

IDENTIFYING LOGICAL FALLACIES
(Epistemological Analysis Status Report)

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In 1974, John Chipka, a founding member of the Church of Reason, then known as the Seekers of Eternal Truths and then known as the First Church of Rational Conscience, after careful study and analysis, penned a list of twelve fallacy detectors which, for the past few years, he and this author, a Minister of the Church of Reason, have been studying in depth. It should be pointed out that John has never claimed that his twelve fallacy detectors are an exhaustive list; he has suggested, however, that a good knowledge and understanding of those twelve should enable us to detect fallacies in most circumstances.

Fallacy detection, like any other epistemological analysis, is, of course, an ongoing process, at least in part, because, unless we make the mistake of coming to conclusions which become dogma in our own minds or coming to conclusions which we espouse as though we know it all, must always be subject to careful examination in our search for truth. In each case, after John wrote the twelve fallacy detectors all those years ago, over time he identified also some kind(s) of fallacies that each of these questions might – or even should – detect. Then, three or four years ago, in trying to discuss fallacies and avoiding them in everyday life, but my not really getting the hang of it, I told John that I needed help to understand how the whole fallacy detection “thing” works. He and I then set out to develop examples, the more basic and simple the better, which would, hopefully, make the process clear, for me at least. In doing so, in order to avoid the fallacy of generalizing from a unique experience, we – sometimes painfully – forced ourselves to come up with at least two examples of each. The examples we came up with, in many

cases, of course, may fall into one or more additional categories than where we have put them.

It is the purpose of this paper to present a status report on our analysis to this point, and to invite input from Philosophical Club members which might enhance or correct the conclusions we have reached so far.

To begin with, a bit of background – For that, let’s take a look at John Stuart Mill’s Fallacy Tree, his basic classifications, in order of elimination--

A	A	F of SIMPLE INSPECTION	=====	=====	1.	Fallacies A_Priori
L						
L				INDUCTIVE	2.	Fallacies of
			from evidence	Fallacies		OBSERVATION
F			DISTINCTLY-----			
			conceived		3.	Fallacies of
L						GENERALIZATION
L						
A				DEDUCTIVE	4.	Fallacies of
C				Fallacies=====		RATIOCINATION
I			from evidence			
E	B	F of INFERENCE	INDISTINCTLY==	=====	5.	Fallacies of
S			conceived			CONFUSION

If we eliminate fallacies of SIMPLE INSPECTION, which are a direct link to A Priori (No. 1) fallacies, we are left with fallacies of INFERENCE, which are all the rest.

If we then eliminate fallacies of CONFUSION (No. 5), which proceed “from evidence INDISTINCTLY conceived”, we are left with INDUCTIVE and DEDUCTIVE fallacies “from evidence distinctly conceived”.

If we then eliminate DEDUCTIVE Fallacies, which are Fallacies of Ratiocination(No. 4), we are left with INDUCTIVE Fallacies.

Finally, if we then eliminate fallacies of OBSERVATION (No. 2), we are left with Fallacies of GENERALIZATION (No. 3) – or the opposite (eliminate Fallacies of GENERALIZATION, leaving Fallacies of OBSERVATION); in other words, one or the other.

With that background on the subject, and John's "intimate" knowledge of the subject, our analysis, to date at least, has produced the following:

1. **HAS A CONNECTION BETWEEN TWO FACTS BEEN ACCEPTED AS A CONCLUSION FROM EVIDENCE?**

Answering this question might, or should, reveal Fallacies of INFERENCE, such as (a) *argumentum a contrario* (in other words, if one thing is true, then the opposite result is true in the same way), or such as (b) *enumerative induction* (that is, the conclusion ignores plurality of causes).

For our first example, we used traffic accidents and possible causes. We said that, hypothetically, "if twenty percent of traffic accidents [fact 1] are distraction related [fact 2] and almost every car we see these days has the driver talking on a cell phone, then equipping all new cars with cell phone jamming devices on their ignitions [causal connection or conclusion] should reduce traffic accidents by that same twenty percent. The conclusion here is—or at least may be—a Fallacy because the reasoning fails to take into account other possible distractions.

In our second example, we used the issue of outlawing guns . [Fact 1]: People use guns to commit crimes (robbery, assault, etc). [Fact 2]: If no access to guns, people can't use guns to commit crimes. This is a Fallacy because the reasoning blames the device rather than the action with the device, and fails to take into account that, at least in part, if there are no guns, criminals will use something else.

2. **HAS A CONNECTION BETWEEN TWO FACTS BEEN ACCEPTED AS AN AXIOMATIC, SELF-EVIDENT TRUTH?**

Answering this question might reveal Fallacies of SIMPLE INSPECTION, such as (a) *undue assumption of axioms* or (b) *assumption of false premises*.

Take, for one example, the notion that “what goes up must come down.” Some things go up [fact 1], such as airplanes, things tossed in the air, etc., and some things go or come down [fact 2], such as rain, snow, etc. There is a Fallacy involved here because the reasoning fails to take into account all circumstances, variables, and qualifications, such as whether or not the circumstance is within the gravitational pull or not, or the fact that gravity sorts fluids by their density.

Next, some say that black cats are bad luck; walking under a ladder is bad luck, etc. – perhaps superstitions in general. There are black cats [fact 1] and people walk under ladders [another fact 1], and there is bad luck [fact 2]. Making these connections as axiomatic and/or as self-evident truths is a Fallacy because the reasoning fails to bring into account all factors that may be involved and, of course, one doesn’t always lead to the other.

3. IS OUR VIEW OF THE EVIDENCE THE SAME WHEN WE USE IT IN DRAWING OUR CONCLUSIONS AS WHEN WE COLLECTED OR RECEIVED IT?

By answering this question, we may reveal whether we have, inadvertently, changed our minds about what the evidence proves. This leads to Fallacies of CONFUSION like those of (a) ambiguous terms or *amphibole* (or word order)¹ or (b) *petitio principii* (which means assuming as a premise the thing to be proven) and which includes *hysteron proteron* and circular argument.

In our first example, a person finds an odd plant in his yard which wasn’t there during the ten years since planting the lawn and which he did not plant – his view when collecting the evidence. He then goes inside, checks the encyclopedia for this plant, and learns that it usually only grows naturally in hot climates. He concludes that it is a consequence or effect of global warming – his view when drawing his conclusion. There is a fallacy here because his reasoning overlooks that the plant might have spread from the

¹ The words themselves are not ambiguous but the order the words are used creates the ambiguity.

yard of a neighbor who might have planted it because he liked it; in other words, there could be a plurality of causes.

In our second example, we discover a building “tagged” and another building torched, both of which were not that way a week ago [our view when collecting the evidence], and we conclude either that there were two different vandals because there were two different types of vandalism or we conclude there was only one vandal who did both since they were discovered at the same time [view when drawing the conclusion]. In either case, a Fallacy would be involved because the reasoning either overestimates or underestimates the force of the evidence.

4. **IS OUR CONCLUSION THE SAME ONE WE SET OUT TO PROVE?**

By answering this question, we may be helped, as with Question No. 3, to avoid committing Fallacies of CONFUSION or Fallacies of DIVERSION, such as (a) *red herring*², which may be defined as leading a person away or diverting from a point one doesn't want discovered, or (b) *ignoratio elenchi*, which may be synonymous with *straw man argument*, which is ignorance of the matter in dispute or proving the wrong point.

In our first example, we have a city council member who is attacking a guy who wants to build an incinerator because the council member believes it will increase pollution; but, not wanting to get into a “green” argument, he claims that it will be an eyesore for the city because it will be big and ugly. There is a Fallacy involved here because the attacker's reasoning fails to take into account, at the very least, that the incinerator will not increase pollution since the scrubbers will clean the air prior to it going into the stack.

For a second example, we might say that an older person sets out to prove that the time has come to move to an apartment or condominium. He considers that his house has

² Insistence on irrelevancies. Fernside & Holther p. 126.

too many stairs, too large a house and yard to take care of, and the house is too costly to maintain. But then, as he is looking for an apartment or condo, he sees and falls in love with a smaller, one floor house, and he concludes that he should move there, ignoring the fact that the yard is even larger than his current house and the maintenance costs are higher. The fallacy here is quite clear, since he intended to prove that his current living arrangements are too much for him to handle both physically and financially, but the point proven was that a smaller, one floor house will make him happier.

5. HAS A WRONG GENERALITY³ BEEN DRAWN FROM PERFECTLY CLEAR EVIDENCE?

The purpose of this question is to reveal Fallacies of INFERENCE, such as errors of causal analysis⁴, one of which is *post hoc fallacies*, meaning “after this” or “therefore, because of this”.

Fortunately, this fallacy detector is a very simple one to understand and easy to illustrate by examples. The first, “The streets are wet, so it has been raining,” is a Fallacy because the reasoning fails to take into account the plurality of causes.

Second, “Thunder makes milk go sour” is a Fallacy because the reasoning fails to understand that there is no causal connection between the two phenomenon. This idea of a causal connection may have arisen because thunder occurs in hot weather and unrefrigerated milk will sour in heat.

This particular fallacy detector was, by the way, this writer’s first real world introduction into fallacies many years ago and really helped me to realize the importance, to one’s very survival, of avoiding fallacies in reasoning. In my particular case, I had read an article in the Cleveland Plain Dealer Sunday Magazine about a couple who had survived a car crash and attributed their survival to their car having air bags. That certainly seemed

³ Conclusion versus generality: conclusion is end of the deduction process whereas generalities are part of the induction process where we are trying to get to a conclusion.

⁴ Lionel Ruby, Logic, An Introduction (Second Edition), pp. 417-420

logical to me, but, for some reason, I questioned whether that reasoning could be relied upon. I then asked one of our other Church members, now deceased, who was very good at reasoning, whether anything else could have contributed to their survival. He said, of course, there were many other reasons, some of which were the speed the cars were going or the angle at which the cars struck each other, or whether they were also wearing seat belts, to name just three.

6. IS ALL THE EVIDENCE MADE UP OF CONCRETE SPECIFIC FACTS?

The aim of this question is to draw a distinction between objective facts and ideas that are interpretation of those facts. Answering this question may reveal Fallacies of SIMPLE INSPECTION. Answering this question may also reveal Fallacies of INFERENCE) such as, again, *post hoc fallacies*.

For a first example, a person has droplets of moisture on his/her brow and his/her clothes are wet, and we interpret what we see as that the person is sweating profusely, which could lead the observer to inaccurately make a determination regarding either the person's health or even that they are lying about something. This is a Fallacy because the reasoning fails to consider what else may be going on, such as the person just got out of a pool or lake and hadn't towed off yet.

For a second example, during jury *voir dire*, an actor appearing as a mock witness is brought into the courtroom appearing drunk, and the potential jurors are asked to describe what they saw, to which at least one potential juror states that the mock witness is drunk. He should have, instead, stated that the mock witness had slurred speech, a staggered gait and unfocused vision. A Fallacy has been committed because the reasoning fails to specify what was really perceived, but, instead, specified an interpretation of what was perceived, and did not take into account other causes such as physical impairment.

7. DOES THE EVIDENCE CONSIST PARTLY OF FOREGONE CONCLUSIONS?

In answering this question, we hope to reveal Fallacies of DEDUCTION, such as (a) *loaded question*, (b) *plurium interrogationum*, (c) assuming a fact not in evidence, and/or (d) *non causa pro causa*, which means putting words in the other person's mouth or false cause).

One might say, in our first example, that since we now have the interstate highway system, railroads should be abandoned as they are no longer needed for national defense. Of course, this is fallacious reasoning because it fails to consider that railroads are good for more than national defense, and because the reasoning, in this instance, including "needed," overstates the case as, obviously, railroads are still useful and they continue to carry heavy loads.

As a second example, one might say that the sky is dark, so a storm is coming. Again, of course, such reasoning is fallacious because it fails to consider that a dark sky can result from other causes such as evening approaching or just thick clouds.

8. IF THE EVIDENCE IS A MIX OF ALLEGED "FACTS" AND TRUE GENERALITIES, COULD ANY OF THE ALLEGED "FACTS" BE FALSE?

Revealed, again hopefully, in answering this question are Fallacies of INDUCTION, such as *oversimplification*.

Litterbugs should be arrested and be made to clean the mess they made or clean some mess – the true generality in this example. So, when we see a teenager standing near a pile of heath bar wrappers or a pile of chip bags, and he has a heath bar or a bag of chips in his hand, we conclude that he is the litterbug – alleged facts, and we have him arrested for littering. Our Fallacy here arises because our reasoning fails to check the facts as to this specific teenager.

A notable columnist, proceeding from the true generality that a true lady will induce certain behavior in a man, once defined "a lady" as "a woman in whose presence a man

behaves like a gentleman.” The columnist reasoning was fallacious because it failed to take into account that there are other things that could cause a man to behave as a gentleman even if the “lady” is not at “lady” such as he wants a political donation or consideration for a job, or a promotion, or if he was raised to treat all women as ladies whether they are or not.

9. ARE THE CONCLUSIONS UNSUPPORTABLE, EVEN WITH SUPPLIED, TRUE EVIDENCE?

Answering this question may reveal Fallacies of DEDUCTION, such as *undistributed middle term*. For a list of additional fallacies that may be revealed by answering this question see Logic, An Introduction (Second Edition), by Lionel Ruby.

In this analysis, we used syllogisms for our examples. The first:

“All alligators are reptiles.”
“All snakes are reptiles.”
Therefore, “All snakes are alligators.”

fails because the middle or connecting term is not referred to in totality. In other words, nowhere does the middle term (“reptiles”) state “all of,” and the middle term must be distributed at least once.

The second syllogism:

“Some Greeks are heros.”
“Some heros are Britains.”
Therefore, “Some Britains are Greeks.”

fails for the same reason since nowhere are “all heros” referred to.

10. DOES THE EVIDENCE CONTAIN SOME POINT THAT WAS MISSED WHEN IT WAS FIRST RECORDED AND ACCEPTED?

The answer to this question may reveal INDUCTIVE Fallacies such as non-observation fallacies, which would include (a) *jumping to conclusions* or (b) *oversimplification*..

A person is hurriedly driving through a town and notices clean and neat looking properties with well manicured lawns, almost all having red and white signs in the front yards, and he or she concludes that all such houses are for sale – having missed that the town’s school colors are red and white and the signs are congratulations to recent town high school graduates. The Fallacy here is because the reasoning reads more into the evidence than was justified; that is, thinking you have more evidence than you really have.

During the Truman v. Dewey presidential election, it was projected that Dewey would win based on phone calls to voters who said they would vote for him, and it was even printed in the newspaper that Dewey had won – having missed the fact that only the rich had phones and not all voters were rich. The Fallacy here is for the same reason as the first example regarding lawn signs.

11. DURING THE RECORDING, WAS AN UNRELIABLE INDICATOR TAKEN AS A MARK OF A FACT?

The purpose of this question is to reveal Fallacies of MAL-OBSERVATION, such as *treating emotional valuations as identifications*.

For our first hypothetical, we said that a thief disappears off of a dock with \$80,000. Police look and can’t find a body. It is assumed that someone picked him up in a boat or that he swam to another shore and was picked up. They go to a suspect’s girlfriend’s house and find the passenger seat of her car wet. The wetness is taken as evidence that the thief had been in her car, whereupon the police accuse her of assisting the man and hiding him, and she is prosecuted – BUT his body is later found and it turns out that his wife had shot him. The Fallacy arises here because the reasoning fails to realize that wetness only proves that somebody or something was wet that was in the car; it fails to correctly identify the source of the wetness.

For our second hypothetical, we said that a person finds a wine bottle, without a cap, lying in the grass in a paper bag, with enough of the label showing to know it is, for example, Wild Irish Rose. The person assumes it is empty without turning it over to see if anything pours or drips out because, perhaps, he or she has concluded that a person who would drink on the sidewalk or street and discard the bottle in the grass would most assuredly finish the bottle. A fallacy in reasoning occurs here because the conclusion was based on an interpretation of the evidence, rather than the evidence itself.

12. WERE INACCURATE GENERALIZATIONS MADE WHILE THE EVIDENCE WAS GATHERED?

The answer to this question has the capacity to expose Fallacies of **INDUCTION**, such as (a) *faulty classifications* or (b) *oversimplification*.

For our first example of this final fallacy detector, we used a silly scenario, and said that a farmer plans to clear a forest for a corn field. He wants to sell some of the cut timber for lumber and use some of it for firewood. He divides his trees by (a) tall ones, (b) evergreens, (c) saplings, and (d) nut-producers, like oak, hickory and walnut. It doesn't take much to understand the fallacy in reasoning because it is both non-exhaustive and non-exclusive. Such classifications do not provide one and only one place to classify -- such as oak and/or hickory are both tall and are both nut-producers].

For our second example of this final fallacy detector, we have a person who looks at a particular table of books in his school or church library and says that all the books on that table are in English. He even supports his statement by saying that he knows that to be true because a book in a foreign language has never been put on that table. A fallacy exists with this reasoning since it fails to account for someone putting a foreign language book on the table inadvertently or accidentally or without enough knowledge to know not

to. In other words, something has been used as a fact that is not a dependable mark or indicator.

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So, in using and answering these questions to form opinions or prepare an argument, which, as John put it, are just unproved fact or theory, keep in mind that their main purpose is to give a person the means to attack a suspicious argument. And, further, keep in mind John's "Anatomy of An Argument", the "organs" in the body of the argument, all of which are contained in the twelve questions in one way or another:

1. Axioms assumed;⁵
2. Original primary data observed;
3. Counts, subdivisions and relationships observed;
4. Previously accepted generalizations;
5. Generalizations made during observation;
6. Assumptions made during observation;
7. Conclusions drawn about the observations;
8. Summary and call for action or for a decision.

In conclusion, I must say that, having gone through this analysis with John over these last few years, I really am beginning to have a better understanding of detecting fallacies. I do believe that this understanding helps me to analyze situations better in order to recognize as many of the multitude of fallacies that exist and to make better decisions in sustaining and enhancing my own life, as well as in counseling those who may seek my assistance as a minister of reason. I hope that the information presented in this paper may also be of some help to those of its readers who may be suffering from the same inadequacies in detecting fallacies as I have had throughout most of my life. I find it vitally important since I try to follow the advice of the late Bob Dunn, founder of the Church of

⁵ Such as "A is A", "where there's smoke there's fire", etc.

Reason and a member of the Philosophical Club of Cleveland, that "it is not sufficient to express oneself so that one may reasonably be understood, it is necessary to express oneself so that one may not be unreasonably misunderstood."

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