be supplemented in time if I get back to updating this document.

The Principle of Fun

For me, it's just fun to chase lunatic concepts. But I wonder if modern [formalised science, directed funding] may have gone too far in regimenting research and rewards, exaggerating the "intellectual roboticism" that is always there.

Multiple Conflicting Hypothesis

separate document link

Appendix I Definitions of Science

I make no attempt here to provide a broad review or even a simple listing of many different definitions of science. Instead I merely provide two, not as my preferences, but as interesting and restrictive definitions that may be of help to stimulate thinking along the lines of the current document. Besides, they come from awesome books!

I particularly like Lucio Russo's book "Forgotten Revolution", as it deals with the incomplete and often-times mistaken modern understanding of ancient Greek science, and its relationship to even more ancient technology and to modern science. Throughout the book, I was stunned by many examples of ancient Greek science, and the critical importance of correcting Ptolemy's misinterpretations and simplifications of concepts he misunderstood when translating from Greek to Latin. This forced me to completely ravamp my own thinking on the subject.

> Lucio Russo 2004 "The forgotten revolution: How science was born in 300 BC and why it had to be reborn" English edition, Springer-Verlag, Berlin Heidleberg, 2004, 487pp, ISBN 3-540-20396-6
>
> *"... What is science?*
>
> *At first glance one might think of two different methods for answering this question: wither describing the characteristics of science as it arose historically, or approaching the problem theoretically. But a slightly closer analysis easily shows that each of the two methods presupposes the other. One cannot approach the problem of characterizing the scientific method without being familiar with the science that did in fact evolve through the centuries, that is, without knowing the history of science. On the other hand, any history of science must obviously presuppose a definition, if perhaps tacit or even unconscious, of science.*
> ...
> *To reach our definition of sciece, we start by observing that some theories that everyone regards as scientific, like thermodynamics, Euclidean geometry, and probability theory, share the same essential features :*
>
> *1. <u>Their statements are not about concrete objects, but about specific theoretical entitites.</u> For example, Euclidean geometery makes statements about angles or segments, and thermodynamics aboutthe temperature or entropy of a system, but in nature there is no angle, segment, temperature, or entropy.*
>
> *2. <u>The theory has a rigorously deductive structure</u>; it consists of a few fundamental statements (called axioms, postulates, or principles) about its own theoretical entities, and gives a unified and universally accepted means for deducing from them an infinite number of consequences. In other words, the theory provides general methods for solving an unlimited number of problems. Such problems, posable within the scope of the theory, are in reality "exercises", in the sense that theere is general agreement among specialists on the methods of solving them and of checking the correctness of their solutions. The fundamental methods are proofs and calculation. The "truth" of scientific statements is therefore guaranteed in this sense.*
>
> *3. <u>Applications to the real world are based on correspondance rules between the entities of the</u>*

theory and concrete objects. Unlike the internal assumptions of the theory, the correspondance rules CARRY NO ABSOLUTE GUARANTEE [Howell's emphasis]. The fundamental method for checking their vailidity - which isto say, the applicability of the theory - is the experimental method. In any case, the range of validity of the correspondance rules is always limited.

Any theory with these three characteristics will be called a scientific theory. The same term will be used for some other theories, which we may call "of a higher order". They differ from the theories we have been considering in that they possess no correspondance rules for application to the real world - they are applicable only to other scientific theories. That is the most common case in contemporary mathematics. Although some who work at the higher levels may tend to lose sight of it, the relationship between theory and reality does not change in any essential way: albeit indirect, it is nonetheless guaranteed by the same mechanism of formation of theories. ..."

Another rather strict description of the "axiomatic and empirical approaches" to science is provided by Bill Lucas :

Charles William Lucas 2013 "The universal force : Volume 1 - Derived from a more perfect union of the axiomatic and empirical scientific methods" www.commonsensescience.org ISBN-13: 978-1482328943, ISBN-10: 1482328941

"... Aristotle and other ancient Greks developed Syllogism or the logic of inference. Syllogism is a kind of logical argument in which one proposition or conclusion is inferred from tow or more other propositions known as premises. Syllogism became the core of deductive reasoning, where facts are determined by combining existing statements using logic. By contrast inductive reasoning is where the facts are determined by repeated observations.

The axiomatic method was invented by the ancent Greeks as the proper way to organize and demonstrate deductive reasoning in the pursuit of natural philosophy. The axiomatic method is a logical procedure by which and entire system of natural philosophy (eg. a branch of science or mathematics) is generated in accordance with specified rules of logical deduction from certain basic propositions (axioms or postulates), which in turn are constructed from a few terms (charge, mass, length) taken as primitives. Therse terms and axioms are to be defined and constructed according to some method by which some warrant for their truth is felt to exist. One of the oldest examples of of an axiomatic system is the ancient Greek Euclidean geometry. ..." pages 57&58

"... In 1687 when Isaac Newton published his famous book "Mathematical Principles of Natural Philosophy", he stated that he intended to illustrate a new way of doing natural philosophy that overcomes some of the limitations of the axiomatic method. The goal of Newtons' method was to find empirically the forces of nature by induction. Thus Newton was expanding the axiomatic method to include both inductive and deductive logic.

Newton's book is considered by many as the most important contribution to science in the history of the world, because it was the first to show how to describe the physical world in

> *terms of the precise language and equations of mathematics which would become the laws of science. Newton's work laid the groundwork for classical mechanics, which determined the scientific view of the physical universe for the next three centuries.*
>
> *The axiomatic method was logically rigorous, but it was not broad enough. It lacked a reliable method to discover the axioms of science and the most appropriate terms for the axioms. ..."* page 58
>
> *"... In this book series the way is shown to develop the universal force law and all of science from a more perfect union of the ancient Greek axiomatic method of "proof" used in Euclidean geometry and Newton's empirical scientific methods to measure and mathematically define the minimal set of empirical forces to explain nature. One might ask, "What is wrong with the current theories of physics and science in general?". The answer is that they are (1) based on idealizations and approximations instead of reality, (2) ignore truth developed in other areas of science, and (3) fail to use the axiomatic method properly, as defined by Euclid and amended by Isaac Newton, to direct natural philosophy towards univeral truth through the use of logic and experiment. ..."* page 7

Other papers by Lucas further develop the definition, often referring to Poincare's "meta-theories".

Appendix II : My path to this and other documents

I enjoy science and scientists, and have always been fascinated by its triumphs small and large, and the creative and powerful thinking behind it. I normally look at science in the sense that we are normally taught - as a realm where honest professionals use experiments and concepts to systematically build a better understanding of the world in the broad sense - including other [mathematical, scientific, technical, life] concepts. The "Scientific Method", combined with well-established and proven theories and data, is how science is often described.

Although science continues to be a big interest of mine that has long taken up much of my "free time" as well as much of my professional career, it gradually became clear to me that serious scientific frauds and errors were not rare occurrences by some kind of deviants or malcreantes, nor were they only part of the history of science "before we were educated to be smart". Because of my work, I first noticed catastrophic failures of the overwhelming mainstream scientific consensus in [high profile, hugely funded, hugely populated] scientific themes related to the environment, and these failures occurred among [highly-educated, high profile, well paid, highly unionized] government and academic scientists. At times it seemed that scientists' opinions had far more to do with whichever political party they were members of, rather than anything the data or reasonable analysis could lead them to. Of course, my first reaction was that I was grossly mistaken (always a reasonable assumption!), but then on further investigation, and seeing conceerns expressed by a few rare scientists, it became clearer that I was not the only problem.

I first wrote initial [descriptions, analysis] of scientists failures related to the "CO2 is the primary driver of climate since the mid-1800's" theory (later reduced to the last 100, 50, or 20 years etc, depending on

which modern promoter-scientists you refer to). Here are two examples of my comments in later years as posted on my website :

> 30Dec10 Lies, Damned Lies, and Scientists
> Something is rotten in the state of science. Or perhaps what is dreadfully wrong, and what scientists illustrate in a spectacular fashion, is that there is something rotten with our image of ourselves, or more to the point, with how we would see others see us. We are not GENERALLY good at [rational, logical, and scientific] thinking, and there are very good reasons for that. For example - [rational, logical, and scientific] thinking isn't GENERALLY appropriate, especially outside ofthe realm of [simple, dead] systems, and certainly not in GENERAL for living or human systems. While my analysis may initially appear dark and ugly, I actually think that this leads to a more realistic, encouraging and ultimately positive view of homo sapiens and the "small worlds" we've built.
>
> 11Dec07 Climate and food production - this is based on preparations for a presentation to the Alberta Potato Growers Association 13Nov07. Only a third of the slides were shown during the meeting, given the time available, and several slides have been updated. A solar-centric perspective dominates (again given the time available), and key failures of the Kyoto Premise are pointed out, which leads into a questioning of *"thinking versus belief systems"* by a vast majority of scientists.

While in the end that the "CO2 is the primary driver of climate since the mid-1800's" mainstream science community may be correct (I doubt that very much!), that will never excuse what I characterise as the widespread [dishonest, dysfunctional, delinquent, hypocritical, back-stabbing, cowardly] thinking and behaviours of essentially all government and academic scientists. Needless to say, that wasn't a popular statement, and colleagues and friends might have been right when they agreed with the theme, but only when applied to me. But looking back, history had many examples of science having gone wrong in a big way, and my own experience with the dioxin and "CFC - ozone layer" areas stood out profanely.

As the demands of career and family gradually diminished, I was able to pursue other personal projects and interests in [fundamental theoretical physics, astronomy, geology, chemistry]. Again, the same pattern emerged, even with areas such as relativity and quantum mechanics which are held out to be "beyond any question". At present, I see this as likely being the rule, rather than the exception, across all sciences.

Moreover, certain "red flags" that I noticed in my science-related professional work stuck out well in relation to the "Principle of Generality" :

- *"This has never been done before, we invented this idea"* - I do fell that recurring re-invention and simultaneous widespread co-invention by independent groups ARE NORMAL realities, but it's hard to verify that. However, I also feel that for every time a justifiable claim is made, there are many times that number of false claims made (at least verbally, and occasionally in writiing), even after a scientific community has more clearly shown the correct attributions.
- *"All the known data fit this theory"* - This is popular baloney in the areas of relativity and quantum mechanics for example, but in my experience applies right across areas of science I have looked at. I now consider this ALWAYS to be baloney as a starting point, and would not accept the statement until after an extreme amount of digging into the current and past science. In practise, I don't consider this claim to be easily verifiable, but most often it can be shown to be blatantly false with not much effort.
- *"You can't be right - you don't even have a phenomenological explanation for this"* - According

to some definitions or perceptions of science, it probably would be fair

While my initial analysis was focussed on the "CO2 drives climate" science, I see the issues as being general and having always been the case all the way down through history. I would peg this "history of science" as being >>5,500 years would be my guess, as I am also toying with the idea of ancient advanced civilisations going back before 10,000 BC and the "Great mammalian extinction" in North America). ?Gobekli Tepe? in Turkey, and the possibility of a great number of ancient cities having been submerged with the 50-to-300 meter sea level rise since the depth of the last glaciation (Cleopatra's palace in Alexandria was only 35 feet - and look how long it took to find that - stupid when you consider the 100-150 years we've known about glaciations and a spherical Earth, but I am more guilty than most on this failure to think past the obvious), are two of many starting points for that. Lucio Russo's "Forgotten Revolution" pegs the beginning of science (he provides a strict definition for science) to ancient Greece, but I wonder ....

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