Critical Reasoning - 04 Fallacies

In the preceding critical reasoning units we have been focusing on ways to get arguments right, striving for validity, cogency, soundness, strength of argument and analogy; however it is also instructive to learn from how we get arguments wrong. Faulty arguments are known as **fallacies** and they are usually grouped according to how they go wrong. The broadest such grouping comprises of arguments that just don't follow. Such an argument is known as **a *non sequitur*** (Latin for "doesn't follow"). Strictly speaking all fallacies are *non sequiturs* because, one way or another, their conclusions just don't follow from their premises; however the term *non sequitur* is usually reserved for fallacies that defy classification such as the following one:

> Why are you whistling?
> It keeps the elephants away.
> Surely that can't be true.
> Do you see any elephants?
> No.
> Exactly!

How to describe such arguments? The words "loopy", "bizarre", and "Get help!" spring to mind; however *non sequitur* is a good label because they simply don't follow or warrant any further analysis.

All other fallacies have been variously classified from Aristotle's "Sophistical Refutations" down to the present day. Since not arguing fallaciously is more important than actually classifying them correctly, we will simply follow a few guidelines when thinking about fallacies. Firstly, we should be sure that we are dealing with a fallacy proper and not a factual error. One person may be mistaken that it will rain tomorrow, and if it doesn't, yet mistakenly believe so based on a strong argument. So, being mistaken is one (forgivable) matter, while arguing mistakenly is quite another. Secondly, we need to ask whether there is something wrong with what someone is claiming or with how they are speaking or writing. If an argument itself is faulty then it is due to either a **formal** or **material**

fallacy. If, on the other hand, an argument is defective because of the way it is worded, then it involves a **verbal fallacy**. A **formal fallacy** involves some defect in the structure of an argument; whereas a **material fallacy** involves some kind of problem concerning the facts of the matter being argued. Material fallacies can be further subdivided into **fallacies of evidence** which do not support the conclusion with sufficient evidence and **fallacies of relevance** which do not support the conclusion because they are simply irrelevant. Fallacies of relevance are also known as **fallacies of distraction** because they try to draw the audience's attention away from the argument proper, by irrelevant means such as emotionalism. A discussion of the most common fallacies follows.

Formal fallacies

Remember that a formal fallacy is due to a structural defect in an argument, *i.e.* something about the way that an argument has been put together. In short, any deductive argument that is invalid will be fallacious. We have already encountered two misuses of the argument *modus ponens* which are invalid. Recall: **Affirming the consequent** and **denying the antecedent**. If for example, someone starts with a conditional statement such as, "If it is a car then it is a mode of transport" and then affirms the consequent by claiming that it *is* a mode of transport and then insists that it *must be* a car, or denies the antecedent by claiming that it *is not* a car and then insists that it *must not be* a mode of transport, then he or she is arguing fallaciously because neither conclusion follows. There is something structurally wrong with such arguments and that something is invalidity.

Misapplication of any of the elementary rules of inference that we learned in Critical Reasoning Unit 02, or misapplication of any combination of them will result in an invalid argument that is representative of a formal fallacy. It is not possible to list every such resultant fallacy because there are an infinite number of invalid combinations. However, we may note that the two already mentioned above are by far the most common.

Material fallacies

Begging the question (*petitio principia*) or **circular arguments** are probably the most obviously fallacious forms of argument because they reach their conclusion by simply assuming, as one of their premises, what the argument is intended to prove. *E.g.*

> The MMR vaccine causes autism because it is known to causes mental disorders among children.

This is an utterly unconvincing argument because autism *is* a mental disorder, so by simply assuming what one is trying to prove, is proof of nothing. Not only is this argument fallacious, it is downright dangerous too, because any parent who falls for it and prevents his or her children from being vaccinated is putting the health of their children as well as their community at risk. Variations on this argument have been touted by several celebrities recently, and in an age that values celebrity status above expertise, the risk is only compounded.

Irrelevant conclusions or "red herrings" (*ignoratio elenchi*) divert attention away from the argument proper rather than engaging with it. There are perhaps ten or more such varieties; however the following six are very common.

Appeal to authority (*ab auctoritate* or *ad verecundiam*) is a fallacy in which a claimed authority is used to support the conclusion. *E.g.* "Celebrity x believes that the MMR vaccine causes autism, therefore we should stop our children from being vaccinated." What celebrity x believes is totally irrelevant to the fact of the matter. Unless celebrity x happens to moon-light as a virologist or epidemiologist, his or her opinion is utterly irrelevant to the medical question at hand. So an appeal to authority is a desperate attempt to associate an argument with then the allure or aura of someone auspicious or highly regarded in the hope of affording it some degree legitimacy or authority, instead of actually engaging with the argument proper. Of course, there are times when we do need to appeal to a legitimate authority if we are in doubt, such as looking up an unfamiliar word in a trusted dictionary or consulting the periodic before doing an experiment or even just running something by our lecturers or professors because they are legitimate authorities in their respective fields.

An ***ad hominem*** is a fallacy that involves an attack or casting aspersions upon the arguer, rather than dealing with the argument itself - a.k.a. playing the man and not the ball. *E.g.* "How can you believe her talk about Climate Change when she, like, probably buys all her clothes at the thrift shop down the road. And, as for her hair! She looks like some kind of groupie form the '80s." As with all irrelevant conclusions, an *ad hominem* draws attention away from the argument to something irrelevant, instead of actually engaging with it. For all we know the woman in the example might be making a very strong case for Climate Change. Where she shops or how she does her hair her are entirely beside the point.

Poisoning the well is a special case of the *ad hominem* fallacy. Typically, an opponent will present information (true or false) to an audience that will prejudice a target in such a way that what she has to say will be discredited or made to sound ridiculous, even before she has had a chance to state her case. The term comes from the ancient practice of poisoning the wells before an invading army so as to weaken their strength. *E.g.* "Ladies and gentlemen, I should ask you to bear in mind that the speaker you are about to hear was once a drug addict, who has spent time in goal." True or false, this information is irrelevant and a distraction from what the speaker intends to say. For all we know she might be a shining example of someone who has turned her life around and is much the wiser for it.

Appeal to the majority (*ad populum*) is a fallacy in which a majority opinion or sentiment is used as a premise. *E.g.* "There are over a billion Catholics who believe that birth control and gay marriages are immoral. Who are you to say they are not? I mean a billion people can't all be wrong!" The problem with appeals to the majority is that the truth of the matter a) does not depend on what the majority thinks - believing doesn't make it so, and b) there have been many instances in which the majority *has* actually been wrong. Think of the belief in slavery or the view that the Sun went around the Earth. Once both of these were universally held to be true, for millennia, and now the majority believe the very opposite.

Appeal to ignorance (*ad ignorantiam*) is a fallacy that invokes ignorance about some matter to draw attention away from the main argument instead of engaging with it. *E.g.* "My psychologist says it's unhealthy to obsess over our relationship this way. And you believe her? Nobody knows how the mind works. I mean not really." While it is true to say that we don't fully understand the workings of the human mind, we do know a surprising amount compared to what we knew just a generation ago. Nevertheless, what we don't know are not grounds for arguing against what we do. The psychologist is almost certainly offering some very sound advice.

The **masked-man fallacy** (a.k.a. intensional fallacy or epistemic fallacy) in its general form may be symbolised as follows:

> I know x
> I do not know y
> ∴ x cannot be y

The masked man fallacy is so named after the following instance:

> I know Bob
> I do not know the masked-man
> ∴ Bob cannot be the masked man

For all we know, Bob may, in fact, moonlight as the masked-man, I just don't know it.

False dilemma (a.k.a. false dichotomy or bifurcation) is a fallacy that presents a choice between two divergent situations as if they were the only possibilities, and then demands that we choose one way or the other. *E.g.*

> Either you are for us or against us!

The problem with this example is that it excludes the possibility of neutrality or, when used as a threat, to subsume neutrality under the choice of hostile intent, when, in fact, a neutral stance is neither hostile nor supportive. Consider another example:

> Either we allow commercial surrogacy, whereby women rent out their uterine space to the highest bidder, or ban the practice outright and spare them from economic exploitation.

Again we are presented with a choice between two incompatible alternatives as if they there is no middle way. In reality, the issue of financially compensated surrogacy is a complex ethical issue that can't be forced into polar opposites that are manifestly black or white, right or wrong. That said, it does not follow either that there aren't some actions that would be wrong; only that they would have to be judged on their merits.

Hasty generalisation is a weak inductive argument from a few instances to a general conclusion that isn't warranted. *E.g.*

> I'm never going to be like my mother. She's been divorced three times and like she says, "All men are jerks."

Here the arguer is basing her appraisal of *all* men on the unfortunate experiences of her mother with just three. Given that there are about 3,5 billion men on the planet, any generalization that doesn't take a large and representative sample into account would likely lead to a hasty generalisation.

The **fallacy of accident** (*Dicto simpliciter ad dictum secundum quid* or simply, *Dicto simpliciter*) a.k.a. **sweeping generalization** results from the application of a general rule to a particular case, in which some special circumstance or "accident" exempts the rule from applying. According to Robert Burton in *The Anatomy of Melancholy*: "No rule is so general, which admits not some exception", hence the saying that the exception proves the rule. Symbolically, fallacies of accident looks like this:

> 1. Xs are normally Ys.
> 2. A is an X. (Where A is an exception.)
> 3. ∴ A is a Y.

E.g.
> All attacks on civilian targets are morally reprehensive. Therefore, firing on an enemy sniper positioned on a hospital rooftop is a war crime.

This argument is a fallacy of accident because, while it would normally be true that someone ensconced within or upon a civilian facility, such as a hospital, would be an illegitimate target, the fact that the man is an enemy sniper using the hospital roof for cover, excludes him from civilian status.

Faulty analogies result from comparisons being drawn between objects or situations that share very few or no relevant similarities. While we have already encountered such cases in the previous critical reasoning unit, variations on the following depressingly sexist, faulty analogy are all too frequently heard:

> My car, bike, computer *etc.* is like a woman. You have to know just how to handle her to get what you want.

What is wrong with such an analogy is that woman and machines share no relevant similarities, other than both being composed of matter, nor are they disposed or amenable to being "handled" or "controlled" like machines.

Loaded or **leading questions** pretend to be open but contain one or more controversial or unjusti-fied assumptions (such as guilt), that restrict the choice of answers. Often respondents will be damned no matter which way they answer. *E.g.* "Are you still beating your wife?" is a loaded ques-tion because (a) it presumes guilt and (b) even if the man replies "no" he will still seem to be admit-ting that he *was* beating his wife but now has stopped. Although there appear to be only two an-swers: "yes" or "no"; the correct response for an innocent man should be: ''I never started!" Be-

cause of the presumption of guilt and that they put the respondent in a bind, leading questions are not permitted in legal proceedings.

Guilt by association is a fallacy which assumes that because two or more people know each other or are associate with each other, one person's presumed guilt is associated with the other. *E.g.*

> My Lord, I submit to the court there are only two suspects in this matter: one a model citizen whose parents serve on the board of our illustrious Botanical Society and the other a sorry case whose every acquaintance is a ne'er-do-well and every friend a miscreant.

Who these suspects know or how their acquaintances are judged by society is immaterial to the evidence that must be weighed in this or any case.

Straw man fallacies misrepresent an opponent's position in an absurd or ridiculous manner which is easily refuted. The image is of a proponent dressed up as a scarecrow, which the opponent then proceeds to demolish. Obviously demolishing a straw effigy of an original does not even touch the original, let alone demolish it. *E.g.*

> I propose a Super Tax on the super-rich. Far too long has the tax burden in this country been borne by the struggling middle classes.

> So basically you're saying you want to penalise people for being too good at making an honest buck.

This straw man misrepresents and distorts the moderately liberal view that the wealthy should bare a proportionately greater tax burden than the middle classes because they can more readily afford to do so. Nobody is going to be penalised for doing what they do well. Only those who can already afford to pay a higher rate of taxation will be required to do so. If anything the middle classes who have hitherto borne the greatest burden of taxation will be relived. This is not the straw man that our interlocutor portrays.

Category mistakes or **category errors** may be semantic or ontological mistakes in which things belonging to one category are treated as if they belong to a different category; alternatively properties may be misattributed to a thing that could not possibly have such a property. *E.g.* The sentence:

> Colourless green ideas seep furiously

is nonsensical because, *inter alia*, it contains two category mistakes. Firstly, ideas cannot have colour because that property belongs only to the category of material things to which ideas do not belong. Secondly, the manner of furiously cannot be attributed to sleep because only the category of sentient organisms, of which sleep is not one, can meaningfully be said to act in such a manner. (Although, sleep can be meaningfully said to be "deep" or "light," "refreshing," or "disturbed.")

Whenever careless talk of mental attributes is concerned, category mistakes abound, as our future foray into the Philosophy of Mind should make clear. Here is another example of a category mistake that involves a mental attribute, first presented by Gilbert Ryle

Suppose a visiting foreigner asks you about Cricket, a game that they do not play in his homeland. You oblige, telling him all about the batsmen, bowlers, fielders, the wicket keeper, the umpire and their role in the game. He turns to you and says, "I've heard so much about this famous 'team spirit.' Who does the team spirit? I'd love to be the guy who does that."

Our foreigner is making a category mistake by assuming that team spirit is something that belongs to a separate category that somebody in particular does, whereas it is a collective attribute or state of mind of all the team players.

Category mistakes are also frequently deployed to comic effect as in the following example attributed to Groucho Marx.

Time flies like an arrow. Fruit flies like a banana.

The **slippery slope fallacy** is a series of graded events that are assumed, without reason or argument, to follow inevitably, one from the other. *E.g.*

Dad, I was hoping to have some girlfriends from school around for my birthday.

Girlfriends for a celebration? I'm not hosting a hen party under my roof, my flower. Next thing they'll be organizing a stripper and doing lines of coke off the bathroom floor.

All this poor girl wants is to have a good time with some friends on her birthday; however her father is lurching from one peculiar presupposition to another. It is simply not inevitable that a school girl celebration will descend into a hen party with all its accoutrements.

Slippery slope fallacies are readily incorporated into other fallacies such as the straw man fallacy above *E.g.*

I propose a Super Tax on the super-rich. Far too long has the tax burden in this country been borne by the struggling middle classes.

O.K. let's get this straight: you want to tax the rich to the point that they become poor, so that no one would ever again aspire to make an honest buck. I mean investors would flee and the economy would collapse. There would be mayhem and mass starvation!

Instead of the mildly liberal view that the wealthy should bare a proportionately greater tax burden than the middle classes because they can more readily afford to do so, what we get served up here is an inexorable descent into a post-economic dystopia, without reason or argument. However because this is also a straw man fallacy, the slippery slope sub-argument doesn't even impinge on the original proposal, which stands unchallenged.

The **Sorites paradox** is not a fallacy but is often used fallaciously to justify some dubious action. Consider a man with a full head of hair. Removing one hair makes no difference. The man still has a full head of hair. Nor would removing two hairs, or three or four… but if we continue in this fashion, at some stage the man would be almost bald or completely bald. So under the assumption that removing a single hair does not turn a man with a full head of hair into a bald man, the paradox to consider is what happens when the process is repeated enough times. Do the remaining hairs still constitute a head of hair? If not, when did the removal of one more hair result in baldness. There is no solution to the Sorites paradox because it arises from the vagueness of the predicates involved. Just as there is no one grain of sand that can be removed from a heap so that it is no longer a heap, there is no one hair that can be removed from a head of hair so that it becomes a bald head. (Wikipedia: Sorites paradox)

People who commit fraud or acts of wanton greed often justify their action by a fallacious appeal to a version of the Sorites paradox. *E.g.*

> Suppose a timber company receives a concession to log a forest so long as it promises to conserve it as a resource for the indigenous community who live there. The company correctly reasons that:
>
> > The removal of one tree will not make any difference, nor two, nor three *etc.* However, the removal of all trees will result in the forest ceasing to exist. Therefore there is no precise number of trees which define when a forest ceases to be a forest.
>
> To the horror of the indigenous community the company removes 95% of the trees claiming that those remaining still comprise a forest and that it has therefore discharged its duty to conserve the forest.

No true Scotsman is the name of a group of fallacies in which someone attempts to shield a universal generalisation from a counterexample by modifying a definition in the generalisation to a "TRUE X", so as to exclude the counter example. *E.g*.

> Every Scotsman loves haggis.
>
> My uncle was Scottish and hated haggis.
>
> But, no TRUE Scotsman would hate haggis.

Here is another example:

> All works of art depict an object of beauty.
>
> What about Picasso's *Guernica*? That depicts the agony of the Spanish Civil War.
>
> Well then, that is not a TRUE work of art.

The problem with such an argument, besides being fallacious, is that the arguer is prepared to erode the class of objects under discussion (*e.g.* works of art) just to avoid admitting that he or she might

be mistaken. Besides which, there is no arguing with someone who already "knows" that he is always right.

The **naturalistic fallacy** of the sort introduced in Hume's *Treaties* and taken up by Kant concerns the nature of "is-ought" claims. Accordingly, no number of facts about the way the world *is* can be adduced to argue for the way it *ought* to be. The English philosopher G. E. Moore defended a similar view. *E.g.* Just because all priests in the Catholic Church are male does not mean that you can conclude that they all should be. Although there may be other arguments to that effect; merely citing the status quo as a reason for a conclusion is not justified.

Similarly, **appeals to nature**, which claim that what is "natural" is inherently "good" and what is "unnatural" is inherently "bad," run afoul of the is-out distinction. *E.g.* It does not follow from the fact that the anatomy of our digestive system, including our dentition, is distinctly omnivorous, that we *ought* to eat meat. Nor does it follow that because vaccines are not "natural", we *ought not* to have our children vaccinated with it in order to protect them against a serious disease. Finally, many manufactures market their products as "natural" in order to promote sales, when strictly speaking, their claims are irrelevant.

These products all claim to be "natural". Would you be persuaded to buy them on the strength of this claim?

Verbal Fallacies

Equivocation is the fallacious use of the same word in two or more senses in different premises of the same argument. *E.g.*

> 1. A feather is light.
> 2. What is light cannot be dark.
> 3. ∴ A feather cannot be dark.

There is nothing structurally wrong with this little syllogism because it is a valid form of inference. What is problematic is that the word "light" is used in two different senses: first to mean "something with little mass," and second to mean "something of bright colouration." Because of the duplication of senses of "light" in the first premise, we actually have four terms in this argument, rather than the usual three for a syllogism, which is why an equivocation of this sort is known as the **fallacy of four terms**. Another kind of equivocation fallacy occurs where a word that can have different meanings in different contexts is used by an arguer who changes contexts so as to allow a **semantic shift**. *E.g.*

> Women needn't worry about man-eating sharks.

The equivocation here turns on the word "man," which can mean either "member of the species *H. sapiens*" or "male member of the species *H. sapiens.*" Another old chestnut is the **better than nothing equivocation**. *E.g.*

> 1. Stale bread is better than nothing.
> 2. <u>Nothing is better than pizza.</u>
> 3. ∴ Stale bread is better than pizza.

The problem here is that in the first premise, "better than nothing" means "of some (limited) value", whereas in the second premise "nothing is better" means "the best possible." So, because of the duplication of senses of "nothing," this is another instance of the fallacy of four terms.

Amphiboly (from the Greek ἀμφιβολία for 'the state of being attacked on both sides,') occurs when the grammatical structure of a sentence itself leads to ambiguity. *E.g.*

> An enthusiastic student hands her lecturer a fifty-page essay. He assures her that he will waste no time reading it. Should she be pleased because he means that he will not waste any time in getting down to reading it or should she feel despondent because he means that he will not waste any of his time by reading it?

Amphiboly can also be used humorously as in the following example, attributed to Groucho Marx:

> One morning I shot a walrus in my pyjamas. How he got in my pyjamas I'll never know.

It is *grammatically* unclear from the above sentence whether he was dressed in his pyjamas when he shot the walrus or whether the elephant was in his pyjamas when he did so.

Apophasis (from the Greek ἀπόφασις from ἀποφάναι 'to say no') a.k.a. **argument by innuendo** is a rhetorical device used to imply something, usually derogatory, by *not* explicitly saying so. *E.g.*

> A student asks her professor for a reference and her professor writes: "She was always punctual for lectures."

By fixating on a trivial virtue that has nothing to do with academic excellence, the professor is actually implying that she was not a very good student.

Fallacy of composition occurs when illegitimately arguing from a property of some part, to the composite whole. *E.g.*

> The members of this orchestra are all clearly very young so it can't be that old, can it? Actually it *is* a youth orchestra but it was established in 1944.That makes it older than you.

Arguing from properties of parts to composites may however be appropriate under certain conditions, such as those involving spatial arrangements. *E.g.*

> All the members of the orchestra plus their instruments are in the concert hall. Therefore the orchestra is in the concert hall.

Fallacy of division is the converse of fallacy of composition above. Whereas the latter argues from properties of parts to the composite, fallacies of division illegitimately argue from properties of the whole to those of its parts. *E.g.*

> That man is so old, why is he donating blood? I mean, who would want seventy something year old blood anyway?

Just because an organism is a certain age doesn't mean that all its cells are that age too. Red blood cells for example are replaced about every 120 days, while the cells lining the gut are replaced about every third day. Similarly, if a university is 700 years old it would be a fallacy of division to claim that all the professors should be 700 years old too.

Verbosity is a rhetorical device encountered daily on talk shows, in speeches, judgements and governmental reports to name just a few. They are characterised by being wordy, superficially plausible and laborious to analyse, which is why many people are fooled into simply letting them slide by unchallenged. The following example is a transcript of a recording of a satirical speech of a politician by the late comedian Peter Sellers:

> ... My friends, in the light of present-day developments let me say right away that I do not regard existing conditions likely. On the contrary, I have always regarded them as subjects of the gravest responsibility and shall ever continue to do so. Indeed, I will go further and state quite categorically that I am more than sensible of the (exact) definition of the precise issues which are at this very moment concerning us all. We must build, but we must build surely. Hear, hear! - Let me say just this: If any part of what I am saying is challenged, then I am more than ready to meet such a challenge. For I have no doubt whatsoever that whatever I may have said in the past, or what I am saying now, is the exact, literal and absolute truth as to the state of the case. [Hear, hear!] I put it to you that this is not the time for vague promises of better things to come. For, if I were to convey to you a spirit of false optimism, then I should be neither fair to you nor true to myself. But does this mean, I hear you cry, that we can no longer look forward to the future that is to come? Certainly not! [Voice from the audience: What about the workers?] "What about the workers?"; indeed sir! Grasp, I beseech you, with both hands [Aside: I'm so sorry, I beg your pardon, madam.] the opportunities that are offered. Let us assume a bold front and go forward together. Let us carry the fight [noise of a blow being struck] against ignorance to the four corners of the earth because it is a fight which concerns us all. Now, finally my friends, in conclusion, let me say just this: [BIG SILENCE !!!]

Clearly this is waffle of the first order. It is not clear just what the politician is arguing for, if anything, nor is clear if he is even making a point or just what that point might be. In short, all we have are words (Latin: *verba*) hence the term verbosity.

Vagueness and Emotion – Getting the Balance Right

Vagueness and emotionalism are not enemies of reason. When used to detract from an argument they are used fallaciously; however when used judiciously or to draw attention more strongly to an argument they facilitate understanding. A man who witnesses a crime and gives a vague but truthful report to the police is aiding them in their investigation. Another man who gives a very precise but merely probable account is a hindrance. Most of our concepts from 'man' to 'dog' to 'legal minor' *etc.* are necessarily somewhat vague so as to accommodate transitional forms, hybrids and special cases respectively. That is not to say that deliberate vagueness or evasiveness should not be condemned. Similarly, arguing with contrived rigor is equally fallacious.

On the other hand, a sound argument backed up by an appropriate appeal to emotion is rhetorically more effective than a catalogue of cold, hard facts. We conclude with one such example - an extract form Dr Martin Luther King Jr.'s speech: "I Have a Dream," in which he uses emotion appropriately and rousingly to emphasise rather than draw attention away from his argument:

> I say to you today, my friends, that in spite of the difficulties and frustrations of the moment, I still have a dream. It is a dream deeply rooted in the American dream.
>
> I have a dream that one day this nation will rise up and live out the true meaning of its creed: "We hold these truths to be self-evident: that all men are created equal."
>
> I have a dream that one day on the red hills of Georgia the sons of former slaves and the sons of former slave owners will be able to sit down together at a table of brotherhood.
>
> I have a dream that one day even the state of Mississippi, a desert state, sweltering with the heat of injustice and oppression, will be transformed into an oasis of freedom and justice.
>
> I have a dream that my four children will one day live in a nation where they will not be judged by the colour of their skin but by the content of their character.
>
> I have a dream today.
>
> I have a dream that one day every valley shall be exalted, every hill and mountain shall be made low, the rough places will be made plain, and the crooked places will be made straight, and the glory of the Lord shall be revealed, and all flesh shall see it together.
>
> This is our hope. This is the faith with which I return to the South. With this faith we will be able to hew out of the mountain of despair a stone of hope. With this faith we will be able to transform the jangling discords of our nation into a beautiful symphony of brotherhood. With this faith we will be able to work together, to pray together, to struggle together, to go to jail together, to stand up for freedom together, knowing that we will be free one day.
>
> This will be the day when all of God's children will be able to sing with a new meaning, "My country, 'tis of thee, sweet land of liberty, of thee I sing. Land where my fathers died, land of the pilgrim's pride, from every mountainside, let freedom ring."

And if America is to be a great nation this must become true. So let freedom ring from the prodigious hilltops of New Hampshire. Let freedom ring from the mighty mountains of New York. Let freedom ring from the heightening Alleghenies of Pennsylvania!

Let freedom ring from the snow-capped Rockies of Colorado!

Let freedom ring from the curvaceous slopes of California!

But not only that; let freedom ring from Stone Mountain of Georgia!

Let freedom ring from Lookout Mountain of Tennessee!

Let freedom ring from every hill and molehill of Mississippi. From every mountainside, let freedom ring.

And when this happens, when we allow freedom to ring, when we let it ring from every village and every hamlet, from every state and every city, we will be able to speed up that day when all of God's children, black men and white men, Jews and Gentiles, Protestants and Catholics, will be able to join hands and sing in the words of the old Negro spiritual, "Free at last! Free at last! Thank God Almighty, we are free at last!"

28 August, 1963

Task

Evaluate the following examples. For those that appear to be problematic, try and identify the fallacy or fallacies involved and how they operate or fail to operate:

1. I bought this old wreck from the dealer down the road. Paid for it in cash too. It's in such a state it barely drives. Well as my old dad used to say, "You get what you pay for."

2. Life is like a bed of roses. It's full of pricks!

3. If the security system detects an intruder, the alarm will sound. Since the alarm has not sounded, no intruder has been detected.

4. Fire trucks must have red engines.

5. Evolution is a lie 'cos I ain't no monkey come down from the trees.

6. If it weren't pension day uncle Arthur would be sober.

7. If it weren't illegal it wouldn't be prohibited by law.

8. Men are from Mars. Women are from Venus.

9. Now that they have legalised gay marriage they'll be promoting bestiality and paedophilia.

10. Look, you're either a rationalist or raging lunatic.

11. "Diamonds are forever," or so they would have us believe.

12. You can tell just by the way she walks that she's onto something!

13. Why are illegal downloads wrong if everybody's doing them?

14. Van Vuuren's team has been awarded a penalty for a high tackle by Tsabalala, who is now furious with the referee: "You penalising me? It's that thug van Vuuren who stinks. I swear he's never heard of deodorant and he farts in the scrum. Oh, and did I mention he stinks!"

15. Old Mother Hubbard
Went to the cupboard,
To give the poor dog a bone;
When she came there,
The cupboard was bare,
And so the poor dog had none.

Feedback

1. No fallacy: This is simply a cautionary tale illustrated by a tautological quotation.

2. Double equivocation: The term "bed of roses" is used figuratively in the first sentence and then in a literal sense in the second, hence the pricking by thorns of real roses. Next the literal term 'prick' encourages a shift, figuratively, to mean an objectionable man.

3. No fallacy: This is a textbook example of *modus ponens*, which is a valid form of inference.

4. Fallacy of division: Just because a fire truck is red doesn't mean that all its parts must be red too.

5. Straw man: This simpleton is trying to make it sound as if evolution is some ridiculous caricature of itself, which he then disowns. Firstly, we are not monkeys; we are great apes because we do not have a post anal tail. Secondly, the theory of human evolution does not say that each of us has come down from the trees. What it does say is that from the fossil evidence, our more ancient ancestors were anatomically adapted to an arboreal existence and that our more recent ancestors were anatomically adapted to bipedal locomotion on the open savannah; and that there were intermediate forms such as *Australopithecus sediba* that demonstrate a mosaic of both arboreal and bipedal traits.

6. No fallacy: This is a counterfactual conditional statement *i.e.* one that is not true but could or would be true under different conditions. As it stands, this statement is not problematic but if it were to be added to a statement either confirming the consequent or denying the antecedent, in the form or an argument, it would become fallacious.

7. Begging the question: This statement is a tautology. Something 'illegal' is, by definition, 'prohibited by law'.

8. No fallacy: Both of these sentences are false, both literally and figuratively. Men and women have much more in common both biologically and psychologically than sets them apart. The idea that what differences there are should set them, figuratively, planets apart is preposterous.

9. Slippery slope: It does not follow inevitably that those who advocated gay marriage would want to press for bestiality or paedophilia. Gay marriage is a human rights issue involving consenting adults. Bestiality and paedophilia are abuses involving non-consenting animals and children respectively.

10. False dilemma: excluded middle or bifurcation: Rationalism and lunacy are not the only alternative worldviews. The Romantic Movement which explicitly eschewed rationalism produced men and women of consummate genius.

11. No fallacy: This is simply a wry remark on an old advertising slogan.

12. *Non sequitur*: It simply does not follow that you can tell that a person is "onto something," just by the way he or she walks. If the person was in pain or in a hurry that might appear in their gait, but not "being onto something." Also this suffers from vagueness. What precisely does "being onto something" entail?

13. Appeal to majority: The fact that *many* (not everybody) do illegal downloads and get away with it doesn't make it legal or ethical to do so.

14. *Ad hominem*: Tsabalala is trying to draw attention away from his own foul play by accusing his opponent of something irrelevant.

15. No fallacy: This is a valid argument in verse with the conclusion in the final line.

The next Critical Reasoning Study Unit concerns Complex Statements.