Tuesday April 19, 2011 Schedule for the Day

Am: Critical Reasoning

-- Comment's on Friday's Assignment

--Discussion of Today's Assignment

--Workshop on new material: "should" arguments, Fallacies: Distraction and Resemblance; more from Chapter 5

Pm: Ethical Reasoning

--Review of Friday's Topics

--Workshop on Utilitarianism

Comments on Critical Reasoning Assignment for Friday, April 15

On Assignment for Friday, a fairly good start, but typically need more implicit premises –and in some cases they need a subordinate argument structure

WEEK	TUESDAY	FRIDAY
WK 4 Apr 19 Apr 22	Am CR: Evaluating Arguments 2 (Read C&P Ch 5 to p. 133) Pm ER: utilitarianism (Read: R&R, Ch. 7 & 8):	Am CR:Fallacies (Read C&P Ch 6 Remainder, Ch 7 to p. 186 Pm ER: Ethics: Kantian Ethics, (Read: R&R, Ch. 9 & 10):
WK 5 Apr 26 Apr 29 **Change**	Am Review of fallacies and preparation for CR Exam No New Reading **5 Portfolio entries due** Pm Conceptual Theories (Read C&P Ch. 7 Remainder) Bring both CR and Ethics Texts	Am Exam I Pm "Gone Baby Gone" Video and Discussion

Your **Portfolio due Tuesday April 26th** should containing at least five (5) items (editorials, letters to editor, opinion pieces, short internet selection, short section from book or longer article, etc); for at least two (2) reconstruct an argument into standard form (with missing, implicit premises or conclusion supplied if necessary); evaluate at least one (1) of those you reconstructed by indicating whether it is valid (using common successful argument patterns or methods of chapter 4 or 5) and if so whether it is sound by casting doubt, if appropriate, on the premises.

Discussion of Chapter 4 Exercise 4.1 #4, #6, #8, #10

4. No great singer has a weak voice. Abby is not a great singer. It follows that Abby has a weak voice.

Invalid Pattern

(1) No great singer has weak voice.
(2) Abby is not a great singer.
∴ Abby has a weak voice.

(1) No P_1 is a P_2.
(2) m is not a P_1.
∴ m is a P_2.

COUNTEREXAMPLE:

As suggested in Friday's Workshop

(***1) No triangle has four sides.***
(2) The Pentagon Building is not a triangle.
∴ The Pentagon Building has four sides.

DESCRIBING AN INVALIDATING POSSIBILITY:

(There could be other reasons why Abby is not a great singer than a weak voice.) Abby could be a poor singer but a great lecturer, that is, she could have limited musical ability (poor pitch and rhythm), but nevertheless have a strong voice that projects well in large lecture halls.

Discussion of Chapter 4 Exercise 4.1

6. All doctors have studied medicine. Paul is not a doctor. Therefore, Paul has not studied medicine.

(1) All doctors have studied medicine.
(2) Paul is not a doctor.
∴ Paul has not studied medicine.

Invalid Pattern

(1) All P_1's are P_2s.
(2) m is not a P_1.
∴ m is not a P_2.

COUNTEREXAMPLE:

(1) All cities in Tennessee are in the U.S.
(2) New Orleans is not in Tennessee.
∴ New Orleans is not in the U.S.

DESCRIBING AN INVALIDATING POSSIBILITY:

(People other than doctors study medicine.) Paul could be a scientist studying physiology, or even a medical sociologist studying the medical profession, but not a medical doctor.

8. Nanotechnology is the business opportunity of the future. This is so because stocks in technology will be strong. If nanotechnology is the business opportunity of the future, then it will attract more investment. If it will attract more investment, then stocks in technology will be strong.

Invalid Pattern

(1) Stocks in technology will be strong.
(2) If nanotechnology is the business opportunity of the future, then it will attract more investment.
(3) If it will attract more investment, then stocks in technology will be strong

(1) S.
(2) If N, then I.
(3) If I, then S.

∴ N.

∴ Nanotechnology is the business opportunity of the future.

COUNTEREXAMPLE:

(1) Tigers are animals.
(2) If tigers are canines, then they are mammals.
(3) If tigers are mammals, then tigers are animals.
∴ Tigers are canines.

DESCRIBING AN INVALIDATING POSSIBILITY:

(Technologies other than Nanotechnology might provide the opportunities) The first premise could be true, but not because the conclusion is true. For example, stocks in technology might be strong because other technologies (cellular communication, biotechnology) will become even more important and the aging "Baby Boomers" will be frantically investing for their upcoming retirement, even though nanotechnology never really becomes a profitable technology itself.

10. Either we will ration health care, or we will spend too much on health care.
We will ration health care. So we won't spend too much on health care.

(Hint: To call this argument invalid is to take the word *or* in the inclusive sense of "either A or B or both." A counterexample would need to be an argument of the same pattern that clearly used *or* in this inclusive sense.)

1. Either we will ration health care,
or we will spend too much on health care.
2. We will ration health care.
∴ We won't spend too much on health care

(1) A or B. ***(or both)***
(2) A .
∴ Not B.

COUNTEREXAMPLE:

(1) I should treat my spouse lovingly through words or through deeds.
(2) I should treat my spouse lovingly through words.
∴ I should not treat my spouse lovingly through deeds.

DESCRIBING AN INVALIDATING POSSIBILITY:

(We could do both.) We could ration health care but also spend too much on health care because we do not hold down the cost of medical treatment for the fewer cases we do cover. Some hold that right now the American health care system rations health care, especially for the poor, and spends too much (on the rest) if only because of the inefficient way health care is delivered

Discussion of Chapter 4 Exercise 4.2 #2, #4, #6, #10

2. People shouldn't make promises unless they are certain they can keep them.

We can treat the statement as the equivalent conditional:
If people are not certain they can keep promises, then they shouldn't make them

If –then (conditional) —look for a case which the antecedent is true and the consequent false

We might be justified in promising to return a book even though we know that a variety of factors, such as a house fire, might make the promise impossible to keep. To demand nearly absolute certainty of being able to keep a promise would rule out all but a few promises. Such a stipulation, if actually carried out in practice, would virtually eliminate the ever-useful custom of making promises. See the discussion of Example 7.7 for further aspects of this case

6. If two people aren't compatible, then they can't live together.

If –then (conditional) —look for a case which the antecedent is true and the consequent false

Two people could live together effectively without being compatible. One could work days, the other work nights. Even if two incompatible individuals would have to spend more time in each other's presence, they might have good reason for doing so—say economic reasons— and might be able to make special arrangements—say living in different parts of the house. See the discussion of Example 7.7 for further aspects of this case.

4. If the fetus is connected to a pregnant woman's body, then it is part of the woman's body.

If –then (conditional) —look for a case which the antecedent is true and the consequent false

Not everything connected to the body is a part of it. A bullet fragment or a piece of shrapnel might be connected to the body by being embedded in it but is not a part of it. Similarly, tumors, warts, or other growths might be considered connected to the body but not an integral part of it. Finally, conjoined twins are connected but are not part of each other.

10. All material that arouses lewd desires is pornographic.

Universal Statement—look for a counter-example

Some people are stimulated to lewd desires in unusual ways. A person with a "foot fetish" might be aroused by shoes; an adolescent might find a medical anatomy text sexually exciting. In neither case is it appropriate to say that the material is pornographic. If lewd desires are to be tied to pornography, some qualification such as "lewd desires" by typical adults is needed.

Discussion of Chapter 4 Exercise 4.3 A2, A4; B2, B4; C#1 b.d.f. C#2 b,d

A. For each argument state
(i) whether or not the conclusion follows, and if so
(ii) whether or not the premises are true.

2. *(1) Every U.S. president is a U.S. citizen.*
(2) I am not the U.S. president.
∴ I am not a U.S. citizen.

The conclusion does not follow, and for one person the second premise is false.

4. *(1) All dogs are mammals.*
(2) All mammals are animals.
∴ All dogs are animals.

The conclusion follows and all premises are true (a sound argument).

B2. An argument that is obviously sound, given common knowledge.

(*1) If the Empire State building is in New York City, then it is in New York State.*

(2) The Empire State building is in New York City.

∴ The Empire State building is in New York State.

B4. An argument that is invalid but has true premises and a true conclusion.

	Pattern
(1) Nixon was president	(1) A
(2) Reagan was president.	(2) B
∴Clinton was president.	∴ C

C1. Which of the following statements make sensible use of the terms?

b. Your premises are unsound. **Misuse of Terms-Not sensible**

d. Your statement is true. **Sensible Use of Terms**

f. You are arguing from true premises to an invalid conclusion. **Misuse of Terms-Not sensible**

C2. Which of these statements are consistent—that is, for which of them can the two parts both be true together?

b. Your argument is valid, but your conclusion is false. **Consistent**

d. Your argument is sound, but your conclusion is false. **Inconsistent**

Discussion of Reconstruction for the three passages from CR WS3-2

Religion and cloning

State Sen. Adrian Smith, in his effort to ban all types of human cloning in Nebraska, clearly is attempting to insert his religious dogma — that an embryo and a person are morally equivalent — into the law. There are compelling legal, scientific and religious reasons to disagree.

Science shows us that only a portion of the cells resulting from a fertilized human egg will, in a normal pregnancy, become a baby. Others are destined to become a placenta. In therapeutic cloning there is no intent of a baby forming, and thus no person whose rights should be protected. Religious teachings on the beginning of life vary greatly, and the Supreme - Court has ruled that law must be neutral with respect to religion.

When elected officials enact theology into criminal law, it's not only scientific research that comes under threat. Religious freedom is at stake as well.

Clay Farris Nail, *Lincoln*

Executive director, Center for the Advancement of Rational Solutions

(1) Laws banning all cloning are justified only if the embryo is a person (embryo and person are equivalent).

(2) Embryo and person are equivalent only if all of the fertilized human egg is destined to be come part of a baby

(3) Not all of the fertilized human egg is destined to become [part of?] a baby.

∴ Laws banning all cloning are not justified

Is the Argument Sound? That is, is it (deductively)valid with premises true?

Valid?

Valid, extended modus tollens

All Premises True?

P1. "Gotcha premise" from standard any cloning argument (but not sure about equivalence)

P2. problematic, some cells may die,

P3. from science

Make the separation official

It is time to separate the legality of civil unions from marriage. Marriage is a religious rite and institution performed by religious persons such as priests or ministers.

To maintain the separation of church and state, the government should not grant legal standing to this religious rite or any other religious rite. Priests and ministers would still be allowed to perform the religious rite of marriage, but such marriages would not have legal standing.

If couples want to obtain legal standing as "married," they should have to go through a separate civil-union ceremony. Such unions are legal matters and should require legal services. After all, when a couple wants to divorce, they go to their lawyers, not to their minister.

The result of all this would relegate the responsibility of upholding the sanctity of marriage to the church. Individual churches would control whom they allow to marry.

Government should not be in the position to decide what constitutes a good marriage:

— Gene Ma, Everett

(1) Either we (should) continue to treat marriages as civil unions or we (should) separate marriage from civil unions.

(2) If we should continue to treat marriage as civil unions, then we should be permitted to grant legal standing to a religious rite,

(3) If we should be permitted to grant legal standing to a religious rite, then we should be permitted to have practices that violate the constitutional separation of church and state.

(4) We should not be permitted to have practices that violated the constitutional separation of church and state.

∴ We should separate marriage from civil union.

Is the Argument Sound? That is, is it (deductively)valid with premises true?

Valid?

Valid, extended modus tollens

All Premises True?

P3 is problematic It assumes that it is unconstitutional to grant legal authority to other non governmental organizations such as churches or Los Vegas for profit "chapels"

Aught is enough

The opponents of gay marriage are missing an important fact: overpopulation. The Catholic Church used to stipulate that marriage was primarily *for* procreation. The present position says that marriage is primarily for marital harmony.

Those against gay marriage say that marriage is mainly for procreation am thereby limited to heterosexuals. With 6.5 *billion* people on this planet, I would think any institution that emphasize more people is a recipe for self-destruction.

This emphasis on procreation is at the heart of most of the world's problems from sprawl,

P1. Seems based on Natural Law Theory: function of marriage is either (life or sociality)
P2 seems to be based on this argument
(i) If we should promote something, we should be willing to accept the consequences
(ii) Overpopulation is a consequence of promoting marriage for procreation ???
∴ If we should promote marriage for procreation, then we should be willing to accept overpopulation

(1) Either marriage should be promoted for procreation or marriage should be promoted for marital harmony.
(2) If marriage should be promote marriage for procreation, then we should be willing to accept overpopulation.
(3) We should not be willing to accept overpopulation.
∴ We should promote marriage for marital harmony
(4) If we should promote marriage for marital harmony, then gay marriage is permissible.
∴ Gay marriage is permissible

Is the Argument Sound? That is, is it (deductively)valid with premises true?

Valid? **Yes, Modus Tollens, Disjunctive Argument, and Modus Ponens**

All Premises True?

Optional Exercise from Chapter 5

Symbol	*Name*	*Example*	*Rough English Equivalent*
¬	Negation	$\neg A$	It is not the case that *A*
&	Conjunction	$A \,\&\, B$	*A* and *B*
∨	Disjunction	$A \vee B$	Either *A* or *B* (or both)[2]
→	Conditional	$A \rightarrow B$	If *A*, then *B*
↔	Biconditional	$A \leftrightarrow B$	*A* if and only if *B*

Modus Ponens	*Modus Tollens*	*Disjunctive Argument*	*Hypothetical Argument*
(1) $A \rightarrow B$	(1) $A \rightarrow B$	(1) $A \vee B$	(1) $A \rightarrow B$
(2) A	(2) $\neg B$	(2) $\neg A$	(2) $B \rightarrow C$
$\therefore B$	$\therefore \neg A$	$\therefore B$	$\therefore A \rightarrow C$

8.If the U.S. deficit will not be vastly increased and U.S taxes will be not be drastically raised, then the United States will not continue to delay significant steps to reduce greenhouse gas emissions.

$$(\neg D \,\&\, \neg T) \rightarrow \neg C$$

Prisons are crowded now, but this will not be a problem if drug arrests decrease. **(Hint:** *But* **can typically be translated like "and.")**

$$C \,\&\, (A \rightarrow \neg P)$$

The prison population will subside only if stiff penalties for drug crimes will not continue.

(Hint: *A only if B* can often be translated like "If *A*, then *B*.")

$$(S \rightarrow \neg P)$$

1. *A widespread spiritual awakening will occur in the United States by the year 2020 if and only if personal success becomes measured by the quality of a person's character, not the size of his wallet.* $(A \leftrightarrow \neg W)$ $(A \rightarrow \neg W) \ \& \ (\neg W \rightarrow A)$
2. *Personal success will continue to be measured by the size of his wallet unless American education concerns itself with issues of ethics and morality.* $(W \vee M)$ $(\neg W \rightarrow M)$
3. *America will continue to be able to exclude religious instruction from the classroom only if American education does not concern itself with issues of ethics and morality.* $(R \rightarrow \neg M)$

∴ *America will continue to exclude religious instruction from the classroom only if a widespread spiritual awakening will not occur in the United States by the year 2020.* $(R \rightarrow \neg A)$

Two Senses of B Shouldn't Happen

Weak sense: *B* is an undesirable outcome.

Strong Sense: *B* should not be allowed to happen under any circumstances.

Weak Sense of "Shouldn't"

(1) If we don't restrict gun ownership, then homicide will increase.

(2) It is undesirable that homicide rates will increase

∴ It is undesirable that we do not restrict gun ownership

In Weak Sense the conclusion is compatible with the claim that we restricting gun ownership is permissible given that there are over-riding benefits to offset the increase in homicide.

Strong Sense of "Shouldn't"

(1) If we don't restrict gun ownership, then homicide will increase.

(2) It should not be under any circumstances that homicide rates increase.

∴ It should not be under any circumstances that we restrict gun ownership

We could challenge the truth of (2) by pointing to a over-riding benefit – significant decrease in the number of accidental deaths with guns

Two Senses of B Shouldn't Happen

Weak sense: *B* is an undesirable outcome.

Strong Sense: *B* should not be allowed to happen under any circumstances.

As long as we construe the sense of "shouldn't" consistently both of the argument patterns seems "valid", but what would be fallacious (a kind of equivocation) would be to interpret them inconsistently as:

(1) If we don't restrict gun ownership, then homicide will increase.
(2) It is undesirable that we do not restrict gun ownership
∴ It should not be under any circumstances that we restrict gun ownership

This move from the weaker to the stronger interpretation is a fairly common
It assumes that because an action or policy has one undesirable consequence, it should not be performed—This assumes that there are no other over-ridding, more desirable outcomes

(1) If health care practitioners try to extend the lifespan of patients as far as possible, then they will cause considerable suffering while extending life only slightly

(2) Health care practitioners should not cause considerable suffering while extending life only slightly

Weaker Interpretation:

(2w) It would be undesirable for it to be the case that health care practitioners cause considerable suffering while extending life only slightly.

Stronger Interpretation:

(2s) It should never be the case that health care practitioners cause considerable suffering while extending life only slightly.

(3) Either health care practitioners should try to extend the lifespan of patients as far as possible, or they should concentrate on quality of life of dying patients.

∴ Health care practitioners should concentrate on quality of life of dying patients

Fallacies -- Chapter 6

Persuasiveness: Legitimate and Illegitimate

if an argument is illegitimately persuasive, then it inclines an audience to accept its conclusion for reasons unrelated to its deserving belief.
Recognizing why these arguments are tempting but fallacious provides both a basis for criticism and a means of explaining to people who commit the fallacy why they might have thought they were offering a good argument when they were not. We will not call a bad argument a fallacy merely because it happens to persuade some unwary person. There must be a **common tendency for the argument to be of a kind that persuades people, even though they should not persuaded.**

Distraction Fallacies: False Dilemma, Slippery Slope, Straw Man

False Dilemma – Typically two alternatives A or B are presented and one is argued against in such a way that we are distracted from seeing that there are more than two alternatives.

The argument pattern of a false dilemma is valid

We call it Disjunctive Argument

$A \vee B$
$\neg A$
$\therefore B$

First premise is false in cases of false dilemma but we are distracted from seeing a third alternative

America: Love it or leave it!

Slippery Slope – Typically a series of if-then, conditional statements leading to a conclusion that is unacceptable as part of extended modus tollens—perhaps with a "should" component

$A \rightarrow B$
$B \rightarrow C$
$C \rightarrow D$
....
$Y \rightarrow Z$
$\neg Z$
$\therefore \neg A$

Some of the steps, conditionals are false but we are distracted from this by the series

The Two Paths[3]

AT 15
STUDY & CLEANLINESS

AT 15
CIGARETTES & SELF-ABUSE

What Will The Boy Become?

AT 25
PURITY & ECONOMY

AT 25
IMPURITY & DISSIPATION

AT 36
HONORABLE SUCCESS

AT 36
VICE & DEGENERACY

AT 60
VENERABLE OLD AGE

AT 48
MORAL-PHYSICAL WRECK

Straw Man – Typically a straw man fallacy occurs when an arguer tries to make their position stronger by exaggerating the the weakness of opposing position.

$\neg \mathscr{A}$ false, if the actual version of opposing position is true
$A \vee B$ false (dilemma) $A \vee B \vee \mathscr{A}$
$\therefore$ B arguer's position But this argument invalid

The champions of global warming must believe that this winter was actually warming than last winter

Distraction Fallacies: False Dilemma, Slippery Slope, Straw Man

1. You're either part of the solution or part of the problem.

False dilemma (in text) would be persuasive because the thought that you might be part of the problem distracts you from considering that are more alternatives than these two. A third alternative is that you are both part of the problem and part of the solution .

2. In the early stages the compulsive gambler doesn't behave differently from the casual gambler. He plays a little poker on Friday night; he bets on the Sunday football games. Slowly, he begins to bet more. Winning becomes the high point of his week. A loss means several days of depression. Finally, he runs out of his own money and is forced to get it any way he can. He begs, borrows, and ultimately steals. Beware! That first flip of the coin can spell disaster.

Slippery slope. A few people who begin with casual gambling are led through these steps to ruin. But for any individual who begins to gamble, this progression is not likely. You might tend to be persuaded because the first few steps sound plausible. Distracted by the thought of how horrible the bottom of the slope is, you don't think critically about the likelihood of all the steps following from the first few.

3. I'm in favor of legalized gambling. There are those who oppose it, but they apparently think that anything that's fun is sinful.

Straw man. This could be persuasive because your attention is caught by the weakness of the argument attributed to the opposition—anything that's fun is sinful. But there are much stronger arguments against legalized gambling.

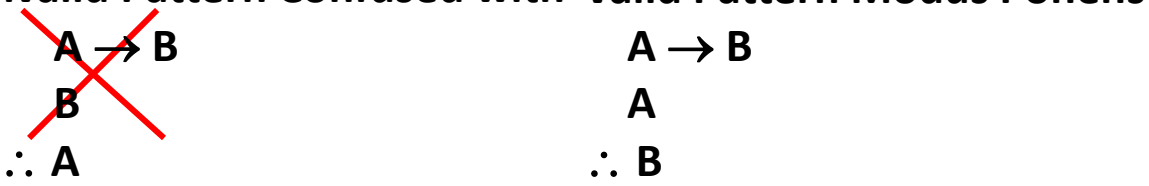
4. If you're not going to save a lot of money on fuel, then you might as well not waste the effort. Putting weather stripping around your doors doesn't save you that much.

False dilemma. Perhaps this is persuasive because we like to have our options simplified: Either you find a way to save a lot or you should forget about it. (Note that if-then in the passage can be treated as an "or." "If not A, then B" is equivalent to "A or B.") You don't look for a third alternative. What's wrong with saving a little?

Resemblance Fallacies: Affirming the Consequent Denying the Antecedent, Equivocation, and Begging the Question

Fallacy of Affirming the Consequent

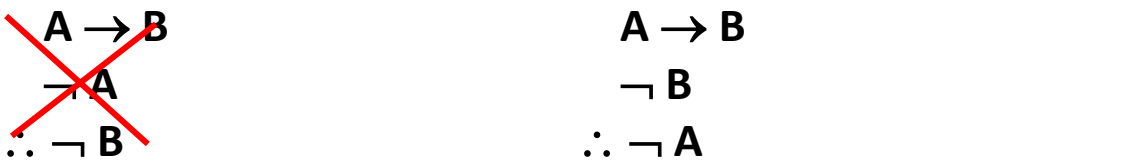
Invalid Pattern Confused with Valid Pattern Modus Ponens



It the economy is improving, stock prices will rise. Stock prices are rising. So the economy is improving.

Fallacy of Denying the Antecedent

Invalid Pattern Confused with Valid Pattern Modus Tollens



If she loves you, she'll marry you. She doesn't love you. So she won't marry you.

The fallacy of equivocation typically involves shift the meaning of crucial terms from one premise to another. The argument may seems to be valid when the same word is used, but if the two meanings are distinguished the argument becomes unsound.

You are perfectly willing to believe in miracles such as a person landing on the moon. If this is so, you shouldn't be so skeptical of the miracles described in the Bible.

(1) You believe in the miracle1 of a person landing on the moon.
(2) If (1), then you shouldn't be so skeptical of the miracles2 describe in the Bible.
∴ You shouldn't be so skeptical of the miracles? described in the Bible.

Resembles a Valid (Modus Ponens) Argument

miracle1 occurs if something was very unlikely to occur
miracle2 occurs if its occurrence is inexplicable by science.

If **miracle1**, is used in both premises, then premise 2 is doubtful –not all unlikely events are equally unlikely

If **miracle2**, is used in both premises, then premise 1 likely false

Begging the Question typically occurs when the conclusion of an argument is, in effect a restatement of a premise. It is a valid argument form but it is a "trival" pattern.

(1) A

∴ A

It is "technically valid" If the premise is true, it is (logically) impossible for the conclusion to be false. But if you had any doubts about the conclusion, they would apply equally to the premise. Typically, versions of this fallacy—have "disguised" version of the conclusion in the premises.

The Bible says God exists, and everything the Bible says is true since God wrote it. Therefore God exists

Doubt about the conclusion "God exists" would apply premise "everything the Bible says is true since God wrote it" Note the alternative phrasing of this premise If God wrote the Bible, then everything the Bible says is true.

1. *If Alvin really loved Alice, then he would have given up his evil ways. He does seem to have reformed—he's even quit hanging out in bars and doing drugs. He must really love Alice.*

Affirming the consequent. This resembles a valid argument

2. *Callous though it sounds, I do not believe we have an obligation to redistribute wealth to the less fortunate. The reason that I believe this is that what a person earns is rightfully hers. No one else has a claim to it.*

Begging the question. To say that no one else has a claim to something sounds like a reason for concluding that you don't have an obligation to give it. But the premise is so close to being the same assertion as the conclusion that anyone who doubted one would probably doubt the other.

It won't be dangerous to ride with Gary, because he hasn't been drinking. If he had been drinking, it would be dangerous.

Denying the antecedent. This resembles a valid argument.

Return to Chapter 5 Definitions of Logical Connectives

Negation

A	$\neg A$
T	F
F	T

Conjunction

Possible Situations		*Truth Value of Compound Statement*
A	B	$A \,\&\, B$
T	T	T
T	F	F
F	T	F
F	F	F

Disjunction

Possible Situations		*Truth Value of Compound Statement*
A	B	$A \vee B$
T	T	T
T	F	T
F	T	T
F	F	F

Conditional

Possible Situations		*Truth Value of Compound Statement*
A	B	$A \rightarrow B$
T	T	T
T	F	F
F	T	T
F	F	T

Biconditional

Possible Situations		*Truth Value of Compound Statement*
A	B	$A \leftrightarrow B$
T	T	T
T	F	F
F	T	F
F	F	T

Determining the truth of more complex statements.

Possible Situations	*Negation*
Row	□	¬ □
1	T	F
2	F	T

Possible Situations		*Conjunction*	*Disjunction*	*Conditional*	*Biconditional*
Row	□	Δ	□ & Δ	□ ∨ Δ	□ → Δ	□ ↔ Δ
1	T	T	T	T	T	T
2	T	F	F	T	F	F
3	F	T	F	T	T	F
4	F	F	F	F	T	T

¬ (A & B)

T F — Initial Assignment

F — Row 2 Conjunction

T — Row 2 Negation

¬ ((A & B) ∨ (C ↔ D)

T T F T — Initial Assignment

T — Row 1 Conjunction

F — Row 3 Biconditional

T — Row 2 Disjunction

F — Row 2 Negation

Possible Situations		*Negation*
Row	□	¬ □
1	T	F
2	F	T

Possible Situations			*Conjunction*	*Disjunction*	*Conditional*	*Biconditional*
Row	□	Δ	□ & Δ	□ ∨ Δ	□ → Δ	□ ↔ Δ
1	T	T	T	T	T	T
2	T	F	F	T	F	F
3	F	T	F	T	T	F
4	F	F	F	F	T	T

Any Possible situation in which the premises are all True and the Conclusion False?

A → B
¬ B
∴ ¬ A

Valid
Modus Ponens

Initial Assignments			Premises		Conclusion	
	A	B	**A → B**	**¬ B**	**¬A**	
1.	T	T	T	F	F	
2.	T	F	F	T	F	
3.	F	T	T	F	T	
4.	F	F	T	T	T	OK

A → B
B
∴ A

Invalid, Fallacy of Affirming the Consequent

Initial Assignments			Premises		Conclusion	
	A	B	**A → B**	**B**	**A**	
1.	T	T	T	T	T	OK
2.	T	F	F	F	T	
3.	F	T	T	T	F	**Problem**
4.	F	F	T	T	F	**Problem**

Possible Situations	*Negation*
Row	□	¬ □
1	T	F
2	F	T

Possible Situations		*Conjunction*	*Disjunction*	*Conditional*	*Biconditional*
Row	□	Δ	□ & Δ	□ ∨ Δ	□ → Δ	□ ↔ Δ
1	T	T	T	T	T	T
2	T	F	F	T	F	F
3	F	T	F	T	T	F
4	F	F	F	F	T	T

Any Possible situation in which ALL the premises are True and the Conclusion is False?

A → B
B → C
¬ C
∴ ¬ A

Valid, Extended Modus Tollens

	Initial Assignments			Premises			Conclusion	
	A	B	C	**A → B**	**B → C**	**¬ C**	**¬A**	
1.	T	T	T	T	T	F	F	
2.	T	T	F	T	F	T	F	
3.	T	F	T	F	T	F	F	
4.	T	F	F	F	T	T	F	
5.	F	T	T	T	T	F	T	
6.	F	T	F	T	F	T	T	
7.	F	F	T	T	T	F	T	
8.	F	F	F	T	T	T	T	OK

Possible Situations		*Negation*
Row	□	¬ □
1	T	F
2	F	T

Possible Situations			*Conjunction*	*Disjunction*	*Conditional*	*Biconditional*
Row	□	Δ	□ & Δ	□ ∨ Δ	□ → Δ	□ ↔ Δ
1	T	T	T	T	T	T
2	T	F	F	T	F	F
3	F	T	F	T	T	F
4	F	F	F	F	T	T

Initial Assignments ***Evaluation of Statements for These Assignments***

Possible Situations			Premises		Conclusion	
	A	*B*	*A* ∨ B	B	¬ *A*	
1	T	T	T	T	F	Problem
2.	T	F	T	F	F	
2	F	T	T	T	T	OK
3	F	F	F	F	T	

Any Possible situation in which ALL the premises are True and the Conclusion is False?

INVALID

Possible Situations		*Negation*
Row	□	¬ □
1	T	F
2	F	T

Possible Situations			*Conjunction*	*Disjunction*	*Conditional*	*Biconditional*
Row	□	Δ	□ & Δ	□ ∨ Δ	□ → Δ	□ ↔ Δ
1	T	T	T	T	T	T
2	T	F	F	T	F	F
3	F	T	F	T	T	F
4	F	F	F	F	T	T

Initial Assignments ***Evaluation of Statements for These Assignments***

Possible Situations				Premises	Conclusion	
	A	¬ A	*B*	*A* ∨ B	¬ *A* → *B*	
1	T	F	T	T	T	OK
2.	T	F	F	T	T	OK
2	F	T	T	T	T	OK
3	F	T	F	F	F	

Any Possible situation in which ALL the premises are all True and the Conclusion isFalse?

VALID

Row	□	¬ □
1	T	F
2	F	T

Possible Situations			*Conjunction*	*Disjunction*	*Conditional*	*Biconditional*
Row	□	Δ	□ & Δ	□ ∨ Δ	□ → Δ	□ ↔ Δ
1	T	T	T	T	T	T
2	T	F	F	T	F	F
3	F	T	F	T	T	F
4	F	F	F	F	T	T

Any Possible situation in which ALL the premises are True and the Conclusion is False?

Initial Assignments				*Premises*			*Conclusion*	
	A	**B**	**C**	**A → B**	**B → C**	**¬ A**	**C**	
1	T	T	T	T	T	F	F	
2	T	T	F	T	F	F	T	
3	T	F	T	F	T	F	F	
4	T	F	F	F	T	F	T	
5	F	T	T	T	T	T	F	Problem
6	F	T	F	T	F	T	T	
7	F	F	T	T	T	T	F	Problem
8	F	F	F	T	T	T	T	OK

INVALID

WEEK	TUESDAY	FRIDAY
WK 4 Apr 19 Apr 22	Am CR: Evaluating Arguments 2 (Read C&P Ch 5 to p. 133) Pm ER: utilitarianism (Read: R&R, Ch. 7 & 8):	Am CR:Fallacies (Read C&P Ch 6 Remainder, Ch 7 to p. 186 Pm ER: Ethics: Kantian Ethics, (Read: R&R, Ch. 9 & 10):
WK 5 Apr 26 Apr 29 **Change**	Am Review of fallacies and preparation for CR Exam No New Reading **5 Portfolio entries due** Pm Conceptual Theories (Read C&P Ch. 7 Remainder) Bring both CR and Ethics Texts	Am Exam I Pm "Gone Baby Gone" Video and Discussion

Your **Portfolio due Tuesday April 26th** should containing at least five (5) items (editorials, letters to editor, opinion pieces, short internet selection, short section from book or longer article, etc); for at least two (2) reconstruct an argument into standard form (with missing, implicit premises or conclusion supplied if necessary); evaluate at least one (1) of those you reconstructed by indicating whether it is valid (using common successful argument patterns or methods of chapter 4 or 5) and if so whether it is sound by casting doubt, if appropriate, on the premises.


That's All Folks