



# THE CONFLICT OVER TRUTH

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COMPARATIVE ANALYSIS REASONING

- DECODING SECULAR TRUTH FROM MORAL TRUTH

*This thesis provides advanced critical thinking skills for students.  
Comparative Analysis Reasoning, along with the Critical Assumptions Test™, are  
procedure designed to best establish the Truth of any proposition*

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*Can Truth be established by secular reasoning; or is it better determined by a uniform set of spiritual-type moral laws? This age-old question is innovatively addressed in this thesis, starting with the question: What is Truth?*

## Introduction

*Teaching is not telling, it is to show students how to analyze and establish truth – it is not telling students the earth is round and not flat - it is to analyze objects from different heights, analyze how ships disappear over a horizon, and analyze the length of shadows at different latitudes*

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This thesis provides a method to establish truth. It presupposes that any complex or multilayered problem requires the inquirer to make a number of assumptions before they can start any analysis. However, after these assumptions have been made, the critical thinker has to spend time and effort to establish whether any one of those assumptions are flawed. As assumptions are most often selected with some level of emotionality, one's mindset must be sufficiently flexible if one expects to carry out an impartial and objective investigation. It is also necessary to be aware of the cultural techniques that can be used to disrupt or disassemble logical thought. This thesis provides innovative techniques to discover the flaws in assumptions; and details some of the equivocations in our culture, along with the methods to recognize them. It follows on from a previous thesis ([How to make sense of complex technical issues](#)), but from a wider perspective.

The advanced critical thinking skill for students presented here, is called Comparative Analysis Reasoning, which includes a technique called the Critical Assumptions Test™. They are procedures developed over the last decade designed to be the preferred way to establish the truth of any proposition.

The approach commences by establishing the importance of distinguishing truth. It then analyses three different types of thinker, showing their diverse understandings of what is real and their subsequent "reasoning" which leads to significantly different conclusions. The strategy addresses these factors and relies upon the three fundamental principles of thinking: logic, consistency, and the checking of all assumptions by their conformity with high probability knowledge.

This thesis is based upon experience developed by a forensic investigator, engineering researcher, and expert witness who has looked into human and systemic biases; and how to establish reliable technical evidence (biography of the author in the [Appendix](#)).

## Discussion & Analysis

### *Background*

Truth is not self-evident. Rationality and morality are also not indisputable, as they both rely upon knowing what is true and what is subjective or anecdotal. Current understanding is that critical thinking is founded upon rationality, skepticism, and sufficient analytic skills. What is overlooked in this description is that rationality, like truth, is always founded upon certain assumptions. One commonplace assumption is that the work product of academia, particularly the scientific, is a collection of firmly established truths. This assumption differs significantly from a more accurate assumption – based upon analysis - of both reasoning and science: as a continuing exploration of uncertainties, with a finite number of consistent and dependable technological findings.

To comprehensively examine the question of truth it should be recognized as having two aspects: philosophical truths and technical truths. Despite having essential differences both can be investigated concurrently and be analyzed by similar methods.

Philosophical truth – which includes the concepts of reality and the nature of humanity - cannot be determined *directly* as any conclusion is dependent upon the particulars of the necessary initial assumptions. Technical truth - which includes the facts of scientific inquiry - or more generally the description of observed events, is dependent upon the trustworthiness of the “describer” or reporter.

As a result, philosophical truth can only be established comparatively by establishing its *logical consistency* to alternative ideas. Technical truth can only be established by verifying the *logical consistency* of the describer(s). Logical consistency is therefore at the root of any enquiry concerning truth – whether philosophical or technical. It requires that the standards used to accept any theory shall be identical to those used to reject any competing theory. This approach circumvents the often biased or circular reasoning associated with both philosophical and technical argumentation. The method is called here Comparative Analysis Reasoning.

Approximately fifty years ago, social science theorists promulgated the idea there is no such thing as an absolute Truth; and that “truth” is always relative to individuals

and circumstances (quote marks and capitalization distinguish conjectural absolute Truth from a “truth” from the perspective of an inquirer).

Recently, that viewpoint appears to have been culturally modified to encompass the theory that there *are* certain overwhelming “truths” when viewed from a global perspective. Internet blockchain technology (as used in *Bitcoin* transactions) relies upon this type of “assumption”. This belief in the “truth” of a global paradigm - has been solidified to include a corollary belief that certain actions are permissible to ensure a particular “truth” can be upgraded to an irrefutable Truth.

This thesis will explore the question: What is Truth and how should humans currently establish and manage “truth”? A previous thesis by this author - [\*How to make sense of complex technical issues\*](#) – looked at the technical or scientific side of that question. This prior thesis demonstrated that the *complex* sciences – and especially those with an explicit cultural goal – are susceptible to being influenced by paradigms, biases, and funding sources; and that the profession had failed to implement any genuinely effective audit means.

Truth is typically defined as what corresponds to facts and reality; so, we will inspect those two features from an applied perspective. This means using inferences to the best explanation, by the meticulous use of logic, consistency, and correspondence to high probability knowledge (HPK). HPK is knowledge obtained by practical experience and *always* takes precedence over speculative data and opinions; meaning that opinions that contravene HPK must be relegated to a personal or group belief or opinion. HPK includes those ideas subjected to fully controlled laboratory experiments with the intent of any enquiry to disprove a hypothesis, and thereby enjoys an especially high probability of being true. The word “certain” is deliberately not used as all knowledge, including the scientific, always has certain boundaries.

The importance and necessity for truth in a society is best illustrated by inspecting outcomes when truth is not considered to be a social priority. It would be evident that both basic and legal *justice* would break down; *trust* between friendships would weaken; the discovery of near *certainty* about any issue, including science, would collapse; and *fairness* and individual *freedoms* would die. Truth would then become synonymous with the feelings of the influencers who control the information system.

Truth therefore is an essential element in order to avoid social confusion, irreconcilable misunderstandings, and conflicts. We shall proceed to determine what is true by first establishing what is real.

### *Necessary Assumptions*

In any enquiry - whether it is for a scientific investigation, for practical life issues, or seeking answers to philosophical/religious questions - the essential first step is to make some assumptions. Assumptions are tools for the mind to help an inquirer get to the truth of a matter - scientists call them hypotheses. The problem with every assumption is that the inquirer can quickly ignore that an assumption has been made, and then switch to the opinion they are an obvious Truth. This shift is pervasive as a typical inquirer initially selects their assumptions consistent with what they, for whatever reason, want to be true. Fortunately, this emotionally biased thinking can be readily identified by the application of various strategies and principles (see below: [\*Distinguishing Truth from Equivocation\*](#)).

Unexamined assumptions can also turn into the belief that one has discovered a personal "truth"; as compared to the conclusion that an incorrect assumption is at the root of every mistake. Questioning others about the validity of their assumptions and biases is problematic for social reasons; but not so problematic as being controlled by the thinking, or assumptions, of others.

Well-constructed assumptions should be initially formulated in sets of two or three (or more, if necessary) *competing* assumptions. Subsequent thought experiments for various scenarios can then be used to compare the logic and consistency of each assumption (see [\*Comparative Analysis Reasoning\*](#) below).

### *Core Assumptions*

Core, or foundational assumptions, are those that shape consequent assumptions. Scientist and philosophers often call core assumptions "paradigms".

Paradigms explain the fascinating issue of why humans are essentially powerless to recognize their biases and mistakes. The word was popularized in the early 1960s by physicist and philosopher Thomas Kuhn in his book *The Structure of Scientific Revolutions*. Paradigms are those assumptions that, for whatever reason, we fail to question or doubt. They become axiomatic "truths". Paradigms permit biases and

beliefs to form, not from the intrinsic quality of any underlying science or information, but from either one of two attributes: 1] its *benefit* to the inquirer for a particular belief or purpose; or 2] the degree of trust, or distrust, the inquirer has in the (perceived) source of the information. Paradigms thus pre-select, or bias, the range of possible answers to any question, including complex, or multilayered, scientific questions.

Paradigms are little discussed in our current culture, yet they form the most dominant of the behavioral laws of bias. Fortunately, the issue can be condensed into one straight-forward question. Are the methods, probabilities, logic, and standards that people (including scientists) use to accept an assumption (or hypothesis) *identical in every way* to the methods, probabilities, logic, and standards used to reject any competing theory that they subconsciously fail to value?

### *Foundational Scientific Knowledge*

Advanced Critical Thinking must have a reliable foundation. Unfortunately, academic reasoning has been shown to have a flaw. There are a number of empirical and statistically based papers that support this conclusion for both the social and medical sciences. However, the best general example is the paper by Mercier and Sperber, published in *Behavioral and Brain Sciences* in 2011, entitled: *Why do humans' reason?* which states the following in its abstract: "Reasoning is generally seen as a means to improve knowledge and make better decisions. However, much evidence shows that reasoning often leads to epistemic (*the investigation of truth*) distortions and poor decisions. This suggests that the function of reasoning should be rethought. Our hypothesis is that the function of reasoning is argumentative. It is to devise and evaluate arguments intended to persuade" (my emphases in this quotation). While their thesis is well-argued, the authors also spent an inordinate amount of time and particularly poor logic explaining why they (and their colleagues) would be exempt from their own conclusions. They failed to explore whether paradigms, biases, and funding sources could be wide-ranging in science that affected part of *their* reasoning.

Knowledge about complex topics is normally compromised by humans' core assumptions and their associated methods of reasoning. For reasoning to move forward two categories of knowledge should be practically accepted. They are the foundational assumptions of science\* and the findings of the foundational and

technological sciences (mathematics, chemistry, physics) – called here: High Probability Knowledge (HPK). As discussed previously, HPK includes the laws of science that support technology and the detailed observations of repeatable and readily verified objects and events.

[\*There are consistent laws of science throughout the universe; humans are capable of understanding them; and the laws have not changed over time.]

The issues encountered by the complex sciences were discussed in our previous thesis ([\*How to make sense of complex technical issues\*](#)). Complex sciences make up the vast majority of scientific research carried out today and are those that require both assumptions and human interpretations. They are not initially considered to be HPK without being subjected to any careful examination.

## Comparative Analysis Reasoning

As discussed, reasoning always involves assumptions, and those assumptions ultimately need to be verified. When assumptions can not be supported by available high probability knowledge then logically there is no other way to investigate their dependability than to *analyse* the implications and consequences to various *alternative* assumptions. This is the essence and logic of Comparative Analysis Reasoning (CAR) (not be mistaken for basic comparative reasoning).

Comparative Analysis Reasoning will explore why one's assumptions about the scope of existence in the world – or reality - has such a profound effect on one's other assumptions and ultimately how those assumptions will form thinkers' opinions regarding truth. This leads to the premise that virtually all of what one reads, watches, observes, or hears is no more than an expression of the *beliefs* of the communicator – the author, blogger, producer, editor, or speaker – based entirely upon their core assumptions. (the exception to this is high probability knowledge that has been previously defined).

Comparative analysis reasoning is built upon the above and the reasoning logic developed by University of Oxford trained David W. Richardson Jr. of the *Assumptions Institute* in his book *Transparent*. The *Critical Assumptions Test™* detailed in this book provides new insights into humans' paradigms, biases, inconsistent logic and flawed reasoning, along with the techniques to determine what is true and what is valuable.

## *Critical Assumptions Test™*

The Critical Assumptions Test (CAT) is a method that can establish the assumptions that have been made to support any viewpoint or belief. It also shows our core assumptions are actually “religious” in nature; this is irrespective of one’s acceptance or rejection of any concept of otherworldliness. This occurs because core assumptions focus on four philosophical questions that every healthy human asks themselves, either consciously or unconsciously. They are questions regarding our origins; our ultimate destiny; the meaning or purposes of our life, if any; and human morality, which includes our appraisals regarding the behaviour of others and ourselves. The CAT explores the outcomes of making various core assumptions to two uncomplicated but highly critical questions: what is real (Reality)? and what is a human?

Assumptions are required because there are three conceivable types of answers to both questions with no *initial* assurance that one is more probable than another. The three basic types of core assumption that can be used to form one’s beliefs about people and the world will be referred to as: thinking types 1, 2, & 3. Consistent thinkers are those who assume according to just one type, whether it be just type 1, or 2, or 3. Inconsistent thinkers are characterized by their two core assumptions (previously discussed) but, when convenient for their beliefs appear to arbitrarily borrow assumptions from the other thinking types. Being inconsistent suggests a degree of uncertainty regarding one’s perception of reality.

The *What is Real* question includes the following related assumptions: how does everything in the universe work? Where does everything come from? And, where is it going? The *What is a Human* question addresses the connected assumptions: where does our knowledge come from? What should be considered to be good and bad (if anything)? And, most significantly, what is considered to be humanity’s single fundamental problem, and how should it be addressed or solved?

The reality question can be addressed in one of three ways. Type 1 thinking assumes there is a single reality which is restricted to the material or observable world – and nothing else exists. Type 2 thinking agrees there is only one reality but it is restricted to mental or spiritual conceptions – with the observable world, in one way or another for practical purposes, to be illusory. Type 3 thinking assumes there are two realities –

the material *and* the spiritual, merging the assumptions of the other two types – comprising a creation and a creator.

Outcomes of consistent type 1 thinking is that everything comes from and works as a natural result of the material world which will ultimately end in a heat and physical death. Outcomes of consistent type 2 thinking is that mental or spiritual conceptions can evolve towards a conformity with some type of ultimate ideal. Outcomes of consistent type 3 thinking is the belief in the overriding importance of truth based upon the nature of the creator God.

The Human question is addressed by the three thinking types as follows: Type 1 thinking assumes a human is a highly evolved animal, that knowledge is determined by individuals – actually, the scholars or influencers - and that morality is similarly determined. Type 2 thinking assumes humans, knowledge, and human morality, are mental or spiritual conceptions that can evolve towards a conformity with some type of ultimate ideal. Type 3 thinking assumes humans are free stewards made to reflect God, and that true knowledge, wisdom and morality are all available by accurately discerning the nature of God.

The assumption regarding the question about humanity's basic problem is crucially determinant as it: 1] provides purpose for people's lives; and, 2] dictates their thoughts, words, and actions. Based on the words and actions of many humans in our current culture (empirically), type 1 thinkers assume that the world's problems are caused by the ignorance and intransigence of those who disagree with any of their assumptions. Type 2 thinkers similarly assume that it is the ignorance and intransigence of those who disagree with *their* assumptions. Consistent type 3 thinkers have an entirely different assumption: that the problems in the world all result from the misapplied natures of *all* humans; that life's struggles, thinking errors, and relationship conflicts are a direct result of people's inability to live sufficiently good lives; and that human solutions will always fail.

Inconsistent thinkers of all three types can borrow assumptions from other types thus making it somewhat difficult – but not impossible - to recognize the thinking types and conclusions. Curiously, despite different assumptions about reality, consistent type 1 and type 2 thinkers tend to find much common ground. They can agree that

transformation or evolution, in some form, is active in the world; that humans, at some level, must decide what is true knowledge and what is moral. They are also united in their condemnation of type 3 thinkers for bringing the concept of an omnipotent God into the arena of thought and debate.

### *Logic Problems with Type 1 & 2 Thinking*

Empirically, consistent type 1 thinkers are intolerant to other thinking types, especially type 3s, and equivocate to further their ends. Consistent type 2 thinkers have similar characteristics, as do inconsistent type 3 thinkers. Those thinking types forget their opinions are constructed entirely upon their core assumptions. Consistent type 3 thinkers are unique in that they acknowledge their assumptions are based upon faith; which means a trust in their assumptions regarding the nature of their creator. From a thinking perspective this is more logical and consistent than the denial of certain imponderable issues used by other thinkers.

Forgotten by the self-confident or assertive type thinkers is that their ability to reason logically, which they use to form their conclusions, is a matter of faith. It is an act of faith to assert that their thoughts have *any* relation to reality at all. Based upon their assumptions about humans (an evolved animal or a mental/spiritual conception) they should logically ask: why is good logic not as misleading as bad logic? They are both just an outcome of movements in the brain of an assuming animal or ill-defined being. They have no basis to even assert they can ever think logically for themselves.

If the grand principle that runs the universe is a result of a spontaneous explosive force or a "transcendent idea" with random interactions of matter & energy (without pre-specified information) or mystical ideas, why does it create extreme order and functional complexity in both organization and organisms; why do scientists go to a laboratory and expect to get anything repeatable & predictable; and why do scientists assume they will have any conception of logic, facts, and understanding?

Type 3 thinkers can be challenged that their assumptions result in gaps in their knowledge. While this is undoubtedly true, it is also the case that every thinking type must fill knowledge gaps with additional assumptions. But for consistent type 3 thinkers it is *not* at the expense of consistent logic as they recognize their core assumptions are "beliefs". More importantly, type 3 thinkers' assumptions historically gave rise to

the specifics of the scrupulous scientific method and enabled the groundwork discoveries for a majority of the truths of the technological sciences during the 16<sup>th</sup> to early 20<sup>th</sup> centuries. This can be attributed to the importance their assumptions ascribe to Truth and the belief that the world was created for them to discover, understand, and value. It was also their assumptions that conceived the infinite and equal worth of every human life, which is now theoretically supported by most type 1 and 2 thinkers without any logical support. Unavailable to type 1 and 2 thinkers, by virtue of their assumptions, are the blessings from the nonintuitive concepts like personal kindness and humility.

Further uses of the Critical Assumption Test are accessible at the [Assumptions Institute](#) including links to purchase the book entitled *Transparent - How to See Through the Powerful Assumptions That Control You*.

## Equivocation Techniques

The public arena of ideas has recently become significantly confrontational. The idea of reasonable debate - based upon logic, consistency, and the search for truth - has largely been replaced. In its place many type 1, type 2, and inconsistent type 3 assumers have fallen into a trap, which can euphemistically be called equivocation. It is observable that equivocation is required whenever an idea cannot reasonably be supported by an assumer's core assumptions and their reasoning becomes inconsistent, illogical, or circular. Equivocation, from distortion to dishonesty, is necessary to support beliefs, and to convince the assumer, and others, that their thinking is rational. The process of reasoning, according to the research paper by Mercier and Sperber, then becomes entirely "argumentative".

While equivocation techniques have always existed long before the 16<sup>th</sup> century writings of Niccolò Machiavelli. But, the marketing and promotion of ideas (and products) was refined to a new level by the father of public relations Edward Bernays nearly a century ago. Recent technological innovations have now virtually perfected the equivocation art by the use of media management, neuroscience brain scans, voice and video strategies, and near-real animations. Artificial intelligence programs (such as *Grover*), prompted only by a "newsworthy headline", can now compose articles that are more plausible than those written by humans.

There are too many techniques to list them all here but with today's technology a strategy, capable of being repeated often enough by the social or traditional media, can be believed by those with insufficient experience or cognitive training, in a very short time period. Six, of the numerous, equivocation techniques are to:

1. Assert one's assumptions as incontrovertible facts or the unimpeachable opinions of experts; while disparaging those with other assumptions as having biased and unacceptable beliefs;
2. Influence the concept of truth by the claim that a global perspective provides a single point of Truth (note the capital T), capable of being "fact checked" by the influencers based upon *their* assumptions;
3. Ignore, censor, or delegitimize exculpatory evidence by various illegitimate means;
4. Use and repeat catchphrases framed to be recognized as superficially true;
5. Create and promote uncertainty regarding the truth, logic and consistency of other more logical assumptions;
6. Shut down discussion by: limiting opposers acceptable vocabulary and accusing opposers of being offensive.

### Distinguishing Truth from Equivocation

The essence of a wide-ranging and effective education *isn't* learning facts – although correct facts are always useful. There are far too many essential facts in the world to become fully educated by that method. There are also many assumption-based "facts" spread through the culture that masquerade as truths. Consequently, education must rely on training the mind to master two specific skills: 1] the principles to distinguish truth from equivocation, coupled with; 2] the aptitude to always inquire and compare every side of a topic. Only then will an inquirer be able to determine the truth, the whole truth, and nothing but the truth. This is a twenty-first century imperative.

In addition to learning and gaining experience with Comparative Analysis Reasoning, combined with the Critical Assumptions Test detailed in this thesis, seven fundamental ideas have been developed to assist the analysis of material presented to students by any educator or communicator. These ideas are based upon verifiable underlying

principles:

1. THE ASSUMPTIONS PRINCIPLE: Everyone's opinions and viewpoints are based upon their assumptions – principally their core assumption about reality. The exception being high probability knowledge which includes the findings of the technological sciences.
2. THE PERSUASION PRINCIPLE: Virtually everything you read, watch, see, or hear expresses the ideas of a communicator who likely wants to *persuade* you to agree with them\*. (\*e.g.: the purpose of *this* thesis is to show a way to discern truth by using assumptions and to provide techniques to discern the merits of opposing arguments – the author is a consistent type 3 assumer).
3. THE EQUIVOCATION PRINCIPLE: Truth can never be established by equivocation or inconsistent assumptions. Any communicator who uses equivocation techniques is asserting and *not* attempting to communicate the truth of a matter.
4. THE AVOIDANCE PRINCIPLE: Those who, for whatever reason or by whichever equivocation method, avoid having their assumptions challenged are almost certainly *unable* to support those assumptions by logic, comparison consistency, or high probability knowledge.
5. THE SKEPTICAL VIEWPOINT PRINCIPLE: To differentiate beliefs from fully considered opinions based upon reliable assumptions, it is necessary to be continually skeptical. Experienced skeptics avoid cynicism and contempt for other thinking types. A skeptical position must be positive; a cynic or equivocator will be trapped into a particular paradigm.
6. THE HUMAN REASON PRINCIPLE: The power of human reason can be directed towards one of two purposes. Purpose 1: to increase understanding and to learn from others – the contemplative use; Purpose 2: to construct ways to convince others one's ideas and beliefs are correct – the argumentative use. Purpose 1 requires a distinct, but difficult to achieve, mind-set. The thinker must refuse to judge, manipulate, or to be upset by those who rely on different assumptions.
7. THE COMPLEXITY PRINCIPLE: Any conclusion – including the scientific - about a complex, or multi-faceted issue, explained as being obvious or uncomplicated, will almost certainly be imprecise, incomplete, or most likely, incorrect.

## Summary

In 1969 professor, physician, and author Edward de Bono, a leading guru of the clear-thinking process, suggested that effective thinking (called: *Lateral Thinking*) required the thinker to construct various assumptions and then explore the consequences of each assumption. Assumptions are also required to analyze ideas about "truth", as they are powerful tools to circumvent the unhelpful polarization of viewpoints that can develop between people.

Type 1 and Type 2 assumers are consciously or unconsciously searching for ways to *reject* the consistency of the logic that supports the type 3 assumptions regarding the reality of God. Consistent Type 3 thinkers recognize that when one does not assume (believe in) God, the assumer can believe in anything else they choose - irrespective of established logic, experience, and observations.

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Geoffrey V Francis DIC MSc PEng

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### The Author

Geoffrey V Francis is a retired professional engineer who specialized in research and development and forensic science. His post graduate studies at Imperial College, London included the development of computer based mathematical models for structural numerical analysis. He was an independent engineering and science consultant for over four decades and has given lectures at various academic venues including Harvard University. He sat on a number of technical standards' committees and has acted as a peer reviewer for technical papers and has also focused on R&D and legal cases involving product and material failures. He frequently collaborated with scientists and other specialty investigators.

For the last ten years the author has studied the topic of *human biases* independent of a university faculty of social sciences. This approach was used to steer clear of any of the biases and paradigms that may have intruded into a university culture. This meant the author's personal biases would need to be vigilantly managed. This was made feasible by experiences gained as a forensic expert where opposing specialists and lawyers relentlessly accentuate and criticize every potential bias, error, or omission in one's thinking and reports. Decades of this work instilled a systematic approach to the investigation of data with a minimum of bias.

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### Topics - Key Words

1: Biases; 2: Paradigms; 3: Skepticism; 4: Critical Thinking; 5: Logic;  
6: High Probability Knowledge; 7: Complex Science; 8: Cultural Science, 9: Critical Assumptions Test, 10: Comparative Analysis Reasoning.

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*A teacher must present students with each side of any given issue and provide them with the techniques to analyze the merits of each argument*

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