

## Appendix 1

### A Great Big List of Fallacies

To avoid falling for the "Intrinsic Value of Senseless Hard Work Fallacy" (see also "Reinventing the Wheel"), I began with Wikipedia's helpful divisions, list, and descriptions as a base (since Wikipedia articles aren't subject to copyright restrictions), but felt free to add new fallacies, and tweak a bit here and there if I felt further explanation was needed. If you don't understand a fallacy from the brief description below, consider Googling the name of the fallacy, or finding an article dedicated to the fallacy in Wikipedia.

Consider the list representative rather than exhaustive.

#### Informal fallacies

These arguments are fallacious for reasons other than their structure or form (formal = the "form" of the argument). Thus, informal fallacies typically require an examination of the argument's content.

- Argument from (personal) incredulity (aka - divine fallacy, appeal to common sense) – I cannot imagine how this could be true, therefore it must be false.
- Argument from repetition (*argumentum ad nauseam*) – signifies that it has been discussed so extensively that nobody cares to discuss it anymore.
- Argument from silence (*argumentum e silentio*) – the conclusion is based on the absence of evidence, rather than the existence of evidence.
- Argument to moderation (false compromise, middle ground, fallacy of the mean, *argumentum ad temperantiam*) – assuming that the compromise between two positions is always correct.
- *Argumentum verbosium* – See proof by verbosity, below.
- (Shifting the) burden of proof (see – *onus probandi*) – I need not prove my claim, you must prove it is false.
- Circular reasoning (*circulus in demonstrando*) – when the reasoner begins with (or assumes) what he or she is trying to end up with; sometimes called *assuming the conclusion*.
- Circular cause and consequence – where the consequence of the phenomenon is claimed to be its root cause.
- Continuum fallacy (fallacy of the beard, line-drawing fallacy, sorites fallacy, fallacy of the heap, bald man fallacy) – improperly rejecting a claim for being imprecise.
- Correlative-based fallacies
  - Correlation proves causation (*cum hoc ergo propter hoc*) – a faulty assumption that correlation between two variables implies that one causes the other.
  - Suppressed correlative – where a correlative is redefined so that one alternative is made impossible.
- Ambiguous middle term – a common ambiguity in syllogisms in which the middle term is equivocated.
- Ecological fallacy – inferences about the nature of specific individuals are based solely upon aggregate statistics collected for the group to which those individuals belong.
- Etymological fallacy – reasons that the original or historical meaning of a word or phrase is necessarily similar to its actual present-day meaning.
- Fallacy of composition – assuming that something true of part of a whole must also be true of the whole.
- Fallacy of division – assuming that something true of a thing must also be true of all or some of its parts.
- Fallacy of many questions (complex question, fallacy of presupposition, loaded question, *plurium interrogationum*) – someone asks a question that presupposes something that has not been

proven or accepted by all the people involved. This fallacy is often used rhetorically, so that the question limits direct replies to those that serve the questioner's agenda.

- Fallacy of the single cause (causal oversimplification) – it is assumed that there is one, simple cause of an outcome when in reality it may have been caused by multiple causes.
- False attribution – an advocate appeals to an irrelevant, unqualified, unidentified, biased or fabricated source in support of an argument.
- Fallacy of quoting out of context (contextomy) – refers to the selective excerpting of words from their original context in a way that distorts the source's intended meaning.
- False authority (single authority) – using an expert of dubious credentials and/or using only one opinion to sell a product or idea. Related to the appeal to authority fallacy.
- Gambler's fallacy – the incorrect belief that separate, independent events can affect the likelihood of another random event. If a coin lands on heads ten times in a row, the belief that it is "due to the number of times it had previously landed on tails" is incorrect.
- Hedging – using words with ambiguous meanings, then changing the meaning of them later.
- Historian's fallacy – occurs when one assumes that decision makers of the past viewed events from the same perspective and having the same information as those subsequently analyzing the decision. (Not to be confused with presentism, which is a mode of historical analysis in which present-day ideas, such as moral standards, are projected into the past.)
- Homunculus fallacy – where a "middle-man" is used for explanation, this sometimes leads to regressive middle-men. Explains without actually explaining the real nature of a function or a process. Instead, it explains the concept in terms of the concept itself, without first defining or explaining the original concept. Explaining thought as something produced by a little thinker, a sort of homunculus inside the head, merely explains it as another kind of thinking (as different but the same).
- Inflation of conflict – The experts of a field of knowledge disagree on a certain point, so the scholars must know nothing, and therefore the legitimacy of their entire field is put to question.
- If-by-whiskey – an argument that supports both sides of an issue by using terms that are selectively emotionally sensitive.
- Incomplete comparison – in which insufficient information is provided to make a complete comparison.
- Inconsistent comparison – where different methods of comparison are used, leaving one with a false impression of the whole comparison.
- *Ignoratio elenchi* (irrelevant conclusion, missing the point) – an argument that may in itself be valid, but does not address the issue in question.
- Kettle logic – using multiple inconsistent arguments to defend a position.
- Ludic fallacy – the belief that the outcomes of non-regulated random occurrences can be encapsulated by a statistic; a failure to take into account unknowns in determining the probability of events taking place.
- Mind projection fallacy – when one considers the way one sees the world as the way the world really is.
- Moral high ground fallacy – one assumes a "holier-than-thou" attitude in an attempt to make oneself look good to win an argument.
- Moralistic fallacy – inferring factual conclusions from purely evaluative premises in violation of fact–value distinction. For instance, inferring *is* from *ought* is an instance of moralistic fallacy. Moralistic fallacy is the inverse of the naturalistic fallacy defined below.
- Moving the goalposts (raising the bar) – argument in which evidence presented in response to a specific claim is dismissed and some other (often greater) evidence is demanded.
- Naturalistic fallacy – inferring evaluative conclusions from purely factual premises in violation of fact–value distinction. For instance, inferring *ought* from *is* (sometimes referred to as the *is-ought fallacy*) is an instance of naturalistic fallacy. Also the naturalistic fallacy in a stricter sense as defined in the section "Conditional or questionable fallacies" below is an instance of the naturalistic fallacy. The naturalistic fallacy is the inverse of moralistic fallacy.

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- Nirvana fallacy (perfect solution fallacy) – when solutions to problems are rejected because they are not perfect.
- *Onus probandi* – from Latin "*onus probandi incumbit ei qui dicit, non ei qui negat*" the burden of proof is on the person who makes the claim, not on the person who denies (or questions the claim). It is a particular case of the "*argumentum ad ignorantiam*" fallacy; here the burden is shifted on the person defending against the assertion.
- Proof by verbosity (*argumentum verborum*, proof by intimidation) – submission of others to an argument too complex and verbose to reasonably deal with in all its intimate details.
- Prosecutor's fallacy – a low probability of false matches does not mean a low probability of *some* false match being found.
- Proving too much – using a form of argument that, if it were valid, could be used more generally to reach an absurd conclusion.
- Psychologist's fallacy – an observer presupposes the objectivity of his own perspective when analyzing a behavioral event.
- Referential fallacy – assuming all words refer to existing things and that the meaning of words reside within the things they refer to, as opposed to words possibly referring to no real object or that the meaning of words often comes from how we use them.
- Regression fallacy – ascribes cause where none exists. The flaw is failing to account for natural fluctuations. It is frequently a special kind of the *post hoc* fallacy.
- Reification (hypostatization) – a fallacy of ambiguity, when an abstraction (abstract belief or hypothetical construct) is treated as if it were a concrete, real event or physical entity. In other words, it is the error of treating as a "real thing" something that is not a real thing, but merely an idea.
- Retrospective determinism – the argument that because some event has occurred, its occurrence must have been inevitable beforehand.
- Shotgun argumentation – the arguer offers such a large number of arguments for their position that the opponent can't possibly respond to all of them. (See "Argument by verbosity" above.)
- Special pleading – where a proponent of a position attempts to cite something as an exemption to a generally accepted rule or principle without justifying the exemption.
- Wrong direction – cause and effect are reversed. The cause is said to be the effect and vice versa.

## Faulty Generalizations

These reach a conclusion from weak premises. Unlike fallacies of relevance, in fallacies of defective induction, the premises are related to the conclusions yet only weakly buttress the conclusions. A faulty generalization is thus produced.

- Accident – an exception to a generalization is ignored.
  - No true Scotsman – when a generalization is made true only when a counterexample is ruled out on shaky grounds.
- Cherry picking (suppressed evidence, incomplete evidence) – the act of pointing at individual cases or data that seem to confirm a particular position, while ignoring a significant portion of related cases or data that may contradict that position.
- Inductive fallacy – a more general name for fallacies such as hasty generalization. A conclusion is made from premises that only lightly support the conclusion.
- Misleading vividness – involves describing an occurrence in vivid detail, even if it is an exceptional occurrence, to convince someone that it is a problem.
- Overwhelming exception – an accurate generalization that comes with qualifications that eliminate so many cases that what remains is much less impressive than the initial statement might have led one to assume.
- Pathetic fallacy – when an inanimate object is declared to have characteristics of animate objects.

- Thought-terminating cliché – a commonly used phrase, sometimes passing as folk wisdom, used to quell cognitive dissonance, conceal lack of thought-entertainment, move onto other topics, etc.

## Red Herring Fallacies

These are errors in logic where a proposition is, or is intended to be, misleading in order to make irrelevant or false inferences. In the general case any logical inference based on fake arguments, intended to replace the lack of real arguments or to replace implicitly the subject of the discussion.

- *Ad hominem* – attacking the arguer instead of the argument.
  - Poisoning the well – a type of *ad hominem* where adverse information about a target is presented with the intention of discrediting everything that the target person says.
  - Abusive fallacy – a subtype of "ad hominem" when it turns into verbal abuse of the opponent rather than arguing about the originally proposed argument.
  - *Ad Hominem Tu Quoque* - (personal inconsistency, aka "you too" fallacy) - "This fallacy is committed when it is concluded that a person's claim is false because 1) it is inconsistent with something else a person has said or 2) what a person says is inconsistent with her actions."
- *Argumentum ad baculum* (appeal to the stick, appeal to force, appeal to threat) – an argument made through coercion or threats of force to support a position.
- Appeal to equality – where an assertion is deemed true or false based on an assumed pretense of equality.
- Association fallacy (guilt by association) – arguing that because two things share a property they are the same.
- Appeal to consequences (*argumentum ad consequentiam*) – the conclusion is supported by a premise that asserts positive or negative consequences from some course of action in an attempt to distract from the initial discussion.
- Appeal to emotion – where an argument is made due to the manipulation of emotions, rather than the use of valid reasoning.
  - Appeal to fear – (*Ad Baculum*, or *Ad Metum*?) a specific type of appeal to emotion where an argument is made by increasing fear and prejudice towards the opposing side.
  - Appeal to flattery – a specific type of appeal to emotion where an argument is made due to the use of flattery to gather support.
  - Appeal to pity (*argumentum ad misericordiam*) – an argument attempts to induce pity to sway opponents.
  - Appeal to ridicule – an argument is made by presenting the opponent's argument in a way that makes it appear ridiculous.
  - Appeal to spite – a specific type of appeal to emotion where an argument is made through exploiting people's bitterness or spite towards an opposing party.
  - Wishful thinking – a specific type of appeal to emotion where a decision is made according to what might be pleasing to imagine, rather than according to evidence or reason.
- Appeal to motive – a premise is dismissed by calling into question the motives of its proposer.
- Appeal to novelty (*argumentum novitatis/antiquitatis*, *ad novitam*) – a proposal is claimed to be superior or better solely because it is new or modern.
- Appeal to poverty (*argumentum ad Lazarum*) – supporting a conclusion because the arguer is poor (or refuting because the arguer is wealthy). (Opposite of appeal to wealth.)
- Appeal to tradition (*argumentum ad antiquitatem*) – a conclusion supported solely because it has long been held to be true.
- Appeal to nature – wherein judgment is based solely on whether the subject of judgment is 'natural' or 'unnatural'.

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- Appeal to wealth (*argumentum ad crumenam*) – supporting a conclusion because the arguer is wealthy (or refuting because the arguer is poor). (Sometimes taken together with the appeal to poverty as a general appeal to the arguer's financial situation.)
- Argument from silence (*argumentum ex silentio*) – a conclusion based on silence or lack of contrary evidence.
- Bulverism (Psychogenetic Fallacy) – inferring why an argument is being used, associating it to some psychological reason, then assuming it is invalid as a result. It is wrong to assume that if the origin of an idea comes from a biased mind, then the idea itself must also be a false.
- Chronological snobbery – a thesis is deemed incorrect because it was commonly held when something else, clearly false, was also commonly held.
- Fallacy of relative privation – dismissing an argument due to the existence of more important, but unrelated, problems in the world.
- Genetic fallacy – a conclusion is suggested based solely on something or someone's origin rather than its current meaning or context.
- Judgmental language – insulting or pejorative language to influence the recipient's judgment.
- Naturalistic fallacy (is–ought fallacy, naturalistic fallacy) – claims about what ought to be on the basis of statements about what is.
- *Reductio ad Hitlerum* (playing the Nazi card) – comparing an opponent or their argument to Hitler or Nazism in an attempt to associate a position with one that is universally reviled. (See also – Godwin's law)
- Texas sharpshooter fallacy – improperly asserting a cause to explain a cluster of data.
- *Tu quoque* ("you too", appeal to hypocrisy, I'm rubber and you're glue) – the argument states that a certain position is false or wrong and/or should be disregarded because its proponent fails to act consistently in accordance with that position.
- Two wrongs make a right – occurs when it is assumed that if one wrong is committed, another wrong will cancel it out.

## Conditional or Questionable Fallacies

- Broken window fallacy – an argument that disregards lost opportunity costs (typically non-obvious, difficult to determine or otherwise hidden) associated with destroying property of others, or other ways of externalizing costs onto others. For example, an argument that states breaking a window generates income for a window fitter, but disregards the fact that the money spent on the new window cannot now be spent on new shoes.
- Definist fallacy – involves the confusion between two notions by defining one in terms of the other.
- Naturalistic fallacy – attempts to prove a claim about ethics by appealing to a definition of the term "good" in terms of either one or more claims about natural properties (sometimes also taken to mean the appeal to nature) or God's will.

## Formal Fallacies

These are errors in logic that can be seen in the argument's form. All formal fallacies are specific types of *non sequiturs*.

- Appeal to probability – is a statement that takes something for granted because it would probably be the case (or might be the case).
- Argument from fallacy – assumes that if an argument for some conclusion is fallacious, then the conclusion *itself* is false.
- Base rate fallacy – making a probability judgment based on conditional probabilities, without taking into account the effect of prior probabilities.

- Conjunction fallacy – assumption that an outcome simultaneously satisfying multiple conditions is more probable than an outcome satisfying a single one of them.
- Masked man fallacy (illicit substitution of identicals) – the substitution of identical designators in a true statement can lead to a false one.

## Propositional Fallacies

A propositional fallacy is an error in logic that concerns compound propositions. For a compound proposition to be true, the truth values of its constituent parts must satisfy the relevant logical connectives that occur in it (most commonly: <and>, <or>, <not>, <only if>, <if and only if>). The following fallacies involve inferences whose correctness is not guaranteed by the behavior of those logical connectives, and hence, which are not logically guaranteed to yield true conclusions.

Types of Propositional fallacies:

- Affirming a disjunct – concluding that one disjunct of a logical disjunction must be false because the other disjunct is true; *A or B; A; therefore not B*. For this to be fallacious, the word "or" must be used in an inclusive rather than exclusive sense. Example:

Premise 1: To be on the cover of Vogue Magazine, one must be a celebrity or very beautiful.

Premise 2: This month's cover was a celebrity.

Therefore, this celebrity is not very beautiful.

- Affirming the consequent – the antecedent in an indicative conditional is claimed to be true because the consequent is true; *if A, then B; B, therefore A*.
- Denying the antecedent – the consequent in an indicative conditional is claimed to be false because the antecedent is false; *if A, then B; not A, therefore not B*.

## Quantification Fallacies

A quantification fallacy is an error in logic where the quantifiers of the premises are in contradiction to the quantifier of the conclusion.

Example: The existential fallacy – an argument has a universal premise and a particular conclusion.

## Formal Syllogistic Fallacies

Syllogistic fallacies – logical fallacies that occur in syllogisms.

- Affirmative conclusion from a negative premise (illicit negative) – when a categorical syllogism has a positive conclusion, but at least one negative premise.
- Fallacy of exclusive premises – a categorical syllogism that is invalid because both of its premises are negative.
- Fallacy of four terms (*quaternio terminorum*) – a categorical syllogism that has four terms.
- Illicit major – a categorical syllogism that is invalid because its major term is not distributed in the major premise but distributed in the conclusion.
- Illicit minor – a categorical syllogism that is invalid because its minor term is not distributed in the minor premise but distributed in the conclusion.

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- Negative conclusion from affirmative premises (illicit affirmative) – when a categorical syllogism has a negative conclusion but affirmative premises.
- Fallacy of the undistributed middle – the middle term in a categorical syllogism is not distributed.

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## Introduction

1. Walter Isaacson, *Steve Jobs* (New York: Simon & Schuster, 2011), pp. 535,536.
2. Philip Norman, *Shout! The Beatles in Their Generation* (New York: Touchstone, 2005) p. 152.
3. *Ibid.*, pp. 144,146. Perhaps industry people should have heard them in concert rather than in their studios. Members of *The Beatles* didn't feel well about their performance at the audition, perhaps because of the pressure (pp. 143,144).
4. Dorothy Sayers, "The Lost Tools of Learning" (published at Oxford, 1947).
5. A 2011 survey of over 1,000 people who hire for a wide range of industries found less than 10 percent reporting that colleges did an excellent job of preparing students for the workplace. Applicants performed below employer's expectations on such skills as critical thinking. Survey by the Accrediting Council for Independent Colleges and Universities (ACICS), "Panel Discussion: Workforce Skills Reality Check," <http://www.acics.org/events/content.aspx?id=4718>.
- 6) John Baldoni, "How Leaders Should Think Critically," *Harvard Business Review*, Jan. 20, 2010. When *The Wall Street Journal* interviewed 2191 people who recruit from the top business schools, attributes they looked for included analytical and problem solving skills, which are clearly in the domain of critical thinking. Ronald Alsop, "The Top Business Schools" (A Special Report), *The Wall Street Journal*, Sept., 2003.
- 7) Richard Florida and Jim Goodnight, "Managing for Creativity," *Harvard Business Review*, July 2005.
- 8) *Op. cit.*, "Workforce Skills Reality Check."
- 9) A study of students in Taiwan found a class combining critical and creative thinking scoring better at both critical thinking and originality than a class that discussed only critical thinking. Yulin Changa, Bei-Di Lib, Hsueh-Chih Chena, Fa-Chung Chiuc, "Investigating the synergy of critical thinking and creative thinking in the course of integrated activity," *Taiwan Educational Psychology: An International Journal of Experimental Educational Psychology*, 2014. <http://www.tandfonline.com/doi/abs/10.1080/01443410.2014.920079#.VGTC0slPKmU>. Significantly, the University of Massachusetts, Boston offers an MA combining Critical and Creative Thinking. <http://www.umb.edu/academics/caps/degree/creative-thinking>.

## Chapter 1: They're Overconfident

1. James B. Stewart, *Disney War* (New York: Simon & Schuster, 2005), pp. 486, 487.
2. *Ibid.*, p. 527.
3. Plato, *The Republic*, from *Plato in Twelve Volumes*, translated by Paul Shorey (Cambridge: Harvard University Press, 20c-24a) 1969.
4. In Socrates' words (as placed in his mouth by Plato, translated from the original Greek), "For I certainly do not yet know myself, but whithersoever the wind, as it were, of the argument blows, there lies our course." *The Republic, op. cit.*
5. Sam Walton with John Huey, *Sam Walton: Made in America* (New York: Doubleday, 1992) p. 212.
6. *Ibid.*, pp. 56,57,60-62,228,229. They would evaluate one another's strengths and weaknesses, report their bestselling item, and compete for the best volume producing item.
7. *Ibid.*, p. 63. According to associate Charlie Cate, "I remember him saying over and over again: go in and check our competition. Check *everyone* who is our competition. And don't look for the bad. Look for the good.... Everyone is doing something right."
8. *Ibid.*, pp. 81,82.
9. *Ibid.*, pp. 22,23.
10. *Ibid.*, p. 211.
11. *Ibid.*, p. 230.
12. Jack Welch and Suzie Welch, *Winning* (New York: HarperCollins, 2005), pp. 25ff. See also Jack Welch, with John A. Byrne, *Jack: Straight from the Gut* (Warner Business Books: New York, 2001), pp. 162ff. On being idea-driven, he speaks of "candid feedback at every level." Welch gave a warning notice to a manufacturing leader who was "not open to ideas from others" (p. 163). Related comments by Welch: "Not being an open thinker would be a killer." "Treat people with dignity and give them a voice." Also see p. 176 on Welch as a facilitator. He would ask, "What would you change if you were in my shoes?" (p. 180)
13. *Straight from the Gut, op. cit.*, pp. 182, 183.
14. *Ibid.*, p. 183. Note also: "...the people closest to the work know it best. Almost every good thing that has happened in the company can be traced to the liberation of some business, some team, or some individual." Welch created "a culture where everyone began playing a part, where everyone's ideas began to count, and where leaders led rather than controlled." (p. 184)
15. Another great example of organizing a company to create and implement a steady flow of ideas would be the SAS Institute in Cary, NC. It has made the top 20 of Forbes' list of best companies to work for every year since Forbes began compiling the list. Its employee turnover rate is an astounding three percent to five percent, compared to the industry average of 20 percent. Revenues have grown for 28 years straight. The secret to their success? According to writers for the *Harvard Business Review*, "SAS has learned how to harness the creative energies of *all* its stakeholders, including its customers, software developers, managers, and support staff." They manage their creativity according to three guiding principles: "Help employees do their best work by keeping them intellectually engaged and by removing distractions. Make managers responsible for sparking creativity and eliminate arbitrary distinctions between "suits" and "creatives." And engage customers as creative partners so you can deliver superior products." Concerning candor at SAS, "it's not in keeping with the corporate culture to withhold constructive

criticism of higher-ups or hide problems from them; doing so would just result in an inferior product. In fact, most of SAS's leaders have an open-door policy. People are free to pop in to talk over an issue or pitch a new product idea. And the CEO might stop by your office to ask you questions about the project you're working on." Richard Florida and Jim Goodnight, "Managing for Creativity," *Harvard Business Review*, July 2005.

16. Concerning the importance of humility in getting the best jobs, it's instructive that when *The Wall Street Journal* interviewed 2191 people who recruit from the top business schools, two of the schools were criticized by certain recruiters because they found their graduates to be arrogant, which was a big turnoff to the recruiters. Ronald Alsop, "The Top Business Schools" (A Special Report), *The Wall Street Journal*, Sept., 2003.

17. This fictional town was created by "Garrison" Keillor for the radio show *A Prairie Home Companion*. "The Lake Wobegon Effect" refers to the observed phenomenon that large portions of groups see themselves as above average in such areas as leadership or driving skills.

18. O. Svenson, "Are we all less risky and more skillful than our fellow drivers?" *Acta Psychologica* 47 (2), 1981: p. 143.

19. Richard L. Brandt, *The Google Guys* (New York: The Penguin Group, 2009, 2011), p. 61.

20. Novelist Terry Kay shared this illustration in a talk he gave at the Georgia Writers Association at Kennesaw State University.

21. Here's how Drew Barrymore describes director Steven Spielberg's relationship with her as a child actor in the hit film *E.T.*: "All of us were free to offer input, but he especially seemed to like the silly things the kids came up with. Like in the scene where Henry, Robert, and I are hiding E.T. in the closet from our mother, Henry tells me that only kids can see E.T. There wasn't a line to go with that, and Steven told me to just make something up. So when we did the scene again, I just shrugged and said, 'Gimme a break!'" "He'd often take me aside and say something like, 'You're talking to me now. Do you really like this? Or do you have a different idea? Do you think it could be done a different way?' Eventually I'd add something and Steven would smile and say, 'Good, let's combine ideas.' It made me feel so good. For once I didn't feel like some stupid little kid trying to make people love me. I felt important and useful." Drew Barrymore, with Todd Gold, *Little Girl Lost* (Pocket Books: New York, 1990), p. 58.

22. In Dr. Philip Tetlock's brilliant and painstakingly researched analysis of why experts are so often wrong in their forecasting, he concludes that "The dominant danger remains hubris, the...vice of closed-mindedness, of dismissing dissonant possibilities too quickly." This is why Tetlock concludes that often a group of generally informed people may do better at political forecasting than a team of experts; thus the value of getting input from many diverse people, rather than automatically going with the advice of a team of experts. Philip E. Tetlock, *Expert Political Judgment: How Good Is It? How Can We Know?* (Princeton, NJ: Princeton University Press, 2005), p. 23.

23. Personal interview with Ajit Gupta, 2014. These articles tell a bit more about his many accomplishments:

[http://en.wikipedia.org/wiki/Ajit\\_Gupta](http://en.wikipedia.org/wiki/Ajit_Gupta), <http://www.forbes.com/sites/brucerogers/2012/11/19/how-ajit-guptas-aryaka-is-disrupting-the-wide-area-network-business/>.

## Chapter 2: They're Under Confident

1. This wasn't just an off-the-cuff remark by Einstein in the heat of argument. At the time of his remark, in 1901, he was engaged in a series of squabbles with academic authorities. According to Isaacson, in his biography of Einstein, this quote "would prove a worthy credo, one suitable for being carved on his coat of arms if he had ever wanted such a thing." Walter Isaacson, *Einstein: His Life and Universe* (New York: Simon & Schuster, 2007), p. 67.

2. People react to experts in a variety of ways. One researcher identified *Simplifiers* (those who make a decision based on simple premises and hold to it forever), *Delegators* (who have an authority they trust), and *Questioners* (those who look for pros and cons and evidence). The following article claims that the Questioner group has grown in recent times. For example, rather than trusting a doctor implicitly, Questioners want to know the doctor's rationale and to be involved in the process. For more on cognitive styles of decision making, see [http://en.wikipedia.org/wiki/Decision-making#Cognitive\\_styles](http://en.wikipedia.org/wiki/Decision-making#Cognitive_styles). Note also the response below this blog post: <http://www.brendan-nyhan.com/blog/2014/03/new-study-on-vaccine-messaging.html>.

3. Christopher Cerf and Victor Navasky, *The Experts Speak* (New York: Pantheon Books, 1984 edition), p. 183. From *Elvis, We Love You Tender* (New York: Delacorte Press, 1979). Cerf and Navasky suggest that current media relies to an unhealthy measure on parading experts before their audiences. "...the mainstream media, and particularly television, have as their principal narrative convention the citation, quotation, and interviewing of experts.... In the mass media, where anchors and reporters are not permitted to have opinions of their own, expert opinion is all that is left.... If the Institute of Expertology is right, then, TV is a medium where a person who is wrong at least half the time is interviewed by another person whose chief qualification is that he has no opinion on the subject. From this encounter the truth is supposed to emerge." *The Experts Speak*, 1998 edition, p. xxv.

4. *Ibid.*, 1984 edition, p. 183, quoting from Atyeo and Green, *Don't Quote Me* (Bounty Books, 1994), p. 54.

5. *The Experts Speak* (1979 edition), p. 182, quoting from Jeff Greenfield, *No Peace, No Place* (Garden City, NY: Doubleday, 1973).

6. *Ibid.*, p. 177, Johann Adolph Scheibe, quoted from Max Graf, *Composer and Critic* (New York: W.W. Norton, 1946).

7. *Ibid.*, p. 177, citing Joseph Schmidt-Gorg and Hans Schmidt, eds., *Ludwig van Beethoven* (Hamburg:Deutsche Grammophon Gesselschaft, 1970), p. 36.

8. He was reviewing the first performance in Vienna. *The Experts Speak*, p. 178, quoting from Louis Spohr, *Selbstbiographie* (Kassel: Barenreiter, 1861).

9. *Ibid.*, p. 152, citing Henri Peyre, *Writers and Their Critics* (Ithaca, NY: Cornell University Press, 1944).

10. *Ibid.*, p. 153, citing Clifton Fadiman's review of *Absalom*, *Absalom* in *The New Yorker*, Oct. 31, 1936.

11. *Ibid.*, p. 157. Citing Harry Thompson Peck, in *The Bookman*, January 1901.

12. *Ibid.*, p. 157. Citing Nicolas Slonimsky, *A Lexicon of Musical Invective* (New York: Coleman-Ross, 1953).

13. *Ibid.*, p. 159. Citing David Frost and Michael Deakin, *David Frost's Book of the World's Worst Decisions* (New York: Crown,



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- 1983), p. ix.
14. Ibid., p. 173. Citing Larry Swindell, *The Last Hero: A Biography of Gary Cooper* (Garden City, NY: Doubleday, 1980).
  15. Ibid., p. 173. Citing Christopher Finch and Linda Rosenkrantz, *Gone Hollywood* (Garden City, NY: Doubleday, 1979), p. 335. See also Bernard Rosenberg and Harry Silverman, eds., *The Real Tinsel* (New York: Macmillan, 1970), p. 187.
  16. Ibid., p. 175. Quoted by Barbara Walters on an ABC TV special, December 2, 1980.
  17. Ibid., p. 203. Citing Arthur C. Clarke, *Profiles of the Future*, Revised Edition (London: Victor Gollancz, 1974).
  18. Ibid., p. 203. Citing A.M. Low, *What's the World Coming To? Science Looks at the Future* (Philadelphia: J.B. Lippincott, 1951).
  19. Ibid., p. 204. Citing Robert Conot, *A Streak of Luck: The Life and Legend of Thomas Alva Edison* (New York: Seaview Books, 1979), p. 245.
  20. Ibid., p. 207. Citing Robert Conot, *op. cit.*
  21. Ibid., p. 207. Citing Morgan and Langford, *Facts and Fallacies* (London Corgi, 1982), p. 20.
  22. Ibid., p. 208. Citing Gabe Essoe, *The Book of Movie Lists* (Westport, Conn.: Arlington House, 1981), p. 222.
  23. Ibid., p. 208. Citing Sir George Bidell Airy, *The Autobiography of George Bidell Airy* (Cambridge, England: Cambridge University Press, 1896), p. 152.
  24. Ibid., p. 209. Citing Rochester and Gantz, *The Naked Computer* (Arlington Books Publishers Ltd., 1984).
  25. Ibid., p. 209. Citing David H. Ahl, in an interview with Cerf and Navasky, 1982.
  26. James W. Finney, in the introduction to *Hiroshima Plus 20*, prepared by *The New York Times* (New York: Delacorte Press, 1965), p. 16. Unfortunately, Finney doesn't document where this quote was originally spoken or published.
  27. Cerf and Navasky, *op. cit.*, p. 35.
  28. Ibid., p. 47.
  29. Ibid., p. 50. Gordon Thomas and Max Morgan-Witts, *The Day the Bubble Burst: A Social History of the Wall Street Crash of 1929* (New York: Doubleday & Company, 1979), p. 410.
  30. Ibid., p. 203. Chris Morgan and David Langford, *Facts and Fallacies* (Exeter, England: Webb & Bower, 1981), p. 64.
  31. "Common Cold," National Institute of Allergy and Infectious Diseases (November 27, 2006, retrieved 11 June 2007; A.M. Fendrick, A.S. Monto, B. Nightengale, M. Sarnes, "The economic burden of non-influenza-related viral respiratory tract infection in the United States," *Arch. Intern. Med.* 163 (4), 2003, 487–94.
  32. <http://www.webmd.com/cold-and-flu/features/cold-and-flu-iq> - searched 1/12/2014.
  33. <http://www.medicalnewstoday.com/articles/166606.php> - January, 2014.
  34. <http://www.everydayhealth.com/cold-and-flu/colds-and-the-weather.aspx> - January, 2014.
  35. [http://www.merckmanuals.com/professional/infectious\\_diseases/respiratory\\_viruses/common\\_cold.html](http://www.merckmanuals.com/professional/infectious_diseases/respiratory_viruses/common_cold.html) - - January, 2014.
  36. <http://www.mayoclinic.org/diseases-conditions/common-cold/basics/risk-factors/con-20019062> - January, 2014.
  37. <http://www.niaid.nih.gov/topics/commoncold/pages/cause.aspx>, last updated May, 2011 - January, 2014.
  38. Ibid.
  39. <http://www.cdc.gov/getsmart/antibiotic-use/URI/colds.html> - January, 2014.
  40. <http://www.nhs.uk/Livewell/coldsandflu/Pages/Preventionandcure.aspx> - January, 2014.
  41. <http://www.cardiff.ac.uk/biosi/subsites/cold/commoncold.html> - January, 2014.
  42. <http://www.nhs.uk/Livewell/coldsandflu/Pages/Preventionandcure.aspx>. See primary document here: Johnson C, Eccles R. (2005) "Acute cooling of the feet and the onset of common cold symptoms." *Family Practice* 22: 608-613.
  43. Sources include:
    - a - Johnson C., Eccles R. (2005), *op. cit.*
    - b - Eccles R. *Acta Otolaryngol* 2002; 122: 183–191 "An Explanation for the Seasonality of Acute Upper Respiratory Tract Viral Infections"; from the Common Cold Centre, Cardiff School of Biosciences, Cardiff University, Cardiff, UK.
    - c - Mourtzoukou E.G., Falagas M.E., *Int J Tuberc Lung Dis.* 2007 Sep;11(9):938-43. "...most of the available evidence from laboratory and clinical studies suggests that inhaled cold air, cooling of the body surface and cold stress induced by lowering the core body temperature cause pathophysiological responses such as vasoconstriction in the respiratory tract mucosa and suppression of immune responses, which are responsible for increased susceptibility to infections."
    - d - Eccles, R. (2007). "Mechanisms of symptoms of the common cold and influenza." *British Journal of Hospital Medicine (London, England)*, 68 (2), 71-75.
    - e - Eccles, R. (2005). "Cold feet, cystitis and common cold: parallels between respiratory and urinary tract infections." *Family Practice*, 22(6), e letters 608-613.
  44. According to the World Health Organization, "The case definition of the common cold is symptoms of a runny and/or stuffy nose, sneezing, with or without symptoms of headache and cough." ([http://www.who.int/maternal\\_child\\_adolescent/documents/fch\\_cah\\_01\\_02/en/](http://www.who.int/maternal_child_adolescent/documents/fch_cah_01_02/en/)).
  45. Their article on the common cold is too brief to even mention prevention. Since it provides no endnotes, it's no help for finding primary sources. <http://www.britannica.com/EBchecked/topic/128201/common-cold>.
  46. [http://en.wikipedia.org/wiki/Common\\_cold](http://en.wikipedia.org/wiki/Common_cold).

47. <http://rarediseases.info.nih.gov/news-and-events/pages/28/rare-disease-day>.
48. [http://en.wikipedia.org/wiki/Wikipedia:Size\\_of\\_Wikipedia](http://en.wikipedia.org/wiki/Wikipedia:Size_of_Wikipedia).
49. See the psychology of under confidence and bias in this regard: <http://www.spring.org.uk/2012/06/the-dunning-kruger-effect-why-the-incompetent-dont-know-theyre-incompetent.php>.
50. For example, they write, "Keep sharing your written work with peers. Indeed, sharing runs through the entire process of research and writing." Peter J. Taylor and Jeremy Szteiter, *Taking Yourself Seriously: Processes of Research and Engagement* (Arlington, Massachusetts: The Pumping Station, 2012), p. 13. In the sharing experience, they emphasize such attitudes/practices as listening, respecting, and encouraging candid input. See especially their example of how the CARE project succeeded once they began listening to the people they were trying to help, rather than assuming they were the experts with all the answers. (pp. 262ff.)

## Chapter 3: They're Married to Brands

1. James R. Healey, "J.D. Power: Most Reliable 3-year Old Cars," USA Today, Feb. 12, 2014.
2. Adam Fisher, "Toyota and Lexus: A Tale of Twin Brands," CBS Money Watch, March 12, 2010.
3. Aaron Crowe, "Doctors, Lawyers in Luxury Cars Hurt Worst by Recession," Nov. 29, 2010. <http://jobs.aol.com/articles/2010/11/29/doctors-lawyers-in-luxury-cars-hurt-worst-by-recession/>.
4. Actually, more could be saved, if he could purchase the Toyota outright to avoid making payments. But we'll let the money saved in interest be offset by higher repair expenses for purchasing an older vehicle.
5. Jerry Edgerton, Report: Which Cars Cost Least to Repair?, *CBS Money Watch*, Nov. 14, 2011. <http://www.cbsnews.com/news/report-which-cars-cost-least-to-repair/>. The top-ranked model, the 2009 Toyota Corolla, had not only infrequent trips to the shop but an average repair cost of just \$45.84. Note how this differs from the study of owners, and consider why it might differ.
6. For Sam Walton's life, read Sam Walton with John Huey, *Made in America: My Story* (New York: Doubleday 1992). For more on Thomas Stanley's studies of self-made millionaires, read Thomas Stanley and William D. Danko, *The Millionaire Next Door: The Surprising Secrets of America's Wealthy* (New York: Pocket Books, 1996) and Thomas Stanley, *The Millionaire Mind* (Kansas City: Andrews McMeel, 2000).
7. Gary Smith, *Introduction to Statistical Reasoning* (Boston: WCB McGraw-Hill, 1998), pp. 186–87. For the original sources see Betsy Morris, "In This Taste Test, the Loser Is the Taste Test," *The Wall Street Journal*, June 3, 1987 and Michael J. McCarthy, "New Coke Gets a New Look, New Chance," *The Wall Street Journal*, March 7, 1990.
8. Mary E. Woolfolk, William Castellan, Charles I. Brooks, *Psychological Reports*, Vol. 52 (1), Feb., 1983, 185-186.
9. I published this research in J. Steve Miller, *Publish a Book! Compare over 50 Publishing Companies* (Acworth, GA: Wisdom Creek Press, 2012).
10. <http://answers.yahoo.com/question/index?qid=20111101081305AAHo67b>. This lawyer did an informal survey and found people differing greatly in their opinions: <http://thenutmeglawyer.blogspot.com/2013/01/does-it-matter-what-type-of-car-your.html>.
11. Two excellent biographies of Warren Buffett document the frugality of his early years and how his passion to accumulate wealth eclipsed any childhood need to seek self-esteem from wearing the right clothes or owning the right things. See the early chapters of Roger Lowenstein, *Buffett: The Making of an American Capitalist* (New York: Main Street Books, 1995) and the more recent Alice Schroeder, *The Snowball: Warren Buffett and the Business of Life* (New York: Bantam Books, 2008). One of Buffett's classmates, Norma Jean Thurston, noted how his fellow students joked about how he wore the same tennis shoes year-round, coming across like a country bumpkin. According to Thurston, "Most of us were trying to be like everyone else. ...I think he liked being different. ...He was what he was and he never tried to be anything else." (Lowenstein, p. 26.) What a motivating example for overcoming the peer pressure that leads us to worship brands!

## Chapter 4: They're Blinded by Prejudices, Preconceptions, and Biases

1. Greg Kot, "How the Isley Brothers Became – and Stayed – the First Family of R & B," *Chicago Tribune*, November 4, 2001, Sec. 7, p. 1. [http://en.wikipedia.org/wiki/List\\_of\\_best-selling\\_music\\_artists](http://en.wikipedia.org/wiki/List_of_best-selling_music_artists) [http://en.wikipedia.org/wiki/Elton\\_John](http://en.wikipedia.org/wiki/Elton_John)
2. Walter Isaacson, *Einstein: His Life and Universe* (New York: Simon & Schuster, 2007), 284-289.
3. *Ibid.*, p. 447.
4. *Ibid.*, pp. 283ff.
5. *Ibid.*, pp. 282,283.
6. *Ibid.*, p. 298.
7. Joseph McBride, *Steven Spielberg* (New York: Simon & Schuster, 1997), p. 27.
8. Celia Popovic and David Green, *Understanding Undergraduates: Challenging our preconceptions of student success* (Routledge, 2012), pp. 7,202,203.
9. Lecture by David Green at Kennesaw State University, Feb., 2013.
10. T.F. Pettigrew, "The Ultimate Attribution Error: Extending Allport's cognitive analysis of prejudice," *Personality and Social Psychology Bulletin* 5 (4) 1979: pp. 461–476.
11. <http://www.nbclosangeles.com/news/local/Women-are-Better-Drivers-Than-Men-Study-137202638.html> It appears that the question, "Are men drivers better than women drivers?" is a separate question from the one we considered.
12. T. F. Pettigrew, L. R. Tropp, "A Meta-analytic Test of Intergroup Contact Theory," *Journal of Personality and Social Psychology*, 90 (2006), 751–783.

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13. T. T. Pettigrew and L. R. Tropp, "How Does Intergroup Contact Reduce Prejudice? Meta-analytic tests of three mediators," *Eur. J. Soc. Psychol.*, 2008, 38: 922–934. doi: 10.1002/ejsp.504. "We test meta-analytically the three most studied mediators: contact reduces prejudice by (1) enhancing knowledge about the out group, (2) reducing anxiety about intergroup contact, and (3) increasing empathy and perspective taking. Our tests reveal mediational effects for all three of these mediators." 14. <http://www.songwritershalloffame.org/index.php/exhibits/bio/C181>. See also [http://en.wikipedia.org/wiki/Bernie\\_Taupin#Personal\\_life](http://en.wikipedia.org/wiki/Bernie_Taupin#Personal_life).
15. I've not been able to trace down the president who said this. I'm thinking it was Theodore Roosevelt, but so far have failed to find it. If it wasn't Roosevelt's words, he certainly lived it. Trace the references to Roosevelt in *How to Win Friends and Influence People* (consult the index) and you'll find him studying up on people's interests before he met them, so that he could talk intelligently about their interests, remembering the names of people of the lowest status, and taking a sincere interest in their lives.
16. <http://blogs.ajc.com/atlanta-forward/2013/08/27/robust-exports-in-georgia/>.

## Chapter 5: They Believe What They Want to Believe

1. Found in Alice Schroeder, *The Snowball: Warren Buffett and the Business of Life* (New York: Bantam Books, 2008), p. xi.
2. Walter Isaacson, *Steve Jobs* (New York: Simon & Schuster, 2011), pp. 83,123,131,132,151.
3. *Ibid.*, pp. 36,38,77,79.
4. *Ibid.*, pp. 75,78.
5. *Ibid.*, pp. 73,343,344,372,383,377-389,497,498.
6. *Ibid.*, p. 19.
7. *Ibid.*, pp. 117-124.
8. *Ibid.*, p. 82.
9. *Ibid.*, pp. 119,452ff.
10. A more recent study found that parents resistant to having their children vaccinated actually became *more* resistant after given factual information about the vaccination. Brendan Nyham, Jason Reifler, Sean Richey, and Gary L. Freed, "Effective Messages in Vaccine Promotion: A Randomized Trial," *Pediatrics*. Note especially the insightful comment below a blog post summary of this study, distinguishing three kinds of thinkers ("questioners," "delegators," and "simplifiers") and why they wouldn't be positively impacted by the scare tactics/authoritative approach. Karen Crisalli Winter, March 7, 2014 (3:07 p.m.), comment on Brendan Nyhan, "New Study in Pediatrics on Vaccine Messaging" (March 3, 2014), <http://www.brendan-nyhan.com/blog/2014/03/new-study-on-vaccine-messaging.html>.
11. David P. Redlawsk, Andrew J.W. Civettini, Karen M. Emmerson, "The Affective Tipping Point: Do Motivated Reasoners Ever 'Get It'?" *Political Psychology*, August, 2010, Vol. 31 Issue 4, pp. 563, 31.
12. Philip Norman, *Shout! The Beatles in Their Generation* (New York: MJF Books, 1981), p. 35.
13. "The Foxification of News," *The Economist*, July 7, 2011, <http://www.economist.com/node/18904112>.
14. Mark Jurkowitz, et. al., of The Pew Research Center, "The State of the News Media 2013," <http://www.stateofthemediamedia.org/2013/special-reports-landing-page/the-changing-tv-news-landscape/>.
15. But Fox, according to the Columbia Journalism Review, has more diversity than MSNBC. Fox hires sharp liberals to have real debates with conservatives, [http://www.cjr.org/feature/and\\_from\\_the\\_leftfox\\_news.php](http://www.cjr.org/feature/and_from_the_leftfox_news.php), <http://www.politico.com/blogs/media/2013/12/is-msnbc-worse-than-fox-news-179175.html>.
16. "During the late stages of the 2012 presidential campaign, a Pew Research analysis found that Barack Obama received far more negative coverage than positive on the Fox News Channel. Yet Fox found its ideological mirror image in MSNBC. In the final stretch of the campaign, nearly half (46%) of Obama's coverage on Fox was negative, while just 6% was positive in tone. But MSNBC produced an even harsher narrative about the Republican in the race: 71% of Romney's coverage was negative, versus 3% positive," <http://www.pewresearch.org/fact-tank/2014/01/14/five-facts-about-fox-news/>. If you watched the 2012 election on MSNBC during the final week, according to the Pew Research Center's *Project for Excellence in Journalism*, there were no positive articles about the Republican candidate, Mitt Romney. None. [http://en.wikipedia.org/wiki/MSNBC#Negative\\_Romney\\_coverage\\_in\\_2012\\_presidential\\_election](http://en.wikipedia.org/wiki/MSNBC#Negative_Romney_coverage_in_2012_presidential_election). Also from this article: In the Pew Research Center's 2013 "State of the News Media" report, MSNBC was found to be the most opinionated news network, with 85% of the content being commentary or opinions, and only 15% of the content being factual reporting.
17. According to a NYT article by their first public editor, the NYT does indeed represent a certain worldview. "...readers with a different worldview will find The Times an alien beast." He is himself liberal, and unabashedly says that the NYT is overwhelmingly liberal in each relevant section of the paper. He then goes through to show examples of what's reported and what's not reported, then justifies its liberal bias by saying that it's representing the residents of NYC, who tend to believe the same way. Daniel Okrent, "The Public Editor: Is The New York Times a Liberal Newspaper?," July 25, 2004, <http://www.nytimes.com/2004/07/25/opinion/the-public-editor-is-the-new-york-times-a-liberal-newspaper.html>.
18. On media bias in popular media: <http://newsroom.ucla.edu/portal/ucla/Media-Bias-Is-Real-Finds-UCLA-6664.aspx> The original research, from which the article was drawn, is Tim Groseclose and Jeffrey Milyo, "A Measure of Media Bias," *The Quarterly Journal of Economics*, Vol. 120, No. 4 (Nov., 2005), pp. 1191-1237. The study was of news content, not editorials. *USA Today* was closest to the center for newspapers; the NYT was far to the left (p. 1191). It found the *Washington Post* leaning

to the right. As for *Wall Street Journal*, the researchers were surprised to find that its news section was the most liberal of the 20 popular news outlets studied, yet the editorial section (opinion pieces) was quite conservative (p. 1213). The WSJ was farthest from center, with NYT next. While the UCLA study found Fox News to have a conservative bias, it found Fox News Special Report with Brit Hume to be one of the most centrist news outlets.

19. "The Public Editor," *op. cit.*

20. Media Matters for America, another self-described progressive media watch group, dedicates itself to "monitoring, analyzing, and correcting conservative misinformation in the U.S. media." Shouldn't reporters, when they quote these watch groups, tell the group's agenda? Conservative organizations Accuracy In Media and Media Research Center argue that the media has a liberal bias, and are dedicated to publicizing the issue. The Media Research Center was founded with the specific intention to "prove ... that liberal bias in the media does exist and undermines traditional American values," [http://en.wikipedia.org/wiki/Media\\_bias\\_in\\_the\\_United\\_States](http://en.wikipedia.org/wiki/Media_bias_in_the_United_States).

21. For a helpful list of types of media bias to watch for, with helpful examples, comments and questions for teachers, see: <http://www.studentnewsdaily.com/example-of-media-bias/news-headline-or-opinion/>.

22. "...partisans perceive *less* bias in news coverage slanted to support their view than their opponents on the other side of the issue."

23. "In a range of studies, when news audiences who hew to opposing sides on an issue are given the same news coverage of the topic to evaluate, both view it as biased in favor of the other side." It's called the "hostile media effect." "Researchers believe that the explanation for this hostile media effect is selective categorization: opposing partisans attend to, process, and recall identical content from a news presentation but mentally categorize and label the same aspects of a story differently – as hostile to their own position." Matthew C. Nisbet, "Why Partisans View Mainstream Media as Biased and Ideological Media as Objective," <http://bigthink.com/age-of-engagement/why-partisans-view-mainstream-media-as-biased-and-ideological-media-as-objective>. In sum, "partisans perceive *less* bias in news coverage slanted to support their view than their opponents on the other side of the issue."

24. William Lane Craig, *On Guard* (Colorado Springs: David C. Cook, 2010), pp. 36,46ff.

25. Thomas Nagel, *The Last Word* (Oxford University Press, 1997), pp. 130-131.

26. Sarah Boseley, "Statins for people at low risk of heart disease needs rethink, says top doctors," *The Guardian*, June 10, 2014, <http://www.theguardian.com/society/2014/jun/10/statins-low-risk-heart-disease-rethink-doctors-nice>.

27. Nina Teicholz, "The Questionable Link between Saturated Fat and Heart Disease," *Wall Street Journal* Online, May 6, 2014, [http://online.wsj.com/news/article\\_email/SB10001424052702303678404579533760760481486-IMyQjAxMTA0MDEwMzExNDMyWj](http://online.wsj.com/news/article_email/SB10001424052702303678404579533760760481486-IMyQjAxMTA0MDEwMzExNDMyWj).

## Chapter 6: They're Trapped in Traditions

1. Edward S. Ninde, *The Story of the American Hymn* (Nashville: Abingdon, 1921), pp. 94-97.

2. Steve Miller, *The Contemporary Christian Music Debate* (Carol Stream, Illinois: Tyndale House, 1993), pp. 139-147.

3. Of course, it's been more complicated and convoluted than this brief summary presents, with both denominational and nondenominational churches and organizations wrestling with issues of new musical forms, both nationally and internationally.

4. <http://www.starbucks.com/about-us/our-heritage>.

5. Schultz, Howard and Dori Jones Yang, *Pour Your Heart Into It: How Starbucks Built a Company One Cup at a Time* (New York: Hyperion, 1997), p. 35.

6. *Ibid.*, p. 87.

7. *Ibid.*, pp. 166, 167.

8. *Ibid.*, pp. 166-169.

9. *Ibid.*, p. 169.

10. *Ibid.*, p. 206.

11. *Ibid.*, p. 209.

12. Sam Walton with John Huey, *Sam Walton: Made in America* (New York: Doubleday, 1992), p. 34.

13. *Ibid.*, p. 63.

14. David Burkus, *The Myths of Creativity* (San Francisco: Josey-Bass, 2014), p. 21. Psychologist Mihaly Csikszentmihalyi studied 91 prominent people to find their perspective on the process that led to their creative moments. Almost all went through five stages: preparation, incubation, insight, evaluation, and elaboration.

15. *Ibid.*, pp. 18-20.

16. For example, in Edison's work to invent a light bulb, he followed his usual course of collecting all the information he could find on the subject. He assumed that the light would best glow in an environment of a gas, so he bought all the transactions of the gas engineering societies, and all the back volumes of gas journals. William M. Meadowcroft and Charles Henry Meadowcroft, *The Boys' Life of Edison* (Harper and Brothers, 1911) p. 136.

17. Gene N. Landrum, *Profiles of Genius* (Buffalo, New York: Prometheus Books, 1993), p. 185.

18. *Ibid.*, pp. 79-81.

19. Walter Isaacson, *Steve Jobs* (New York: Simon & Schuster), p. 329.

## Chapter 7: They Fail to Identify Hidden Assumptions

1. David McCullough, *1776* (New York: Simon & Schuster, 2005), pp. 58-60,111.
2. *Ibid.*, p. 25.
3. *Ibid.*, p. 76.
4. *Ibid.*, p. 72.
5. *Ibid.*, p. 74.
6. *Ibid.*, p. 81.
7. *Ibid.*, pp. 24,79.
8. *Ibid.*, pp. 82-85.
9. *Ibid.*, p. 78.
10. *Ibid.*, pp. 86, 87.
11. *Ibid.*
12. *Ibid.*, pp. 88,89.
13. *Ibid.*, pp. 90,91-93.
14. *Ibid.*, pp. 88,89.
15. *Ibid.*, p. 95.
16. *Ibid.*, pp. 99-105.
17. *Ibid.*, pp. 148, 158,161,191,197.
18. *Ibid.*, p. 148.
19. *Ibid.*, pp. 225,254,269.
20. *Ibid.*, p. 270.
21. *Ibid.*, p. 256.
22. *Ibid.*, p. 270.
23. *Ibid.*, pp. 260,261.
24. *Ibid.*, p. 276.
25. *Ibid.*, p. 284.
26. *Ibid.*, pp. 280,281,283.
27. *Ibid.*, pp. 283, 290-293.
28. *Ibid.*, p. 73.
29. Richard L. Brandt, *The Google Guys* (New York: The Penguin Group, 2011), pp. 5,6,46.
30. *Ibid.*, p. 76.
31. "The World's Most Valuable Brands," *Forbes*, <http://www.forbes.com/powerful-brands/list/>.
32. "Google Inc. Announces Fourth Quarter and Fiscal Year 2013 Results," Google.com, [https://investor.google.com/earnings/2013/Q4\\_google\\_earnings.html](https://investor.google.com/earnings/2013/Q4_google_earnings.html), See also <https://www.trefis.com/company#/GOOG>.
33. According to Gates' biographers, "Rule Number One" of dealing with Bill Gates was to stand up to him. According to Gates' personal assistant, "He [Gates] liked it when you stood up to him.... If you backed down from Bill, he wouldn't have respect for you." Stephen Manes and Paul Andrews, *Gates* (New York: Simon & Schuster, 1994), pp. 200, 259. See also p. 179 on Paul Allen and Bill Gates coming to good decisions at Microsoft by hashing through their disagreements. Note that some people manage to enjoy their arguments rather than escalating to screaming fits and ending in animosity. Albert Einstein didn't agree with Neils Bohr's views on quantum physics, but he found their many discussions a great delight. Einstein wrote to Bohr after one of their visits: "Not often in life has a human being caused me such joy by his mere presence as you did...." Walter Isaacson, *Einstein* (New York: Simon & Schuster, 2007), p. 325.
34. Example of Jobs' associates arguing against his ideas: Jobs thought of the computer as "a bicycle for the mind" and insisted on changing the name of their "Macintosh" computer to "Bicycle." His colleagues thought it was stupid and refused to use the name. Eventually, Jobs relented. Walter Isaacson, *Steve Jobs* (New York: Simon & Schuster, 2011), p. 115. See also how they argued on pp. 145-147,460,468,498,499,569.
35. Schultz, Howard and Dori Jones Yang, *Pour Your Heart Into It: How Starbucks Built a Company One Cup at a Time* (New York: Hyperion, 1997), p. 156.
36. *Ibid.*, pp. 156ff.
37. *Ibid.*, p. 60.
38. *Ibid.*, pp. 101-109.
39. "Skunkworks® Origin Story," Lockheedmartin.com, <http://www.lockheedmartin.com/us/aeronautics/skunkworks/origin.html>. They would distill 14 practices and rules for their future skunkworks® groups. See "Kelly's 14 Rules and Practices" here: <http://www.lockheedmartin.com/us/aeronautics/skunkworks/14rules.html>.
40. John Gertner, *The Idea Factory: Bell Labs and the Great Age of American Innovation* (New York: The Penguin Press, 2012), p. 4.
41. *Ibid.*, p. 222.
42. *Ibid.* For example, see p. 56 on Shockley, others on p. 194. Bell labs allowed tremendous personal freedom to conduct new research (p. 355).
43. *Ibid.*, p. 177.
44. *Ibid.*, p. 354. The author of *The Idea Factory* says that Google's 20% rule was picked up from an old Bell Labs tradition.
45. *The Google Guys*, *op. cit.*, pp. 57-59; 176-178.
46. Robert Spector, *Amazon.com: Get Big Fast* (London: Random House, 2000), p. 85.
47. *Ibid.*, p. 215.

## Chapter 8: They Underestimate the Power of the Paradigm

1. Walter Isaacson, *Einstein: His Life and Universe*, (New York: Simon & Schuster, 2007), p. 163, quoting from "Einstein to Maurice Solovine, Apr. 10, 1938" in Maurice Solovine, *Albert Einstein: Letters to Solovine* (New York: Philosophical Library, 1987), p. 85.
2. *Einstein*, pp. 323, 324. If energy were introduced to a gas of atoms, photons would be emitted. Yet (and this is what would bother Einstein), "there was no way to determine which direction an emitted photon might go. In addition, there was no way to determine when it would happen." In classical physics (a la Newton), "if you knew all the positions and velocities in a system you could determine its future." Einstein's theory of relativity was indeed radical, but it didn't violate Newton's strict rule of cause-and-effect. Yet, the indeterminacy of either the time or direction of a photon's emission (or particles such as electrons) undermined cause-and-effect, since the resulting states couldn't be determined beforehand. Einstein's strict determinism would also lead him to believe in an impersonal rather than personal God. A personal God could make free decisions and make changes in the universe, thus disrupting a strict sequence of natural cause and effect. Also due to his determinism, he didn't believe in the freedom of people to make choices. (p. 391)
3. *Ibid.*, p. 323.
4. *Ibid.* See primary source on p. 609.
5. *Ibid.*, p. 333.
6. *Ibid.*, p. 95.
7. *Ibid.*, p. 100. For primary sources, see p. 320 on Einstein's transition from a revolutionary (on relativity theory) to a conservative (on quantum theory). See 330ff for more developments in quantum physics and Einstein's problems with it. According to Heisenberg, "When one wishes to calculate 'the future' from 'the present' one can only get statistical results, since one can never discover every detail of the present." (p. 333) Who knows? In the end Einstein might get the last laugh, if a "theory of everything" could establish a cause-effect relation that has hitherto remained undiscovered.
8. *Ibid.*, pp. 254,255.
9. John Farrell, *The Day Without Yesterday* (New York: Thunder's Mouth Press, 2005), pp. 10,11.
10. *Ibid.*, p. 13 and others as well.
11. *Ibid.*, pp. 254,255. Could Gamow have been exaggerating? Perhaps. See Farrell's endnote, p. 225. Yet, the comment is consistent with what we know of Einstein's feelings about his decision. It must have been extremely disappointing. In a letter to Lemaitre, Einstein admitted that "since I have introduced the term [the cosmological constant] I had always a bad conscious." (*Einstein*, pp. 169,353-356). Concerning Einstein's resistance to quantum physics, the tables had seemingly turned. While he had once stood against authority, now the one who tossed aside Newton's idea of absolute time couldn't part with the idea of the static universe. (p. 254) But while some viewed Einstein as becoming more conservative concerning science in his later years, Einstein viewed himself as the revolutionary who was still in the business of bucking scientific fads, with the recent fad being quantum physics. (p. 463)
12. Farrell, *op. cit.*, p. 149.
13. *Ibid.*, p. 13.
14. Quote from Robert Jastrow, *God and the Astronomers* (New York: W.W. Norton & Company, 1978) p. 112. See similar quote in Farrell, *op. cit.*, pp. 105,106.
15. *Ibid.*, p. 112.
16. Helge Kragh, *Cosmology and Controversy: The Historical Development of Two Theories of the Universe* (Princeton, New Jersey: Princeton University Press, 1996), p. 253. Hoyle was an atheist and felt like a beginning of the universe implied a God, so his emotional preference was for a static universe which had no beginning. According to Farrell, Hoyle "did not hesitate to associate his atheism with the steady state model." (Farrell, *op. cit.*, pp. 153,205.) He wasn't alone. "...many scientists admittedly resisted the big bang theory because for them it seemed to imply the moment of creation." (206)
17. Jastrow, *op. cit.*, p. 16.
18. Nicholas Wade, in *Science*, called it "A landmark in intellectual history."
19. The way Plank originally put it: "A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it." *Wissenschaftliche Selbstbiographie. Mit einem Bildnis und der von Max von Laue gehaltenen Traueransprache*. Johann Ambrosius Barth, Verlag (Leipzig 1948), p. 22, as translated in *Scientific Autobiography and Other Papers*, trans. F. Gaynor (New York, 1949), pp. 33–34, as cited by Thomas Kuhn, *The Structure of Scientific Revolutions*, second edition (Chicago: The University of Chicago Press, 1962, 1970).
20. See Farrell, *op. cit.*, pp. 39,40.
21. See critiques and evaluations such as Ian Barbour, *Myths, Models and Paradigms* (New York: HarperCollins, 2013). See also Dudley Shapere, University of Chicago, *Philosophical Review*, vol. 73, 1964, pp. 383ff.
22. Reflect on his personality. The same traits that may have contributed to his great breakthrough—roguish, dismissing authority, etc. (*Einstein*, *op. cit.*, pp. 45,49,67,93)—were the same traits that may have kept him from accepting evidence for quantum physics or the Big Bang.
23. Here I'm reformulating a sentence people have used in reference to paradigms captivating church leaders, something to the effect of "Those who are most resistant to the present move of God are often those who were involved in the last move of God."

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24. *Einstein, op. cit.*, pp. 62,122,123.
25. *Einstein*, pp. 61,62,123. They would exchange 229 letters over their lifetimes and would die within weeks of each other. Besso lacked focus, drive and diligence, but had "an extraordinarily fine mind" that was nevertheless "disorderly". His boss called him "completely useless and almost unbalanced." On Einstein's relationship with Besso, see pp. 27,61,62,122,123,136,137. Einstein's big breakthrough on relativity came while discussing it with Besso, which Einstein acknowledged in his breakthrough paper.
26. Einstein carried on conversations all his life with Neils Bohr, who was also a great friend. So to Einstein's great credit, he held his position on quantum physics with his eyes wide open to the other side, rather than isolating himself in his office and refusing to interact. See *Einstein*, pp. 192,193 on working through the math for his relativity theory with Grossman. See p. 222 on Hilbert's assessment of Einstein's lack of understanding of four-dimensional geometry. On p. 215 Isaacson described Grossman as Einstein's "mathematical caddy." Einstein continued to use mathematical caddies throughout his life (pp. 368,397,450,537).
27. Lain Carter, "Tiger Wood's Former Caddie Apologizes for Race Remarks," BBC.com, Nov. 5, 2011, <http://www.bbc.com/sport/0/golf/15605113>.
28. Alice Schroeder gives a delightful description of the similarities and differences that make Buffett and Munger such a successful twosome in pp. 24-30 of *The Snowball* (New York: Bantam, 2008).
29. David Packard, *The HP Way: How Bill Hewlett and I Built our Company* (New York: Harper Business, 1996). They met as college freshmen (p. 18), and established the "next bench" syndrome (p. 97). If your idea appeals to the worker at the next bench, then you might be onto something. The weakness of running it by only one person, in my opinion, is that this person may not represent the interests/needs of a large segment of humanity. But the "next bench" is certainly a good place to start.
30. Richard L. Brandt, *The Google Guys* (New York: The Penguin Group, 2011). Note how Brin and Page argue through the details of important issues. Surely it helps that they share a long history together. They met when Brin volunteered to show a new contingent of students around Stanford; Page was one of them. They subsequently became close friends. [http://en.wikipedia.org/wiki/History\\_of\\_Google](http://en.wikipedia.org/wiki/History_of_Google). How do you find such people? Many successful teams met in high school or college.
31. David Berlinski, *Newton's Gift: How Sir Isaac Newton Unlocked the System of the World* (New York: Free Press, 2002), pp. 21,22.
32. Masaaki Sato, *The Honda Myth* (Vertical, 2006).
33. Humphrey Carpenter, *J.R.R. Tolkien* (New York: Houghton Mifflin Company, 1977), p. 152.
34. Ed Catmull, *Creativity, Inc.* (New York: Random House, 2014), p. 67.
35. *Ibid.*, p. 68.
36. *Ibid.*, p. 68, 65-74.
37. *The Google Guys, op. cit.*, pp. 59,60.
38. *Einstein: His Life and Universe, op. cit.*, pp. 79-84. "Ernst Mach... lambasted Newton's notion of absolute time as a 'useless metaphysical concept' that 'cannot be produced in experience.'" (p. 125)
39. Benjamin Franklin, *The Autobiography of Benjamin Franklin* (New York: Dover Publications, 1996 edition) pp. 28,29,45-46. See also Walter Isaacson, *Benjamin Franklin* (New York: Simon & Schuster, 2003), pp. 55-60.
40. *J.R.R. Tolkien, op. cit.*, pp. 152-154. Much has been written about *The Inklings*. Those wanting to know more should consider reading *The Inklings*, by Humphrey Carpenter. Although I've not read *The Inklings*, Carpenter's biography of Tolkien was quite good and I'd assume *The Inklings* would be of similar quality. Other groups include Steve Wozniak and Steve Jobs meeting with the Homebrew Computer Club before launching Apple. Walter Isaacson, *Steve Jobs* (New York: Simon & Schuster, 2011), pp. 58-63.
41. *The Day without Yesterday, op. cit.*, pp. 12,13,52,53.

## Chapter 9: They Fail to Account for World Views

1. Some of my main sources for these leaders were *The Communist Manifesto*, by Marx and Engels, ed. Samuel H. Beer (Northbrook, Illinois: AHM Publishing Corporation, 1955); Paul Johnson, *Intellectuals* (New York: Harper Perennial, 1988); Martin Amis, *Koba the Dread* (New York, Vintage Books, 2003); Janet Caulkins, *Joseph Stalin* (New York: Franklin Watts, 1990).
2. *Koba the Dread, op. cit.*, p. 57.
3. *Ibid.*, p. 35.
4. As Alain Brossat put it. *Ibid.*, p. 34.
5. Helge Kragh, *Cosmology and Controversy: The Historical Development of Two Theories of the Universe* (Princeton, New Jersey: Princeton University Press, 1996), p. 260.
6. *Ibid.*, p. 260. Soviet chief ideologue Andrei Zhdanov said, "Falsifiers of science want to revive the fairy tale of the origin of the world from nothing...." (p. 260)
7. *Ibid.*, p. 260. Whereas early Russian leaders resisted certain scientific theories because of their Marxism, Einstein resisted certain theories because of his determinism. For Einstein, a God who intervenes in history (such as in a creation) would disrupt the determinism that he believed was a necessary base for science. "Lemaitre recalled how Einstein had complained in one of their meetings that Lemaitre's expanding cosmic nucleus was unacceptable because of its metaphysical implications." Einstein had responded to Lemaitre, "No, not that, that suggests too much the creation." John Farrell, *The Day Without Yesterday* (New

York: Thunder's Mouth Press, 2005), p. 100.

8. Helge Kragh, *Entropic Creation* (Burlington, Vermont: Ashgate Publishing, 2008), p. 230, quoting Paul Davies, *God and the New Physics* (New York: Simon & Schuster, 1983), p. 11.

9. Friedrich Engels fought the second law of thermodynamics because of his atheistic dialectical materialism, which taught that material can have neither a beginning nor an end. (Helge Kragh, *op. cit.*, p. 134). He considered entropy dangerous "because of its association with creation, miracles and theism." (p. 136) For those who want to further explore the history of the laws of thermodynamics, *Entropic Creation* exhibits academic scholarship at its best. The author, Helge Kragh, seems to be familiar with every scientist of any note who considered the laws of thermodynamics and their implications to cosmology. It's not only thorough, but well organized and well written.

10. *Ibid.*, p. 223.

11. *Ibid.*, p. 226, quoted by Kragh, from an East German textbook, Fromm, et al., 1974, p. 137, *Einführung in den dialektischen und historischen Materialismus*, Berlin: Dietz Verlag. Note also Chinese scientists fighting against the Big Bang theory. One Chinese scientist who published a paper on Big Bang cosmology had to take refuge in 1989 in the American Embassy to avoid arrest as a traitor. (p. 227)

12. *Koba the Dread, op. cit.*, p. 43.

13. *Ibid.*, p. 29. As Lenin said, "We must now give the most decisive and merciless battle to the [clergy] and subdue its resistance with such brutality that they will not forget it for decades to come.... The greater the number of the representatives of the reactionary bourgeoisie and reactionary clergy that we will manage to execute in this affair, the better." (p. 29)

14. *Ibid.*, pp. 63,64.

15. This is found in the introduction to *The Black Book of Communism*, by Jean-Louis Panné, Andrzej Paczkowski, Karel Bartosek, et. al., translated from the original French version by Harvard University Press, 1999, p. x. In this book, six French scholars took up the task of consulting the best sources available to estimate the human death toll of Communism in the 1900s.

16. Janet Caulkins, *Joseph Stalin* (New York: Franklin Watts, 1990), p. 80.

17. Since people made the same wages no matter how hard they worked, there was little incentive to get ahead, make superior products, or put customers first. One waiter in a Bratislava, Slovakia restaurant told me, "You'll probably get better service in the restaurant down the street." From a Communist perspective, this attitude makes sense. Why try to be the best restaurant in town if that would result in more customers and more work, but no more pay? Also, because of the fear of government leaders and their lack of accountability to a higher law of ethics, people tried hard to not stand out. If your grades and work were outstanding, you might provoke jealousy or fear in the leaders, who were the gatekeepers for higher education, better jobs, etc.

18. Alex Rosenberg, *The Atheists' Guide to Reality* (New York: W. W. Norton & Company, 2012), pp. 272-274.

19. *Ibid.*, p. 288.

20. *Ibid.*, p. 19. Rosenberg states these conclusions on pp. 2 and 3, then spends the rest of the book arguing for them.

21. *Koba the Dread, op. cit.*, pp. 14,15, 20. This was from his childhood friend.

22. *Intellectuals, op. cit.*, pp. 69ff.

23. Mandela modeled his practice of listening to all sides from his early experience in the Thembu tribe, where a regent and his counselors listened to people speak their minds about issues before coming to conclusions. According to Mandela, "It was democracy in its purest form." Nelson Mandela, *Long Walk to Freedom* (New York: Little, Brown and Company, 1994,1995), pp. 20-22.

24. Edited by Clayborne Carson, *The Autobiography of Martin Luther King, Jr.*, (New York: Warner Books, 1998), pp. 19-22.

25. See their autobiographies in this regard.

26. <http://www.enterstageright.com/archive/articles/0105/0105churchilldem.htm>.

27. This is a variant expression of a sentiment which is often attributed to Tocqueville or Alexander Fraser Tytler, but the earliest known occurrence is as an unsourced attribution to Tytler in "This is the Hard Core of Freedom" by Elmer T. Peterson in *The Daily Oklahoman* (December 9, 1951) [http://en.wikiquote.org/wiki/Alexis\\_de\\_Tocqueville](http://en.wikiquote.org/wiki/Alexis_de_Tocqueville).

## Intermission

1. Walter Isaacson, *Einstein: His Life and Universe* (New York: Simon & Schuster, 2007), p. 299.

2. Benjamin Graham, *The Intelligent Investor*, revised edition, with commentary by Jason Zweig (New York: HarperCollins, 2003), p. 524.

## Chapter 10: They Contradict, Leave Out Valid Options, and Knock Down Straw Men

1. Analytical philosopher Alvin Plantinga argues that this line of reasoning is consistent with, and even demanded by, philosophical naturalism. <http://www.nybooks.com/articles/archives/2012/sep/27/philosopher-defends-religion/>.

2. Susan Blackmore and Alex Rosenberg argue that since our brains were constructed solely through naturalistic evolutionary processes—for survival than for finding truth—our brains build mental models that we can't control (there is no "I" or "self" directing the brain, in the view of both authors) and they can't be trusted to lead us to truth. Susan Blackmore, *Dying to Live* (Buffalo, New York: Prometheus Books, 1993), pp149-164; 221-225; Alex Rosenberg, *The Atheist's Guide to Reality* (New York: W. W. Norton & Company, 2011).

3. For example, Hume's radical empiricism led him to deny that we can establish cause/effect relationships—a belief which would



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obviously wreak havoc in science.

4. Richard Dawkins, *The God Delusion* (New York: Mariner Books, 2008), p. 187.

5. *Ibid.*, p. 52.

6. *Ibid.*, p. 136.

7. *Ibid.*, p. 187.

8. *Ibid.*, see also pp. 186-188.

9. Academic biologist H. Allen Orr suggests that Dawkins failed to consider that, rather than ending in an infinite regress ("Who made God?" "Who made the being that made God," etc.), God could be a brute fact, like subatomic particles or matter. "It could, after all, be a brute fact of the universe that it derives from some transcendent mind...." H. Allen Orr, "A Mission to Convert," *The New York Review of Books*, January 11, 2007. <http://www.nybooks.com/articles/archives/2007/jan/11/a-mission-to-convert/>

10. In *The God Delusion*, Dawkins doesn't even mention the option of God being eternal, much less argue against it. In one of his earlier books, *The Blind Watchmaker*, he least acknowledges that some would argue that God exists eternally, but brushes this option off (rather than forward an opposing argument) with a sentence: "You have to say something like 'God was always there', and if you allow yourself that kind of lazy way out, you might as well just say 'DNA was always there', or 'Life was always there', and be done with it." Richard Dawkins, *The Blind Watchmaker* (New York: W. W. Norton & Company, 1996), p. 200. But why does Dawkins consider "something was always there" an invalid option? After all, prior to the 20th century, the majority opinion of scientists was that the universe was always there, extending into eternity past. Was that "lazy" on their part? In fact, when we consider ultimate origins, we'd seem to be left with two options: either there was nothing prior to the Bang (the standard scientific view of the Big Bang, according to Dawkins), so that something appeared out of nothing, with nothing to cause it, (that's absolutely nothing—no empty space, no vacuum), or that the beginning of the universe was caused by something that existed in some non-material form outside of time and space, existing from eternity past. Is the latter option really stranger than something coming from nothing on its own accord? If not, then why does Dawkins think it so inconceivable (or lazy) that God could have existed eternally? He fails to address this question.

11. Gary Gutting, Does Evolution Explain Religious Beliefs? *The New York Times* (July 8, 2014)

[http://opinionator.blogs.nytimes.com/2014/07/08/does-evolution-explain-religious-beliefs/?\\_php=true&\\_type=blogs&\\_php=true&\\_type=blogs&\\_r=1&](http://opinionator.blogs.nytimes.com/2014/07/08/does-evolution-explain-religious-beliefs/?_php=true&_type=blogs&_php=true&_type=blogs&_r=1&)

12. C. S. Lewis, *The Screwtape Letters* (New York: HarperOne reprint edition, 2009), p. 1.

13. Alex Rosenberg, *The Atheist's Guide to Reality* (New York: W.W. Norton & Company, 2011), pp. 2,3.

14. *Ibid.*, pp. 164-193.

15. *Ibid.*, p. 16.

16. *Ibid.*, pp. 2,3,310,311.

17. *Ibid.*, pp. 313-315.

18. *Ibid.*, p. 311.

19. *Ibid.*, for example, pp. viii, 304-306. For a helpful critique of this book, see James N. Anderson, *Analogical Thoughts* (blog), August 13, 2013, <http://www.proginosko.com/2013/08/the-atheists-guide-to-reality/>.

20. "Minus logical positivists, tremendously influential outside philosophy, especially in psychology and social sciences, intellectual life of the 20<sup>th</sup> century would be unrecognizable." Yet, "By the late 1960s, the neopositivist movement had clearly run its course. Interviewed in the late 1970s, A. J. Ayer supposed that "the most important 'defect' was that nearly all of it was false." [http://en.wikipedia.org/wiki/Logical\\_positivism#Critics](http://en.wikipedia.org/wiki/Logical_positivism#Critics). For a brief history of Logical Positivism, see articles such as "Logical Empiricism" or "Theism" in *The Stanford Encyclopedia of Philosophy*, Edward N. Zalta (ed.). It's a wonderful (free!) resource for all things philosophical.

21. H. Allen Orr, op. cit. Dawkins would seem to be a master of the straw man. Perhaps he gives us a clue as to why in his introduction to *The Divine Watchmaker*, where he states his opinion that Darwin's first edition of *Origin of the Species* was more persuasive than the last edition, because in the first edition Darwin didn't deal with all the objections. Apparently, in Dawkins' mind, Darwin's stating other people's objections took away from his argument. So perhaps Dawkins knows many of the objections people would give to his arguments, but is afraid that if he presents the strongest arguments for all sides of his statements, that this will take away from his persuasiveness. Thus, he presents straw men, which are much more easily knocked down. Example: if you look carefully at his arguments against the existence of God in chapter three of *The God Delusion*, he doesn't present the arguments as his strongest opponents present them. In the form he presents them, they're easily destroyed. For example, on Dawkins' critique of the Cosmological Argument for God's existence, see philosopher Edward Feser's critique at <http://edwardfeser.blogspot.com/2011/07/so-you-think-you-understand.html>. Also, view Dr. William Craig's presentation at Oxford on the same topic at <https://www.youtube.com/watch?v=fP9CwDTRoOE>.

22. Ed. by Paul Copan, William Lane Craig, *Contending with Christianity's Critics* (Nashville: B&H Academic), p. 5.

23. H. Allen Orr, replying to Dennett's response in the *New York Review of Books*,

<http://www.nybooks.com/articles/archives/2007/mar/01/the-god-delusion/>.

24. See Michael Ruse's response in Does Evolution Explain Religious Beliefs?, op. cit.

25. Note other objections to this argument:

1. Going along with our argument concerning the mining operation on the moon, philosophers argue that an immediate explanation doesn't require an ultimate explanation. Example: William Craig suggests that if we found artifacts of a lost civilization, that's sufficient evidence that the civilization actually existed, even if we have no ultimate explanation of where the civilization came from. *Contending with Christianity's Critics*, op. cit., p. 4.

2. From a purely naturalistic perspective, we have no *ultimate* explanation of anything. For example, you may ask why this cat is sitting on my desk looking at me? I may respond, "It wants to lick the milk out of my bowl of cereal." But what if you counter, "That's no explanation, where did the cat come from?" I may say, "Its mom." And you may complain, "Yes, of course. But if you can't give me the ultimate explanation of where the cat came from, I refuse to believe that it even exists." Yet, from a naturalistic perspective, all scientific explanations end with the Big Bang, a place at which physics as we know it breaks down and at which scientists tell us all scientific questions stop. All reductionist scientific explanations end with the Big Bang, and if we ask one more "Why?" beyond the Big Bang, science lets us down,

because the Big Bang is a singularity. Thus, if all arguments about the existence of this or that must answer the ultimate question of origins to be meaningful, aren't we stuck with no meaningful arguments at all? Thus, from a naturalistic perspective we can't ultimately answer the question, "Where did this cat come from?" But would Dawkins thus concede that we therefore can't argue for its existence? Surely not.

26. Jack Andraka, A Promising Test for Pancreatic Cancer...from a Teenager?, A TED talk, (Filmed Feb., 2013) [http://www.ted.com/talks/jack\\_andraka\\_a\\_promising\\_test\\_for\\_pancreatic\\_cancer\\_from\\_a\\_teenager?language=en](http://www.ted.com/talks/jack_andraka_a_promising_test_for_pancreatic_cancer_from_a_teenager?language=en)[http://www.ted.com/talks/jack\\_andraka\\_a\\_promising\\_test\\_for\\_pancreatic\\_cancer\\_from\\_a\\_teenager](http://www.ted.com/talks/jack_andraka_a_promising_test_for_pancreatic_cancer_from_a_teenager).
27. For the story of the development of Starbucks' instant coffee, see Schultz, Howard and Dori Jones Yang, *Pour Your Heart Into It: How Starbucks Built a Company One Cup at a Time* (New York: Hyperion, 1997), pp. 216-218.

## Chapter 11: They Fall for Other Common Fallacies

1. I compared lists from 1) the writing center at the University of North Carolina, Chapel Hill, which includes tips for spotting fallacies <http://writingcenter.unc.edu/handouts/fallacies/> 2) the University of Idaho [http://www.webpages.uidaho.edu/eng207-td/Logic%20and%20Analysis/most\\_common\\_logical\\_fallacies.htm](http://www.webpages.uidaho.edu/eng207-td/Logic%20and%20Analysis/most_common_logical_fallacies.htm) 3) California State, Fullerton, includes nice, down home examples - <http://commfaculty.fullerton.edu/rgass/fallacy3211.htm> 4) from Purdue University - <https://owl.english.purdue.edu/owl/resource/659/03/> 5) the University of Texas, El Paso - <http://utminers.utep.edu/omwilliamson/ENGL1311/fallacies.htm> 5) Carson Newman, helpful for its division by categories - [http://web.cn.edu/kwheeler/fallacies\\_list.html](http://web.cn.edu/kwheeler/fallacies_list.html) 6) the University of Louisiana, Lafayette, gives documented examples - <http://www.ucs.louisiana.edu/~kak7409/Fallacies.html> 7) Mesa Community College - <http://www.mesacc.edu/~paoih30491/ArgumentsFallaciesQ.html> 8) California State - <http://www.csus.edu/indiv/g/gaskilld/criticalthinking/Six%20Common%20Fallacies.htm> 9) Sacramento State University 9) the University of Wisconsin, Eau Claire <http://www.uwec.edu/ranowlan/logical%20fallacies.html> 10) St. Lawrence University 11) the University of Oklahoma 12) North Kentucky University. It's interesting that some of these universities use contradictory definitions of various fallacies.
2. Bertrand Russell demonstrated this tendency. He seemed to relish standing against the majority opinion. A person with his disposition should strongly consider that his assessment of evidence might be skewed by this character trait. See chapter 25 for an analysis of the passions that drove Russell.
3. <http://traveltips.usatoday.com/air-travel-safer-car-travel-1581.html>.

## Chapter 12: They Either Fail to Recognize Fallacies, or Misapply The Ones They Know

1. Aristotle was the first I'm aware of to discuss examples. Apparently, back in 350 BCE, Greek predecessors to today's trolls strolled about annoying the great philosophers, imagining that they were spouting profundities. Thus, Aristotle wrote a work about "Sophistical Refutations," which he defined as "what appear to be refutations but are really fallacies instead." While mainly writing about logical fallacies, he also spoke of assigning fallacies incorrectly. See Aristotle, *Sophistical Refutations*, written c. 350 B.C.E., translated by W. A. Pickard-Cambridge, available digitally here: [http://classics.mit.edu/Aristotle/sophist\\_refut.1.1.html](http://classics.mit.edu/Aristotle/sophist_refut.1.1.html).
2. Aristotle describes this issue: "By a sophistical refutation and syllogism I mean not only a syllogism or refutation which appears to be valid but is not, but also one which, *though it is valid, only appears to be appropriate to the thing in question.*" (Italics mine, Part Eight, *Sophistical Refutations*.)
3. Benjamin Franklin, *The Autobiography of Benjamin Franklin* (New York: Dover Publications, 1996), p. 13.
4. Tetlock, in his respected work, *Expert Political Judgment*, suggests that those who use more temperate language tend to be more accurate in their predictions. He brings together a wealth of research showing that the foxes (who know many little things) predict better than the hedgehogs (who know one niche area in depth), although the latter are typically considered the experts and practically everyone (e.g., news sources) wants to hear from them. Those who speak in terms of "perhaps," and "possibly" are far better predictors than the dogmatic, assured experts. Philip E. Tetlock, *Expert Political Judgment* (Princeton, New Jersey: Princeton University Press, 2005, 2006).
5. Many such schemes of categorization have been proposed through the centuries. For example, John Stewart Mill proposed five general categories: Fallacies of Simple Inspection (or *A Priori* Fallacies), of Observation, of Generalization, of Ratiocination, of Confusion. *A System Of Logic, Ratiocinative And Inductive* (New York: Harper & Brothers, Publishers, 1882, available digitally

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- at Project Gutenberg). According to Mackie, "Of other classifications of fallacies in general the most famous are those of Francis Bacon and J.S. Mill." See "Fallacies" in *The Encyclopedia of Philosophy* (Vol. 3), pp. 169-179.
6. *Encyclopaedia Britannica*, 1910 edition, see the article entitled *Fallacy*.
  7. From his article "Fallacies," op. cit.
  8. David Hackett Fischer, *Historians' Fallacies* (New York: Harper & Row, 1970).

### Chapter 13: They Draw Conclusions from Inadequate Evidence

1. Leonard L. Berry, Kent D. Seltman, *Management Lessons from Mayo Clinic* (New York: McGraw Hill, 2008), p. 16.
2. I don't want to point to my sources for this article, since it might falsely incriminate the innocent. At present we don't know all the facts about this case (which is my point in recounting this story), so I don't want to influence people's opinions.
3. A good starting place for studying Black Swans would be here: [http://en.wikipedia.org/wiki/Black\\_swan\\_theory](http://en.wikipedia.org/wiki/Black_swan_theory).
4. <http://www.sfgate.com/art/article/Tom-Griscom-The-10-000-hour-rule-3564307.php>. Read this article in *Wired*: <http://www.wired.com/2013/05/so-you-know-that-10000-hours-makes-an-expert-rule-bunk/>.
5. Malcolm Gladwell, *Outliers* (New York: Little, Brown & Company, 2007), pp. 35-37, 41-47.
6. *Ibid.*, p. 47.
7. *Ibid.*, pp. 37-40.
8. *Ibid.*, pp. 39,40.
9. *Ibid.*, pp. 38, 41.
10. *Ibid.*, p. 40, quoting Daniel J. Levitin, *This Is Your Brain on Music: The Science of a Human Obsession* (New York: Dutton, 2006), p. 197.
11. *Ibid.*, p. 41.
12. *Ibid.*, p. 38.
13. *Ibid.*, p. 41.
14. Another potential differentiator would be their love for playing their instruments. If some love it more than others, they understandably practice more and probably get more out of their practice, since they're so fascinated with their instrument and into their music. Some simply lose interest over time. So we can't assume that if we take those who've lost interest and force them to practice as much as the obsessed ones that they'd get just as much out of their practices and would be able to progress at the rate of those with more raw talent.
15. <http://www.hfm-berlin.de/en/studies/courses-offered/junior-scholars>.
16. Philip Norman, *Shout! The Beatles in Their Generation* (New York: Touchstone, 2005), pp. 157,159. Consider also the successful Barcelona soccer team, which practices much less than others would assume. <http://thetalentcode.com/2013/06/07/forget-10000-hours-instead-aim-for-10-minutes/>
17. Joshua Foer, *Moonwalking with Einstein* (New York: The Penguin Group, 2011), p. 13.
18. Two good books on strengths are Marcus Buckingham and Curt Coffman, *First, Break All the Rules* (New York: Simon & Schuster, 1999) and Marcus Buckingham and Donald Clifton, *Next, Discover Your Strengths* (New York: The Free Press, 2001).
19. For example, see Temple Grandin and Richard Panek, *The Autistic Brain: Thinking Across the Spectrum* (New York: Houghton Mifflin Harcourt, 2013); Mel Levine, *All Kinds of Minds* (Educators Publishing Service, 1992); Daniel Tammet, *Born on a Blue Day* (New York: Free Press, 2006).
20. See *Moonwalking with Einstein*, op cit. See also <https://www.youtube.com/watch?v=gWI4liX4PNw>.

### Chapter 14: They're Snowed by Success Bias

1. Wikipedia on the California Gold Rush.
2. <http://www.statisticbrain.com/startup-failure-by-industry/>.
3. "Are there any losers?" Self-help speakers typically make a point and then give examples of people who've applied this point with profit. [See Gary Collins, *Helping People Grow* (Santa Anna, California: Vision House, pp. 268,276).] Yet, success stories could be given to back up any number of competing theories.
4. Richard Cole and Richard Trubo, *Stairway to Heaven* (New York: Pocket Books, 2004), p. 40.
5. Temple Grandin and Richard Panek, *The Autistic Brain: Thinking Across the Spectrum* (New York: Houghton Mifflin Harcourt, 2013).
6. Malcolm Gladwell, *Outliers* (New York: Little, Brown & Company, 2007), pp. 55-68.
7. For example, see Sam Walton with John Huey, *Sam Walton: Made in America* (New York: Doubleday, 1992) and *From Lucky to Smart: Leadership Lessons from QuikTrip* (Mullerhaus Publishing Group, 2008).
8. <http://www.chrisbrogan.com/how-much-time-should-i-spend-on-social-media>.
9. <http://gigaom.com/collaboration/how-much-time-does-social-media-marketing-take>.
10. <http://www.millerfinchmedia.com/2012/02/the-time-it-takes-to-do-social-media-not-10-mins-a-day>.
11. [http://beth.typepad.com/beths\\_blog/2008/10/how-much-time-d.html](http://beth.typepad.com/beths_blog/2008/10/how-much-time-d.html).
12. See J. Steve Miller and Cherie K. Miller, *Sell More Books* (Acworth, GA: Wisdom Creek Press, 2011) and J. Steve Miller,

*Social Media Frenzy* (Acworth, GA: Wisdom Creek Press, 2013).

## Chapter 15: They "Discover" Meaningless Patterns

1. Joseph Bulgatz, *Ponzi Schemes, Invaders from Mars and More Extraordinary Popular Delusions and the Madness of Crowds* (New York: Harmony Books, 1992), p. 87.
2. *Ibid.*, p. 91.
3. From the Bureau of Labor <http://www.bls.gov/ooh/construction-and-extraction/carpenters.htm>.
4. Bulgatz, *op. cit.*, p. 100.
5. *Ibid.*, pp.79,80.
6. *Ibid.*, p. 108.
7. *Ibid.*, p. 109.
8. *Ibid.*, p. 108.
9. Wikipedia has a good article on economic bubbles. Note especially the psychology of bubbles and examples: [http://en.wikipedia.org/wiki/Economic\\_bubbles](http://en.wikipedia.org/wiki/Economic_bubbles).
10. Eric Goldschein, "The Complete History of U.S. Real Estate Bubbles Since 1800," *Business Insider* (June 10, 2012). <http://www.businessinsider.com/the-economic-crash-repeated-every-generation-1800-2012-1?op=1>
11. Jason Zweig, *Your Money and Your Brain*, early promo copy (New York: Simon & Schuster, 2010), p. 6.
12. *Ibid.*, p. 6.
13. *Ibid.*, pp. 44-45.
14. Zweig, *op. cit.*, pp. 90,91.
15. L.J. Davis, "Buffett Takes Stock," *The New York Times Magazine*, April 1, 1990, p. 16. As cited in Janet Lowe, *Warren Buffett Speaks* (Hoboken, NJ: John Wiley & Sons, 2007), p. 97.
16. Jason Zweig, in Benjamin Graham, *The Intelligent Investor*, revised edition, with commentary by Jason Zweig (New York: HarperCollins, 2003), p. 245.
17. Bulgatz, *op. cit.*, p. 98.
18. J. Steve Miller, *Enjoy Your Money!* (Wisdom Creek Press, 2009) pp. 46,47.
19. *Your Money and Brain*, *op. cit.*, p. 80.
20. *The Intelligent Investor*, *op. cit.*, p. 45.
21. *Ibid.*, p. 45 - the "dividing the dividend by"..." technique was touted for a time by some influential investors. On chimps and investing, see p. 70.
22. See *Your Money and Your Brain*, *op. cit.*, p. 184. Perhaps it's best to be agnostic about the future of the economy.
23. 2001 Chairman's Letter for Berkshire Hathaway.
24. Zweig, *op. cit.*, p. 86.
25. *Ibid.*, pp. 85-87. See the entire Chapter Five in Zweig (pp. 85ff.) on "Confidence."
26. I find part of this quote in Benjamin Graham, *The Intelligent Investor* (New York: HarperCollins, 2003 edition with commentary by Jason Zweig), p. 524. I failed to find the entire quote.
27. Walter Isaacson, *Steve Jobs* (New York: Simon & Schuster, 2011), pp. 64,65.
28. *Steve Jobs*, *op. cit.*, p. 10. ; Stephen Manes and Paul Andrews, *Gates* (New York: Simon & Schuster, 1994), pp. 94,127,191,365,375,399,437.

## Chapter 16: They Fail to Closely Examine Statistics

1. U.S. Department of Education, Science, Technology, Engineering and Math: Education for Global Leadership, <http://www.ed.gov/stem>.
2. *Ibid.*
3. "Best Jobs in America," *CNN Money* (Oct. 29, 2012), <http://money.cnn.com/pf/best-jobs/2012/snapshots/>. They apparently weighted their choice highly on the industry growth statistic of 61.7 percent, which they say they got from the Bureau of Labor Statistics.
4. U.S. Department of Labor, Department of Labor Statistics, Occupational Outlook Handbook, "Biomedical Engineers," <http://www.bls.gov/ooh/architecture-and-engineering/biomedical-engineers.htm#tab-6>. This report has downgraded the growth to 27 percent for the decade 2012 to 2022, which is a huge change, unless someone can show that from 2010 to 2011 biomed grew by a whopping 34 percent! Reports cited below certainly don't show such growth.
5. I gathered this stat by counting the US biomed related programs listed at [www.gradschools.com](http://www.gradschools.com).
6. InfoPlease, Number of U.S. Colleges and Universities and Degrees Awarded, <http://www.infoplease.com/ipa/A0908742.html>.
7. Department for Professional Employees, "The STEM Workforce: An Occupational Overview," Fact Sheet 2014, pdf found here <http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCYQFjAB&url=http%3A%2F%2Fdepeaficio.org%2Fwp-content%2Fuploads%2FSTEM-Workforce-2014.pdf&ei=GAhaVfqSDIKfoQSQ04HYAQ&usq=AFQjCNHQzWz6LjG7NuDQe9aARj5DUJXqdQ&sig2=HruuWRCc5GkHyDUtXFfWw&bvm=bv.93564037,d.cGU>.
8. *Ibid.* According to this 2014 Fact Sheet, "Although the unemployment rate for life, physical, and social science occupations is similar to other STEM occupations, in the last four years these occupations have shed 102,000 jobs and total employment has *declined* by 7.2 percent." (Italics mine.) Of course, biotech would be a subset of these occupations and would need to be

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considered separately. Compare this to their statement that "Employment in professional and related occupations *increased* 3.6 percent from 2010 to 2013. (Italics mine.) They gathered their stats from here:  
[http://nces.ed.gov/programs/digest/d13/tables/dt13\\_318.20.asp](http://nces.ed.gov/programs/digest/d13/tables/dt13_318.20.asp).

9. Interestingly, physicians and nurses aren't considered STEM careers. <http://www.teachhub.com/should-stem-include-medical-field>.
10. Brian Vastag, "U.S. Pushes for More Scientists, but the Jobs Aren't There," *The Washington Post*, (July 7, 2012) [http://www.washingtonpost.com/national/health-science/us-pushes-for-more-scientists-but-the-jobs-arent-there/2012/07/07/gJQAZJpQUW\\_story.html](http://www.washingtonpost.com/national/health-science/us-pushes-for-more-scientists-but-the-jobs-arent-there/2012/07/07/gJQAZJpQUW_story.html).
11. Ibid.
12. Ibid.
13. Jocelyn Kaiser, "NIH Panel Urges Steps to Control Growth in Biomedical Research Trainees," *Science* (June 14, 2012). <http://news.sciencemag.org/2012/06/nih-panel-urges-steps-control-growth-biomedical-research-trainees>.
14. "U.S Pushes for More Scientists," op. cit.
15. Ibid. See also Robert N. Charette, "The Stem Crisis is a Myth," *IEEE* (Institute of Electrical and Electronics Engineers) *Spectrum* (Aug. 30, 2013). <http://spectrum.ieee.org/at-work/education/the-stem-crisis-is-a-myth>.
16. National Science Foundation, *Science and Engineering Indicators, 2012*, "Projected Growth of Employment in S&E Careers" (science and engineering), <http://www.nsf.gov/statistics/seind12/c3/c3s.htm>.
17. Ibid.
18. Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2014-15 Edition*, Biomedical Engineers, <http://www.bls.gov/ooh/architecture-and-engineering/biomedical-engineers.htm> (visited May 18, 2015). A 2014 report by the National Science Foundation now predicts that the biological sciences will grow 20 percent from 2010-2020. But it's still not referencing any data to back it up. It will be interesting to see how all this plays out over time. According to a couple of studies, "the future labor-market demand for scientific workers is famously hard to predict." For a great pro and con debate on this, fully documented with authoritative sources, see Jeffrey R. Sharom, "The Scientific Workforce Policy Debate: Do We Produce too Many Biomedical Trainees?" *Hypothesis Journal*, Sept., 2008, Vol.6 No.1, H.H. Garrison and S.A. Gerbi, (1998). See also "Education and employment patterns of U.S. Ph.D.'s in the biomedical sciences," *Faseb J* 12, 139-148; J. Mervis, J. (2003); "Scientific workforce. Down for the count?" *Science* 300, 1070-1074; <http://www.nsf.gov/nsb/sei/edTool/data/workforce-03.html>; [http://www.hopkinsmedicine.org/institute\\_basic\\_biomedical\\_sciences/news\\_events/articles\\_and\\_stories/employment/2012\\_09\\_Biomed\\_Workforce.html](http://www.hopkinsmedicine.org/institute_basic_biomedical_sciences/news_events/articles_and_stories/employment/2012_09_Biomed_Workforce.html)
19. Percentage of All Professional Workers in STEM Occupations, from the Bureau of Labor Statistics, <http://dpeaflcio.org/wp-content/uploads/Percentage-of-all-Professional-Workers-in-STEM-Occupations.jpg>.
20. Ron Hira, "Boom-Bust Cycles: A New Paradigm for Electrical Engineering Employment," Center for Science, Policy, and Outcomes, Columbia University. [http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCcQFjAB&url=http%3A%2F%2Farchive.cspo.org%2Fproducts%2Farticles%2FUnemployment.pdf&ei=gytbVeChGMfToASR\\_IHABw&usq=AFQjCNH2bTfR0\\_glF0-n0VScrF5zN6vIA&sig2=UBZbLr2j\\_XCNkSRyMi71EA&bvm=bv.93756505,d.cGU](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCcQFjAB&url=http%3A%2F%2Farchive.cspo.org%2Fproducts%2Farticles%2FUnemployment.pdf&ei=gytbVeChGMfToASR_IHABw&usq=AFQjCNH2bTfR0_glF0-n0VScrF5zN6vIA&sig2=UBZbLr2j_XCNkSRyMi71EA&bvm=bv.93756505,d.cGU)

## Chapter 17: They Make Common Statistical Blunders

1. The Planned Parenthood Survey (1986) was reported in *Psychology Today*, May 1989.
2. Alan Guttmacher Institute, *Sex and America's Teenagers* (1994) p. 4.
3. In the early 1990's I pulled these statistics from the US Department of Health and Human Services, the Centers for Disease Control, and the Alan Guttmacher Institute (the latter of which is often used by the CDC).
4. Josh McDowell, *Why Wait?* (Nashville: Thomas Nelson, 1994), p. 22.
5. Research by Dr. Marion Howard, *Atlanta Journal*, Jan 18, 1996, p. G1.
6. National Science Foundation, "Science Indicators," 1974, Washington: General Accounting Office, 1976, p. 15, as quoted by Gary Smith, *Introduction to Statistical Reasoning*, pp. 52-54, 615.
7. Design & Teach a Course, Carnegie Mellon, Eberly Center, <http://www.cmu.edu/teaching/designteach/design/instructionalstrategies/lectures.html>.
8. Donald A. Bligh, *What's the Use of Lectures?* (San Francisco: Jossey Bass, 2000).
9. Bligh, op. cit., p. 56.
10. Ibid., p. 61.
11. D.H. Lloyd, "A Concept of Improvement of Learning Response in the Taught Lesson" (Oct., 1968), p. 24.
12. Maryellen Weimer, "A New Look at Student Attention Spans," *Faculty Focus* (Dec. 4, 2009), <http://www.facultyfocus.com/articles/instructional-design/student-attention-spans/>.
13. Washington University, "Are You With Me? Measuring Student Attention in the Classroom," *The Teaching Center Journal*, (May 23, 2013), <http://teachingcenter.wustl.edu/Journal/Reviews/Pages/student-attention.aspx#.U6GHWChwVgk>. It mostly was a minute or less, with the first spike about 30 seconds into the lecture, then at five minutes, eight minutes, etc. Basically, they waxed and waned throughout the lecture—with more attention lapses as time went on—about every two minutes by the end. When active learning was used, students were more engaged and their attention span was longer.
14. <http://cfe.unc.edu/publications/fyc6.html>.
15. Ibid.
16. Statistics (after the first chart) from the National Science Foundation. "How Do U.S. 15-year-olds Compare with Students from other Countries in Math and Science?" *Stem Education Data* (2012) <http://www.nsf.gov/nsb/sei/edTool/data/highschool-08.html>.
17. The NYT editorial board, Why Other Countries Teach Better: Three Reasons Students Do Better Overseas, *The New York Times* (Dec. 17, 2013), <http://www.nytimes.com/2013/12/18/opinion/why-students-do-better->

overseas.html?pagewanted=all&\_r=1&. The early paragraphs show America comparing poorly to other countries in much the same manner as we discussed.

18. *Introduction to Statistical Reasoning*, op. cit., p. 58.

19. This chart from Wikipedia Commons.

20. J. Mathews, "The Myth of Declining U.S. Schools," *The Washington Post* (02/11/2011), [http://voices.washingtonpost.com/class-struggle/2011/02/myth\\_of\\_declining\\_us\\_schools.html](http://voices.washingtonpost.com/class-struggle/2011/02/myth_of_declining_us_schools.html).

21. Ibid.

22. Ibid.

## Chapter 18: They Fail to Learn from History

1. Georg Wilhelm Friedrich Hegel, John Sibree, translator, *Introduction to the Philosophy of History* (first published in 1837, now the text is under common domain), Introduction.

2. While philosopher Alex Rosenberg claims that we can learn nothing from history (pp. 242ff); elsewhere, in the same book, he wants to teach us from history. For example, on p. viii he writes of science having been "vindicated beyond reasonable doubt." But isn't that vindication based upon the pattern of success in the history of science? On p. 321 he pontificates from the history of ethics. On p. 315 he recommends that the depressed take Prozac; but isn't that recommendation based upon the medical histories of those who've taken Prozac? *The Atheists' Guide to Reality* (New York: W. W. Norton & Company, 2012).

3. Rousseau fathered four children by Therese, all of whom he abandoned at birth, giving them to an overcrowded hospital, where they in all likelihood either died or became beggars. Paul Johnson, *Intellectuals* (New York: Harper & Row), pp. 21,22.

4. Ibid., 212-219.

5. Ibid., 115-121.

6. Science Museum, Brought to Life: Exploring the History of Medicine, "Keeping It Zipped: Controlling Sexually Transmitted Infections," <http://www.sciencemuseum.org.uk/broughttolife/themes/publichealth/sti.aspx>.

7. Beezy Marsh, "Syphilis, The Scourge of Kings and Dictators of Old, Is Surging Back," *Daily Mail*, Dec. 5, 2009, <http://www.dailymail.co.uk/news/article-1233310/Syphilis-scourge-kings-dictators-old-surging-back.html>.

8. From a 2007 personal discussion with accountant and money counselor Larry Winter. He uses an analogy to warn clients about risky ventures and investments. To start a fire, you need three ingredients: air, fuel and something to ignite the fuel. In the same way three things lead to disaster in investing: 1) Do it in a hurry, 2) in an area you know nothing about, 3) with borrowed money.

9. For example, they had no experience running electricity businesses, technology businesses, or water utilities. Over time, this took its toll.

10. For example, see this fact check of the film "Lincoln" on Harvard Press's blog:

[http://harvardpress.typepad.com/hup\\_publicity/2012/11/historians-respond-to-spielbergs-lincoln.html](http://harvardpress.typepad.com/hup_publicity/2012/11/historians-respond-to-spielbergs-lincoln.html).

11. Buffett is perfectly content to spend his days pouring over the financial reports of companies that he either owns or might acquire.

12. See Madeleine L'Engle and Carole F. Chase, *Madeleine L'Engle Herself: Reflections on a Writing Life* (Shaw Books, 2001).

13. Fannie Flagg, who wrote the novel *Fried Green Tomatoes*, once said, "I'm dyslexic. I write the end, then middle, then some of the beginning. I write scenes, then hang them on a clothesline down my great-big, long hallway. It just helps me to see the story visually in sequence. The hardest part is putting it all together at the end. It's like piecing together a quilt. And if I drop it, I have a totally different book. (Found in Cherie K. Miller, *Writing Conversations* (Wisdom Creek Press, 2010), p. 28.

14. Peter Han, *Nobodies to Somebodies* (New York: Penguin Group, 2005), pp. 64-66. A part of the reason they moved on from their first jobs was for professional growth—to keep learning new things and to be stretched.

15. At Enron, leaders such as Jeff Skilling and Rebecca Mark "believed that talent outweighed experience, and in Enron's world, talent meant thirty-somethings with MBAs from all the best business schools. What did it matter that they didn't know a thing about water. They were smart; they would figure it out." Bethany McLean and Peter Elkind, *The Smartest Guys in the Room* (New York: Penguin Group), p. 251. Skilling was so ignorant of the computer industry that he couldn't even send and receive email or turn on his computer, but he thought he could make a killing off broadband. Enron leaders made fun of businesses that concentrated on the day-to-day task of running a business. Thus, they purchased businesses with little concern with how they'd be running them ten years down the road. (pp. 120,182-184,186)

16. [http://en.wikipedia.org/wiki/A\\_Whiter\\_Shade\\_of\\_Pale](http://en.wikipedia.org/wiki/A_Whiter_Shade_of_Pale).

## Chapter 19: They Learn the Wrong Lessons from History

1. The name of the artist, on the cartoon, appears to be "Torn" or "Jorn".

2. Charles W. McCoy, Jr., *Why Didn't I Think of That?* (Paramus, New Jersey: Prentice Hall Press, 2002), p. 3.

3. [http://en.wikipedia.org/wiki/Gettysburg\\_Address](http://en.wikipedia.org/wiki/Gettysburg_Address), see also

<http://www.abrahamlincolnonline.org/lincoln/speeches/gettysburg.htm>.

4. Carl E. Olson and Sandra Miesel, *The Da Vinci Hoax* (San Francisco: Ignatius Press, 2004), p. 242.

5. From Amazon.com.

6. Olson and Miesel, op. cit., p. 21, quoting from Brown's site.

7. I checked his site more recently, and someone seems to have taken the sources down.

8. Olson and Miesel (pp. 223-239) provide a good critique of Brown's primary sources, such as *Holy Blood, Holy Grail, The Templar Revelation*, and *The Messianic Legacy*. After in depth research of Brown's historical claims in *The Da Vinci Code*, Olson and Miesel conclude that "Brown's vaunted research largely involved reading Picknett and Prince's book." (p. 263)

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9. Michael White, *Leonardo: The First Scientist* (New York: St. Martin's Press, 2000).
  10. As he's referred to in popular writing, I'll call him "Da Vinci," although technically that's not his last name, but a reference to where he was from. He should be properly referred to as Leonardo.
  11. Dan Brown, *The Da Vinci Code* (New York: Anchor Books, 2003), p. 50. *The Da Vinci Hoax*, op. cit., p. 243.
  12. Bruce Boucher, "Does *The Da Vinci Code* Crack Leonardo?," *New York Times*, Aug. 3, 2003.
  13. I'm speaking here of *The Da Vinci Hoax*, op. cit.
  14. [http://en.wikipedia.org/wiki/Black\\_Death#Origins\\_of\\_the\\_disease](http://en.wikipedia.org/wiki/Black_Death#Origins_of_the_disease).
  15. Sewell Chan, "Financial Crisis Was Avoidable, Inquiry Finds," *The New York Times* (Jan. 25, 2011), <http://www.nytimes.com/2011/01/26/business/economy/26inquiry.html>.
  16. James Pethokoukis, "Again, Which Bush Policies Caused the Great Recession? And Which of Obama's Ended It?" American Enterprise Institute, at [aei.org](http://aei.org), Sept. 4, 2012.
  17. "Obama's Claim That The Bush Tax Cuts Led to The Economic Crisis," Fact Checker, *The Washington Post*, Sept. 30, 2012, [http://www.washingtonpost.com/blogs/fact-checker/post/obamas-claim-that-the-bush-tax-cuts-led-to-the-economic-crisis/2012/09/30/06e8f578-0a6e-11e2-aff-d6c7f20a83bf\\_blog.html](http://www.washingtonpost.com/blogs/fact-checker/post/obamas-claim-that-the-bush-tax-cuts-led-to-the-economic-crisis/2012/09/30/06e8f578-0a6e-11e2-aff-d6c7f20a83bf_blog.html).
  18. [http://en.wikipedia.org/wiki/The\\_great\\_recession#Panel\\_reports](http://en.wikipedia.org/wiki/The_great_recession#Panel_reports).
  19. Jacob Weisberg, "What Caused the Crash? Let the Bickering Begin," *Newsweek*, 1/8/10, <http://www.newsweek.com/what-caused-crash-let-bickering-begin-70921>.
  20. From a paper by economist James Hamilton. Keith Johnson, "Oil Shock: Did High Oil Prices Cause the Recession?" *Wall Street Journal*, April 22, 2009, WSJ Blogs, <http://blogs.wsj.com/environmentalcapital/2009/04/22/oil-shock-did-high-oil-prices-cause-the-recession/>.
  21. Amir Sufi, Chicago Board of Trade Professor of Finance, University of Chicago Booth School of Business, [http://www.thechicagocouncil.org/files/Event/FY14\\_Events/05\\_May/House\\_of\\_Debt.aspx](http://www.thechicagocouncil.org/files/Event/FY14_Events/05_May/House_of_Debt.aspx).
  22. Richard M. Salsman, "How Bernanke's Fed Triggered the Great Recession," *Forbes*, 7/17/2011, <http://www.forbes.com/sites/richardsalsman/2011/07/17/how-bernankes-fed-triggered-the-great-recession/>.
  23. *Ibid.*
  24. "What Caused the Crash?" op. cit.
  25. Sewell Chan, "Financial Crisis Was Avoidable, Inquiry Finds," *The New York Times*, Jan. 25, 2011, <http://www.nytimes.com/2011/01/26/business/economy/26inquiry.html>.
  26. *Ibid.*
  27. *Ibid.* See also Ryan Chittum, "Bill Clinton on Deregulation: 'The Republicans Made Me Do It!': The Ex-President Seriously Mischaracterizes His Record", Oct. 1, 2013, *Columbia Journalism Review* - [http://www.cjr.org/the\\_audit/bill\\_clinton\\_the\\_republicans\\_m.php?page=all](http://www.cjr.org/the_audit/bill_clinton_the_republicans_m.php?page=all).
  28. Note Warren Buffett's 2008 Letter to Shareholders of Berkshire Hathaway: "These parties looked at loss experience over periods when home prices rose only moderately and speculation in houses was negligible. They then made this experience a yardstick for evaluating future losses. They blissfully ignored the fact that house prices had recently skyrocketed, loan practices had deteriorated, and many buyers had opted for houses they couldn't afford. In short, universe "past" and universe "current" had very different characteristics. But lenders, government and media largely failed to recognize this all-important fact. Investors should be skeptical of history-based models. Constructed by a nerdy-sounding priesthood using esoteric terms such as beta, gamma, sigma and the like, these models tend to look impressive. Too often, though, investors forget to examine the assumptions behind the symbols. Our advice: Beware of geeks bearing formulas."
- [http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CC0QFjAB&url=http%3A%2F%2Fwww.berkshireathaway.com%2Fletters%2F2008ltr.pdf&ei=vWTmU8ujBeed8gH9\\_oGwBw&usg=AFQjCNGqn0pEA357hTUi2N3KQ9H8kdJJSQ&sig2=90Txc58e0je9oGYqp83kQ&bvm=bv.72676100,d.b2U](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CC0QFjAB&url=http%3A%2F%2Fwww.berkshireathaway.com%2Fletters%2F2008ltr.pdf&ei=vWTmU8ujBeed8gH9_oGwBw&usg=AFQjCNGqn0pEA357hTUi2N3KQ9H8kdJJSQ&sig2=90Txc58e0je9oGYqp83kQ&bvm=bv.72676100,d.b2U)
- "Three hundred million Americans, their lending institutions, their government, their media, all believed that house prices were going to go up consistently," he said. (Quoting Buffett) "Lending was done based on it, and everybody did a lot of foolish things." Steve Lohr, "Like J.P. Morgan, Warren E. Buffett Braves a Crisis," *The New York Times*, Oct. 5, 2008, <http://www.nytimes.com/2008/10/06/business/06buffett.html?%3Cem%3Er=0>
29. According to the commission, "We conclude over-the-counter derivatives contributed significantly to this crisis. The enactment of legislation in 2000 to ban the regulation by both the federal and state governments of over-the-counter (OTC) derivatives was a key turning point in the march toward the financial crisis." (<http://fcic.law.stanford.edu/report/conclusions>) While then President Bill Clinton claims the Republican majority in Congress made him do it, the historical data, as summarized in this *Columbia Journalism Review* article, don't seem to support his contention: "Bill Clinton on Deregulation," op.cit.
  30. "What Caused the Crash?" op. cit.
  31. Will and Ariel Durant, *The Lessons of History* (New York: Simon & Schuster, 1968), p. 97.
  32. W.O. Henderson and W.H. Challoner checked the sources for Engle's *Condition of the Working Class in England* (Oxford, 1958). Two Cambridge scholars wrote a paper, "Comments on the use and the Blue Books by Karl Marx in Chapter XV of *Le Capital*" (1885). Besides cherry picking, Marx and Engles often improperly used their quoted material, putting capitalism in the worst possible light. See discussion in *Intellectuals*, op. cit., pp. 62ff.
  33. According to Paul Johnson, "Virtually all Marx's facts, selectively deployed (and sometimes falsified) as they were, came from

the efforts of the State (inspectors, courts, Justices of the Peace) to improve conditions, which necessarily involved exposing and punishing those responsible..." *Intellectuals*, op. cit., pp. 68,69.

35. Allan Bloom, *The Closing of the American Mind* (New York: Simon & Schuster, 1987). On our tendency to allow the current intellectual trends to shape their views, it's interesting to read the intellectual journey of a modern philosopher who decided that today's philosophers tend to take for granted that earlier views (such as Aquinas) have been demolished, without giving the historic arguments a serious look. <http://edwardfeser.blogspot.com/2012/07/road-from-atheism.html>.

36. Thomas L. Friedman, "Justice Goes Global," *The New York Times*, June 14, 2011.

37. Jason Zweig, *Your Money and Your Brain*, early promo copy (New York: Simon & Schuster, 2010), pp 72,73.

38. Proverbs 22:7.

39. Paul Johnson traces four aspects of Marx's personal history that impacted his writings: "his taste for violence, his appetite for power, his inability to handle money and, above all, his tendency to exploit those around him." *Intellectuals*, op. cit., pp. 69-81.

40. Bethany McLean and Peter Elkind, *The Smartest Guys in the Room* (New York: Penguin Group, 2004).

41. Richard L. Brandt, *The Google Guys* (New York: The Penguin Group, 2009, 2011), p. 113ff.

## Chapter 20: They Miss Subtle Shifts in Word Meanings

1. *Einstein: His Life and Universe*, by Walter Isaacson (New York: Simon & Schuster, 2007) p. 8.

2. Ibid.

3. Ibid. In German, they called him "der Depperte."

4. Ibid., pp. 7,16.

5. Ibid., pp. 9,23.

6. Ibid., p. 34.

7. Ibid., p. 39.

8. Ibid., p. 9.

9. Ibid., pp. 438,439. Once a secretary at Princeton received a call from someone asking for Einstein's home address. When she replied that she couldn't give it out, the caller whispered, "Please don't tell anybody, but I am Dr. Einstein, I'm on my way home, and I've forgotten where my house is."

10. Ibid., p. 325. Einstein and quantum physicist Niels Bohr were travelling from the train station in Copenhagen by streetcar. Engrossed in conversation, they "rode to and fro," according to Bohr, "and I can well imagine what the people thought about us."

11. Ibid., p. 227.

12. Ibid., p. 438.

13. Ibid., p. 540.

14. Ibid., p. 16.

15. Ibid., p. 20.

16. Ibid., p. 14.

17. *Time Magazine*, Dec. 31, 1999, see cover story.

18. Joseph McBride, *Steven Spielberg* (New York: Simon & Schuster, 1997), p. 98.

19. Sam Walton with John Huey, *Sam Walton: Made in America* (New York: Doubleday, 1992) pp. 17,18. Walton would "screw up the sales slips and generally mishandle the cash register part of things." One man who evaluated personnel for J. C. Penney told Walton, "I'd fire you if you weren't such a good salesman. Maybe you're just not cut out for retail." (p. 18)

20. Ibid., p. 116. According to Walton, "...if you asked me am I an organized person, I would have to say flat out no, not at all." "My style is pretty haphazard."

21. Paul Orphalea, *Copy This!* (New York: Workman Publishing, 2007).

22. C.S. Lewis, *Surprised by Joy* (New York: A Harvest Book, 1955), pp. 12,137,186,187.

23. Mel Levine, *A Mind at a Time* (New York: Simon & Schuster, 2002, p. 25.

24. Michael White, *Leonardo: The First Scientist* (New York: St. Martin's Press, 2000), pp. 160,161, 326.

25. Ibid., pp. 91,152,153.

26. Personal interview with Gupta, 2014.

27. Daniel Tammatt, *Born on a Blue Day* (New York: Free Press, 2006), pp. 4,5.

28. Strength advocates such as Marcus Buckingham point to research on over two million people in the workplace by the Gallup organization, showing that people in the workplace are often miscast in their roles. Rather than concentrating on strengthening our weaknesses (which most schools emphasize), strengths advocates argue that our greatest potential improvement is in our areas of strength. See Marcus Buckingham and Curt Coffman, *First, Break All the Rules: What the World's Greatest Managers Do Differently* (New York: Simon & Schuster, 1999).

29. *Leonardo*, op. cit., pp. 28,29,55-70. Leonardo probably began this apprenticeship experience at age twelve or thirteen.

30. Spielberg applied to two prestigious film schools, but was rejected because of his "mediocre academic record." McBride, op. cit., p. 131.

31. Temple Grandin and Richard Panek, *The Autistic Brain: Thinking Across the Spectrum* (New York: Houghton Mifflin Harcourt, 2013).

32. Daniel Goleman, *Emotional Intelligence* (New York: Bantam Books), p. 40. To expand upon Gardner's thesis, see Howard



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Gardner, *Frames of Mind: The Theory of Multiple Intelligences* (New York: Harper/Collins, 1985).

33. Bethany McLean and Peter Elkind, *The Smartest Guys in the Room* (New York: Penguin Group), pp 120ff. Note how this impacted Skilling's hiring for Enron. Rather than hire people with experience in the field (such as natural gas or electricity), he hired people who were outstanding students in an academic context, assuming that if they're "smart," they can learn anything (managerial skills, judgment, etc.). Skilling considered himself, in his own words, "f...ing smart," but seemed clueless about his lack of judgment in many matters. For example, businesses can't consistently grow by merely trading. Surely this was part of what led to Enron's downfall. Compare Skilling at Enron to Jack Welch at G.E. At first, Welch loved hiring PhDs, but he later realized that some of them couldn't execute business plans.

34. Here's a good place to begin a study of criticisms of IQ tests:

[http://en.wikipedia.org/wiki/Intelligence\\_quotient#Criticism\\_and\\_views](http://en.wikipedia.org/wiki/Intelligence_quotient#Criticism_and_views).

35. Liberal Education is an approach to learning that empowers individuals and prepares them to deal with complexity, diversity, and change. It provides students with broad knowledge of the wider world (e.g. science, culture, and society) as well as in-depth study in a specific area of interest. A liberal education helps students develop a sense of social responsibility, as well as strong and transferable intellectual and practical skills such as communication, analytical and problem-solving skills, and a demonstrated ability to apply knowledge and skills in real-world settings.

[http://www.aacu.org/leap/what\\_is\\_liberal\\_education.cfm](http://www.aacu.org/leap/what_is_liberal_education.cfm).

36. Let's take the etymology of the English word *nice*. It comes from the Latin word *nescius*, which meant 'ignorant.' Obviously, the word has significantly shifted meaning over time and the one who appeals to its history to understand its current usage will likely find himself far off course. Yet, I often hear preachers and writers appealing to the etymology of biblical words to derive questionable meanings. See Moises Silva, *Biblical Words & Their Meaning: An Introduction to Lexical Semantics* (Grand Rapids: Zondervan, 1983), p. 38. Note also Silva's entire chapter devoted to etymology (pp. 35-52). See also D. A. Carson, *Exegetical Fallacies* (Grand Rapids: Baker Academic, 1996), pp. 27ff. Even standard reference works can suffer from overdependence upon, or misuse of etymology, a criticism James Barr brought against the most exhaustive lexicon of New Testament words, the *Theological Dictionary of the New Testament*. Surely de Moor's statement concerning Ugaritic lexicography could be applied more broadly to other languages: "An explanation which rests on the sole basis of etymology can never be anything more than a plausible hypothesis." (From de Moor's "Ugaritic Lexicography," p. 85, as quoted by Silva, op. cit., p. 44.)

37. <http://community.cartalk.com/discussion/805209/what-should-a-mechanic-charge-for-auto-parts>.

38. Kevin Nelson, *The Spiritual Doorway in the Brain* (New York: Penguin Group, 2011) p. 132.

39. See Dudley Shapere, University of Chicago, *Philosophical Review*, vol. 73, 1964, p. 383ff. "The term 'paradigm' thus covers a range of factors in scientific development including or somehow involving laws and theories, models, standards, and methods (both theoretical and instrumental), vague intuitions, explicit or implicit metaphysical beliefs (or prejudices). In short, anything that allows science to accomplish anything can be a part of (or somehow involved in) a paradigm. ... At the very outset, the explanatory value of the notion of a paradigm is suspect: for the truth of the thesis that shared paradigms are (or are behind) the common factors guiding scientific research appears to be guaranteed, not so much by a close examination of actual historical cases, however scholarly, as by the breadth of definition of the term 'paradigm.'" (p. 385)

40. For Jobs' romancing of Sculley for Apple, see Walter Isaacson, *Steve Jobs* (New York: Simon & Schuster, 2011), pp. 148-154. When Jobs showed Sculley the first Macintosh computer, Scully noted that "He seemed more a showman than a businessman. Every move seemed calculated, as if it was rehearsed, to create an occasion of the moment." (p. 152)

41. On the toil Churchill put into his speeches, see <http://www.winstonchurchill.org/resources/in-the-media/churchill-in-the-news/sweat-and-tears-made-winston-churchills-name>.

42. Denise Shekerjian, *Uncommon Genius* (New York: Penguin Books), pp. 6,7.

43. *Einstein*, op. cit., p. 14.

44. At least 11 screenwriters contributed to *The Wizard of Oz*. Research many of your favorite movies and you'll likely discover that several writers contributed.

45. Dale Pollock, *Skywalking: The Life and Films of George Lucas* (Harmony Books, 1983), p. 141.

## Chapter 21: They Misinterpret Phrases and Sentences.

1. Roland Bainton, *Here I Stand: A Life of Martin Luther* (Nashville: Abingdon Press, 1950), pp 15,25.

2. *Ibid.*, pp. 39-50.

3. According to Luther, "I hated that word, 'justice of God,' which, by the use and custom of all my teachers, I had been taught to understand philosophically as referring to formal or active justice, as they call it, i.e., that justice by which God is just and by which he punishes sinners and the unjust.... I couldn't be sure that God was appeased by my satisfaction. I did not love, no, rather I hated the just God who punishes sinners." But when he deliberated on the context of this phrase, he "began to understand that this verse means that the justice of God...is a passive justice, i.e. that by which the merciful God justifies us by faith." ["Justice" is an alternative translation for "righteousness."] Dr. Martin Luther, *Preface to the Complete Edition of Luther's Latin Works* (1545), translated by Andrew Thornton from the "Vorrede zu Band I der Opera Latina der Wittenberger Ausgabe. 1545" in vol. 4 of *Luthers Werke in Auswahl*, ed. by Otto Clemen, 6th ed., (Berlin: de Gruyter. 1967), pp. 421-428.

## Chapter 22: They Use Faulty Parallels and Analogies

1. "US in a 'real state of crisis,' education secretary says," *NBC News*, World News, Wed., Oct. 22, 2014, <http://www.nbcnews.com/news/other/us-real-state-crisis-education-secretary-says-f8C11354527>.
2. Later in this chapter, note that I ask, why compare to only 12 other countries? Why these 12? It looks suspiciously like they were cherry-picked, comparing ourselves to largely homogeneous cultures we knew were at the top on testing. Of course, we came out below them. Studies like this appear to be designed to show the United States at the bottom of lists on charts; but at least the article does note that socio-economic factors are a much greater issue in American culture than the other cultures. The Editorial Board, "Why Other Countries Teach Better: Three Reasons Students Do Better Overseas," Dec. 17, 2013, *The New York Times*, [http://www.nytimes.com/2013/12/18/opinion/why-students-do-better-overseas.html?pagewanted=all&\\_r=1&](http://www.nytimes.com/2013/12/18/opinion/why-students-do-better-overseas.html?pagewanted=all&_r=1&).
3. If they've changed the subtitle by the time you view it, I've saved a screen shot on the accompanying website. [http://www.nytimes.com/2013/12/18/opinion/why-students-do-better-overseas.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2013/12/18/opinion/why-students-do-better-overseas.html?pagewanted=all&_r=0).
4. Anu Partanen, "What Americans Keep Ignoring about Finland's School Success," *The Atlantic*, Dec. 29, 2011, <http://www.theatlantic.com/national/archive/2011/12/what-americans-keep-ignoring-about-finlands-school-success/250564/>. This also impacts comparisons with Shanghai, an extremely wealthy region, which doesn't even offer education to their 9 million migrant workers. Jill Barshay, "Shanghai Likely to Repeat Strong Results on International PISA test in December," Education by the Numbers, pub. by The Hechinger Report, posted Nov. 18, 2013, [http://educationbythenumbers.org/content/shanghai-likely-repeat-strong-results-international-pisa-test-december\\_644/](http://educationbythenumbers.org/content/shanghai-likely-repeat-strong-results-international-pisa-test-december_644/).
5. Rafael Irizarry, "Stratifying PISA scores by poverty rates suggests imitating Finland is not necessarily the way to go for US schools," Simply Statistics, Aug. 23, 2013, <http://simplystatistics.org/2013/08/23/stratifying-pisa-scores-by-poverty-rates-suggests-imitating-finland-is-not-necessarily-the-way-to-go-for-us-schools/>.
6. Wayne D'Orio, "Finland is #1: Finland's education success has the rest of the world looking north for answers," Scholastic Administrator, <http://www.scholastic.com/browse/article.jsp?id=3749880>. <http://www.smithsonianmag.com/innovation/why-are-finlands-schools-successful-49859555/#TFWTePOEAQE6Q1cl.99>
7. [http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CEQQFjAB&url=http%3A%2F%2Fwww.legalmomentum.org%2Fsites%2Fdefault%2Ffiles%2Freports%2Fworst-off-single-parent.pdf&ei=rluEU\\_7EFpOdqAbnklHoDg&usq=AFQjCNFbWHlsUqURNi\\_huOVIWIsai48Gmzw&sig2=6QatMcr6pWOXF7NfBOp\\_uNQ&bvm=bv.67720277,d.b2k&cad=rjaSingle parent families](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CEQQFjAB&url=http%3A%2F%2Fwww.legalmomentum.org%2Fsites%2Fdefault%2Ffiles%2Freports%2Fworst-off-single-parent.pdf&ei=rluEU_7EFpOdqAbnklHoDg&usq=AFQjCNFbWHlsUqURNi_huOVIWIsai48Gmzw&sig2=6QatMcr6pWOXF7NfBOp_uNQ&bvm=bv.67720277,d.b2k&cad=rjaSingle parent families).
8. Rafael Irizarry, op. cit.
9. <http://en.wikipedia.org/wiki/Finland> <http://www.smithsonianmag.com/innovation/why-are-finlands-schools-successful-49859555/#5FH00EHg9RIY9jSu.99>. By contrast, our secretary of education recommends that we need to ensure that every child gets preschool so that our students don't have to play catch-up with many other countries. <http://www.nbcnews.com/news/other/us-real-state-crisis-education-secretary-says-f8C11354527>.
10. LynNeil Hancock, "Why Are Finland's Schools Successful?" Special Report: Educating Americans for the 21st Century, *Smithsonian Magazine*, <http://www.smithsonianmag.com/innovation/why-are-finlands-schools-successful-49859555/#5FH00EHg9RIY9jSu.99>.
11. Ibid.
12. <http://en.wikipedia.org/wiki/Finland> <http://www.smithsonianmag.com/innovation/why-are-finlands-schools-successful-49859555/#amZzeyFGk30YwuYe.99>.
13. "Why are Finland's Schools Successful?", op. cit..
14. <http://en.wikipedia.org/wiki/Finland>.
15. "Why are Finland's Schools Successful?", op. cit.
16. Ibid.
17. Ibid.
18. <http://en.wikipedia.org/wiki/Finland>.
19. <http://en.wikipedia.org/wiki/Finland>.
20. "Why are Finland's Schools Successful?", op. cit.
21. Ibid. The college track will continue from age 16 or 17 and last three or four years.
22. Note how this seems to contradict the NYT article, which states: "Moreover, all high school students must take one of the most rigorous required curriculums in the world, including physics, chemistry, biology, philosophy, music and at least two foreign languages." It gives the impression of a monolithic, specific curriculum that all have to master. But read this wonderful document. It's not the type of "rigor" that we're used to seeing. It's low on the specifics that Americans are used to (example: asking students to memorize all the terms and methods to understand plate tectonics) and big on helping students find their areas of strengths and assess their own progress rather than taking standardized tests over content. National Core Curriculum for Upper Secondary Schools, 2003, Finnish National Board of Education, [http://www.oph.fi/download/47678\\_core\\_curricula\\_upper\\_secondary\\_education.pdf](http://www.oph.fi/download/47678_core_curricula_upper_secondary_education.pdf). Could this be one of the reasons that so many more Finns graduate than Americans (93%, over 17% more than Americans) In my county, some schools dropped the tech

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track, in order to try to give every student a precollege education. Many drop out because of lack of ability or motivation to take many of the academic courses.) "Why are Finland's Schools Successful?", op. cit.

23. Ibid.

24. Ibid.

25. Ibid.

26. Ibid., Comparatively, half of US teachers quit after the first five years, according to the NEA. Lisa Lambert, "Half of Teachers Quit in 5 Years," *The Washington Post*, May 9, 2006, <http://www.washingtonpost.com/wp-dyn/content/article/2006/05/08/AR2006050801344.html>.

27. "Finland is #1!", op. cit. "Tom Loveless, a senior fellow at the Brookings Institute, asserted that it has 'systems in place to make sure that students who may perform poorly are not allowed into public schools.'" John Fensterwald, "U.S. Scores Stagnant, Other Nations Pass Us by in Latest International Test," EdSource, Dec. 3, 2013, <http://edsources.org/2013/u-s-scores-stagnant-other-nations-pass-by-in-latest-international-comparison/52052#.U4CAKSimXsE>. So comparing our elite prep schools to Shanghai might be a better comparison.

28. This is a very astute article, attempting to examine the nuances of such international comparisons: Martin Carnoy and Richard Rothstein, "What Do International Tests Really Show about U.S. Student Performance?", Economic Policy Institute, Jan. 28, 2013, <http://www.epi.org/publication/us-student-performance-testing/>.

29. Iga M., "Suicide of Japanese Youth," *Suicide Life Threat Behav.*, 1981 Spring; 11 (1): 17-30, <http://www.ncbi.nlm.nih.gov/pubmed/7233479>.

## Chapter 23: They Fail to Identify and Interpret Fiction and Figurative Language

1. Genius.com, "American Pie Lyrics," <http://rock.rapgenius.com/Don-mclean-american-pie-lyrics#note-519107>.

2. Martin Amis, *Koba the Dread* (New York, Vintage Books, 2003), pp. 27.

3. IMDb, Ozzy Osbourne, Biography, <http://www.imdb.com/name/nm0005285/bio>.

4. Elizabeth F. Brown and William R. Hendee, "Adolescents and their Music," *Journal of the American Medical Association* 262:12 (22-29 Sept. 1989), 1659-1663.

5. Matthew Wilkening, "30 Years Ago: An Ozzy Osbourne Fan Commits Suicide, Leading to 'Suicide Solution' Lawsuit," *Ultimate Classic Rock*, Oct. 27, 2014, <http://ultimateclassicrock.com/ozzy-osbourne-fan-suicide/>.

6. Alan Howard, *The Don McLean Story: 1970–1976*. <http://www.don-mclean.com/?p=32>.

7. Cecil Adams, "What is Don McLean's Song, 'American Pie' All About?", *The Straight Dope*, May 15, 1993, <http://www.straightdope.com/columns/read/908/what-is-don-mcleans-song-american-pie-all-about>.

8. Humphrey Carpenter, *J.R.R. Tolkien: A Biography* (New York: Houghton Mifflin Company, 1977), p. 193.

9. J.R.R. Tolkien, *Lord of the Rings*, Second edition, with introduction by J.R.R. Tolkien (New York: Ballantine Books, 1954) p. xxiii.

10. Sherwood Eliot Wirt, "The Final Interview of C.S. Lewis," Assist News Service, [http://www.cbn.com/special/narnia/articles/ans\\_lewislastinterviewa.aspx](http://www.cbn.com/special/narnia/articles/ans_lewislastinterviewa.aspx). In this, his final interview, Lewis answers the question: "Would you say that the aim of Christian writing, including your own writing, is to bring about an encounter of the reader with Jesus Christ?" Lewis responds: "That is not my language, yet it is the purpose I have in view.

11. *The Letters of C.S. Lewis*, ed. by W.H. Lewis, NY, HBJ, 1966, p. 167. This statement was confirmed by an independent study of his reviews. David C. Downing, *Planets in Peril: A Critical Study of C.S. Lewis's Ransom Trilogy* (Amherst: University of Massachusetts Press, 1992) p. 36.

12. See, for example, Proverbs 3:16.

13. <ftp://rtfm.mit.edu/pub/faqs/music/american-pie>.

14. Thomas C. Foster, *How to Read Literature Like a Professor* (New York: HarperCollins, 2003) p. xv.

## Chapter 24: They're Overwhelmed by Their Passions

1. The teen state of brain development impacts "the urgency and intensity of emotional reactions." "Adolescents and adults seem to engage different parts of the brain to different extents during tests requiring calculation and impulse control, or in reaction to emotional content." "One interpretation of all these findings is that in teens, the parts of the brain involved in emotional responses are fully online, or even more active than in adults, while the parts of the brain involved in keeping emotional, impulsive responses in check are still reaching maturity. Such a changing balance might provide clues to a youthful appetite for novelty, and a tendency to act on impulse—without regard for risk." "The Teen Brain: Still Under Construction," National Institute of Mental Health, NIH Publication No. 11-4929, 2011, <http://www.nimh.nih.gov/health/publications/the-teen-brain-still-under-construction/index.shtml>.

2. The top rating of Enron's stock by Standard and Poors "continued to bless Enron's debt instruments with triple-A ratings until just months before its collapse." Loren Steffy: A Business Blog, "S&P's Trail of Failure, from Enron to America," *Houston Chronicle*, Aug. 9, 2011, <http://blog.chron.com/lorensteffy/2011/08/sps-trail-of-failure-from-enron-to-america/>. The other two respected credit rating agencies, "...Moody's Investors Service...and Fitch Ratings, maintained high ratings for Enron until a few days before its bankruptcy filing." "Moody's, S&P Say Enron Lied," USA Today, March 20, 2002, <http://usatoday30.usatoday.com/money/energy/enron/2002-03-20-sp.htm>.

3. Flynn McRoberts and Cam Simpson, "Ex-Enron Exec's Suicide Note Released," *Chicago Tribune*, April 12, 2002,

[http://articles.chicagotribune.com/2002-04-12/business/0204120223\\_1\\_suicide-note-ex-enron-baxter](http://articles.chicagotribune.com/2002-04-12/business/0204120223_1_suicide-note-ex-enron-baxter).

4. Bethany McLean and Peter Elkind, *The Smartest Guys in the Room* (New York: Penguin Group), p. 31.

5. C. William Thomas, *Today's CPA*, March/April 2002.

<http://www.journalofaccountancy.com/Issues/2002/Apr/TheRiseAndFallOfEnron.htm>.

6. As quoted in *The Smartest Guys in the Room*, op. cit., p. 350.

7. Ibid.

8. Ibid., p. 365.

9. For example, see how Fastow doctored his resume by claiming personal credit for other's accomplishments.

10. Skilling's favorite book was Richard Dawkins' *The Selfish Gene*, which he interpreted to justify selfish, ruthless behavior in getting ahead. Richard Conniff, "Animal Instincts," *The Guardian*, May 26, 2006,

<http://www.theguardian.com/money/2006/may/27/careers.work5>. Sure, Enron's leaders were the smartest guys in the room ("smart" in the sense of educational credentials and ability to influence and persuade). But ruled by egotistic passion for money and power, they made a plethora of unwise business decisions. At one point, they turned off the power to one of the regions of California that they serviced, in order to fake a shortage. And they thought they could get away with that? Really?

11. *The Smartest Guys in the Room*, op. cit., p. 376.

12. In Psychology, "Dialectical Behavior Therapy" and "Wise Mind" approaches seek to help us control our emotions in order to make wiser decisions. They recommend distinguishing the "reasonable mind" from the "emotional mind" and blending them to achieve a "wise mind."

13. *The Smartest Guys in the Room*, op. cit., p. 317. Enron leaders got rid of Bass at Arthur Anderson, because he wouldn't go along with their "creative" accounting. Enron consistently got rid of naysayers and surrounded themselves with "yes men." Again, they ignore contrary counsel (p. 363). See lots of examples from earlier in their history as well; for example, how they had a large group dedicated to risk control, but controlled the group so that it couldn't stop anything.

14. For his story, read Joe Gibbs, *Racing to Win* (Colorado Springs: Multnomah Books, 2003).

15. The college president was Robertson McQuilkin at Columbia International University.

16. Margaret Heffernan, "Lessons of Enron, 10 Years On," CBS Money Watch, Dec. 2, 2011,

<http://www.cbsnews.com/news/lessons-of-enron-10-years-on/>.

17. Ibid.

18. "Studies of children and adolescents have found that sleep deprivation can increase impulsive behavior; some researchers report finding that it is a factor in delinquency. Adequate sleep is central to physical and emotional health." "The Teen Brain," op. cit.

19. *The Smartest Guys in the Room*, op. cit., p. 330.

20. "In 2003, Fastow was a prominent figure in *24 Days: How Two Wall Street Journal Reporters Uncovered the Lies that Destroyed Faith in Corporate America*. It was created by the reporters who had broken some of the key stories in the saga, Rebecca Smith and John R. Emshwiller. They described Fastow as "a screamer, who negotiated by intimidation and tirade". [http://en.wikipedia.org/wiki/Andrew\\_Fastow](http://en.wikipedia.org/wiki/Andrew_Fastow).

"Despite their independence and the variance in their techniques, nearly every sell-side analyst reached the same conclusions about Enron in 2001, right up to the brink of its bankruptcy on Dec. 2. As of Oct. 18, all 15 analysts tracked by Thomson Financial/First Call rated Enron a "buy"—12 of the 15 called it a "strong buy." Dan Ackman, "Enron Analysts: We Was Duped," *Forbes*, Feb. 27, 2002, <http://www.forbes.com/2002/02/27/0227analysts.html>. "When financial instruments, or the organizations that create them, become too complex for democratic institutions to understand, they successfully evade oversight. A good rule of thumb should be that opacity is a warning sign, not a badge of honor." "Lessons of Enron," op. cit.

21. Frank A. Wolak, Making Sense of the Enron Nonsense, Policy Brief, Stanford Institute for Economic Policy Research, May, 2002,

[http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=7&ved=0CG0QFjAG&url=http%3A%2F%2Fwww.stanford.edu%2Fgroup%2Fsiepr%2Fcg-bin%2Fsiepr%2F%3Fq%3Dsystem%2Ffiles%2Fshared%2Fpubs%2Fpapers%2Fbriefs%2Fpolicybrief\\_may02.pdf&ei=ogSjU7XKE8-BqgaAroDwAg&usq=AFQjCNEjUYEYdCDjIBk875IMkasdJXq3nw&sig2=GyQ0CiXGDBVKdLfrTi6w&bvm=bv.69411363,d.b2k](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=7&ved=0CG0QFjAG&url=http%3A%2F%2Fwww.stanford.edu%2Fgroup%2Fsiepr%2Fcg-bin%2Fsiepr%2F%3Fq%3Dsystem%2Ffiles%2Fshared%2Fpubs%2Fpapers%2Fbriefs%2Fpolicybrief_may02.pdf&ei=ogSjU7XKE8-BqgaAroDwAg&usq=AFQjCNEjUYEYdCDjIBk875IMkasdJXq3nw&sig2=GyQ0CiXGDBVKdLfrTi6w&bvm=bv.69411363,d.b2k).

22. Benjamin Graham, *The Intelligent Investor*, revised edition, with commentary by Jason Zweig (New York: HarperCollins, 2003), p. 524.

23. "The Teen Brain," op. cit.

24. Some early quantum physicists used to say that if you wanted to discover something revolutionary in their field, do it before you're 30, since most of them made their great discoveries at an early age. Today some argue that while this was true when quantum physics was first breaking on the scene, today the average age may be around age 45. They theorize that quantum physics was such a sharp break from Newtonian physics, that young scientists had an advantage by not being immersed in the old paradigm. Charles Q. Choi, "The Stroke of Genius Strikes Later in Modern Life," *Live Science*, Nov. 7, 2011.

25. Changes in seating structure can make a huge difference in the flow of ideas. At Pixar, the leadership changed from a large rectangular table to a round table, in order to encourage more people to share in their "brain trust" meetings. Also, they wouldn't allow Steve Jobs to attend, because his personality was so strong that it might inhibit sharing. The Harkness method of teaching emphasizes the benefits of teaching smaller groups around round tables. [http://en.wikipedia.org/wiki/Harkness\\_table](http://en.wikipedia.org/wiki/Harkness_table). One day last semester, I sat down in the back of a classroom to listen to a student presentation and I felt a sharp pain in my back. After the presentation, I told the students that I'd conduct the remaining discussion from the chair. I was amazed at how this changed the entire dynamic of the discussion. I noticed that especially the students closer to me felt more open to share.

26. This recommended trail comes from a conversation with clinical psychologist Dr. Ken Walker.

## Chapter 25: They Fail to Reason with Emotional Intelligence

1. Bethany McLean and Peter Elkind, *The Smartest Guys in the Room* (New York: Penguin Group), p. 28.
2. Ibid.
3. Jon Gertner, *The Idea Factory* (New York: The Penguin Press, 2012) p. 231.
4. Ibid., pp. 229, 230, 231, 262-265, 289. Surveys about mobile (cell) phones indicated there wasn't a need for them, but Bell Labs went ahead with them and won big time. One person surmised that surveys such as these aren't effective when dealing with products that have never before been introduced. People often don't know that they need something until they have it.
5. I heard Jeff Haynie, co-founder and CEO of Appcellerator, sharing this at Kennesaw State University's annual social media conference: SoCon.
6. Paul Edwards, William P. Alston and A.N. Prior, Bertrand Arthur William Russell, *The Encyclopedia of Philosophy*, Vol. 7 (New York: Macmillan Publishing Co., Inc., & The Free Press, 1967), p. 239 - "Russell has exercised an influence on the course of Anglo-American philosophy in the twentieth century second to that of no other individual. "Moreover he had a fantastic memory - in his latter 70s he spoke of remembering almost all his lessons from kindergarten in detail. Bertrand Russell, *The Autobiography of Bertrand Russell* (New York: Bantam Books, 1968), p. 19.
7. Paul Johnson, *Intellectuals* (New York: Harper & Row, 1988), p. 199.
8. Edwards, et. al., op. cit., pp. 235ff. While these authors refer to him as a "great and honest man," (p. 238), one must wonder about his grandiose statements in his writing which seem to have little if any support from honest, objective research. Was it "honest" to present material as solid fact, when it wasn't adequately researched? Surely his former wives, and the husbands of the wives he seduced, would size him up differently. Historian Will Durant "trembled" as he recalled Russell pursuing his wife Ariel, and later reading Russell state his view that any man out of town on business for more than three weeks should be temporarily released from monogamous restrictions. Will and Ariel Durant, *A Dual Biography* (New York: Simon & Schuster, 1977), p. 119.
9. For example, Alister McGrath notes that Russell, in his *History of Western Philosophy*, quotes the urban legend rendition of John Calvin versus Copernicus. *The Twilight of Atheism* (New York, Doubleday, 2004), pp. 80,81.
10. *Intellectuals*, op. cit., p. 198.
11. Katherine Tait, *My Father, Bertrand Russell* (New York: Harcourt Brace Jovanovich, 1975), p. 197.
12. *Intellectuals*, op. cit., p. 199.
13. Ibid., p. 202.
14. Ibid., p. 202.
15. Ibid., p. 216.
16. Ibid. Note also Russell's self-evaluation in a statement to his fiancée: "Once for all, G. A. [God Almighty] has made me a theorist, not a practical man; a knowledge of the world is therefore of very little value to me." *The Autobiography of Bertrand Russell*, op. cit., p. 127.
17. Ibid.
18. Colin Brown, *Philosophy and the Christian Faith* (Downers Grove, Illinois: InterVarsity Press, 1968), p. 227.
19. Katherine Tait, op. cit., p. 184.
20. Ibid., p. 98.
21. Ibid., p. 176. She also noted, "Both our parents, however, were born rebels, passionately convinced that everything the government was doing was completely misguided, if not deliberately wicked....", p. 19.
22. Ibid., p. 6.
23. Paul Edwards, et. al., p. 256. On Russell's childlike "me first" attitude, remember in his autobiography when he pursued another woman regardless of how it might hurt her husband (*Bertrand Russell*, op. cit., pp. 274ff.) In one of his affairs with a woman in the USA, he made her big promises to commit to her, then dropped her. His actions reveal arrogance and self-centeredness of grand proportions, underscored by his tendency to gross overstatement with inadequate accompanying evidence and intellectual bullying of all who disagreed with him. Contrast this with his claim, in the first page of his autobiography, to have great concern for the plight of people.
24. Paul Edwards, William P. Alston, A. N. Prior, "Bertrand Arthur William Russell," *The Encyclopedia of Philosophy*, Vol. 7 (New York: Macmillan Publishing Co., Inc. & The Free Press, 1967), p. 256.
25. Bertrand Russell, *The Autobiography of Bertrand Russell* (New York: Bantam Books, 1968), p.132. From a letter to his fiancée, Alys.
26. On his lack of objective scholarship and his tendency to quote any story that bolstered his argument, see *Intellectuals*, op. cit., pp. 204-212.
27. For instance, the following essay, which purports to discover if Christianity has been a source for good, virtually ignores all the positive evidence and merely makes grandiose statements. This essay shows an astounding lack of scholarship, misrepresentations of people who believe differently from him, and a tendency toward revisionist history. "Has Religion Made Useful Contributions to Civilization?" <http://www.positiveatheism.org/hist/russell2.htm>.

In his first paragraph, Russell answers the question posed in his title as follows: "It helped in early days to fix the calendar, and it caused Egyptian priests to chronicle eclipses with such care that in time they became able to predict them. These two services I am prepared to acknowledge, but I do not know of any others." Seriously? Apparently, he never bothered to study history to research the profound contributions made by Christianity in halting legal infanticide in early Rome, starting hospitals, starting the Red Cross, stopping the slave trade in Britain and America, formulating the scientific method, establishing human rights in America's founding documents, feeding the poor, founding colleges and secondary education for all, worldwide literacy, etc. Of the many books that document these contributions, a good place to start might be the well-documented study by sociologist Alvin J. Schmidt, *Under the Influence: How Christianity Transformed Civilization* (Grand Rapids: Zondervan, 2001).

When I read articles such as this one, it's difficult to understand why people revere Russell as such a fearless defender of truth. Rather, he seemed to be a person who fearlessly and vigorously spoke his mind. But often, his opinions weren't based upon any serious research or dialogue with experts in the fields he addresses. In fact, when we look more closely at his essays, we find the very fundamentalist approach that most intellectuals claim to deplore: an appeal to emotions, an intolerance for the opinions of scholars who disagree, and cherry-picked facts rather than objective study.

28. One of the primary steps in any serious research is to ensure that you've read and/or listened to positions that oppose your own. A part of this involves thoroughly acquainting oneself with "background information" on the topic. What have others already researched in the area? What conclusions have they come to? See, for example, Peter J. Taylor and Jeremy Szteiter, *Taking Yourself Seriously: Processes of Research and Engagement* (Arlington, Massachusetts: The Pumping Station, 2012), pp. 9,21.

29. Colin Brown, op. cit., p. 227.

30. Paul Johnson, op. cit., p. 209.

31. Ibid., pp. 208,209.

32. Ibid., pp. 209,210.

33. Ibid., p. 212.

34. Ibid. For more on Russell's extremism, emotionalism, and lack of objectivity, see especially pp. 204-211 of Johnson, op. cit. He would collect and disseminate propaganda with no pretense to partiality, kept changing his view of pacifism, preaching each new view with equal fervency to the ideas he formerly held. He went to extremes, seemingly unable to find reasonable mediating views. Johnson found in him a "Lack of concern for the objective facts, the attribution of the vilest motives to those holding different views..." (pp. 208,209). According to his daughter, he needed certainty; he was an absolutist. Katherine Tait, op. cit, p. 184. In this way, he played the part of the fundamentalist.

35. Katherine Tait, op. cit., p. 58.

36. Ibid., p. 60.

37. Ibid., p. 62.

38. Johnson, op. cit., p. 219. On their children's anxieties, see not only their childrearing methods [he'd later confess that he "failed as a parent" (p. 219)], but how their innovative school, led by Russell and his wife, contributed to the problems. By assuming that children should be given extreme freedom (choose whether to attend classes, express whatever they want in whatever foul language they desired, etc.) the lack of supervision allowed bullying and caused other emotional traumas that his parents didn't notice. On his children's anxieties, see Katherine Tait, op. cit., pp. 58-61, 67,68,118-128,180. The view of the school from his daughter's perspective is enlightening. (p. 215).

39. Johnson, op. cit., p. 202.

40. Tait., op. cit., p. 39.

41. Johnson, op. cit., p. 198.

42. I believe I read this comment in one of John Warwick Montgomery's books.

43. Edward de Bono, *Six Thinking Hats* (New York: Little, Brown & Company, 1985), pp. 34-79.

44. Schultz, Howard and Dori Jones Yang, *Pour Your Heart Into It: How Starbucks Built a Company One Cup at a Time* (New York: Hyperion, 1997), p. 156ff.

45. Malcomb Gladwell explores both the positives and negatives of intuitions and first impressions in his popular book *Blink: The Power of Thinking without Thinking* (New York: Little, Brown and Company, 2005).

46. *Einstein: His Life and Universe*, by Walter Isaacson (New York: Simon & Schuster, 2007), p. 113.

47. Ibid., p. 335.

48. Leonard L. Berry, Kent D. Seltman, *Management Lessons from Mayo Clinic* (New York: McGraw Hill, 2008), pp. 1,2.

49. *The Smartest Guys in the Room*, op. cit., p. 405.

50. Katherine Tait, op. cit., pp. 191,193,195.

51. On studying what makes people happy, see David G. Myers, *The Pursuit of Happiness* (New York: Avon Books, 1992). On Cliff Baxter's suicide, see *The Smartest Guys in the Room*, op. cit., pp. xvii, xviii.

52. Michael J. Sandel, *Justice: What's the Right Thing to Do?* (New York: Farrar, Straus and Giroux, 2009).

53. Thus, Page and Brin at Google have adopted the mantra, "Don't do evil." Many of their decisions along the way sacrificed money in the short haul, for the sake of not doing evil to people. If they fail to hold to this ideal, with all the information and resulting power they hold, we're all in trouble. See "10 Things We Know" - <http://www.google.com/about/company/philosophy/>. Perhaps De Bono could recommend "Is it right?" as a seventh thinking hat. But he'd probably say that our moral thinking should have come out in one or more of the other thinking hats.

54. *Intellectuals*, op. cit., p. 342.

## Conclusion: On a Passion for Seeking Truth

1. Norm Augustine, "The Education Our Economy Needs," *The Wall Street Journal*, Sept. 21, 2011.
2. Leonard L. Berry, Kent D. Seltman, *Management Lessons from Mayo Clinic* (New York: McGraw Hill, 2008), p. 71.

## About The Authors

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