

# The Syllogisms Diagrammed

Forms in this document:

IEA

IEE

IEI

IEO

Each form includes figures 1 through 4.

## The Syllogisms Diagrammed

Each page describes one of the 256 syllogisms. Here is the page format.

=====

**Name of form:** AAA, EIO, OOE, &c.

**Figure:** 1, 2, 3, 4

**Premises as stated:** Venn diagram showing what the premises say.

**Purported conclusion:** Venn diagram showing what the premises claim to say.

**Relation of premises to conclusion.** Intended to describe how the content of the premises and the statement in the conclusion logically relate to each other. Used in only a few examples.

Validity. The syllogism is valid.

Superfluity. The premises prove more than the conclusion states.

Subcontrariety. The premises and conclusion can be true together, but they cannot be false together.

Irrelevance. The content of the premises is unrelated to the conclusion.

Insufficiency. The premises lack sufficient information to show the truth of the conclusion.

Contrariety. The premises and conclusion can be false together, but they cannot be true together.

Contradiction. The premises and conclusions directly contradict each other. If one is true, the other is false.

## Distribution

This section is intended to create a system in which each syllogism has a unique code. In each premise, there are three numbers to indicate the subject, the predicate, and the middle term. Each term is assigned a one or a zero.

For the subject and predicate, one means the term is distributed; zero means that the term is undistributed. These meanings also apply in the conclusion.

For the middle term in each premise, one means that the predicate is the middle term; zero means that the subject is the middle term.

Example. EIO in the first figure says: No M are P; Some S are M; thus Some S are not P. The full code is 110/001/01. The major premise is 110; the subject is distributed, the predicate is distributed, and the middle term is the subject. The minor premise is 001; the subject and predicate are both undistributed, and the predicate is the middle term. The conclusion is 01; the subject is undistributed but the predicate is.

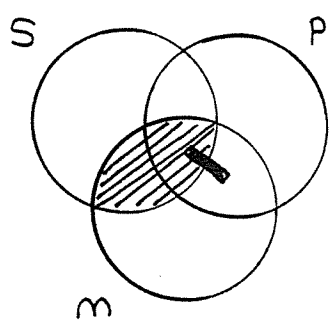
## Rules

This section lists the rules that define a syllogism. Each rule is stated, followed by the name for the violation of that rule.

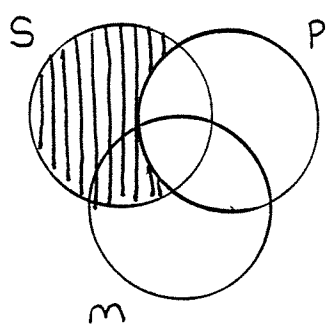
The symbol One indicates that the syllogism follows the rule; Zero indicates that the syllogism violates the rule; and a Dash indicates that the rule is irrelevant to that particular syllogism.

I E A  
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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

- Validity
- Superfluity
- Subcontrariety
- Irrelevance
- Insufficiency
- Contrariety
- Contradiction

Text:

Major premise: Some M are P  
 Minor premise: No S are M  
 Conclusion: All S are P

Distribution:

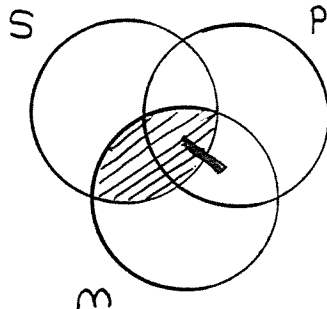
Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
0	0	<del>1</del>	1	1	<del>1</del>	1	0
		0			1		

Rules:

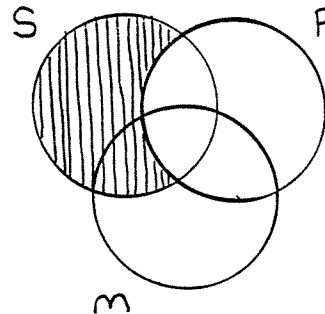
- 1 Middle term distributed in at least one premise (undistributed middle).
- If major term is distributed in the conclusion, it is distributed in the premise (illicit major).
- 1 If minor term is distributed in the conclusion, it is distributed in the premise (illicit minor).
- 1 The syllogism has no negative premises, or only one, but not two. (exclusive premises).
- 0 If one premise is negative, then the conclusion is negative (affirmative conclusion from negative premises).
- If the conclusion is negative, then one premise must be negative (negative premises).
- If the syllogism has a particular conclusion, then it does not have two universal premises (existential fallacy).

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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

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Text:

Major premise: Some P are M

Minor premise: No S are M

Conclusion: All S are P

Distribution:

Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
○	○	⊗			⊗		○

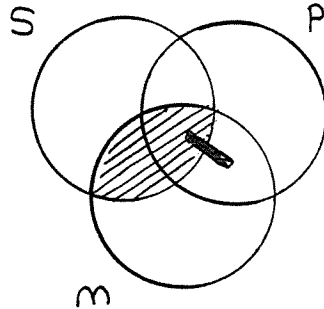
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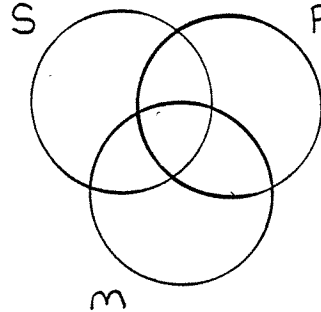
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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

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Text:

Major premise: Some M are P

Minor premise: No M are S

Conclusion: All S are P

Distribution:

Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
○	○	<del>○</del>			<del>○</del>		○
		○			○		

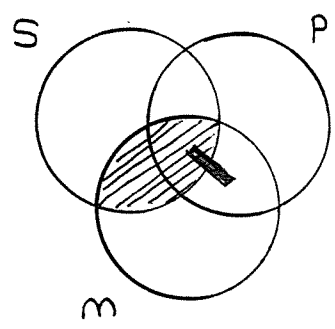
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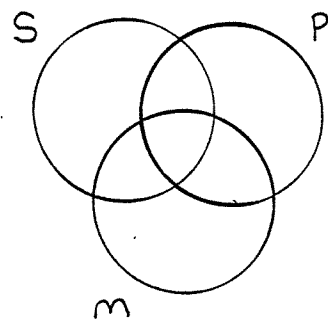
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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

- Validity
- Superfluity
- Subcontrariety
- Irrelevance
- Insufficiency
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- Contradiction

Text:

Major premise: Some P are M  
 Minor premise: No M are S  
 Conclusion: ~~S~~ ~~are~~ All S are P

Distribution:

Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
○	○	<del>○</del>			<del> </del>		○
					○		

Rules:

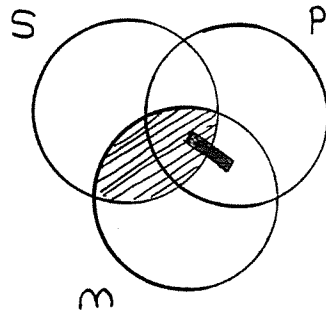
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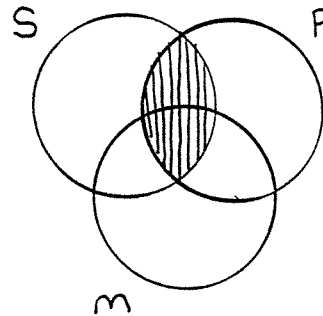
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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

- Validity
- Superfluity
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- Irrelevance
- Insufficiency
- Contrariety
- Contradiction

Text:

Major premise: Some M are P

Minor premise: No S are M

Conclusion: No S are P

Distribution:

Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
○	○	/			/		
		○			)		

Rules:

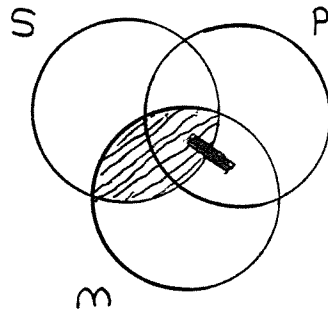
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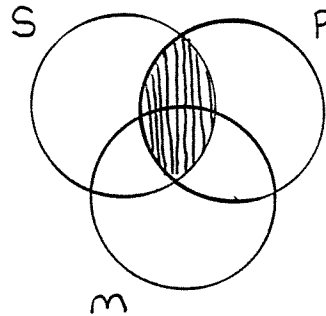
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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

- Validity
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- Contradiction

Text:

Major premise: Some P are M

Minor premise: No S are M

Conclusion: No S are P

Distribution:

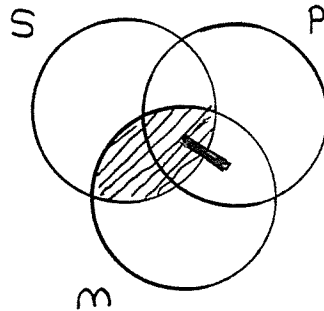
Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>1</u>

Rules:

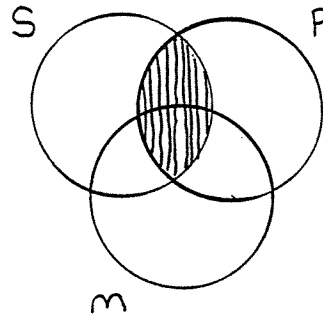
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Premises As Stated



Purported Conclusion



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Exist Hypo

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- Contradiction

Text:

Major premise: Some M are P

Minor premise: No M are S

Conclusion: No S are P

Distribution:

Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
○	○	⊗			⊗		
		○			○		

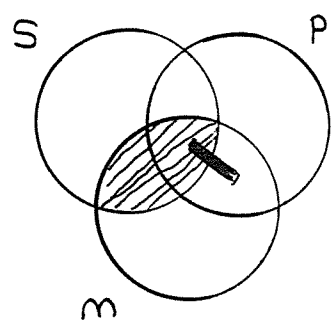
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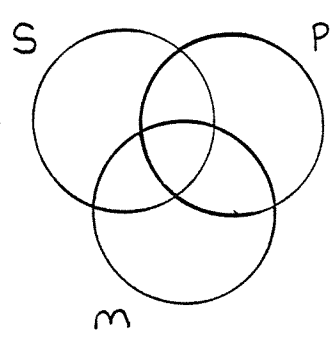
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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

- Validity
- Superfluity
- Subcontrariety
- Irrelevance
- Insufficiency
- Contrariety
- Contradiction

Text:

Major premise: Some P are M  
 Minor premise: No M are S  
 Conclusion: No S are P

Distribution:

Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
0	0	1	1	1	1	1	1
					0		

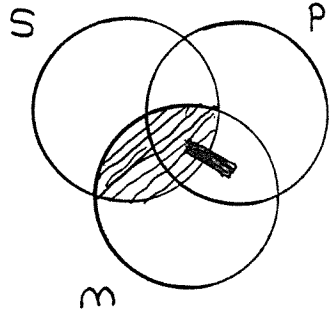
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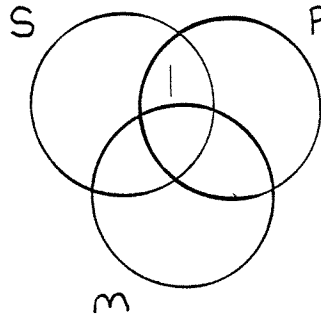
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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

- \_\_\_ Validity
- \_\_\_ Superfluity
- \_\_\_ Subcontrariety
- \_\_\_ Irrelevance
- \_\_\_ Insufficiency
- \_\_\_ Contrariety
- \_\_\_ Contradiction

Text:

Major premise: Some M are P

Minor premise: No S are M

Conclusion: Some S are P

Distribution:

Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
o	o	<del>o</del>			<del>o</del>	o	o
		o					

Rules:

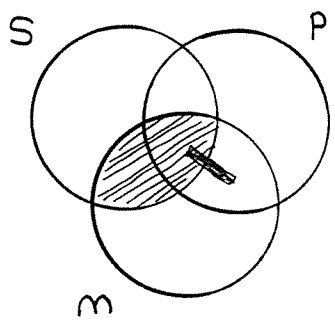
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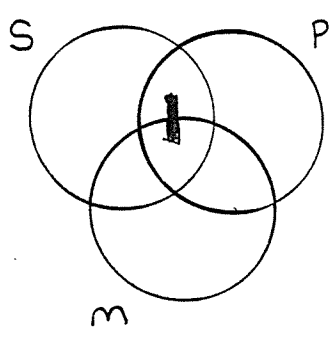
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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

- Validity
- Superfluity
- Subcontrariety
- Irrelevance
- Insufficiency
- Contrariety
- Contradiction

Text:

Major premise: Some P are M  
 Minor premise: No S are M  
 Conclusion: Some S are P

Distribution:

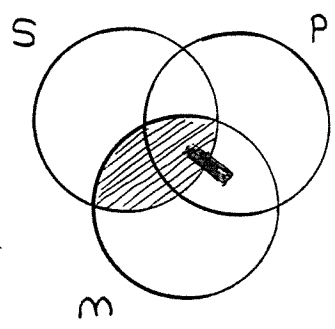
Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
○	○	<del>○</del>			<del>○</del>	○	○

Rules:

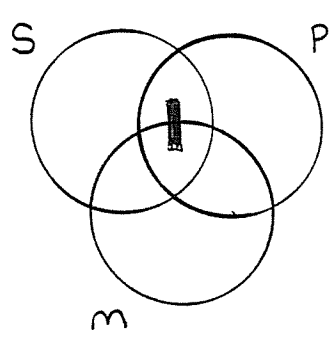
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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

- Validity
- Superfluity
- Subcontrariety
- Irrelevance
- Insufficiency
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- Contradiction

Text:

Major premise: Some <sup>M</sup> P are <sup>P</sup> M  
 Minor premise: No <sup>M</sup> S are <sup>S</sup> M  
 Conclusion: Some S are P

Distribution:

Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
○	○	<del>○</del>			<del>○</del>	○	○
		<del>NO</del>			<del>NO</del>		

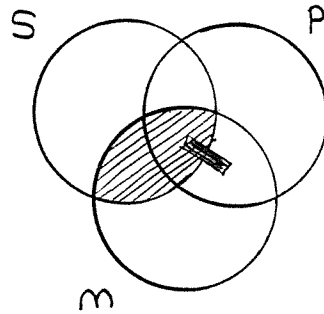
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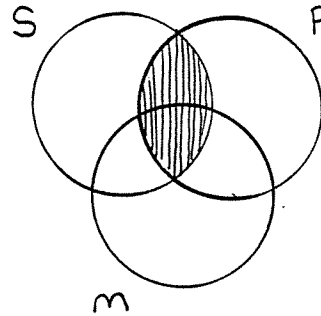
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Premises As Stated



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Text:

Major premise: Some P are M

Minor premise: No M are S

Conclusion: Some S are P

Distribution:

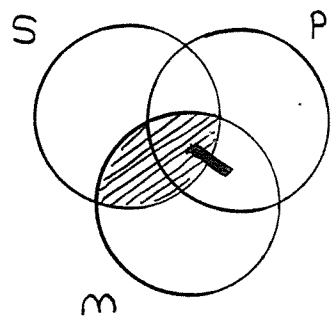
Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
○	○	<del>○</del>			<del>○</del>	○	○
					○		

Rules:

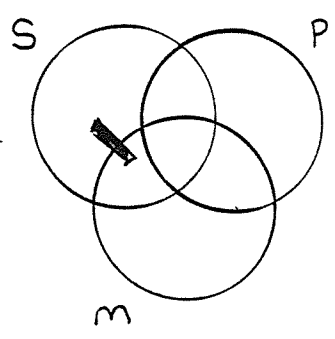
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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

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- \_\_\_ Validity
- \_\_\_ Superfluity
- \_\_\_ Subcontrariety
- \_\_\_ Irrelevance
- \_\_\_ Insufficiency
- \_\_\_ Contrariety
- \_\_\_ Contradiction

Text:

Major premise: Some M are P

Minor premise: No S are M

Conclusion: Some S are not P

Distribution:

Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
0	0	1	1	1	1	0	1
		0			1		

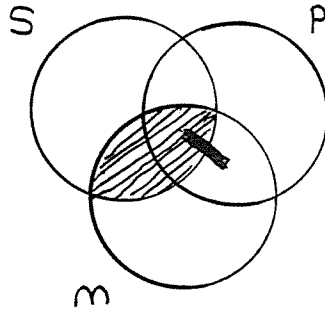
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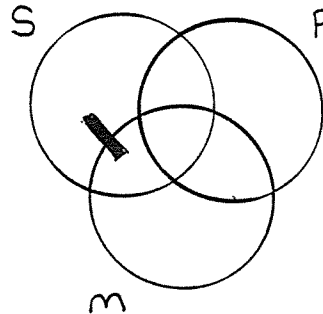
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Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

- Validity
- Superfluity
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- Contrariety
- Contradiction

Text:

Major premise: Some P are M

Minor premise: No S are M

Conclusion: Some S are not P.

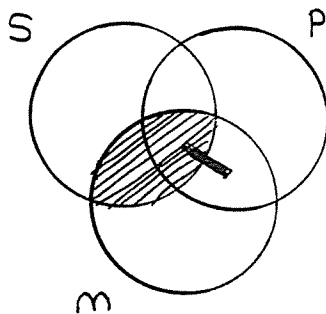
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Major			Minor			Conclusion	
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0	0	<del>1</del>	1	1	<del>1</del>	0	1

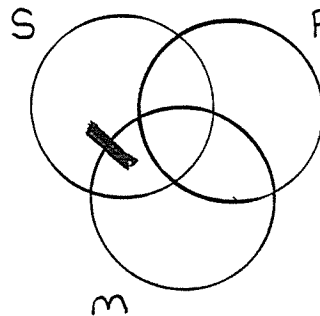
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Premises As Stated



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- Validity
- Superfluity
- Subcontrariety
- Irrelevance
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- Contrariety
- Contradiction

Text:

Major premise: Some M are P

Minor premise: No M are S

Conclusion: Some S are not P

Distribution:

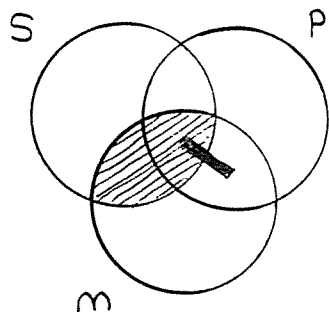
Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
○	○	/			/	○	
		○			○		

Rules:

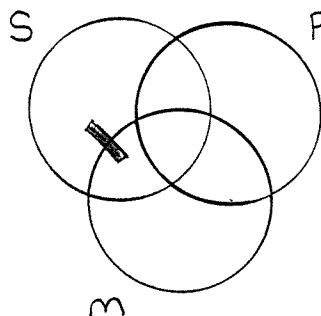
- Middle term distributed in at least one premise (undistributed middle).
- If major term is distributed in the conclusion, it is distributed in the premise (illicit major).
- If minor term is distributed in the conclusion, it is distributed in the premise (illicit minor).
- The syllogism has no negative premises, or only one, but not two. (exclusive premises).
- If one premise is negative, then the conclusion is negative (affirmative conclusion from negative premises).
- If the conclusion is negative, then one premise must be negative (negative premises).
- If the syllogism has a particular conclusion, then it does not have two universal premises (existential fallacy).

8/24/90 4/21/97

Premises As Stated



Purported Conclusion



Relation of premises to conclusion:

Exist Hypo

- Validity
- Superfluity
- Subcontrariety
- Irrelevance
- Insufficiency
- Contrariety
- Contradiction

Text:

Major premise: Some P are M

Minor premise: No M are S

Conclusion: Some S are not P

Distribution:

Major			Minor			Conclusion	
S	P	M	S	P	M	S	P
○	○	<del>∩</del>	↑		<del>∩</del>	○	
			○				

Rules:

- Middle term distributed in at least one premise (undistributed middle).
- If major term is distributed in the conclusion, it is distributed in the premise (illicit major).
- If minor term is distributed in the conclusion, it is distributed in the premise (illicit minor).
- The syllogism has no negative premises, or only one, but not two. (exclusive premises).
- If one premise is negative, then the conclusion is negative (affirmative conclusion from negative premises).
- If the conclusion is negative, then one premise must be negative (negative premises).
- If the syllogism has a particular conclusion, then it does not have two universal premises (existential fallacy).