

Introducing the Principles of Inference through Practical Exercises

Reasoning RIGHT

EFFECTIVE AND DEFECTIVE ARGUMENTS



Reasoning Right

part of the hands-on, heads-up philosophy series



— printing 1.2

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Preface

1.1 Going Where?

Humanities > Philosophy > Reasoning. That's the typical classification. The truth is, however, that reasoning is an essential vehicle for all disciplines. Well, perhaps language is the vehicle, reasoning is the driver, and the subject matter is riding shotgun. Anyway, without reasoning it is rather difficult to advocate or object to a claim in any subject, whether politics or the arts. So what you have here are handouts for aspiring politicians, art critics, or anyone interested in the nature of argument and the principles of inference.

Use the principles to classify passages as effective arguments, defective arguments, or not inferences at all. But don't stop there! Apply the principles to claims heard in commercials, in discussions with other people, even in thinking through your own point of view. Just be careful not to become a pest, citing the Latin name when pointing out a fallacy in the expression of a peer or parent. Keep a sense of humor. Paraphrase passages until you get a sense of whether or not they make sense. And always be willing to share the secret of your newfound powers of logical discernment.

1.2 Getting There

Reasoning Right is an exercise book. You—or a group of you—form the Court of Reason. Each session, you are given a variety of passages. (You might find a few of your own arguments, at least in the roster of fallacies.) Judge whether a passage is an argument, a fallacy, or neither by applying the principles of inference. If you wish, start with a passage and go looking for an inference rule that fits. Conversely, get to know the rules of inference to begin with, then consider the passages. Possibly you will end up doing a bit of both.

Along the way you will bump into Smith and Wilson, fictitious characters who lend their surnames to save us from awkward variables such as 'Mr X' and 'Ms Y'. However, the Smith and Wilson of one passage are unrelated to their namesakes in any other passage. In other words, each passage stands on its own.

As an exercise book, *Reasoning Right* leaves scholarship to other resources. Numerous lists of fallacies and not a few introductions to logic can be found online and are suggested to supplement the present material or for further investigation into the world of *Reasoning Right*.

Expressions

1 REASONING

1.1 Reasoning is making inferences.

An inference is connecting information to make a decision (reasoning from evidence to conclusion) or consider whether there are reasons to support a particular belief or claim (reasoning from conclusion to evidence).

A detective inspects the clues to figure out who is the culprit.

A doctor checks symptoms in order to make a diagnosis.

A lawyer cites evidence to support a client's claim of innocence.

A meteorologist examines weather current conditions for a forecast.

1.2 We communicate our reasoning by means of arguments; the argument expresses an inference.

An argument is a group of statements that have an inferential relationship. That means some statements (called the premises) provide reason to believe one of the other statements (called the conclusion). The premises support the conclusion. If there is no inferential relationship among the statements, then the passage might still be informative (e.g., an example or explanation) or persuasive (e.g., a command or wish), but the passage would not be an argument.

A statement isn't the same as a sentence. Some sentences express a command or request, such as 'leave the cat alone' or 'please pass the pepper'. Some sentences ask a question, such as 'what does it cost?' or 'where is the wash-room?'. Other sentences declare an idea or opinion, such as 'I believe in magic' or 'Pluto is a planet'. A statement is that which a declarative sentence asserts and it is either true or false.

'All humans have genes' is a true statement; 'pigs can fly' is false statement.

'Je t'aime', 'I love you', and 'I am in love with you' express the same statement.

The term "proposition" will be used as a synonym for "statement".

1.3 Premises “give reason” by having a formal or relevant connection to the conclusion.

In a valid deductive argument the premises have a formal connection to the conclusion. That is, the structure of the argument fits one of the recognized forms or patterns to be discussed later. In a deductive argument, true premises guarantee that the conclusion is true.

Squares are rectangles; rectangles are quadrilaterals; so squares are quadrilaterals.

All humans have genes; I am human; therefore, I have genes.

In a strong inductive argument the premises support – but don’t guarantee – that the conclusion is true. The strength of an inductive argument depends not on its form or structure, but on the relevance of the premises to the conclusion.

It rained yesterday and it rained today, so it will likely rain tomorrow.

You were seen fleeing the scene of the crime and the stolen jewels were found in your apartment, so you are likely the thief.

1.4 In everyday arguments, parts are often taken for granted and so they are not stated.

It is unlikely that you’ll hear “the mower is running; running requires fuel; therefore, the mower has fuel.” More likely, the argument would be abbreviated to “there must still be fuel in the mower since it started.” An argument in which some part is understood, but unstated is called an enthymeme. Enthymemes are useful shorthand when the implied assertion is so obvious that stating it would be dull or mechanical.

All insects have six legs, so all wasps have six legs. [Unstated premise: all wasps are insects.]

Your editorial is racist and racism is wrong. [Unstated conclusion: your editorial is wrong.]

Unfortunately, enthymemes can conceal false claims. For example: boy applies body spray [minor premise]; boy gets adoring girls [conclusion]. This omits the false premise: body spray gets adoring girls. To evaluate an enthymeme, first state the implied parts, then determine whether it has the proper structure of a syllogism.

Darling, I’m sorry. Busy people tend to forget such things as anniversaries. [I did not say that I am busy, but you may presume as much if it excuses me for forgetting the anniversary.]

I hope to repay you soon. My late aunt said she would leave a reward to everyone who had looked after her. [I actually neglected my aunt, but will allow you to presume that I looked after her.]

Yes, I am rather late. One simply cannot depend on buses and trains any more. [I walked from around the corner, but you may go ahead and think that I took a bus or train.]

I am not happy with Smith for mayor. One can never be happy with those who cheat on their taxes. [I have no evidence that Smith is a tax cheat, but you may presume as much if it sways your vote.]

The type of reasoning to which we are accustomed in our daily lives is typically the familiar, short arguments like syllogisms. Even then we abbreviate them into enthymemes. For instance: I like you, so I will give you a discount on the subscription; You've got your hands full, so let me hold the door; We have to arrive on time, so we can't stop for lunch.

1.5 Statements can be connected into more complex statements with: not, and, or, if-then.

A simple statement asserts a fact, such as 'fire requires oxygen'. The truth value of a statement depends on the truth value of its simple statements and how they are connected.

Negation (not): $\sim A$ is read 'not A' or 'it is not true that A' or 'A is not true'. When A is true $\sim A$ is false and when A is false $\sim A$ is true.

Conjunction (and): $A \& B$ is read 'A and B' or 'it is true that A and B'. A and B are called conjuncts. $A \& B$ is true only when A is true and B is true; otherwise $A \& B$ is false.

Disjunction (or): $A | B$ is read 'A or B' or 'A is true or B is true'. A and B are called disjuncts. $A | B$ is true as long as one or both are true.

Implication (if-then): $A \supset B$ is read 'A implies B' or 'if A is true, then B is true'. A is called the antecedent, B is called the consequent, and the expression is called a conditional. $A \supset B$ is true under all truth-value assignment except when A is true and B is false.

Equivalence (if and only if): $A \equiv B$ is read 'A is equivalent to B' or 'A has the same value as B'. $A \equiv B$ is true when A and B have the same value (that is, both true or both false)

2 DEDUCTION

2.1 Logical form makes the structure of a statement more clear.

The logical form of a statement shows its structure using connectives (not, and, or, if-then, is equivalent to) with capital letters representing the parts to be connected. Parentheses are used for grouping indicators and \therefore is shorthand for 'therefore'.

The statement 'the light is on or the light is off' has the form: $A | B$.

The statement 'the baby is a boy or the baby is a girl' also has the form: $A | B$.

To reduce parentheses, connectives have the following order of priority, from highest to lowest: negation (not), conjunction (and), disjunction (or), implication (if-then), equivalence (if and only if). So $A | B \& \sim C \supset D$ means the same as $(A | (B \& (\sim C))) \supset D$.

2.2 An argument is valid if it has one of the deductive forms.

Suppose 'the light is not on' and also that 'the baby is not a boy'. Both of these statements have the form $\sim A$. From $A | B$ and A one can conclude B. So the logical form of the argument is: $A | B; \sim A; \therefore B$. This form is one of the deductive forms of an argument. If an argument can be expressed in one of the deductive forms, then the argument is valid. Assuming the premises are true, the conclusion must be true.

2.3 An argument is sound if it is valid and has true premises.

The following argument is valid: if every animal can fly, then pigs can fly; a pig is an animal; therefore, a pig can fly. It is valid because it can be expressed in one of the deductive forms: $A \supset B$ and A is true so $\therefore B$ is true. Even so, the argument is not sound. An argument is said to be sound only if it is valid and the premises are true. The following is sound: if every animal has DNA, then a pig has DNA; a pig is an animal; therefore, a pig has DNA.

2.4 Affirm the Antecedent: that the antecedent is true is reason to believe its consequent is true.

Affirm the Antecedent (or “*modus ponens*”) uses a conditional, which is an ‘if-then’ statement. The antecedent is the ‘if’ part. The consequent is the ‘then’ part. If the antecedent is true, the consequent is true. If A is true, then B is true; A is true; therefore, B is true. $A \supset B$, A , $\therefore B$.

If two objects have mass, then they mutually attract. The Earth and its moon each have mass. Therefore, the Earth and moon attract one another.

When the bananas are ripe, I slice one onto my granola. This bunch seems ripe, so I will have fruit on my cereal.

2.5 Deny the Consequent: a false consequent is reason to not believe its antecedent.

Deny the Consequent (or “*modus tollens*”) is based on a conditional. If the consequent is false, then the antecedent is false. If A is true, then B is true; but B is not true; so, A is not true. $A \supset B$, $\sim B$, $\therefore \sim A$.

If there is fire, then there must be oxygen; the sun has no oxygen; therefore the sun is not on fire.

If you love me, you would not leave me; you did leave me; therefore, you do not love me.

2.6 Hypothetical Syllogism: a true first-antecedent is reason to believe the last-consequent.

In Hypothetical Syllogism (or “conditional syllogism”), if the first antecedent in a series of overlapping conditionals is true, then the final consequent is true. There could be two, three, or more conditionals as premises. If A is true, then B is true; if B is true, then C is true; so, if A is true, then C is true. $A \supset B$, $B \supset C$, $\therefore A \supset C$.

If you sleep in, you’ll miss the bus, then you’ll have to walk. If you sleep in, then you’ll have to walk.

If the valve is closed, water won’t flow, so the tub can’t fill. Without a tub of water, I cannot wash the dishes and no dishes mean no plates mean no dinner. Therefore, if the valve is closed, no dinner.

2.7 Disjunctive Syllogism: that one disjunct is false is reason to believe its alternative is true.

A disjunction is an exclusive statement of alternatives: this or that — not both, not something else. In Disjunctive Syllogism (or “excluded middle”), if one of the disjuncts is false, then the other has to be true. A is true or B is true; but A is not true; so, B is true. $A \vee B$, $\sim A$, $\therefore B$.

We know that she paid Pete or Paul. Our sources show that she didn’t pay Pete, so she must have paid Paul.

The king held out a basket with two notes. If the knight picks the one marked Yes, he may marry the princess. The knight, suspecting both notes are marked No, grabbed a note and swallowed it, proclaiming that he picks the note remaining in the basket.

2.8 Constructive Dilemma: if at least one antecedent is true, at least one consequent is true.

Constructive Dilemma starts with two or more true conditionals. If one of the antecedents is true, then one of the consequents must also be true. If A is true, then B is true and if X is true, then Y is true; A or X is true; so, B or Y is true. $(A \supset B) \& (X \supset Y), A \vee X, \therefore B \vee Y$.

If you play the ace, then you win the hand; but if you play the deuce, your partner will win. You must play either the ace or the deuce. Therefore either you win or your partner wins.

If there is a red sky at night, then the weather will be clear. However, if there is a red sky in the morning, then the weather will be stormy. There will be a red sky either tonight or in the morning. Therefore the weather will be either clear or stormy.

2.9 Destructive Dilemma: if at least one consequent is false, at least one antecedent is false.

Destructive Dilemma starts with two or more true conditionals. If one of the consequents is false, then one of the antecedents must also be false. If A is true, then B is true and if X is true, then Y is true; B or Y is false; so, A or X is false. $(A \supset B) \& (X \supset Y), \sim B \vee \sim Y, \therefore \sim A \vee \sim X$.

If we are going to paint the deck, then we need to buy brushes; but if we are to stay within budget, then we must borrow brushes from a neighbor. We will either not purchase brushes or we will not borrow them. Therefore we will either not paint the deck or we will not stay within budget.

If the model car is under-oiled, it will squeak; but if it is over-oiled, it will start to smoke. Either the model car did not squeak or it did not smoke; so it wasn't under-oiled or it wasn't over-oiled.

2.10 Simplification: if two statements are true together, then each statement is true on its own.

A conjunction is a statement made joining other statements with "and". The statements joined are called conjuncts. If a conjunction is true, then each conjunct on its own is true. A is true and B is true; so, A is true. $A \& B, \therefore A$

If it is true that the union went on strike when negotiations failed, then it is true that negotiations failed and it also true that the union went on strike.

If it is true that the movie is short yet funny, then it is true that the movie is short and also that is funny.

2.11 Conjunctive Addition: if this is true and that is true, then "this and that" is true.

If two or more statements are true on their own, then they are true together. Any two true statements can be joined to form a true conjunction. A is true; B is true; so, A is true and B is true. $A, B, \therefore A \& B$. The order of conjuncts does not matter, so $B \& A$ is also true.

The sky is blue; the grass is green; so it is true that the sky is blue and the grass is green.

The rain stopped; the sun is shining; so it is true that the rain stopped and the sun is shining.

2.12 Disjunctive Addition: “this or that” is true as long as one of them is true.

A disjunction is true as long as at least one of its simple statements is true. Starting with a true statement, any other statement can be connected by “or” and the resulting disjunction will also be true. In other words, if a statement is true, then any statement in which it is a disjunct is also true. A is true; therefore, A is true or B is true — even if B is false or unrelated to A. $A, \therefore A \mid B$.

Any mass has inertia, so it is true that “any mass has inertia or the Earth is flat”.

Since $2+2=4$, it is true that “ $2+2=4$ or I am 6 cm tall”.

2.13 Conditional Proof: if A is assumed to be true and B results, then “if A, then B” is true.

One way to conclude that a conditional (“if-then”) statement is true is to assume that its antecedent is true and apply the rules of logic to obtain the consequent. A conditional statement is true if its consequent can be derived by assuming its antecedent to be true. This method consists of assuming the antecedent of the required conditional statement and deriving the consequent.

Whenever it is snowing, it is cold outside and there are clouds. Whether it is cold or warm, you should dress appropriately. Therefore, if it is snowing, you should dress appropriately.

If I had wealth, then I’d take care of my health. If I had both wealth and health, then I would be happy. Therefore, if I had wealth, I would have happiness.

3 TRANSFORMATION

Some logical forms can be changed to other forms that are equivalent. This does not make a new argument. It just puts a statement in another form. In the following deductive transformation rules, one expression can be replaced with the other.

3.1 Association

Switching the grouping of statements joined by “and” or by “or” does not change whether the overall expression is true or false. $(A \& B) \& C \equiv A \& (B \& C)$. $(A \mid B) \mid C \equiv A \mid (B \mid C)$.

Putting the egg and vanilla in the bowl then adding sugar is the same as adding egg to the bowl that already has vanilla and sugar.

“Do you want pepperoni or salami – or would you rather have just cheese” is the same as “Do you want pepperoni – or would you rather have salami or just cheese”.

3.2 Commutation

Switching the order of statements joined by “and” or by “or” does not change whether the overall expression is true or false. $A \& B \equiv B \& A$. Likewise $A \mid B \equiv B \mid A$.

A dollar and a dime has the same value as a dime and a dollar.

Whether you put on the left glove first or right glove first, the result will be the same.

3.3 Contrapositive (Transposition)

If the consequent of a conditional is false, then the antecedent must also be false.

$$A \supset B \equiv \sim B \supset \sim A.$$

Rain requires clouds, so the absence of clouds indicates no rain.

The Big Bang was silent since sound must have a medium to travel through; no medium, no sound.

3.4 DeMorgan's Law

A negative can be distributed to a conjunction or disjunction. That is, $\sim(A \& B) \equiv \sim A \mid \sim B$. Likewise $\sim(A \mid B) \equiv \sim A \& \sim B$.

“He isn’t tall, tanned, and handsome” means he is not tall or not tanned or not handsome.

“The subway does not run north or south” means the subway does not run north and it doesn’t run south.

3.5 Distribution

Disjunction is distributive over conjunction, and conjunction is distributive over disjunction.

$$[A \& (B \mid C)] \equiv (A \& B) \mid (A \& C). \text{ And likewise, } [A \mid (B \& C)] \equiv (A \mid B) \& (A \mid C).$$

Ice cream on cake or pie is the same as ice cream on cake or ice cream on pie.

“Jogging or sitting and reading” is the same as “jogging or sitting and jogging or reading”

3.6 Double Negation

A double negative is equivalent to a positive. That is, $\sim\sim A \equiv A$.

I wouldn’t ask if this were not so important = I am asking since this is important.

Never have the bees been without a queen = The bees have always had a queen.

That white hat of yours is hardly inconspicuous = Your hat is conspicuous.

There isn’t a day when I don’t think about it = I think about it every day.

Double Negation can be used with an inherently negative term.

It is not true that the performance was boring (not interesting) = The performance was interesting.

The building is not in total darkness (lacking light) = Some light is showing in the building.

3.7 Exportation

A series of antecedents is equivalent to their conjunction. $A \supset (B \supset C) \equiv (A \& B) \supset C$.

If the firecracker explodes, it will wake the baby = If the firecracker explodes and makes a loud noise, that will wake the baby.

If you put water in the tray and put the tray in the freezer, then there will be ice cubes = if you put water in the tray, then put the tray in the freezer, then there will be ice cubes.

3.8 Material Equivalence

Two items are equivalent when they imply one another. $A \equiv B$ is the same as $(A \supset B) \& (B \supset A)$ and also equivalent to $(A \& B) \mid (\sim A \& \sim B)$.

A vixen is a female fox. If you saw a vixen, then you saw a female fox and if you saw a female fox then you saw a vixen.

Hesperus (the evening star) is Phosphorus (the morning star), since both are the planet Venus.

3.9 Material Implication

A conditional is the same as saying the “antecedent is false or the consequent is true”.

$$A \supset B \equiv \sim A \vee B \equiv \sim(A \& \sim B).$$

If you hit the bulls-eye, you win a Kewpie doll = You didn’t hit the bulls-eye or you got a Kewpie doll = It is not the case that you hit the bulls-eye yet didn’t get the doll.

If Spain and New Zealand are antipodes, then noon in one is midnight in the other = They are not antipodes or noon in one really is midnight in the other.

3.10 Tautology

A statement is equivalent to multiple statements of itself joined by “and” or by “or”. Thus, $A \equiv A \& A$. Likewise $A \equiv A \vee A$.

You will receive a “free gift” book.

“Each and every” victim was “dead or deceased”.

4 INDUCTION

Deductive arguments have form. Inductive arguments have methods, such as analogy and fair sampling. In the methods of induction one must consider the content of what is said, weigh whether the premises are relevant and sufficient for believing the conclusion, and take into account whether there is a decisive, overriding reason to the contrary. Fallacies can occur when one fails to take into account factors that contravene or override.

4.1 An induction is strong if the premises are relevant and sufficient to believe the claim.

Weaker ...

Many people saw the movie, therefore it must be good — but did most like it?

The flashlight won’t shine, so the batteries must be dead — but is it switched on?

Stronger ...

Some of the egg salad is moldy, so the rest of the salad is probably not good to eat.

Around here, people tend to stay indoors on rainy days and many watch movies, so rainy days promote local movie rentals.

A strong induction with true premises is said to be cogent.

4.2 Analogy: that which is true of one case is true of another case that is similar in relevant ways.

An analogy is inductive reasoning that one case (object or situation) has a certain property because it is like another case that has the property and the two cases are alike in ways relevant to that property.

Case A has property Z. Case A and Case B are similar in that both have properties in common. The properties in common are sufficient and relevant to Z. A and B are not dissimilar in some manner that overrides their similarity. Therefore, B likely has property Z.

A pipe resists the flow of water. A hydraulic circuit and electrical circuit both have a source (pump/battery), connections (pipe/wire), and controls (valve/switch). Source, connection, and controls are relevant to the flow of the contained medium. No overriding dissimilarity: both vessels are tubular containers that carry a flow. Therefore, the wire likely resists the flow of electricity.

The dogs at your kennel ate the kibble. You have yellow labs and I have golden retrievers. The dogs are similar in size, age, health, and breed – factors that can affect what they will eat. There is no major difference in the dogs nor in their kennels. We live in the same climate and the dogs get about the same exercise. So, when I give some of that kibble to my retrievers, I suspect they will eat it..

To assess the strength of an analogy, consider whether the number of ways in which the two cases are said to be similar is sufficient and whether they are relevant to the property at issue. Also consider whether the cases are not dissimilar in some manner that overrides the ways in which they are alike. And keep in mind that a conclusion by even the strongest analogy is inductive (likely), not deductive (certain).

Weak: Puzzles and chores are both time-consuming and difficult. I like doing crossword puzzles, so I suppose that I like doing chores.

Weak: Just as it was wrong to deny women the vote, it is also wrong to deny the vote to children.

4.3 Corresponding Cause: correspondence is reason to believe one event is the cause of the other.

Corresponding Cause (or “Mill’s Methods of Induction”) consists of tests to establish whether there is a causal relationship between events. A causal relationship exists when one event (the cause) brings about or influences the other event (the result). Corresponding Cause tests whether events match in presence, absence, variation, or remainder.

Presence: Whenever B occurs, A precedes it. If in all cases where an effect occurs, there is a single prior factor that is common to all those cases, then that factor is the cause of the effect.

If cookies are stolen only when Bart is present in a group of children, we would suspect Bart as the thief. If another child were also always present we could use this method only to narrow the suspects down to those two.

Absence: Whenever A is absent, B is absent. Where one situation leads to an effect, another situation does not lead to that effect, and the only difference is the presence of a single factor in the first situation, then this factor is the cause of the effect.

Cookies are always missing from the cookie jar except on days when Bart is not present. We suspect Bart is the thief because the cookies remain safe when Bart is gone. However, another cookie thief could implicate Bart by stealing cookies only when Bart is present, so a more thorough analysis might be needed to discover the real culprit.

Presence and Absence: Whenever B occurs, A precedes and whenever A is absent, B is absent.

Cookies are always missing from the cookie jar whenever Bart is in a group of children, and never when Bart is missing from one or more of those same groups. This does not apply to any other child. We therefore suspect Bart as the thief.

Variation: If A varies, B varies. When one event varies, another event varies in proportion.

The number of cookies missing from the jar in the morning is proportional to the amount of food Bart leaves on his plate at lunch time. Similar corresponding variations are not observed in any other child. We therefore suspect Bart is the thief.

Remainder: Eliminating known correspondences, the remaining events must correspond.

New cookies appear in the jar one day shortly after Thomas, Richard, and Harold arrive for work. We know that Tom brought just the sandwiches and Richard brought only coffee. So, we figure that Harold brought the cookies.

4.4 Fair Sample: that which is true of a representative sample is true of the general population.

That which is true of a representative sample is true to the general population. A generalization about a population is valid if based on a random (or at least not biased) sample whose composition is similar to that of the population.

If one strand of spaghetti is cooked al dente, then the pot of pasta (all the spaghetti strands) are equally cooked and firm when bitten.

According to a recent poll, the conservative party is favored in the next election. Pollsters contacted 1000 homeowners as well as 1000 who rent since homeowners are, on average, wealthier than non-homeowners, and the more wealthy tend to be more conservative than the less wealthy.

4.5 Statistical Syllogism: that which is true in general is likely true in a particular instance.

Statistical Syllogism applies a statistical generalization about a group to an arbitrary member of that group. A statistical generalization is a statement which is usually true. The closer the generalization is to 100%, the stronger the induction.

Bob is a mechanic. Most mechanics have dirty fingernails, so Bob probably does too.

The first card dealt from a well-shuffled deck is probably not going to be an Ace.

Statistical Syllogism can be quantified with percentages or relative descriptions, such as: most, usually, commonly, frequently, generally, seldom, rarely, scarcely. At times the quantifier is unstated, but implied.

Lions are (usually) faster than zebras.

Barley is (commonly) used in making beer.

5 FALLACIES

An argument is defective if it has an error in reasoning. A defective argument is called a fallacy and just as there are deductive and inductive arguments, there are formal and informal fallacies.

A formal fallacy has a defect in its logical structure. That is, the form of the argument does not fit one of the deductive patterns. An informal fallacy has no recognizable deductive form; it can only be detected by examining the content of the argument, for instance to find that the premises are not relevant to the conclusion.

5.1 Appeal to Emotion: the desire to have or avoid a certain feeling is reason for a belief or action.

In an effective argument, the premises support the conclusion. In fallacies of emotional influence, however, the premises are not relevant to the conclusion. Instead the arguer uses some sort of emotional appeal to make the premises appear relevant.

Appeal to Emotion regards esteem or sorrow as sufficient reason to accept a certain belief or course of action. Esteem may be desire for flattery, popularity, pride, sense of inclusion, or other personal affirmation. Sorrow can be the wish to avoid confusion, threat, disgust, or other feelings of discomfort. Whether the appeal is to esteem or sorrow, Appeal to Emotion is a fallacy because the emotional factor is not relevant to whether the proposition is true or false.

Appeal to Fear: the desire to avoid likely harm or discomfort is reason for a belief or action. This variety of emotional appeal amounts to coercion; it uses threat to cause a reluctant person to do something. The coerced party acts out of fear of harm rather than out of reasoned persuasion.

In this neighborhood we give expensive treats for Halloween. It is still cheaper than removing rotten eggs or spray paint.

The lawyers handling the estate of my late aunt send papers for the beneficiaries to sign. The documents are loaded with legal jargon, but my cousin just signed them. The legal language was confusing and he didn't want to feel awkward asking what this word or that word means.

5.2 Appeal to Pity: feeling sorry for the suffering of others is reason for a belief or action

In asking yourself if this man is to be convicted, ask yourself what it means for him to be locked up in prison, deprived of his liberty, and turned into an outcast from humanity.

Listen, I didn't mean to make you cry, but you have lots of toys at home. No, not tears again. Okay, just the teddy bear, okay?

5.3 Appeal to Praise: desire for the approval of others or acknowledgement of self-regard (vanity)

You've worked hard for your money. Anything less than a Brand X watch will not do for someone of your class and distinction.

What a wonderful wit you have – a good sense of timing and great punch-lines! No doubt you can see the humor in the mayor's plan to tax employees for parking spaces.

5.4 Appeal to Inclusion: desire to not be left out of a group is reason to act or believe as others do.

But mom, everybody is going to be wearing these when school starts. If you don't buy me a pair, I won't fit in. I just want to be like the other kids.

Country Western has got to be the purest form of musical ballad. Just listen to the applause from the studio audience.

5.5 Appeal to Spite: the desire for revenge is reason to support a belief or course of action.

In the fallacy of Appeal to Spite, a statement is true or action is appropriate because it exacts a measure of revenge. It attempts to leverage a grudge – to convince a second person by exploiting the other person’s existing feelings of bitterness or spite toward a third party.

The French refused to join us in the military invasion, so don’t buy French wines.

Your mom grounded you for staying up too late? You should jump around in that mud puddle before you go home and make sure to put shoe prints all over the carpet. It’ll drive her crazy.

5.6 Personal Attack: that someone at fault holds a certain belief is reason to reject the belief.

Instead of trying to disprove what is asserted, in a Personal Attack (or “*ad hominem*”) one reviles the person making the assertion by finding fault with them personally, their motivations, association with others, or consistency. Person N supports proposition P, but N is at fault; therefore P is false. It is a fallacy because the character or conduct of the source is not related to whether the proposition is true or false; Arguing against the person is not arguing against his or her premises. The other’s person’s argument may be valid regardless of his/her faults, agenda, or consistency.

Abusive: claims the other person has faults and thereby so does his or her argument. There is a variation called “Poisoning the Well” to discredit anyone in advance, such as “everyone but an idiot knows that not enough money is spent on education”.

Electric automobiles? As every school child knows, gasoline drives the engine of industry. Even a fool can see that electric vehicles will put people out of jobs.

My opponents speech is like a Texas longhorn: a point here, a point there, but a whole lot of bull in between.

5.7 Circumstantial: claims the other person is motivated by a bias or hidden agenda.

Smith argues that the fairest kind of income tax is a flat-tax: everybody pays the same amount. But Smith is a software billionaire and stands to save millions of dollars if a flat-tax is enacted. Therefore, we can hardly take Smith’s argument seriously.

I was just talking to the representative for that big insurance company. She was going on about jury awards for pain and suffering and how they should be severely limited. But this is what you would expect her to say. After all, lawyer fees come out of these awards. If the awards are limited, no one will sue her company.

5.8 Tu Quoque: claims the other person is a hypocrite who fails to practice what he or she preaches.

Dad, I don’t see how you can ask me to not smoke. You and mom both said that you smoked when you were young. Maybe I will quite later on, like you did.

The ambassador's complaint about poverty in our nation is ridiculous since twice as many people are below the poverty level in his own country.

5.9 Appeal to Authority: regard for the person making an endorsement is reason for belief.

Appeal to Authority assumes that a claim is true because of who says it is, such as celebrity endorsement of a product. The celebrity is a perceived expert. In this fallacy, respect for the character of others is considered sufficient reason for belief or action. It is a fallacy because the status of the messenger is taken as justification rather than value of the message.

Just as Personal Attack rejects a claim because the person making it is reviled, Appeal to Authority accepts the claim because the person making it is revered. In either case, regard for the arguer is not reason to accept or reject the argument. The perceived authority or witness might not be qualified, might have a bias, a motivation to distort the truth, or might not be able to perceive or recall the facts.

Brand X is a smart choice in toothpaste because Einstein used it.

The best view I ever heard on this was told to me by a simple, honest woodcutter. He puffed reflectively on his pipe, then looked at me with those quiet eyes. He told me that, although poor himself, he always reckoned that deficit spending by government could stimulate the economy.

5.10 Two Wrongs Make a Right: that others do or would do wrong is reason for us to act likewise.

In the fallacy of Two Wrongs Make a Right, the conduct of others is taken as sufficient reason for belief or action, justifying an action as what others have or would have done. More specifically, the fallacy runs, if one mistake is made, another can cancel it out.

She pinched me, so I pulled her hair.

The library keeps calling me to donate to their fund-raising campaign. I've asked them repeatedly to stop. If they don't stop, I will rip pages out of books before I return them. I'll make sure that they're the pages with important plot points.

This fallacy does not include, however, retribution and preemptive strike, such as punching a mugger or a naval blockade to prevent nuclear hostilities.

5.11 Appeal To Antiquity: to do as we've always done is reason to continue to do so.

This fallacy (“*argumentum ad antiquitatem*”) consists of supposing that something is good or right simply because it is old. If something fits with tradition, then it is true or appropriate. This is a fallacy since the age of a belief or practice may make it more familiar, but is not relevant to whether or not it is correct. A long-held false belief (e.g., the world is flat) or practice (e.g., blood-letting reduces fever) is still false.

Appeal to Antiquity is similar to Appeal to Novelty (“*ad novitatem*”): because something is new or newer is reason to believe that it is true or good. Another version (“Non-anticipation”) argues that since an idea is not already part of current wisdom is reason to reject the idea.

The national leader should be a man because we have always had male leaders.

We don’t need email. Telegrams were good enough when my grandfather and my father ran the company.

5.12 False Dichotomy: one option is undesirable, so its only apparent alternative is right or true.

False Dichotomy presents two options as if they were the only ones available, one of which is undesirable, so the best choice is the alternative preferred by the arguer. The fallacy has the form of a disjunctive syllogism: A or B, not A, therefore B. It is a fallacy, however, because these choices might not be the actual options or they might not be the only options. The fallacy is intended to limit choice; it leaves out relevant alternatives.

Use Brand X deodorant or risk perspiration odor. Nobody wants to stink, so use brand X.

There are two types of people in this world: the rich and the suckers. Do you want to get rich, or are you happy to remain a sucker?

5.13 Appeal to Ignorance: the absence of proof to the contrary is reason for a belief.

In the fallacy of Appeal to Ignorance, whatever has not been proved false must be true, and vice-versa. This has the form of a disjunctive syllogism: A or \sim A, not \sim A, therefore A. That is, the belief must be true because it has not been shown false (or false because it has not been shown true). It is a fallacy because it counts lack of proof as proof to the contrary.

In general, the person who wishes change has the burden to supply reasons, to show why present practices and beliefs are inadequate and why change would be superior. However, if qualified investigators search for something and fail to find it, then this may imply that there is nothing to be found. Furthermore, a person not proven guilty is considered innocent.

Life must exist somewhere in the universe since, after all, we have not visited and ruled out every possible planet.

No one has proved conclusively that nuclear power plants constitute a danger to people living in their immediate vicinity. Therefore, it is perfectly safe to continue to build nuclear power plants near urban centers.

5.14 Slippery Slope: claim that an option will lead to an undesirable result is reason to act otherwise.

An action will inevitably lead to a certain result, that result is undesirable, so do not take the initial action. If P, then Q; if Q, then R; R is undesirable, so do not do P. If proven, it would be a valid hypothetical syllogism (e.g.: slip on a banana peel, succumb to gravity, strike the ground). But Slippery Slope is a fallacy because the chain of events is unlikely and is presumed, not proven.

I am against lowering the drinking age from 21 to 18. This will only lead further demands to lower it to 16. Then it will be 14. Before we know it our newborns will be suckled on wine rather than mother's milk.

If we ban smoking, people will turn to soft drugs, then move on to hard drugs and the crime rate will go up; so to prevent crime we should allow smoking.

5.15 Begging the Question: the conclusion is a restatement of one of the premises.

The conclusion — the proposition to be proven — is presumed in the premises, usually in synonyms or paraphrase. It is a fallacy because the reasons or evidence are not independent of the claim; the conclusion just restates a premise which is presumed.

The reason there is such a big demand for the latest technology toys is because everybody wants them.

Telepathy cannot exist since direct transfer of thought between individuals is impossible.

5.16 Complex Question: the conclusion is presumed within a question.

In Complex Question (or “loaded question” or “*plurium interrogationum*”) the conclusion is presumed within a question such that answering the question affirms the conclusion. The question is used to imply more than to inquire.

A complex question contains an assumption that the concealed question has already been answered affirmatively. It is this unjustified presumption which constitutes the fallacy and so this fallacy is a variation of Begging the Question. Respond to a complex question by dividing it into its component questions and answer each separately.

Where did you hide the jewels you stole? — Even answering “nowhere” presumes that you stole the jewels, but just did not hide them.

Timmy, do you want to put your toys away in the box or on the shelf? Would you prefer to take your nap now or after your cocoa? — Timmy is merely told to ‘put away your toys’ and ‘take a nap’ even though he seems to have a choice in the matters.

5.17 Suppressed Evidence: leaves out information that would lead to a different conclusion.

Suppressed Evidence uses as evidence only the facts that support the conclusion, disregarding any other pertinent facts. This can occur by inadvertent omission. It can also occur by deliberate deception, as is the case where those making judgment consider only one side of the evidence. In a one-sided assessment, evidence to the contrary is suppressed.

In a balanced assessment, by comparison, the preponderance of evidence is reason for a belief or action. This is a process of inferring a conclusion by weighing reasons for (pro) and against (con) to reach a decision based on the greater body of evidence.

Let's get a bulldog puppy for the kids. They are ugly-cute and nobody around here already has one. — This is a one-sided assessment since bulldogs are not especially good around children, difficult to train, and have habits of drooling and breaking wind.

This ad says that we can buy a Brand X cell phone for only \$99. That sounds like a great bargain. For less than \$100 we can make all the phone calls we want!

5.18 Straw Man: presumes to refute an opposing belief by refuting a misconstrued version of it.

This fallacy sets up a sham or misconstrued version another person's argument for the purpose of more easily attacking it. A certain position is distorted, the distorted version is refuted, concludes that the original position is refuted. This is a fallacy because rejection of a misrepresented or oversimplified version of a position does not constitute rejection of the original position. One version consists of refuting an argument by taking it to extremes ("Runaway-Train").

Smith, a wealthy business person, has argued that government should get off the back of the business. Obviously, Smith wants to abolish government altogether. Yet without government there would be no defense, no judicial system, no pensions, no health and safety regulations. None of us wants to forgo these benefits. Thus we can see that Smith's argument is absurd.

The opposition wants to lower the highway speed limit by 10% in order to save lives. But why stop there; why not lower it 50% or more? Obviously saving lives is not the real agenda of the opposition.

5.19 Missing the Point: draws a conclusion different from the one logically implied by the premises.

The evidence implies one conclusion, but the arguer draws a conclusion not implied by the premises. Also known as "ignoring the issue".

Members of the jury, clearly the defendant is guilty. He has been in and out of trouble. As a youth he was suspended for truancy, as a teen he was ticketed for speeding, and as an adult he has had his taxes audited. Now he stands here guilty of murder. [— The issue is whether the accused is guilty of murder; the argument ignores this and proves that the accused had some concerns growing up.]

Nuclear power plants generate electricity, but electricity can be dangerous no matter where it comes from. Every year people are accidentally electrocuted. Most accidents are the result of carelessness and could easily be avoided by using common sense. So no, nuclear power isn't dangerous. [— Makes a connection that being careful can reduce the number of electrical accidents, but misses the issue of whether nuclear power is dangerous.]

5.20 Changing the Subject: pretense of refuting a claim or argument by diverting attention from it.

Also known as “Red Herring” — this fallacy depends on diverting the attention of the audience. It responds to the claim of another party by diverting attention from that claim or its evidence and in doing so claims to have defeated the claim. One version of Changing the Subject introduces an anecdote or other bit of humor to divert attention.

We've all heard the argument that too much television is the reason our children can't read and write. Yet, many of today's TV shows are excellent. Reality shows require ordinary people to use their wits, sit-coms provide comedy relief from everyday stress, and drama programs add a sense of excitement and adventure. Today's TV is just great!

Is nursing a worthwhile occupation? Believe me, we not only work as hard as anyone else, but harder. The hours are long, the demands are many, and you have to keep current with medical changes. — Which changes the subject: it may be hard work, but is it worthwhile?

5.21 Accident: an extreme exception to a general rule is still reason to reject the rule as inadequate.

Accident (or “Hasty Instance”) seeks to reject a general rule by pointing out an exceptional case as evidence of the rule's inadequacy. This is similar to refuting an argument showing a counter-example. However the fallacy of Accident treats the general rule as rigidly absolute and offers an exception that is an impractical extreme or applies the rule under circumstances that render the rule irrelevant (meaning the rule does not apply when other factors are taken into account).

A note should be made of the phrase “an exception that proves the rule” since some people use it incorrectly. To ‘prove’ used to mean to ‘test’ or establish quality, such as in proving the temper of a sword. The phrase “an exception that proves the rule” uses ‘prove’ in this sense. The exception puts the general rule to the test and, if the exception has merit, than it refutes the rule.

The sign says ‘no parking’ so the ambulance should not park here.

Keri claims that we have a duty to repay what is owed. But suppose a man lends you a rifle for hunting, goes insane, then asks for the rifle back? It would be wrong to put a lethal weapon into the hands of a madman, so Keri is wrong — we don't really have a duty to repay what is owed.

A variation of Accident is “Accent” — which interprets the rule narrowly and changes the meaning of the rule by changing stress on a key element. This can seem to make a prohibition more permissive: by stressing the factor to be excluded, it implies that all else is admissible.

Mother said we shouldn't throw STONES at the cat. She didn't say anything about throwing apples.

Perhaps people are BORN equal, but that does not mean they are equal as adults and so there no reason for giving them all an equal vote.

5.22 Hasty Generalization: concludes a generalization from a sample too small or not typical.

Hasty Generalization (or “Converse Accident”) concludes a generalization about a population based on a sample that is not typical of the population. The sample may be too small or the sample might be an exception to a general rule. In any case, the sample observed is not representative of a population.

The sample needs to be large enough to represent the population's diversity. Strands of spaghetti boiling in a pot are fairly homogeneous, so testing whether one strand is done is sufficient. People, however, are more diverse.

Age 70 is too old to drive; my mother became reckless on the road in her late 60s.

An election poll wrongly predicted a victory for one political party because it surveyed by telephone, not realizing that fewer members of the opposing political party owned telephones.

Proof by Example is one form of Hasty Generalization when it proceeds from an example to a generalization. Rover likes carrots, so dogs like carrots. It would be valid only if it proceeded from an example to an instance: Rover likes carrots, so some dog [or there is a dog who] likes carrots.

5.23 Amphiboly: draws a conclusion based on an ambiguous arrangement of words

In the fallacies of ambiguity, a word or phrased is not used clearly or consistently. The premises cannot support the conclusion since they refer to different senses or interpretations.

In Amphiboly, a premise can be interpreted in more than on way due to its word-arrangement or punctuation. The conclusion is based on the more unlikely interpretation. It arises from ambiguity in a statement usually made by someone other than the arguer. The premises cannot support the conclusion since they refer to different interpretations.

The supervisor told my client that he made a mistake. That shows the supervisor has the courage to admit making mistakes — Does ‘he’ refer to the supervisor or to the employee?

The will states, “I leave my house and my dog to my niece and nephew.” The niece claims she gets the house exclusively. The nephew claims the property and pet pass to both relatives collectively.

5.24 Equivocation: the conclusion depends on inconsistent use of a word or phrase.

Equivocation arises from ambiguity of a word or phrase used by the arguer. The conclusion depends on using a word or phrase in one sense in the premises and in a different sense in the conclusion. The premises cannot support the conclusion since they refer to different senses.

An athlete is a human being, so a good athlete is a good human being. — Equivocation on “good” as successful or virtuous.

Emeralds are seldom found in this country, so you should be careful not to misplace your emerald ring. — Equivocation on “found” as indigenous or located.

5.25 Composition: claims that something has a property because its parts have that property.

If the parts have a certain property, then the whole must have that property. As with the fallacy of Division, the error lies transferring attributes that cannot be transferred. Generally, A has property P, A is a part of B, so B must have property P.

Every part of the model is plastic, so the assembled airplane is plastic. Every part of the model can fit in its package, but it does not follow that the assembled airplane can fit in its package.

Each atom of an apple has mass, so the apple has mass. Every atom of the apple is invisible, but it does not follow that the apple is invisible.

You like cola. You like corn flakes. So you will like cola on corn flakes.

Oxygen and hydrogen are gases at room temperature, water consists of oxygen and hydrogen, so water is a gas at room temperature.

Expansive Property is an exception to the fallacy of Composition. If every part of a whole has an expansive property, then the whole will, too. Plastic and yellow are expansive properties, so if all the parts of a model airplane are plastic and yellow, then the model will also be plastic and yellow. Light and cheap, by comparison, are not expansive properties. Individual part might all be light and cheap, but the product is nevertheless heavy and expensive.

5.26 Division: concludes that the parts have a property because the whole has that property.

The fallacy of Division assumes that whatever is true of a whole must be true of each of its parts. As with the fallacy of Composition, the error lies transferring properties that cannot be properly transferred.

Smith, you claim to be bankrupt, but you work for a wealthy company, so you must be wealthy.

Human beings are made of cells. Human beings are conscious, so cells must be conscious.

5.27 Post Hoc: one event is the cause of another because when one event occurs, the other occurs.

Post Hoc is from the Latin phrase “*post hoc, ergo propter hoc*” which means “after this, therefore because of this.” Because one event follows another, it is claimed that the second has been caused by the first. It is a fallacy because sequence does not entail causal connection; the two events are coincidence. Post Hoc is the basis of good-luck charms and other superstition, sports rituals, and magical thinking.

Cola cures the cold. Enjoy a bottle of the soft drink; your cold will be gone in only a couple weeks.

Star athletes are paid top salaries, so the best way to ensure that the rookie will become a star athlete is to raise her salary to the top.

5.28 Joint Effect: false causal connection in which the two events result from an underlying cause.

Joint Effect: False cause in which the two events result from an underlying cause. It is a fallacy since two events are not related as cause-effect, even though they correlate as both “symptoms” of an underlying cause.

You had a fever, then broke out in spots, so the fever caused the spots. [No, both fever and spots are symptoms of the measles virus.]

When I eat chocolate, I get a headache, so chocolate causes a headache. [No, there could be an underlying cause of both. For instance, I only eat chocolate when I feel stress and stress causes muscle tension, which results in a headache.]

5.29 Gambler’s Fallacy: a streak of events is reason to believe a contrary result is due to happen.

A streak of random events affects the likelihood of future independent events. The longer the run of a random event, the stronger the belief that the opposite outcome is due to occur. It is a fallacy because results of previous events have no bearing on the outcome of next event.

The value of company stock has gone up for several days. Sell now, because what goes up and up must come down.

I know your last three blind-dates turned out to be miserable, but that is all the more reason to suppose you’ve use up your share of bad luck so the one will be wonderful.

5.30 Affirm the Consequent: that the consequent is true is reason to believe the antecedent is true.

Affirm the Consequent uses a conditional statement. A conditional has an if-then structure, such as “if you are a bachelor, then you are not married”. The antecedent in a conditional is asserted in the ‘if’ part; the consequent is asserted in the ‘then’ part.

$A \supset B, B, \therefore A$

That is: if A is true, then B is true; B is true; therefore, A is true.

Affirming the Consequent is fallacious because an event can be produced by different causes. An egg is broken. If I drop an egg, it breaks. Therefore I must have dropped it. –But there could have been other causes. Perhaps someone else dropped it or the chick popped out.

When cats are bitten by rabid raccoons, the cats die. We found a dead cat by the roadside so there must be a rabid raccoon around here.

To have a fire, there must be oxygen. There is oxygen here, so there must be a fire.

Affirm the Consequent is a corruption of the valid deductive form called Affirm the Antecedent (or “*modus ponens*”), which asserts: that the antecedent is true is reason to believe the consequent is true.

$A \supset B, A, \therefore B$

That is: if A is true, then B is true; A is true; therefore, B is true.

Affirm the Antecedent and Affirm the Consequent are similar in appearance, but it is important to distinguish them since the one is valid and the other invalid.

If two objects have mass, then they mutually attract; the Earth and its moon each have mass; therefore the Earth and moon attract one another.

If our team wins their last game, we will be league champions. We won; so we are the champions.

5.31 Deny the Antecedent: that the antecedent is false is reason to believe the consequent is false.

$A \supset B, \sim A, \therefore \sim B$

That is: if A is true, then B is true; A is not true; therefore, B is not true.

If I am in the ocean, then I am in water; I am not in the ocean, therefore I am not in water. [I could be in a river, pool, or bathtub.]

If capital punishment deterred murder, then it would be justified. It does not deter murder and so capital punishment is not justified.

Deny the Antecedent is a corruption of the valid deductive form called Deny the Consequent (or “*modus tollens*”) which asserts: that the consequent is false is reason to believe the antecedent is false.

$A \supset B, \sim B, \therefore \sim A$

That is: if A is true, then B is true; B is not true; therefore, A is not true.

Deny the Consequent and Deny the Antecedent are similar in appearance, but it is important to distinguish them since the one is valid and the other invalid.

If there is fire, then there must be oxygen; the sun has no oxygen; so the sun is not on fire.

If you love me, you would not leave me; you did leave me; therefore, you do not love me.

Maybe Both: that one alternative is true is reason to believe another alternative is false.

$A \mid B, A, \therefore \sim B$

That is: A is true or B is true [or both are true]; A is true; therefore, B is not true.

Maybe Both (or “Affirming a Disjunct”) is a fallacy when both options could be true. In other words, the list of alternatives does not exclude the possibility of both A and B being true.

I am at home or in the city. I am at home, so I am not in the city. [Could be both: my home is a city apartment.]

My puppy is house-trained or there is an accident to clean up when we get home. My puppy is house-trained, so there will not be pee on the carpet [Could be both: the pup is house broken, but has a bladder problem or drank too much water.]

Maybe Both is a corruption of the valid deductive form known as Disjunctive Syllogism (or “excluded middle”) which asserts: that one disjunct is false is reason to believe that the other disjunct is true. In a disjunction the statement of alternatives is exclusive, so if one disjunct is false, the other must to be true.

$A \mid B, \sim A, \therefore B$

That is: A is true or B is true; A is not true; therefore, B is true.

Disjunctive Syllogism and Affirming a Disjunct are similar in appearance, but it is important to distinguish them since the one is valid and the other invalid.

She paid Pete or Paul; she didn’t pay Pete; so she must have paid Paul.

The king held out a basket with two notes. If the knight picks the one marked YES, he may marry the princess. The knight, suspecting the evil king marked both notes NO, grabbed a note and swallowed it, proclaiming that he picks the note remaining in the basket.

5.32 *Maybe Neither: that one alternative is false is reason to believe the alternative is true.*

Maybe Neither (or “Denying a Conjunction”) is a fallacy that reasons as follows: statements A and B cannot both be true; statement A is known to be false; therefore the statement B must be true. It is a fallacy where there is a third possibility: statements A and B are both false.

It can’t be both sunny and overcast. It is not sunny; therefore, it is overcast. [Could be neither: clear sky in the middle of the night.]

A suspect cannot be guilty and have an alibi. Since you don’t have an alibi, you must be guilty. [Could be neither: innocent, but without evidence that you were elsewhere.]

Disjunctive Syllogism and Denying a Conjunction are similar in appearance, but it is important to distinguish them since the one is valid and the other invalid.

5.33 *Undistributed Middle: that subjects have the same predicate is reason to equate the subjects.*

A syllogism has a minor premise (A is B), major premise (B is C), and conclusion (therefore, A is C). The conclusion consists of the subject from the minor premise and the predicate from the major premise. It leaves out the middle term connecting the two premises.

Spot is a dog; a dog is a mammal; thus, Spot is a mammal. [The middle term ‘dog’ is left out.]

Dragonflies are insects that eat mosquitoes. No insects that eat mosquitoes should be harmed. So, no dragonflies should be harmed.

The fallacy of Undistributed Middle occurs when there is no middle term connecting the two premises. It is a fallacy because the subjects can be separate groups even though they have a common property.

The mayor is a person. I am a person. Therefore I am the mayor.

All living things can reproduce. A virus can reproduce, so a virus is alive.

5.34 *Weak Analogy: the conclusion depends on a similarity that is not relevant to the claim.*

In an analogy, one case (that is, an object or situation) has a certain property because it is like another case that has the property and the two are alike in ways relevant to that property. An analogy is strong when the cases compared share a large or decisive number of relevant similarities and do not exhibit significant differences.

An analogy is weak when the cases compared do not share a large or decisive number of relevant similarities or do exhibit significant differences. In a Weak Analogy, similarity in one respect is reason to expect similarity in other respects: known parts are similar, so unknown parts must also be similar.

A laxative capsule looks like a jelly bean, so it will be just as tasty.

When water is poured on the top of a pile of rocks, it trickles down to the rocks on the bottom. Similarly, when rich people make lots of money, this money will trickle down to the poor.

5.35 Insignificant Cause: focuses on a genuine but minor cause instead of more important factors.

In this fallacy, a cause is identified that is insignificant in comparison to other causes. There is a more dominant or decisive cause, so action on the insignificant cause is not likely to produce or prevent the result.

Painting the restaurant's dining room may attract more customers. [Yes, but advertising and lower prices are more effective.]

You shouldn't leave on your porch lights at night. It contributes to global warming. [True, but the effects of automobile and industrial emissions are more significant.]

5.36 Oversimplification: selects one contributing factor and represents it as being the only cause.

Oversimplification looks for a single cause when, in fact, several factors contribute to the result. This fallacy takes the form of a False Dichotomy (sales up or piracy, sales not up, so piracy), when in fact there are several contributing factors.

The sales of video games are down, so software piracy must be the cause. [Slumping sales could be due to economic recession, no new games, or competing technology.]

Our airplanes are so well built that the aviation accident must have been the result of pilot error. [The accident could have been caused by collision with a bird, bad weather, terrorism.]

6 NON-INFERENCE

An argument purports to prove something; a non-inferential passage does not. The statements in a non-inferential passage do not and were not intended to have an inferential relationship.

6.1 Advice : makes a recommendation about a future decision or course of conduct.

An argument purports to prove something; a non-inferential passage does not. The statements in a non-inferential passage do not and were not intended to have an inferential relationship.

6.2 Advice : makes a recommendation about a future decision or course of conduct.

Advice is guidance or recommendation concerning prudent future action, typically given by someone regarded as knowledgeable or authoritative. Opinion about what could or should be done about a situation or problem; counsel, recommendation, suggestion or warning.

Don't try to argue with anyone who has taken a course on reasoning. They just know too much about fallacies.

Before purchasing a puppy, visit the breeder. Ask to see the mother, and be suspicious if you are not allowed to do so. Of course, never purchase from a chain store; that only encourages puppy mills.

6.3 Conditional Statement: asserts an antecedent and its consequent, but not that they are true.

A conditional statement expresses belief in a connection, but does not assert that either part (the antecedent or consequent) is true. A conditional statement is not an argument, but could be added to other premises to become part of an argument.

If art is an artifact that evokes emotion, then an arsonist is an artist.

Suppose the air is removed from a solid closed container; the container will weigh less than it did.

6.4 Definition: describes the category to which something belongs and its distinctive features.

A definition is a description that identifies the closest category to which something belongs and the features that distinguish it from other members of that category.

A triangle is a type of figure [its closest category] that is two-dimensional and has three straight sides [two features that distinguish it from other figures].

Legally blind: a measure of vision less than 20/200 or less than 20 degrees diameter (10 degrees radius) and that cannot be improved with corrective lenses.

The list of features is sufficient if it identifies all and only the members to be included.

“Engine: a type of machine that converts gasoline into motion” is too exclusive. A truck might run on diesel fuel.

“Bachelor: a male who is unmarried” is too inclusive. A baby boy is not really a bachelor.

A definition should not be circular (Hill: land lower than a mountain. Mountain: land higher than a hill). State the definition in positive terms if possible, although sometimes negative terms are unavoidable, such as in defining “bald” or “darkness” or “silence”.

6.5 Explanation: an account intended to clarify why something happened or is a certain way.

An explanation is a statement or account intended to clarify or to make sense of a known event or phenomenon. The event or phenomenon is known or accepted as a matter of fact and the explanation provides understanding as to why it happened or why is as it is. By comparison: an argument tries to prove that something occurred or that it is a certain way; an explanation tries to clarify why something occurred or why it is a certain way.

The sky appears blue from the earth’s surface because light rays from the sun are scattered by particles in the atmosphere.

Without regular maintenance, a crack in the car’s brake line went undetected. The fluid leaked out and this awful auto accident ensued.

6.6 Expository Passage: explains by expanding or elaborating upon a main point.

An expository passage develops a topic sentence. Other sentences in the passage expand or elaborate upon the topic sentence. If the other sentences attempt to prove the topic sentence, however, then the passage is argumentative and not classified as expository.

There are three familiar states of matter: solid, liquid, and gas. Solid objects ordinarily maintain their shape and volume regardless of their location. A liquid occupies a definite volume, but assumes the shape of the occupied portion of its container. A gas maintains neither shape nor volume. It expands to fill completely whatever container it is in.

The pace of reading depends on the reader. One may stop and reread or seek clarification before continuing. The reader can accelerate the pace when the material is easy or uninteresting, and can slow down when it is difficult or enthralling. If the content is moving, one can put down the book for a moment to reflect without fear of losing anything.

6.7 Illustration: an example serving to clarify (but not prove) a point.

An illustration states a point and includes an example as a case in point. This can be a general rule along with an instance or single occurrence of that general rule. In any event, the use of an instance is not to prove the point, but to make the point easier to understand. If examples in the passage can be interpreted as providing evidence to infer or support a conclusion of the point, then the passage is classified as argumentative and not merely illustrative.

Chemical elements and compounds can be represented by molecular formulas. Oxygen, for instance, is represented by O_2 ; water is H_2O , sodium chloride is $NaCl$.

Whenever a force is exerted on an object, the shape of the object can change. For example, when you squeeze a rubber ball or drop your sleepy head on a feather pillow, the ball and pillow are deformed to some extent.

6.8 Instruction: directs behavior based on authority (command) or respect (request).

6.9 Opinion or belief: expression of what someone happens to think or believe.

An opinion express a point of view, personal judgment, or matter of taste. An opinion is of ones own making, but a belief can be accepted or inherited from others. A belief is an assumption made about ourselves, about others, about how we think things really are, or about how we expect things to be. An opinion or belief is held with confidence but not substantiated with proof.

We believe that our company must produce products that fulfill a need for our customers, that our business must be run at an adequate profit, and that the services and products we offer must be better than those offered by competitors.

In my judgement, our country must support peoples of other nations seeking to overthrow oppression by offering economic and financial aid, rather than military intervention, so that they can work out their own destinies in their own way.

6.10 Report: a group of statements that convey information about some topic or event.

A report is an account that describes what one has done, seen, observed, or investigated. Such information could be used in or as the premises of an argument, but because the author makes no claim that they support or imply anything, there is no argument.

A powerful bomb blew up outside the regional telephone company headquarters, injuring several people and causing extensive damage to nearby buildings, police said. A police statement said the 50 kilogram bomb was packed into a milk churn hidden in the back of a stolen car.

Cancer is not one disease, but many. Some forms are particularly susceptible to radiation therapy. Radiation is carefully aimed at the cancerous tissue, and exposure of normal cells is minimized. If the cancer cells are killed by the destructive effects of the radiation, the malignancy is halted.

6.11 Suggestion: idea or plan put forward for consideration.**6.12 Warning: brings to someone's attention the possibility of a problem or unpleasant situation.**

A warning serves to put another person on guard about an impending harm. It is, in effect, advice to beware.

The sidewalk can become slippery. Take care that you don't slip on the ice.

Shut the cage door, you fool! The lions are escaping into the street!

6.13 Wish: expresses the feeling of a hope or desire for something to happen or to be true.

This lottery ticket has to be the winner; we really need the money.

The donut franchise is bound to succeed. You'll get a huge return on your investment.

7 RHETORIC

As used here, rhetoric refers to communication that persuades by means of an argument. An essay—the instrument of rhetoric—could be built around a deductive or inductive argument, filling in supportive and transitional sentences. An essay could be developed using the structure of any valid deductive argument or the method of any strong inductive argument.

The following essays are examples using Affirm the Consequent. In each essay, the conditional is the last sentence of the first paragraph; the antecedent is the last sentence of the second paragraph, and the conclusion is the last sentence of the third paragraph. In each paragraph, sentences prior to the last serve to establish the credibility of that last sentence. They give evidence for believing it.

Hero or Zero — a matter of fairy tale perspective

For any conflict, the victor writes the history and the vanquished becomes the bad guy. That's true for the little old lady that Hansel and Gretel called a witch. It is true for the lonely wolf bullied by the three pigs—and trust me they weren't little. In other words, if you examine fairy tales from the victim's viewpoint, then you'll see that the so-called hero is really the villain.

Consider the case of Jack and the Bean Stalk. My name is Jolly Green and this is how Jack vanquished my brother, André XXXXL. Jack's mother, a shrewd lady, decided to pawn off their aging cow on some fool before it started pushing up daisies. A traveling salesman suckered Jack into trading the cow straight up for a pocket full of kidney beans. His mother, upon seeing his take, was furious. She tossed the beans out the window and gave Jack a tongue-lashing. The next morning, to everyone's surprise, the beans have turned into some sort of mutated freak-stalk. Jack decided to climb this floral staircase to see what might be at the top. Upon spying my brother's abode, the boy sneaks into the kitchen. Here the crimes begin: (1) trespassing, followed by (2) breaking-and-entering. From the point of view of the fairy tale giant, he is the real victim.

As an amateur alchemist, André developed a process to turn ordinary animal feed into gold using only the reproductive tract of a goose. Jack stealthily crept up and pilfered the goose. Crime (3) grand theft goose. Springing from his chair André chased the evil little snot onto the clouds and towards the beanstalk. My brother, as a result of his dense bone structure and massive torso, clambered much more carefully down the vines. At the bottom, Jack stashed the goose and started up his chainsaw. With a loud crack the stalk separated from its base, sending it and its rider crashing. Crimes (4) and (5): willful destruction of property and homicide (or giant-icide). No, the giant (or wolf or troll or witch) does not lives happily ever after. Moral of the story: the fairy tale 'hero' is really the villain.

Cats Make Healthy House Pets

People need pets. The common saying that “dog is man’s best friend” reflects the fact that people have a basic need for companionship. It is well known, for instance, that the elderly feel better and live longer when caring for and interacting with a pet. Dogs are not the only animals that give companionship, however. Some people keep goldfish, parrots, hamsters, turtles, lizards, Guinea Pigs, and even ferrets. As long a pet has many advantages and few disadvantages, then it makes a good pet.

Despite what some dog lovers believe, cats make excellent house pets. They are affectionate, playful, and quiet. They will snuggle up and purr to be petted or scratched under the chin. Who can resist a kitten chasing a balls of yarn. Bathing is rarely needed since cats take care of their own grooming. As a bonus, they do not have to be walked, getting plenty of exercise playing in the house. Cats don’t bark; most don’t even meow very often. They generally lead a quiet existence. Cats do need a litter box, but the mother trains her kittens and from then on most will use the litter box without fail. Cats also need a scratching post, but will use it safely and leave the furniture alone. Clearly, the benefits of cats as pets are many, with no significant concerns.

Conclusion: cats make excellent house pets. Cats are low maintenance, civilized companions. People who have small living quarters or less time for pet care should value these characteristics of cats. However, many people who have plenty of space and time still opt to have a cat because they love the cat personality. In a variety of ways, a cat is an excellent, healthy choice for a house pet.

Both essays use the same structure:

If this, then that

This is true

So, that is true

Exercise Sessions

1 SESSION

Appeal to Inclusion, Hasty Generalization (3), Post Hoc (3), Slippery Slope (3)

1.1 Don't donate to any charity or before long they will all be after your money.

1.2 Roosters crow just before the sun rises. Therefore, roosters crowing cause the sun to rise.

1.3 White must be the Chinese color of mourning because several people at the funeral in China wore white.

1.4 I had a sandwich at that new deli yesterday, but didn't like it very much at all. I won't bother trying any other stuff they have since it is probably all just as bad.

1.5 If we accept slippery slope arguments, we may have to accept other forms of weak arguments. Eventually, we won't be able to reason at all. Hence, we must reject slippery slope arguments as invalid.

1.6 We had a pile of rags in the corner. Pretty soon we noticed rats hanging around the pile of rags. Rags cause rats.

1.7 All of the people who live in the big city must be rich, because all they have there are expensive apartments.

1.8 Can you believe what they're opening up next door? A pet shop! Man, they better not let it open or soon this whole block will smell like animals! Dogs, cats, monkeys, bears, rhinos — yeah, they sell them, I knew a guy that had a rhino. It will be like living next door to a zoo.

1.9 We have more laws than ever and the crime rate is higher than ever. To reduce crime, we must reduce the number of laws.

1.10 Everyone who really belongs here knows that an argument from appeal to inclusion is invalid.

2 SESSION

Appeal to Inclusion, Composition, Equivocation, Hasty Generalization (3), Post Hoc (2), Slippery Slope (2)

2.1 I think we should stop the contractors from building that new apartment building on the empty lot. The next thing you know, this city will be overrun with skyscrapers!

2.2 My girlfriend gives orders: do this, do that. That's all women want is to do is nag, nag, nag.

2.3 Yesterday, I ate three bowls of cereal and won the lottery. From now on I am going to have three bowls of cereal every morning!

2.4 A mouse is an animal, so a large mouse is a large animal.

2.5 All this snowfall in November is sure to mean we are in for a viciously long winter!

2.6 Everyone we know has a sports utility vehicle. We're the only ones that still have a minivan. Let's sell it and get an SUV. We can cruise town and chuckle at folks that still have minivans!

2.7 Not that there's anything wrong with A, mind you, but A will lead to B and then C, and before you know it we'll be up to our arm-pits in Z.

2.8 To answer your question, I should get this job because it is meant to be. Sure there are a lot of out-of-work musicians, but I finished playing on the corner for coins when a gust of wind blew the newspaper in my face with your job posting literally right before my eyes. That means getting this job is destiny.

2.9 Each page in this large phone book can easily be torn in half, so the phone book can easily be torn in half.

2.10 Everyone who lives on my street owns a border collie. They are athletic and intelligent. I tell you, border collie's are the most popular dogs on the planet.

3 SESSION

Appeal to Ignorance (2), Appeal to Inclusion, Begging the Question, Composition, Equivocation, Hasty Generalization, Post Hoc, Slippery Slope (2)

3.1 I don't understand why you are so against putting a waste pipeline from our factory into the river. The company up the street as well as the one across the river do it!

3.2 Literacy rates have steadily declined since television became prevalent. Clearly television viewing impedes learning.

3.3 Never give anyone a break or they will just walk all over you.

3.4 Poor people should be given government assistance because they earn less than the average citizen.

3.5 Talk of extraterrestrial life-forms is nonsense. We know no life exists on other planets because every attempt to establish their existence has failed.

3.6 You have a duty to do what is right. You have a right to leave the country. So you have a duty to leave the country.

3.7 A line is composed of points. Points have no length. Therefore, a line has no length.

3.8 If you spray to get rid of mosquitoes, the dragonflies and frogs will starve, then the snakes and owl that live on them and soon the whole local ecosystem will fall apart.

3.9 Wilson took a poll to find out the favorite soft drink. She asked three of her friends and they all said cola. Wilson then concluded that nation's favorite soft drink is cola.

3.10 Others may die, but that does not mean I shall do so. After all, there is no evidence that says I, in particular and for certain, will one day cease to be.

4 SESSION

Appeal to Fear, Appeal to Ignorance, Appeal to Inclusion, Begging the Question (2), Composition, Equivocation, Hasty Generalization, Post Hoc, Slippery Slope

4.1 People are driving their cars like maniacs tonight. There must be a full moon.

4.2 Smith is a nobody, but since nobody is perfect, Smith must be perfect.

4.3 Women write the best novels because men do not write novels as well.

4.4 You are regarded positively (as wise, popular, loyal, charismatic, beautiful, or having some other desirable trait). If you want to continue to be regarded positively, then you will agree that N is true (in other words, if you don't agree, then you will lose the positive regard), so you should agree that N is true.

4.5 Criminals are basically stupid, because anyone who isn't basically stupid wouldn't be a criminal.

4.6 Every sentence in this paragraph is well written. Therefore, the paragraph is well written.

4.7 I believe that the world came into existence 5 minutes ago, complete with memories, fossils, and records. If that is not so, prove it wrong.

4.8 If we allow the government to require the registration of hand guns, then they will regulate hunting rifles and there will be a push to outlaw all guns. Only criminals will have guns. For self-defense, we must oppose hand gun regulation.

4.9 If you don't take out a membership, we will be pleased to remind you of its many advantages through weekly mailings, daily phone calls, and hourly email.

4.10 Wilson has invested in the stock market three times and made money every time. Figuring she is a genius at picking stocks, she decides to sell her home to invest more money in the market.

5 SESSION

Appeal to Fear, Appeal to Inclusion, Appeal to Spite, Equivocation (2), False Dichotomy, Post Hoc (2), Slippery Slope, Weak Analogy

5.1 Wilson told Smith that she had to have cranberry sauce at Thanksgiving because that is what every one of her relatives serves. It's like I would be celebrating a different holiday than everyone else, Wilson said, that's how important the cranberry sauce is!

5.2 The cocktail called a Screwdriver is made with vodka and orange juice. On Monday I drank 5 of them, then up with a headache. On Wednesday I drank 4 Screwdrivers and woke up with a headache. On Friday I drank 3 Screwdrivers and woke up with a headache. To prevent further headaches I must give up orange juice.

5.3 The government can repeal any law, so they can repeal the law of gravity.

5.4 After shuffling the deck randomly, I predicted that the Ace of Spades would be on top – and it was! The odds must be impossibly small, so I think I have some psychic power that perhaps I could develop.

5.5 Do not get a puppy! It will jump on the bed and your pillow will become infested with fleas! Then the fleas will get into your hair, and chair, and everywhere!

5.6 Either you are part of the solution or you are part of the problem.

5.7 Good steaks are rare these days, so don't order yours well done. on "rare"

5.8 I see that Company X has started doing business with our main competitor. Well then, that means we're not doing business with the folk at Company X.

5.9 I was going to play in the golf tournament on Sunday, but the pro golfers might humiliate us. Maybe I had better catch up on my gardening instead.

5.10 If a car breaks down on the freeway, a passing mechanic is not obligated to render emergency road service. For similar reasons, if a person suffers a heart attack on the street, a passing physician is not obligated to render emergency medical assistance.

6 SESSION

Accident, Appeal to Antiquity, Appeal to Ignorance, Appeal to Inclusion, Begging the Question, Composition, Hasty Generalization (2), Straw Man, Two Wrongs Make a Right

6.1 It's not right that our team's mascot is not a woodland creature. The other teams all have cute and lovable forest creatures as mascots. And you should see the costumes at the football games, they're just oh-so-adorable!

6.2 Wilson went to the supermarket and saw that all of the milk expired on Sunday. She figured that all milk expires on a Sunday.

6.3 Molecules are in constant random motion. The statues of lions outside the library are composed of molecules. Therefore, the statues are in constant random motion.

6.4 My opponent urges us to liberalize the laws on marijuana. No. Any society with unrestricted access to drugs loses its work ethic goes only for immediate gratification.

6.5 Police officers should be given higher wages because it is right that people who enforce the law of the land should earn more.

6.6 The cashier wouldn't say anything if I overpaid, so if the cashier charges too little I'll keep it.

6.7 We should ban the production of nuclear power because it can never be made completely safe.

6.8 Yes, I've been from one side of the continent to the other. I've seen a lot of strange stuff, but I have never seen anything that could make me believe there is an honest used-car salesperson.

6.9 Ancient wisdom teaches that the *argumentum ad antiquitatem* is invalid.

6.10 Based on my two trips to Nation N, I can say with certainty that their entire country is completely flat.

7 SESSION

Accident, Appeal to Antiquity, Appeal to Fear, Appeal to Spite, Division, Equivocation, False Dichotomy, Slippery Slope, Two Wrongs Make a Right, Weak Analogy

7.1 By voting for our town rezoning plan rather than theirs you will have a chance to get back at them for raising property taxes last term.

7.2 Don't go into politics. If you tell the truth, people will hate you. If you lie, you will hate yourself. Since you must either tell the truth or lies, you will be hated.

7.3 Half a loaf of bread is better than nothing. Nothing is better than good health. Therefore, a half a loaf is better than good health. on "nothing"

7.4 I was considering mushrooms to go with the steak for dinner, but this article says some mushrooms carry parasites that can eat your brains. Maybe a pasta potato side-dish is safer.

7.5 If an automobile kills a person, do politicians call for automobile control and call in all cars? If an arsonist burns down a house do we confiscate all matches? The control and confiscation of guns is just as poor a thought process in an age of supposed intelligence.

7.6 If we don't soon switch over to a paperless office, this entire place will become a fire hazard with the mountains of paperwork we're assembling.

7.7 Mom, you said 'don't put your elbows on the table' and you put your elbows on the table when holding the bowl of mashed potatoes.

7.8 Murders have no qualms about killing, so giving them capital punishment is okay.

7.9 Our school is well known. You are a student at our school, so you are well known.

7.10 People didn't need these long vacations years ago; they don't need them now.

8 SESSION

Appeal to Ignorance (2), Appeal to Inclusion (2), Begging the Question, Composition, Division, Equivocation, Post Hoc, Straw Man

8.1 Say what you want about Ouija boards, but as kids one spelled out a name and – sure enough – that's the first name of the person I married years later. In this one case, anyway, it predicted the future.

8.2 The sports car is made entirely of low mass components, so the car is therefore very lightweight.

8.3 To be an atheist you must be certain there is no god. To be certain, you must examine all places in the universe where god could be. Since you can't do that, you can't be an atheist.

8.4 We should not adopt gun control, because unacceptable impositions on our liberty cannot be tolerated.

8.5 We should really try to stop selling these lava lamps. We are the only vintage store in the area that is still pushing the lava lamps. It makes us look way out of style in an industry where we should fit in.

8.6 You cannot be sure that Smith's leg is not wooden because he wears long pants. I am telling you, it must be made of wood!

8.7 A violinist is a person, so a poor violinist is a poor person. on 'poor'

8.8 An expectant Irish couple with two children are nervous, because they know that every third child born is Chinese.

8.9 Anyone could tell Bruce Wayne was Batman since they were never in the same room together. Well, I suspect that you must be the pope.

8.10 As a businessperson you certainly want to subscribe to Brand X magazine. Virtually all the successful business executives in the country subscribe to it.

9 SESSION

Accident, Appeal to Antiquity (2), Complex Question, Composition, False Dichotomy, Hasty Generalization, Missing the Point, Post Hoc, Suppressed Evidence

9.1 Every member of the Gold Club is over 70 years old. Therefore, the Gold Club must be over 70 years old.

9.2 Gravel driveways were okay, but all the houses in this development are now finished. At this point we either pave the driveway or the whole neighborhood will think we are hillbillies or just being cheap.

9.3 I am not a doctor, but play one on TV, and recommend Brand X pain reliever.

9.4 I see you aced that last test. In fact, you're doing well in all subjects this term. Have you stopped cheating on exams?

9.5 I'm against spending our vacation in the south islands since we cannot be sure that we would enjoy ourselves there. ; takes a general rule as rigid; lack of perfection

9.6 If tobacco is really so harmful, it would have been banned generations ago.

9.7 Wilson is scratched by a cat while visiting Smith. Two days later she comes down with a fever. Wilson concludes that the cat's scratch must be the cause of her illness.

9.8 Let's not vacation in Port Spindrif. Think of the heat, the mosquitoes, and the crowds. [I need not mention, on the other hand, the sunshine, low costs, excellent food, and variety of entertainment.]

9.9 Most car accidents occur within 50 kilometers of one's home. Apparently it is more dangerous to drive close to home than far away from home. That most people live and work within 50 kilometers of home.

9.10 My baby-sitter is sixteen and she likes roller blading. Roller blading—that's all those teenagers do! Roller blading, telephones, and music. Crazy.

10 SESSION

Appeal to Antiquity, Appeal to Fear, Appeal to Spite, Begging the Question, Equivocation, Slippery Slope, Straw Man, runaway-train, Two Wrongs Make a Right (2), Weak Analogy

10.1 No one would buy a pair of shoes without trying them on. Why should anyone be expected to get married without first living together?

10.2 One special interest group wants government to subsidize opera, claiming it is too expensive to put on productions without the extra support from public funds. That may be, but why stop with opera? Be prepared for government to transfer tax dollars from your pocket to the purses special groups.

10.3 Smith ate my lunch without asking and it was my favorite tuna salad sandwich. So I ate his, even though it was some crazy macrobiotic cuisine and I didn't really enjoy it.

10.4 The longer I have to wait for my mother to get here, the more likely it seems that she's gotten into an accident.

10.5 We can't take our kids to the park. It is filled with germs and the kids could fall and get injured. Maybe it is better to just let them watch TV all afternoon.

10.6 We should not sell military arms to neighboring nations because it would be wrong for equip other countries with the means of taking human life.

10.7 What, your teacher didn't give you a grade A on that essay just because it was copied from the Internet? Post an anonymous nasty comment on Rate My Teacher — that will get back at her.

10.8 A certain group of people will be given preferential treatment because their ancestors have been discriminated against in the past.

10.9 All that I said was I would be home at a reasonable hour. I think that three o'clock in the morning is a reasonable hour in view of what I've been doing.

10.10 Brand X instant hot cereal – old-fashioned goodness just like mom used to make.

11 SESSION

Appeal to Fear, Appeal to Ignorance, Appeal to Inclusion, Appeal to Spite, Complex Question, Division, False Dichotomy, Hasty Generalization, Missing the Point, Post Hoc

11.1 Certainly Smith will be a capable and efficient manager. He is tall and handsome, a sharp dresser, and he speaks articulately with just a hint of some exotic accent.

11.2 Certainly you want to buy a pair of Brand X fashion jeans. They are the hottest thing this Spring and your friends are sure to be wearing them.

11.3 First you defend the environmental fund. Next you want to take the toll off the bridge even though money goes into road repairs. When are you going to stop talking nonsense?

11.4 I see no reason to help Smith move his furniture to his new apartment. When I moved last week and asked for help, he seemed to ‘discover’ that he had to work.

11.5 I suppose you can go on the cruise without me, honey, but remember how one passenger fell over the railing and drowned in the deep, dark ocean last year. Spending the holiday’s with my parents promises to be a lot safer.

11.6 If we import goods, we send our jobs abroad. If we export goods, we send our property abroad. Since we must either export or import, we export either our jobs or our property.

11.7 If you like to eat cake, you will like to eat its ingredients, such as raw eggs, butter, and flour.

11.8 Wilson was excited to get to go do a study of baboons in their natural habitat. She watched a baboon mother and her child sleep for an entire day. Her report concluded that baboons are the laziest animals on the planet.

11.9 Just as our parents did for us, my husband and I rely solely on Belief System X for all the health needs of our two sons and find it invaluable for the quick cure of whatever ails them. One particular healing that comes to mind happened several years ago when our youngest was a toddler. He had a flu-type illness that suddenly became quite serious. One of the Belief System elders visited the house and our son was well the next morning.

11.10 No citizen objected to the proposed rezoning of the farm property for commercial purposes, so we take this as approval by our residents and town council hereby approves the rezoning

12 SESSION

Accident, Appeal to Authority (2), Begging the Question, Composition (2), Slippery Slope, Straw Man, Suppressed Evidence, Weak Analogy

12.1 Opening an iced-tea franchise in China is a great idea. They have the population for lots of customers. They already like tea and it can get hot in many regions of China. [However, they already have an established market for the product, communist party regulations oppose foreign investment, and iced-tea might not meet cultural acceptance.]

12.2 People who lack humility have no sense of beauty because everyone who has a sense of beauty also has humility.

12.3 Reasoning by analogy is like giving a starving man a cookbook. It increases interest, but not results.

12.4 Smith has argued that cloning frogs in the biology lab is unproblematic. But cloning has serious ethical implications. Suppose you were cloned. Would your clone have rights. Could he or she claim your property? These are deep problems. We can only conclude that Smith's argument is misguided.

12.5 Sodium and chlorine, the atomic components of salt, are both deadly poisons, so salt is a deadly poison.

12.6 The government is considering a law that will make it illegal to smoke in any public buildings. This is outrageous. What's next? Telling us what we can and can't wear?

12.7 There must be something to psychic research. Two famous physicists — Smith and Wilson — took it seriously.

12.8 We promised not to engage in germ warfare against people in *far away* lands, but Nation N is not really far away. , by Accent

12.9 A government represents its people, people can be phoned, so a government can be phoned. (I tried to phone the government, but only people kept answering.)

12.10 As Shakespeare said, arguments from an appeal to authority are invalid.

13 SESSION

Accident, Appeal to Fear, Appeal to Inclusion, Appeal to Spite, Equivocation, False Dichotomy, Hasty Generalization, Missing the Point, Post Hoc, Straw Man

13.1 Cutting people with a knife is a crime; surgeons cut people with knives; so surgeons are criminals.

13.2 Dear federal income tax department: I received a notice that my taxes are being audited for last year. But you have no right to do this. I filed my income tax return a full week before the deadline.

13.3 Either we have a rigorous physical education program in our public schools or the health level of society will disintegrate. The choice should be obvious. ; kids can play instead of watching TV or becom

13.4 He: We should go on a safari for our company trip this year. She: Isn't that a little dangerous? He: If you don't like the idea of an adventure then maybe you shouldn't work at this company. She: Okay, crazy dangerous safari it is.

13.5 If Smith gives Wilson a ring, then they will be engaged. Smith did give Wilson a ring. In fact, he phoned her just the other night. Therefore, Smith and Wilson are engaged.

13.6 Wilson was out shopping one weekend and found a fabulous deal on a great cashmere sweater. It looked so good on her that Wilson decided to wear it out of the store. But as she walked out the door, she tripped and fell into an enormous puddle. From then on, Wilson vowed that she would never buy any sweaters ever again.

13.7 My political opponent believes in ‘laissez faire’, less government regulation of business. Well, why not abolish government altogether? That means no national defense, no judicial system, no health and education programs. We cannot live like that, so clearly ‘laissez faire’ won’t work.

13.8 No way am I giving some milk to that stray cat. It comes around here chasing hummingbirds away from my feeder. You know, that cat doesn’t look too hungry after all.

13.9 Of course you should eat Brand X cereal. Brand X is the breakfast of champions, you know.

13.10 Ow, your cat scratched me, Smith! Why do you have such a vicious animal around the house? I tell you, all cats are mean and dangerous. Why not get goldfish instead?

14 SESSION

Appeal to Antiquity, Appeal to Ignorance, Begging the Question, Corresponding Cause, Division, Slippery Slope, Statistical Syllogism, Suppressed Evidence, Two Wrongs Make a Right, Weak Analogy

14.1 Panda bears are rapidly disappearing. This bear is a Panda. Therefore, this bear should disappear any minute now.

14.2 Picasso is the greatest artist of the twentieth century. We know that this is so because art critics have described him in these terms. Thee art critics are correct in their assessment because they have a more keenly developed sense of appreciation than the average person. This is true because it takes a more keenly developed sense of appreciation to realize that Picasso is the greatest artist of the twentieth century.

14.3 Principal Smith, my boy is innocent. Those Wilson boys in his classroom are always getting into mischief and this time they’ve just blamed my child. Besides, it may have been an accident. My son told me right away that he didn’t throw a rock, the window just broke. .

14.4 Since nobody has any questions, the class must be ready for the quiz.

14.5 Smith wouldn’t stop drinking his roommate’s orange juice from the mini-fridge in their dormitory room, not even when asked repeatedly. His roommate, well, he urinated in the next orange juice carton. That sounds fair.

14.6 The boss at the factory where I am going for an interview resides in a town where three-quarters of the inhabitants are aboriginal, so she is probably aboriginal too.

14.7 This proposal has been kicked around for years. If there were any merit in the idea at all, it would have been implemented long before now.

14.8 To prevent dangerous weapons from being carried aboard airliners, those seeking to board must pass through a magnetometer and submit to a possible pat-down search. Therefore, to prevent alcohol and drugs from being carried into rock concerts, it is appropriate that those entering submit to similar search procedures, such as a urine or breath test.

14.9 When Wilson is on duty, the bank is robbed, but it isn't when he isn't, so we are beginning to suspect Wilson.

14.10 You should never feed a stray dog, because all the strays in town will soon be begging outside your house. Then you'll need a lot of dog food because they'll all give you those puppy-dog eyes that you just can't say no to.

15 SESSION

Appeal to Antiquity [novelty], Appeal to Fear, Appeal to Spite, Complex Question (2), Equivocation, False Dichotomy, Personal Attack, Strong Analogy, Tu Quoque

15.1 You will be away on Monday and the report won't be in until Thursday. Smith, how long must I put up with your attitude?

15.2 Adding fertilizer, my strawberry garden had about 25% higher yield of fruit over previous years. As neighbors, our gardens have similar soil, weather — and we both grow strawberries. Soil, location, and weather are relevant to the yield of fruit. There is nothing significantly different about the two gardens (e.g., one isn't enclosed in a greenhouse and the other openly exposed to the elements). Therefore, if you use fertilizer in your garden it will likely yield more strawberries as well.

15.3 Beer, wine, whiskey. It can all get to a person. So, are you still drinking excessively?

15.4 Brand X soft drink – new, improved package, same great taste. , appeal to novelty

15.5 Don't worry about goofing off around me just because my father owns this company. You know, it's not like I rat on people all the time. Except that one time—oh, and that other time.

15.6 Either we take decisive military action against Nation N or we will one day be attacked by them with chemical and biological weapons.

15.7 For many years, Smith has argued in favor of increased expenditures for space exploration. But remember that the national space agency is situated in Smith's home region. Obviously he supports these expenditures. In view of these considerations, we should ignore Smith's arguments.

15.8 Happiness is the end of life. The end of life is death. Thus, happiness is death.

15.9 Hmm, I would like to donate to your wildlife refuge, but more than one skunk and raccoon have made a mess of my garbage can. Nope, no money from me.

15.10 How can your nation insist that our country not develop nuclear weapons when you have one of the world's largest stockpiles of nuclear missiles?

16 SESSION

Amphiboly, Appeal to Authority, Appeal to Ignorance, Composition, Division, Post Hoc, Slippery Slope, Statistical Syllogism, Straw Man, Weak Analogy

16.1 I have read that one aspirin taken every other day will reduce the risk of heart attack. So if I take two, I will double the protection.

16.2 I promised to pay and leave a large tip only if I could get a window seat at the restaurant. The maître d' did not give me a window seat, so I did not pay the bill or tip.

16.3 If someone rents a piece of land and plants crops on it, the landlord is never permitted to come and take those crops for himself when harvest time arrives. Similarly, if couples enlist the services of a surrogate mother to provide them with a baby, the mother should never be allowed to welch on the deal and keep the baby for herself once it is born.

16.4 Junior always makes sure to drink a big glass of orange juice every morning. One day he was in a rush and accidentally drank his grandmother's prune juice instead, and that day he scored 100% on an exam. Since that day, he always drinks a big glass of prune juice before taking a test.

16.5 Junior real estate agents at our firm are encouraged to purchase and drive an luxury automobile when showing property. The vehicle suggests success and promotes confidence. The appearance of wealth is your ticket to credibility with prospective clients.

16.6 Most birds can fly. The kiwi is a bird, so probably it can fly. Probably, but not actually.

16.7 Now that Big Brother has decided that I must wear a seat belt when I ride in a car, how long will it take before I have to wear an inner tube when I swim in my pool, a safety harness when I climb a ladder, and steel-toe shoes when I carry out the garbage?

16.8 People were put on this earth to discover the purpose of life. That is, our purpose is finding purpose. Unless you can demonstrate that this is not true, we want this to be considered a serious theory and included in the social studies curriculum.

16.9 Russia is big, so Russians must be big.

16.10 Smith has argued that logic is not the most important thing in life. Apparently Smith advocates irrationality. It has taken two million years for the human race to achieve the position that it has, and Smith would throw the whole thing into the garbage. Nonsense!

17 SESSION

Accident, Appeal to Pity, Begging the Question, Corresponding Cause, Explanation, Gambler's Fallacy, Hasty Generalization, Missing the Point, Suppressed Evidence, Two Wrongs Make a Right

17.1 Smith is a notorious cat burglar. He has lived off larceny for years. It only seems appropriate that Wilson broke into Smith's apartment one night and stole Smith's stash of cash. Smith got his just deserts.

17.2 Smith is suffering from amnesia and has no recollection whatever of the events of the past two weeks. We can only conclude that Smith did not commit the crime of murdering his wife a week ago, as he has been accused of doing.

17.3 The Book of Answers is true because it was written by Smith. Smith wrote the truth because he was divinely inspired. We know that Smith was divinely inspired because the Book of Answers says that he was, and the Book of Answers is true.

17.4 The job open in the accounting department should be given to Smith. Smith has six hungry children to feed and his wife desperately needs an operation to save her eyesight.

17.5 The next coin flip will come up heads. After ten tosses the coin hasn't come up heads yet, so heads-up is due on the next flip.

17.6 The space probe exploded when it was struck by a meteor about the size of a baseball.

17.7 This encyclopedia is one you will be proud to own. Your friends will admire it. Your children will benefit. You will learn from it. It will complement your bookshelf. [I will not mention the high cost of bound hard-copy, how quickly it goes out of date, and the availability of free, up-to-date, information online.]

17.8 We must ban the new heart drug because it has been occasionally associated with neurological disorders.

17.9 When you want something, you're polite; otherwise you are rude. So acting nicely is just your way of getting what you want.

17.10 While walking through the hotel, Wilson noticed that the carpeting was the same on every floor. She came to the conclusion that all hotels everywhere have the same carpeting throughout.

18 SESSION

Appeal to Authority, Appeal to Inclusion (2), Composition, Equivocation, Explanation, False Dichotomy, Hasty Generalization, Statistical Syllogism, Tu Quoque

18.1 You should read this novel. It is on the best-seller list, having sold over a million copies. Practically everyone is talking about it.

18.2 80% of our customers are right-handed, so it makes sense to put the handles on the right side.

18.3 All men are mortal. Therefore, some day man will disappear from the earth.

18.4 Anyone who gets Smith to work for him will indeed be fortunate.

18.5 Cows can digest grass, while humans cannot, because their digestive systems contain enzymes not found in humans.

18.6 Dr. Smith has argued that smoking is responsible for the majority of health problems in this country and that every smoker who has even the slightest concern for his or her health should quit. Unfortunately, however, we must consign Dr. Smith's argument to the trash bin. Only yesterday I saw Smith smoking a cigar.

18.7 Dude, Brand X console games suck. I was playing an action-adventure game with this friend of mine, and the Brand X version was horrible. Brand Y console games are much better.

18.8 Either you marry me right now or I'll be forced to leave you and never speak to you again. I'm sure you wouldn't want that.

18.9 Everybody knows that perseverance and hard work are rewarded by wealth. According to my dad, worldly goods are the hallmark of virtue. It makes sense, then, that the lifestyles of the rich and famous are virtuous.

18.10 Everyone is wearing Bousculer; why are aren't you? That's 'boo-skoo-lay' – it means 'liven up' and it means what it says. Can 50 million Frenchmen be wrong?

19 SESSION

Amphiboly, Appeal to Fear, Appeal to Ignorance, Appeal to Pity, Appeal to Spite, Corresponding Cause, Division, Post Hoc, Statistical Syllogism, Strong Analogy

19.1 Extensive laboratory tests have failed to prove any harmful side effects of the new pain killer Compound X. We conclude that Compound X is safe for human consumption.

19.2 I visited a zoo. In one of the large cages were a lion and a tiger. Both respected each other's strength. It occurred to me that it was a good illustration of "balance of power." Each beast followed the other and watched each other's moves. When one moved, the other did. When one stopped, the other stopped. In today's world, big powers or groups of powers are trying to maintain the status quo, trying to be as strong as or stronger than the other. They realize a conflict may result in mutual destruction. As long as the countries believe there is a balance of power we may hope for peace.

19.3 If I eat oysters, I get hives. I never get hives when I eat other food. Therefore, oysters probably cause my hives.

19.4 If you had any consideration for my feelings, you wouldn't argue from an appeal to pity.

19.5 Wilson said that after she had removed her new mink coat from the shipping carton she threw it into the trash. We conclude that Wilson has no appreciation for fine furs.

19.6 Wilson's shoelace is untied and she might trip, but I am not going to tell her. Wilson laughs at the misfortune of others. It would be nice to see her get a little comeuppance.

19.7 Last night, I rubbed my rabbit's foot for good luck on the midterm today, and I aced it! I am going to use my rabbit's foot for good luck from now on and then I won't have to study as hard.

19.8 My dog can bark, my dog has a tail, my dog's tail can bark.

19.9 No doubt you have some memories of you childhood. But the further back, the less you remember, to the point that few of us remember what we were doing before birth — where we were or what it was like. Yet no one has proven that there isn't a pre-birth existence. Until they do, we must conclude that it exists. After all, did we spring into consciousness out of nothing?

19.10 Not wanting his little sister to enter his tree house, Smith made a point of telling her how many spiders, centipedes, and other bugs would be crawling around up there and love to drop onto somebody's hair.

20 SESSION

Accident, Complex Question, Missing the Point, Personal Attack (2), Straw Man, Suppressed Evidence, Two Wrongs Make a Right, Weak Analogy, Wish

20.1 Of course the peace talks will succeed. They must succeed; otherwise it means war.

20.2 One person says this; another person says that. You were in court as well. Why did you lie on the witness stand?

20.3 People have the right to do as they wish, I wish to rob this bank, so respect my right by handing over the cash.

20.4 Port Spindrif has schools, jobs, shopping, recreation facilities, and reasonable housing costs. It is clearly a great family town. [Oh, forgot to mention frequent public service strikes, traffic congestion, pollution, and the high crime rate.]

20.5 Professor Smith's arguments in favor of the theory of evolution should be discounted. Smith is a tax-dodging, chain-smoker and, according to some reports, a member of the communist party.

20.6 Raising a child is like growing a tree. Sometimes violent things, such as cutting off branches, have to be done to force the tree to grow straight. Similarly, corporal punishment must sometimes be inflicted on children to force them to develop properly.

20.7 Since tax dollars go to pay for the national health program, some people want the government to prohibit smoking since smokers suffer more illnesses. Okay, I say, but why stop there? Ban all behavior which adversely affects health, such as eating salt and sugar. Require people to exercise in order to prevent the health costs of their laziness from falling on others.

20.8 Smith and Wilson heard the golfers ahead of them on the course talk about euthanizing their pets so that, instead of walking the dogs, they would have more time for golf. Smith then made sure to aim his next drive right at their golf cart. It looked like an accident, but struck one guy on the forehead.

20.9 Smith's arguments against the rent control initiative on the September ballot should be taken with a grain of salt. As a landlord, it is only natural that Smith would oppose the initiative.

20.10 Something is seriously wrong with high school education these days. After ten years of decline, standardized test scores are still extremely low, and high school graduates are practically incapable of reading and writing. The obvious conclusion is that we should close the schools.

21 SESSION

Appeal to Antiquity, Appeal to Antiquity [novelty], Appeal to Fear, Appeal to Inclusion, Appeal to Spite, Begging the Question, Gambler's Fallacy, Missing the Point, Slippery Slope, Strong Analogy

21.1 The death penalty is the punishment for murder. Just as we have long jail terms for armed robbery, assault and battery, fraud, contempt of court, fines for speeding, reckless driving and other numerous traffic violations, so must we have a punishment for murder. Yes, the death penalty will not deter murders any more than a speeding ticket will deter violating speed laws again, but it is the punishment for such violation!

21.2 The latest phone comes with a 'chameleon' covering: it takes on the color of what it touches. It has all the functionality of our previous model, but with this latest, must-have covering.

21.3 The secretaries have asked us to provide lounge areas where they can spend their coffee breaks. This request will have to be refused. If we give them lounge areas, next they'll be asking for spas and swimming pools. Then it will be racquetball courts, tennis courts, and fitness centers. Expenditures for these facilities will drive us into bankruptcy.

21.4 Well, I am heading to a software store tomorrow to buy that new video game. It has never been on sale before, so has got to be on sale today.

21.5 Animals and humans are similar in many ways. Both experience sensations, desires, fears, pleasures, and pains. Humans have a right not to be subjected to needless pain. Does it not follow that animals have a right not to be subjected to needless pain?

21.6 Are we to presume that we are wiser or more cleverer than the thousands of learned and competent people over the years who could have acted on a proposal such as this, but refrained from doing so?

21.7 Are you sure you want to go to Africa? Last year my parents went there. My father came down with an awful case of typhoid. My mother spent several days in the bathroom.

21.8 Before you give your varsity jacket to Wilson, you should know she was dating Smith while you were on away-games. I would never do something like that.

21.9 {On an advertisement} Chippers: the world's favorite chocolate chip cookie.

21.10 Dozens of species of plants and animals are being wiped out every year, even though we have laws to prevent it. Clearly, we should repeal the Endangered Species Act.

22 SESSION

Accident, Affirm the Antecedent, Affirm the Consequent, Appeal to Ignorance, Complex Question, Composition, Gambler's Fallacy, Hasty Generalization, Post Hoc, Suppressed Evidence

22.1 Freedom of speech is the law of the land. Therefore, your friend was acting within his rights when he shouted “fire! fire!” in that crowded theater, even though it was only a joke.

22.2 Frogs don't actually feel pain. They writhe and exhibit behavior that we associate in humans with pain, but since frogs have no consciousness, they feel no pain.

22.3 Do you want to go to the party or take in a movie? Wear shorts or slacks? Wilson, why is it so difficult for you to reach a decision?

22.4 I am 69 and have been smoking for 50 years. My husband is 80 and has inhaled my smoke for some 40 years with no bad effects. I see no reason to isolate smokers in our restaurants and public places. Smokers have been ostracized enough. There are plenty of fumes on our streets and freeways.

22.5 I think I'm going to buy an umbrella today. After all, we haven't had any rain in months, so I am pretty sure it'll happen any day now.

22.6 I went to visit your home, but only saw rooms.

22.7 I'm not going to get married. There would be all that extra responsibility, not to mention the loss of my freedom. Think of the costs of raising children and putting them through college. Then there are the increased insurance premiums.

22.8 If I get all green traffic lights when driving in to work, then it is sure to be a good day and no real bad will happen.

22.9 If Smith had been planning murder, he would have taken out extra insurance on his wife. He did take out extra insurance, so Smith is the murderer.

22.10 In a recent editorial, The National News accused our newspaper of being offensive. Ironically, on the page opposite this editorial was a cartoon featuring racial stereotypes. If you show that, then you're offensive. The National News is hypocritical.

23 SESSION

Appeal to Authority, Appeal to Pity, Corresponding Cause, Equivocation, Explanation, False Dichotomy, Personal Attack (2), Statistical Syllogism, Tu Quoque

23.1 In areas where rats are a problem, it is very difficult to exterminate them with bait poison. That's because some rats eat enough poison to die but others eat only enough to become sick and then learn to avoid that particular poison taste in the future.

23.2 In demanding a ban on your nation until you outlaw bullfighting, I am joined by distinguished panel of celebrities in the worlds of sports and entertainment.

23.3 Nothing is better than happiness; a tuna sandwich is better than nothing; therefore, a tuna sandwich is better than happiness.

23.4 Of course Wilson is in favor of having our school sell lollypops as a fund-raiser — she is a dentist. That argument about sweets dissolving in the mouth rather than clinging to the teeth doesn't wash with me. Just ask yourself: who stands to make money off cavities?

23.5 Part of the damage to the aircraft could be attributed to its impact with the ground. Another part was definitely due to the wind shear that the plane experienced as it fell from the sky. However, some of the damage cannot be accounted for by either of these factors. Investigators are examining this evidence closely for evidence of explosives.

23.6 Personal attack arguments are the tools of scoundrels and blackguards, so of course they are invalid.

23.7 Professor Smith, surely I deserve a B in your class. I got D's on all the tests, but if you give me a failing mark, I will lose my scholarship. That will force me to drop out of school. My poor, aged parents, who yearn to see me graduate, will be grief-stricken.

23.8 Recently I was shopping downtown in freezing weather. A stranger walked up to me and said, "I wonder how many beautiful rabbits died so you could have that coat?" I noticed she was wearing a down coat, so I asked if the geese they got the down from to make her coat were still alive. She looked surprised. Obviously she had never given it a thought. If people are so upset about cruelty to animals, why don't they go after the folks who refuse to spend the money to have their pets neutered and spayed? Thousands of dogs are put to death every year because the animal shelters can't feed and house them.

23.9 So you want to ban smoking in all eating establishments? Well, when the 40% of smokers stop eating out, restaurants can do one of two things: close, or raise the price of a \$20 dinner 40 percent to \$28.

23.10 That dog wandering this way looks like a Chow. As a breed, Chow Chows tend to bite. So to be safe I should just jog the other direction.

24 SESSION

Amphiboly, Begging the Question, Changing the Subject, Division, Slippery Slope, Straw Man, Two Wrongs Make a Right (2), Weak Analogy, Wish

24.1 The bank just has to extend our credit or we will lost the house.

24.2 The coach reported seeing a picture of a pretty girl stashed in Smith's locker. We can only conclude that Smith has broken the rules, because girls are not allowed in the locker room.

24-3 Water will quench one's thirst. Water is composed of hydrogen and oxygen. Therefore, hydrogen and oxygen will quench one's thirst.

24-4 We don't dare let the animal rights activists get their foot in the door. If they sell us on the idea that dogs, cats, and dolphins have rights, next it will be chickens and cows. That means no more chicken Kiev or prime rib. Next it will be worms and insects. This will lead to the decimation of our agricultural industry. The starvation of the human race will follow close behind.

24-5 We know that induction will provide dependable results in the future because it has always worked in the past. Whatever has consistently worked in the past will continue to work in the future, and we know that this is true because it has been established by induction.

24-6 We played poker with the Smith brothers, figuring they would use a marked deck. That's why we placed a few aces in socks and sleeves. They would cheat if given the chance, so it just evens the playing field.

24-7 What will we do to improve national security? Well, that's not really the point. We have introduced legislation to protect our interests at home and abroad and can say, without hesitation, this is more than our opponents managed in their entire term.

24-8 When a car breaks down so often that repairs become pointless, the car is thrown on the junk heap. Similarly, when a person becomes old and diseased, he or she should be mercifully put to sleep.

24-9 You agreed to allow a bingo hall in the town because people should have the choice to gamble if they so wish. I'm now proposing to have gaming machines on every street corner for precisely the same reasons.

24-10 A panhandler sat on a downtown corner, tin cup in hand, and legs across the sidewalk. I saw him pull in his feet for those who found spare change in their pockets. Those who made no such gesture were left to dodge into the busy intersection rather than navigate across the panhandler's outstretched limbs. I figured the fellow was taking advantage of people and accidentally-on-purpose stepped on the vagrant's shin. He had a few choice words, but hobbled off.

25 SESSION

Accident, Appeal to Inclusion, Composition, Disjunctive Syllogism, False Dichotomy, Hasty Generalization, Missing the Point, Report, Weak Analogy, Wish

25.1 An atomic bomb causes more damage than a conventional bomb. Therefore, during World War II more damage was caused by atomic bombs than by conventional bombs.

25.2 But mom all the other kids are going to the bungee jumping party. Even Smith and Wilson are going. I just have to go.

25.3 Civilizations have a life-cycle of birth, growth, and death like living organisms. As our culture develops, it is only natural that it should, like any life form, put out seeds to reproduce itself in distant places. Thus, colonialism is only natural.

25.4 Did you hear the guy from Company X lost their biggest account to Company Y. Sounds like those guys at Company X don't know what they're doing!

25.5 Either classical culture originated in Greece, or it originated in Egypt. Classical culture did not originate in Egypt. Therefore, classical culture originated in Greece.

25.6 Either the government imposes price controls on the cost of prescription drugs, or the pharmaceutical companies will continue to reap huge profits. Therefore, price controls must be imposed, because we cannot tolerate these huge profits any longer.

25.7 Even though more of the world is immunized than ever before, many old diseases have proven quite resilient in the face of changing population and environmental conditions, especially in the developing world. New diseases, such as AIDS, have taken their toll in both the North and the South.

25.8 Exporting cigarettes to Asia is good business for our economy; there is no reason we should be prohibited from doing so. Asians have been smoking for decades; we are only offering variety in their habit. If the Asians made tobacco smoking illegal, that would be a different situation. But as long as it is legal, the decision is up to the smokers.

25.9 Going to work in this awful weather would do no good for anyone. I think I'll take the day off and stay in bed.

25.10 He: You say you have never met this spy. Can you be sure he was never near you in a crowd, for example? She: Well, no. He: When was this occasion, and what papers passed between you?

26 SESSION

Affirm the Consequent, Amphiboly, Appeal to Authority, Appeal to Ignorance, Appeal to Spite, Changing the Subject, Corresponding Cause, Equivocation, Explanation, Straw Man

26.1 Humanitarian groups argue in favor of housing for the poor. Apparently what they want is another high-density project. Unfortunately, these projects have been tried in the past and have failed. In no time they turn into ghettos with astronomical rates of crime and delinquency. Clearly, these humanitarian arguments are not what they seem.

26.2 If I've won the lottery, I feel happy; I feel happy; therefore I've won the lottery.

26.3 It is usually easy to decide whether or not something is alive. This is because living things share many common characteristics, such as the capacity to extract energy from nutrients to drive their various functions, the power to actively respond to changes in the environment, and the ability to grow, to differentiate, and to reproduce.

26.4 Wilson complains that the problems on the algebra test were too hard. But have you ever seen the way she flirts with that good-looking quarterback on the football team? She's constantly batting those long, black eyelashes at him and her sweaters are scandalous. Wilson should pay more attention to her studies.

26.5 Listen, Wilson, just lend me the money. Remember how Smith dumped you? Well, Smith hates me, so helping me out will make him really upset.

26.6 Maybe I am nearsighted, but I say that I saw the manager rob his own bank.

26.7 Motives and desires exert forces on people, causing them to choose one thing over another. But force is a physical quantity, governed by the laws of physics. Therefore, human choices are governed by the laws of physics.

26.8 No college wrestler has died in fifteen years until now. Why did Rocky die? He was using restricted drugs.

26.9 Our universe began with the “Big Bang” primordial explosion. We can obtain no information about events that occurred before that singular event. The age of the universe, therefore, is the interval from the Big Bang to the present.

26.10 Smith said that he went out on the veranda and watched the fireworks go up in his pajamas. We conclude that Smith must have had an exciting evening.

27 SESSION

Appeal Legitimate Expert, Appeal to Antiquity, Appeal to Fear, Appeal to Pity, Gambler's Fallacy, Personal Attack, Post Hoc, Slippery Slope, Statistical Syllogism, Suppressed Evidence

27.1 Smith was going to buy a motorcycle until Wilson told him about the horrible accident she witnessed three years earlier. She calls it a murder-cycle.

27.2 Smith, universally respected author of the annual state-of-the-world report, has said that the destruction of tropical rain forests is one of the ten most serious worldwide problems. Thus, it must be the case that this is indeed a very serious problem.

27.3 Sure this used car may be 10 years old, but the odometer reading is very low, so it is surely in good shape.

27.4 Surely Wilson is not responsible for running the red light and hitting a parked car. Wilson has had nothing but trouble lately. His daughter eloped, his son dropped out of school, and his wife spent their retirement savings on plastic food storage containers.

27.5 The best way to win the bet is to place all your money on the team with the lowest odds. That way he would encourage that team's morale and probably win the most money.

27.6 The farmers have asked that we provide subsidies for soybeans. Unfortunately, we will have to turn down their request. If we give subsidies to the soybean farmers, then the corn and wheat growers will ask for the same thing. Then it will be the cotton growers, citrus growers, truck farmers, and cattle raisers. In the end, the cost will be astronomical.

27.7 The picture on Smith's old TV set goes out of focus. He steps over and strikes the TV on the side and the picture goes back into focus. Smith figures that hitting the TV fixed it.

27.8 This "History of the War Between the North and the South" by Professor Smith can't be taken seriously. After all, he lives in a region deep in the south. It is no better than that so-called historical account written by Professor Wilson who lives in the north. As historians who live where the war took place, their accounts of what started the conflict are bound to be biased.

27.9 Those clouds look like cumulonimbus, which are known as rain clouds. So rain may be in the forecast.

27.10 We make our furniture in the best way: the old way. And it's every bit as uncomfortable as it always was.

28 SESSION

Appeal to Inclusion, Begging the Question, Complex Question, Corresponding Cause, Division, Personal Attack (2), Strong Analogy, Suppressed Evidence, Tu Quoque

28.1 We've often heard the saying, "Far better to let 100 guilty men go free than to condemn one innocent man." What happens then if we apply the logic of this argument to the question, "Is a fetus an unborn human being?" Then is it not better to let 100 fetuses be born rather than to mistakenly kill one unborn human being? This line of reasoning is a strictly humanist argument against abortion.

28.2 White sheep eat more than black sheep because there are more of them. Therefore, this white sheep eats more than that black sheep.

28.3 Whoever is honest is courageous, because if a person is not courageous then he or she can not be honest.

28.4 Why did you make your husband alter his will in your favor? How did you put poison in his coffee without attracting his attention?

28.5 You say that I should not use my cell phone while driving because it could cause an accident. Well, just because you can't drive and phone doesn't mean others can't. You must be a complete klutz. Were you born a klutz or did you become one by choice?

28.6 Your country asks us to apply “discipline” in our consumption of oil. Well, the population of your country is expected to double in less than a quarter-century. When will your citizens apply the discipline necessary to control population growth so we do not have so many illegal immigrants crossing into our borders?

28.7 A couple of the city councillors want ‘season stations’ so people can cool off during summer heat or shelter from freezing cold of winter. Their argument for ‘season stations’ should be ignored since those two councillors in particular are a pair of do-gooders who support this kind of legislation only to get their names in the newspapers.

28.8 Cats are affectionate and can pretty much take care of themselves. Alley is a cute cat and would make a good pet for somebody in an apartment. [Not to mention that Alley came from a shelter where she was known to be highly aggressive.]

28.9 Charles worked for two years at a hospital. During this time, the number of deaths increased dramatically.

28.10 Don’t worry about jaywalking downtown. Everybody does it.

29 SESSION

Affirm the Consequent, Appeal to Spite, Deny the Consequent, Division, Equivocation, Expansive Property, Personal Attack, Report, Weak Analogy, Wish

29.1 Elephants are not found in this region, so if you have one, don’t lose it or you will never find it again.

29.2 Every tile on the floor is blue, so the floor is blue. Every part of the chair is wooden, so the chair is wooden.

29.3 Five college students who were accused of sneaking into the Cincinnati Zoo and trying to ride the camels pleaded no contest to criminal trespass yesterday. The students scaled a fence to get into the zoo and then climbed another fence to get into the camel pit before security officials caught them, zoo officials said.

29.4 Government embodies the people and, like any body, it works best when the brain is in charge. This shows that an authoritarian government is best since it is most clearly in charge.

29.5 Graduates from East University score much higher on standardized tests than do graduates from West University. Smith is from East University, so he will do better than Wilson on the tests, since she is from West University.

29.6 He can’t die. We couldn’t manage without him.

29.7 Hey, that's the guy who dumped your sister. You're not going to let him win this auction for an original lava lamp, are you? You should outbid him.

29.8 I don't think we should hire Smith. I see he's a keen fisherman. Idlers take up fishing, so that's a bad indication of his work performance.

29.9 I have one question for those bleeding hearts who whine that the atomic bomb should not have been dropped on Japan. If the Japanese had invented the bomb first, don't you think they would have used it? So do I.

29.10 If there is sound, then there must be a medium; there is no medium in outer space; therefore, in space, nobody can hear you scream.

30 SESSION

Appeal to Antiquity, Appeal to Fear, Changing the Subject, Disjunctive Syllogism, Explanation (2), Gambler's Fallacy, Statistical Syllogism, Strong Analogy, Two Wrongs Make a Right

30.1 It has been unusually cold all month, so I am sure that it will warm up in the next couple of days.

30.2 Wilson was going to put maraschino cherries on the cake, at least until Smith told her that the chemicals used stick around in a person's body for seven years and who knows what harm that can cause.

30.3 Members of the jury, you have heard Wilson testify that she observed the entire scene and that at no time did the defendant offer illegal drugs the undercover police officer. But Wilson is a known drug dealer herself and a close friend of the defendant. Also, only a year ago she was convicted of two counts of perjury. Therefore, you should certainly discount the testimony of Wilson.

30.4 Men are less likely than women to develop osteoporosis until later in life. Even then, men seldom suffer as severely as women because they have 30 percent more bone mass on the average and don't undergo the sudden drop in estrogen that occurs with menopause.

30.5 My cat is not male; cats are male or female; thus, my cat is female.

30.6 My client could not have ordered the murder. I have proved beyond a shadow of doubt that he was not even in the country at the time.

30.7 My grandmother used to say 'blood cannot be washed out with blood' but grandma never knew about modern-day pirates. We were in international waters when they boarded our freighter at gun-point. They held the captain hostage without food or water for three days, demanding ransom that we didn't have. When we got him back, we sunk their ship so no one would have to go through that ordeal again.

30.8 No one, upon encountering a watch lying on a forest trail, would expect that it had simply appeared there without having been made by some force. For the same reason, no one should expect that the universe simply appeared without having been made by some force.

30.9 No, I don't want any coffee, but thanks for the offer. Its just that coffee after dinner tends to keep me awake at night.

30.10 No, son, you are not having a car. I never had a automobile, my father never had one, nor did his father before him. Yet we all ways got where we were going.

31 SESSION

Accident, Amphiboly, Appeal to Authority, Appeal to Ignorance, Begging the Question, False Dichotomy, Hasty Generalization, Post Hoc, Slippery Slope, Straw Man

31.1 Of course smoking and drinking should be permissible. After all, people have a right to do as they please with their own bodies.

31.2 Our nation is proud to advance peace and prosperity throughout the world. We stand for democracy. We stand against terrorism. Either you are with us or you are against us.

31.3 Smith advocates increased old age pension benefits. It is regrettable that Smith finds it necessary to advocate socialism. Socialism defeats initiative, takes away promised rewards, and leads directly to inefficiency and big government. It was tried for years in Eastern Europe, and it failed miserably. Clearly, socialism is no good.

31.4 Smith purchases a new computer and it works fine for months. He then buys and installs a new software program. The next time he starts up his computer, it freezes. Smith concludes that the software must be the cause of the freeze.

31.5 Smith's theory about the origin of the Martian craters is undoubtedly true. Smith, the great concert pianist, announced his support of the theory in this morning's newspaper.

31.6 The law of the land prevents the government from interfering with the free exercise of religion. The liturgical practice of the Belief System X involves human sacrifice. Therefore, it would be wrong for the government to interfere with this religious practice.

31.7 The travel brochure states that when walking up Main Street, the kinetic statue comes into view. Apparently that statue has no trouble getting around.

31.8 There is no conclusive study that says taking vitamins actually improves a person's health. Therefore, we can conclude that vitamins are simply a waste of money.

31.9 There is no way the swan that hangs around the lake at your cottage is black. I saw a swan in the zoo and it was white.

31.10 We really should not let our daughter go to that party tonight. Pretty soon she will be staying out until four in the morning every weekend!

32 SESSION

Appeal to Pity (2), Appeal to Praise (2), Appeal to Praise, Complex Question, Composition, Maybe Neither, Missing the Point, Post Hoc, Tu Quoque

32.1 We saw marching bands, clowns, horses, and floats, but the parade never passed by.

32.2 When will law-makers, with their cozy, cushy jobs realize that the rest of us work hard for 30 or 40 years. A factory laborer puts in 35 years. With a tired, aching body he or she longs to retire at age 55. Now the government wants to make these poor, spent bodies wait, yes wait another decade of toil on the assembly lines, in the fields or mines, or in the poorly ventilated, hot-in-summer, cold-in-winter factories and garages. Many cannot afford to retire early on their own. Do not let the government extend the retirement age. It's a matter of survival.

32.3 When will they ever learn that the Red Party is not for the people who voted for it?

32.4 Why is your coach complaining to the referee? You have nothing to complain about since your players have been poking and tripping throughout the first half of the game. You can give it, but can't take it.

32.5 You are far too intelligent to accept an argument based on an appeal to vanity.

32.6 You cannot be wealthy and a be a poet. You aren't wealthy, so you must be a poet.

32.7 Baseball player Smith just retired. Clearly, he will end up in the Hall of Fame. After all, he is such a nice guy and gave a lot of money to all sorts of charities.

32.8 A camera slowly zooms in on a boy slumped on the steps, elbows on his knees, face in his hands. No sound; then the narrator intones: 'no child should suffer boredom, give to the Children's Amusement Charity'.

32.9 A glamorous gal like you deserves to indulge in Brand X expensive perfume.

32.10 A statistician looking over figures for pupil performance was astonished to discover that, for students age 7-12, neatness of handwriting matched with shoe size. After checking the figures for hundreds of children, it was quite clear: neat handwriting correlated with large feet, with 98% probability that this was not mere chance.

33 SESSION

Complex Question, Composition, Corresponding Cause, Disjunctive Syllogism, Expansive Property, Gambler's Fallacy, Joint Effect, Missing the Point, Report, Weak Analogy

33.1 An automobile makes less pollution than a bus, so cars are less of a pollution problem than buses.

33.2 Are you in favor of the ruinous economic policy that the mayor proposes?

33.3 At first we could not determine the cause, but then we noticed that there were more cases of the infection when more monkeys from Uganda were present.

33-4 Each and every stone in the sandstone post office is gray. Therefore, the post office has a gray color.

33-5 Either human beings evolved from more primitive life forms or they were created in their current state. But human beings were not created in their current state. Therefore, human beings evolved from more primitive life forms.

33-6 For generations now there has been a trend: during an election year consumer spending increases, compared to spending in non-election years. Evidently, elections make people spend.

33-7 Government is like business, so just as business must be sensitive primarily to the bottom line, so also must government.

33-8 Haydn developed the string quartet from the eighteenth century divertimento, giving more substance to the light, popular form and scoring it for two violins, a viola, and a cello. His eighty-three quartets, written over the course of his creative lifetime, evolved slowly into a sophisticated form. Together Haydn's eighty-three quartets constitute one of the most important bodies of chamber music literature.

33-9 I am putting all my money on whichever horse is in the seventh gate. Seven is my lucky number so it will bring me luck.

33-10 I fail to see why hunting should be considered cruel when it gives tremendous pleasure to many people and employment to even more.

34 SESSION

Affirm the Antecedent, Affirm the Consequent, Appeal to Authority, Appeal to Fear, Appeal to Spite, Conditional Statement, Equivocation, False Dichotomy, Undistributed Middle, Wish

34-1 If an artifact evokes an emotion, that's art. I kicked over my nasty neighbor's garbage can and he reacted with emotion, all right. I explained it is just art.

34-2 If the mill is polluting the river, then the number of fish deaths will increase. Fish deaths have increased, so the mill is polluting the river.

34-3 If you buy our airline ticket now you can save 60%, and that means 60% more vacation for you.

34-4 If you light the grill, I will start mixing the pancake batter.

34-5 It can't be Friday already! I need more time to finish the taxes!

34-6 It is owls versus jobs, the environment or the economy.

34-7 Wilson is a great golfer, probably the best playing today. She is in those commercials for Brand X running shoes, so those must good running shoe.

34-8 Wilson, who has a high fever, refuses to see a doctor because Smith told her repeatedly that people get sicker in medical waiting rooms than anywhere else. Wilson is feeling so poorly that she doesn't want to chance becoming even more ill.

34-9 Let's follow my big sister everywhere around the house. That will really annoy her.

34-10 Men are human; women are human; so men are women.

35 SESSION

Amphiboly, Appeal to Ignorance, Appeal to Legitimate Authority, Definition, Explanation, Slippery Slope, Statistical Syllogism, Straw Man, Strong Analogy, Tu Quoque

35-1 No business concern wants to sell on credit to a customer who will prove unable or unwilling to pay his or her account. Consequently, most business organizations include a credit department which must reach a decision on the credit worthiness of each prospective customer.

35-2 Probably no life exists on Venus. Teams of scientists have conducted exhaustive studies of the planet's surface and atmosphere, and no living organisms have been found.

35-3 Rhinos once roamed Africa in teeming numbers, but very few rhinos now survive outside national parks and reserves. The three rhinos were observed in the western savannas are not likely to survive on their own.

35-4 Rhubarb pie is a dessert. Therefore, whoever eats rhubarb pie eats a dessert.

35-5 Slow down a little. If you are too efficient, before long the boss will expect more from all of us.

35-6 Smith said that he was interviewing for a job drilling oil wells in the supervisor's office. We can only conclude that the supervisor must have an awfully dirty office.

35-7 So you think a course in poetry is not the most important thing in your life? Apparently you don't value poetic expression. It has taken thousands of years to develop language and refine it into meter, metaphor, and other techniques of imagery. And now you would reject centuries of human achievement. Nonsense; clearly poetry is important.

35-8 The accumulation of pressure in a society is similar to the build-up of pressure in a boiler. If the pressure in a boiler increases beyond a critical point, the boiler will explode. Accordingly, if a government represses its people beyond a certain point, the people will rise up in revolt.

35-9 The ancient Romans had one of the history's greatest civilizations. They had slaves, so we can keep slaves too.

35-10 The chefs in this restaurant are stupid and intolerable when it comes to the problems of waiting tables. I defy you to find me a cook who has any idea what we have to go through as waiters.

36 SESSION

Accident, Appeal to Antiquity, Begging the Question, Changing the Subject, Division, Maybe Neither, Personal Attack (2), Suppressed Evidence, Two Wrongs Make a Right

36.1 The conservative attitude found in campus newspaper comes from a handful of wealthy brats who have had whatever they wanted while growing up. Put them on an ethnically more diverse campus, then let us see how long their newspapers survive.

36.2 The doors of that delivery van are open and unguarded. They shows a crate of eight Labrador retriever puppies going to the pet shop around back. We're not going to steal them. The pups are from a puppy mill, so we are going to liberate the puppies.

36.3 The federal government should prohibit the sale of the Gold-Wing Blackbird to a Japanese zoo because it should prevent the export of all works of indigenous life found on Lilac Island.

36.4 The federal government should subsidize arts programs. Every great civilization in history has provided state subsidies for art and culture!

36.5 The federal government wants to expand law-enforcement powers, including revising wire-tapping laws, in order to combat terrorism. But these are the same ideas that were used by the Nazis in the 30s, so clearly we should not adopt them.

36.6 The missile can't go both north and south. It wasn't fired north, so the missile must be going south.

36.7 The school board says that our schools are in desperate need of repair. But the real reason our students are falling behind is that they spend too much time with their computers. Becoming educated means a lot more than learning how to point and click. The school board should urge parents to monitor their kids' computer time.

36.8 The students attending North University come from every one of the ten regions of our country. Wilson attends North University. Therefore, Wilson comes from every one of the ten regions.

36.9 This letter from the National Gift Distribution Center says that we have won a free gift, and to claim it we need to call the phone number given in the letter. Apparently if we call that number, they will send the gift right away.

36.10 What the farmer sows in the spring he reaps in the fall. In the spring he sows \$8-per-bushel soybeans. Therefore, in the fall he will reap \$8-per-bushel soybeans.

37 SESSION

Appeal to Inclusion, Changing the Subject, Complex Question, Definition, Expansive Property, Hasty Generalization, Missing the Point, Slippery Slope, Statistical Syllogism, Suppressed Evidence

37.1 What's wrong with kids today? Answer: nothing. Witness the action of two teenage boys recently, when the fire in the valley was at its worst. They took a garden hose to the roof of a threatened house—a house belonging to two elderly sisters, people they didn't even know. They saved the house, while neighboring houses burned to the ground. No, I say kids today are great. .

37.2 Every other restaurant in town serves bread before the meal. If we do not serve bread then we will not be a successful restaurant. We must hire a baker!

37.3 Accidents on commercial airliners are quite rare so your upcoming flight is very safe.

37.4 Animal rights activists say that animals are abused in biomedical research labs. But consider this: pets are abused by their owners every day. Probably 1 of every 4 of pet owners should never get near animals. Some cases of abuse are enough to make you sick.

37.5 Are consumers so stupid they don't realize that every time they pay thousands of dollars for one of those new "economical" import cars, they are making our nation bankrupt and giving foreigners our money?

37.6 Belief System X is the only true religion since it has clearly been of great help to many people.

37.7 Butane is combustible. Therefore, it burns.

37.8 During the 50 years that Mr. Wilson worked, he contributed \$90 000 to the pension fund. Now that he is retired, he stands to collect \$200 000 from the system. Obviously he will collect much more than he contributed.

37.9 Each and every cell in this carrot is 90 percent water. Therefore, the entire carrot is 90 percent water.

37.10 Even though Smith's new book is offensive to just about everybody, we cannot remove it from the library or eventually we will be throwing out the classics because somebody objects.

38 SESSION

Advice, Affirm the Antecedent, Affirm the Consequent (2), Appeal to Inclusion, Appeal to Spite, Conditional Statement, Personal Attack, Two Wrongs Make a Right, Weak Analogy

38.1 Friedrich Nietzsche's philosophy is not worth the paper it's printed on. Nietzsche was an immoral reprobate who went completely insane from syphilis before he died.

38.2 Hanging a balloon or paper bag will make wasps go elsewhere since they are territorial.

38.3 Hey, that van just cut right in front of us. Speed up and cut him off. He needs to know what it is like. Dangerous drivers need to be taught a lesson.

38.4 Holding a gun, a thief robs John Q. Public of thousands of dollars. Holding a baby, an unmarried mother robs taxpayers of thousands of dollars. If one behavior is considered a crime, then so should the other.

38.5 I am voting against this resolution not because of its content, but because it will give the environmentalists an ability to blow their trumpets, to claim a victory in this district. It will give them political oxygen. I wish to deny political oxygen to the environmentalists.

38.6 I think we should put on a musical this season since every other troupe in this city is performing musicals.

38.7 If 20% of adults are functionally illiterate, then it's no wonder that some morons get elected to public office. In fact, 20% of adults are functionally illiterate. So, no wonder some morons get elected to public office.

38.8 If public education fails to improve the quality of instruction in both primary and secondary schools, then it is likely that public education will lose additional students to the private sector in the years ahead.

38.9 Let's see if I have this straight. You and a three neighbors would like your yards landscaped at the same time. You figure that since merchants give a price break on bulk orders, you want my landscaping company to also give a discount. Well, that's like asking a house builder for a volume discount because the four of you happen to know one another. The cost to me for labor, materials, and overhead are the same whether the four of you approach me together or independently. Think of it this way: although property is involved, the builder and I provide a service, not merchandise. The only way either of us could do as you ask is either at a financial loss or if the bid was high to begin with and your discount is just bringing it down to competitive levels.

38.10 If the universe had been created, we would see order and organization everywhere. We do see order, not randomness, so it's clear that the universe had a creator.

39 SESSION

Appeal to Antiquity, Appeal to Fear, Conditional Proof, Corresponding Cause, Equivocation, exception to Appeal to Ignorance, Report, Straw Man, Undistributed Middle, Warning

39.1 If there was any compelling reason for allowing that group to vote, would it not have been acted upon long before now? We must rest assured with the wisdom of the ages and restrict voting to those already familiar with the practice and vested with its responsibility.

39.2 If you get in, then you can find a table. Whether you find a table or sit on the floor, in either case you can watch the show. So, if you get in, you can watch the show.

39.3 If you purchase things on the internet using your credit card, you are opening yourself up to far greater risk of identity theft compared to other purchase practices. If you want to keep your money and identity safe, never buy anything online.

39.4 Ladies and gentlemen of the jury. As you can see, the prosecution did not prove that my client is guilty. So you must return a verdict of ‘not guilty.’

39.5 Lions at National Park are dying of tuberculosis. ‘All of the lions in the park may be dead within ten years because the disease is incurable, and the lions have no natural resistance,’ said the deputy director of the Department of Agriculture.

39.6 Most Arabs are Muslims. All the hijackers are Muslims. Therefore, most Arabs are hijackers.

39.7 My campaign promised hope and change and now that we are elected it is true: the people are hoping for change. We have delivered on our promise.

39.8 My parents didn’t count on having me to shake up their world. My favorite strategy is to exaggerate. Suppose mom tells me to do the washing up. I twist her request to suggest that I should always do the washing up or that doing the washing up is my job. Now it doesn’t sound so fair. Mom’s reasonable request is now an indefensible position.

39.9 Never post personal information on the Internet. What’s out there, stays out there.

39.10 Nobody has ever seen Wilson smoke a cigar or cigarette, so she is probably a non-smoker.

40 SESSION

Appeal to Authority, Appeal to Pity, Composition, Disjunctive Syllogism, Division, Joint Effect, Maybe Neither, Oversimplification, Personal Attack, Post Hoc

40.1 Now be reasonable, Wilson. You can not get both the bicycle and the puppy. Wilson did not get the bicycle, so she must have received the puppy.

40.2 Our planet has just the right temperature range for us, just the right atmosphere to breathe, just the right raw materials that we need for food and shelter. It has to be more than luck. There must be a design or purpose.

40.3 Our roadways have been eroding for years. Clearly we need to stop using salt on roads in winter.

40.4 Pigeons struggle in our city in search for food. What manner of person would watch these hungry creatures suffer from want of peanuts in the park and deny them their survival? These helpless birds are too often ignored by the people of our city, with not the least bit of compassion shown to them. Give generously to the City Pigeon Fund.

40.5 Rudolf Höss, commandant of the Auschwitz concentration camp, confessed to having exterminated one million people, most of whom were Jews, in the Auschwitz gas chamber. We can only conclude that Höss was either insane or an extremely evil person.

40.6 Sales of soup are highest (or lowest) when the incidence of frostbite is highest (or lowest), so soup sales cause frostbite.

40.7 Since each person desires just their own happiness, people together desire the common happiness.

40.8 Smith is employed by the research department, and everyone knows our research department is the most inefficient department in the company. Therefore, Smith must be an inefficient worker.

40.9 Smith wants us to outlaw plastic shopping bags altogether because they are bad for the environment. Smith doesn't tell you he is married to the daughter of a pulp and paper manufacturer. What do pulp and paper companies produce? Paper shopping bags! I say the only thing that needs to go to the trash is Smith's argument.

40.10 Smith was a coal miner all his life, a man who worked hard for an honest day's wages. You can see the simple honesty carved in the creases of his face and hands. When he says that time is relativized motion, you just have to believe him.

41 SESSION

Amphiboly, Appeal to Legitimate Authority, Begging the Question, Denying the Antecedent, Expository, Hasty Generalization, Hypothetical Syllogism, Induction by Enumeration, Strong Analogy, Tu Quoque

41.1 Smith, the world's leading paleontologist, says the dinosaurs were killed by an asteroid that collided with the earth. Many scientists agree with Smith. Therefore, we conclude that the dinosaurs were probably killed by an asteroid.

41.2 Squares are rectangles and rectangles are quadrilaterals, so squares are quadrilaterals.

41.3 The author warns about numerous computational errors in his accounting text. Therefore, he must have written it very carelessly.

41.4 The construction company should not be given the job of designing the new bridge over the canyon. In recent years this same company designed three other bridges and all have collapsed. The company is clearly not competent to complete the job safely.

41.5 The editor of the local newspaper accused our company of being one of the town's worst water polluter. But that same newspaper is responsible for much more pollution than we are. After all, they own the pulp and paper company and making paper discharges massive amounts of chemical residue into the bay every day.

41.6 The instructor said that if we didn't do the homework, we would not pass. I did all the homework, and so I should have passed. But she still gave me a D, so I'm going to complain.

41.7 The issue isn't whether we should subsidize the arts, but whether anyone should be able to force others to subsidize the arts. You are free to donate any amount of your money to any artistic endeavor. When the government gets involved, however, bureaucrats take our money and give it to the arts they wish to support. We are not consulted.

41.8 The news carried an article this morning about three local teenagers who were arrested on charges of drug possession. Teenagers these days are nothing but a bunch of junkies.

41.9 The operation of a camera is similar in many ways to the operation of an eye. If you are to see anything in a darkened room, the pupils of your eyes must first dilate. Accordingly, if you are to take a photograph without a flash in a darkened room, the aperture of the camera lens must first be opened.

41.10 The finding that media violence is related to social aggression is hardly surprising. Take half of the population every night in front of a box watching people getting stabbed, shot and blown away. And then you expect them to go out into the streets hugging each other?

42 SESSION

Accident, Affirm the Antecedent, Appeal to Ignorance, Appeal to Praise, Constructive Dilemma, Explanation, False Dichotomy, Gambler's Fallacy, Illustration, Maybe Both

42.1 There is no conclusive proof that violence in the media makes those who watch it more violent. Therefore, we must conclude media violence is harmless or at least does not contribute to aggressive conduct.

42.2 They can send a man to the moon, so why can't they cure the common cold?

42.3 They're the home team, they have to win this game. I have a good feeling about this one because they've lost the past 19 games and this is the only one left this season.

42.4 Water is a good solvent for many different substances, and it picks them up as it moves through the environment. Thus, rain water flowing over and under the ground dissolves minerals such as limestone.

42.5 We made a deal: if I win the lottery, I will donate it to the animal hospital; if you win, you'll donate it to the orphanage. One of use has the winning ticket. Therefore, either the animal hospital or the orphanage will get a donation.

42.6 What goes up must come down. The price of gold has been going up for months. Therefore, it will surely come down soon.

42.7 Women tend to have higher pitched voices than men because they have shorter vocal chords. Shorter vocal chords vibrate at a higher frequency than longer ones.

42.8 Would you like cream or sugar with your coffee? Cream—okay, then no sugar for you.

42.9 You're smart, so of course you understand why communism is far superior to capitalism.

42.10 As rain begins to fall, the umpire looks to the sky and shouts "well, there goes the game".



applying principles to evaluate expressions as
effective arguments, fallacies, or non-inferences