
As'Sullam Al'Munawraq

*The Ornamented Ladder on the Art of
Logic*

The Different Types of Temporal Knowledge

Conception of **Individual/independent**
and **Related** Objects/Concepts

Distinction between that which is
arrived at through **reflection** vs that
which is **self-evident**

فَصَلِّ فِي أَنْوَاعِ الْعِلْمِ الْحَادِثِ

19- إِدْرَاكَ مُفْرَدٍ تَصَوُّرًا عُلْمٍ

وَدَرْكَ نِسْبَةٍ بِتَصْدِيقٍ وَسِمٍ

20- وَقَدِّمِ الْأَوَّلَ عِنْدَ الْوَضْعِ

لِأَنَّهُ مُقَدَّمٌ بِالطَّبَعِ

21- وَالنَّظْرِي مَا اخْتَجَّ لِلتَّأَمُّلِ

وَعَكْسُهُ هُوَ الضَّرُورِيُّ الْجَلِي

Different Types of Facts – Terms and Propositions/ Premises

	تصور	تصديق
ضروري	الموت	الموت حق
نظري	البدعة	الاركان الصلاة سبعة عشر

Through What are These Different Types of Knowledge Acquired?

1. *Defining Expressions*
2. *Arguments*

22- وَمَا بِهِ إِلَى تَصَوُّرٍ وَصِلَ

يُدْعَى بِقَوْلٍ شَارِحٍ فَلْتَبْتِهَلْ

23- وَمَا لِتَصْدِيقٍ بِهِ تُوَصَّلَا

بِحُجَّةٍ يُعْرِفُ عِنْدَ الْعُقَلَا

The 4 Sub-Topics of Logic:

- مباديء التصورات - الكليات الخمس
- مقصد التصورات - القول الشارح
- مباديء التصديقات - القاضايا و احكامها
- مقاصد التصديقات - القياس بأقسامها

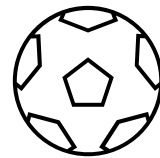
How Do We Determine the Meaning of Words?

Football

دلّ



دلالة



مدلول

What Are the Different Types of Dalalat (Indications to Meaning)

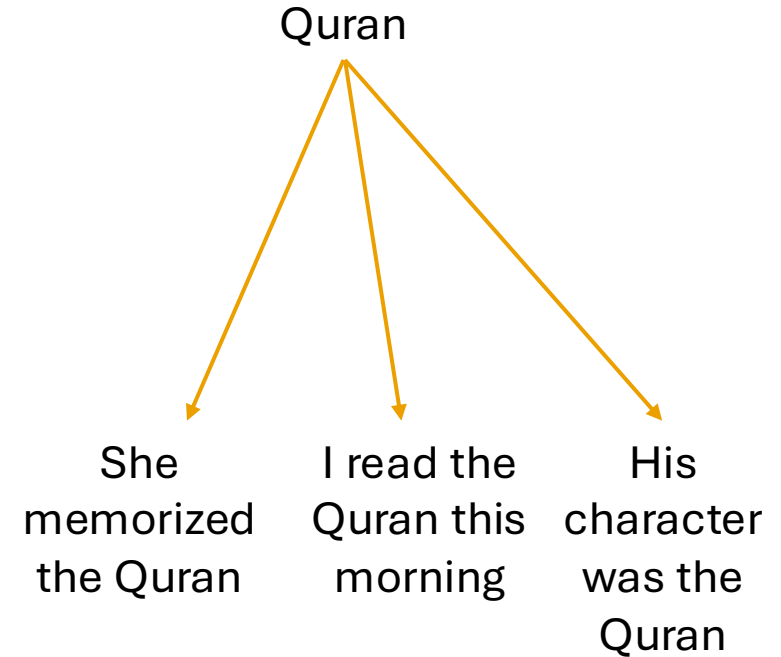
فَصَلِّ فِي أَنْوَاعِ الدَّلَالَةِ الْوَضْعِيَّةِ

24- دَلَالَةُ اللَّفْظِ عَلَى مَا وَافَقَهُ

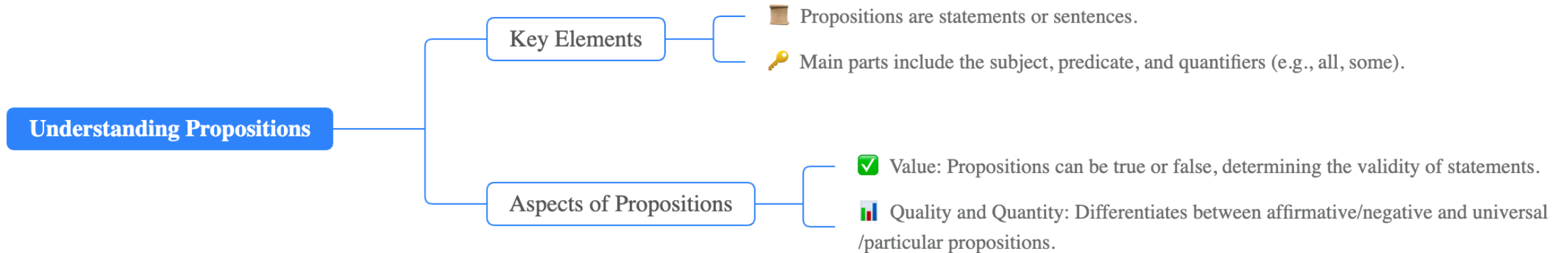
يَدْعُونَهَا دَلَالَةَ الْمُطَابَقَةِ

25- وَجُزْئِهِ تَضَمُّنًا وَمَا لَزِمَ

فَهُوَ التَّزَامُ إِنَّ بَعْقَلِ التُّزْمِ



Conveying Meaning



Linguistic Forms: How Do We Convey Meaning?

Section: Clarifying the Meaning of Words

فَصَلِّ فِي مَبَاحِثِ الْأَلْفَاظِ

26- مُسْتَعْمَلُ الْأَلْفَاظِ حَيْثُ يُوجَدُ

إِمَّا مُرَكَّبٌ وَإِمَّا مُفْرَدٌ

27- فَأَوَّلُ مَا دَلَّ جُزْؤُهُ عَلَى

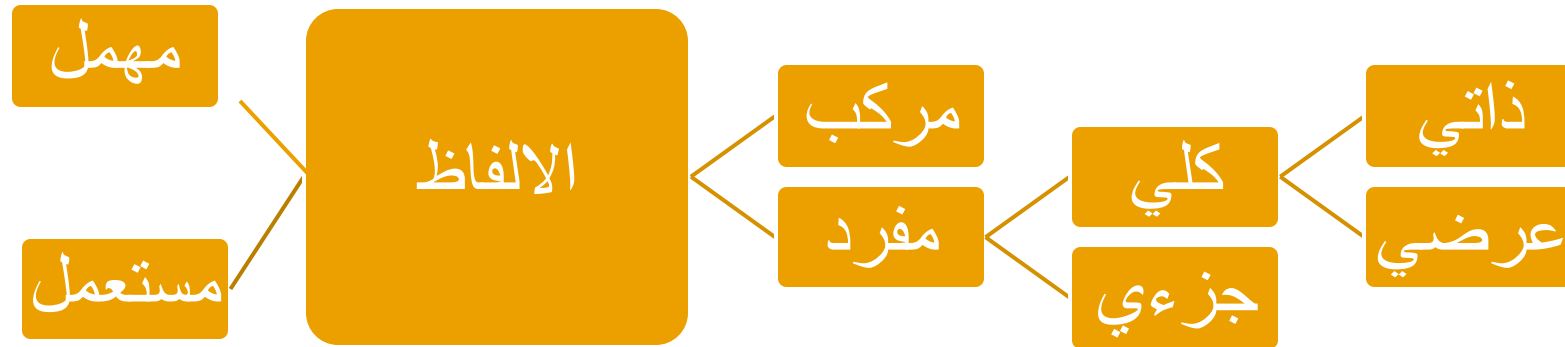
جُزْءٍ مَعْنَاهُ بِعَكْسِ مَا تَلَا

28- وَهُوَ عَلَى قِسْمَيْنِ أَعْنِي الْمَفْرَدَا

كُلِّيٌّ أَوْ جُزْئِيٌّ حَيْثُ وُجِدَا

- Logic deals primarily in **Meanings**, but words (or symbols) are required to Convey Meaning
- Linguistic Forms (الافاظ) are either singular or compound
 - Words have individual meaning (**mufrad**)
 - Referring to something in its entirety (Kulli)
 - Or referring to some part of it (Juz'ee)
 - Compound Meaning (part of it refers to part of it)
 - Murakkab

The Different Types and SubCategories of Words

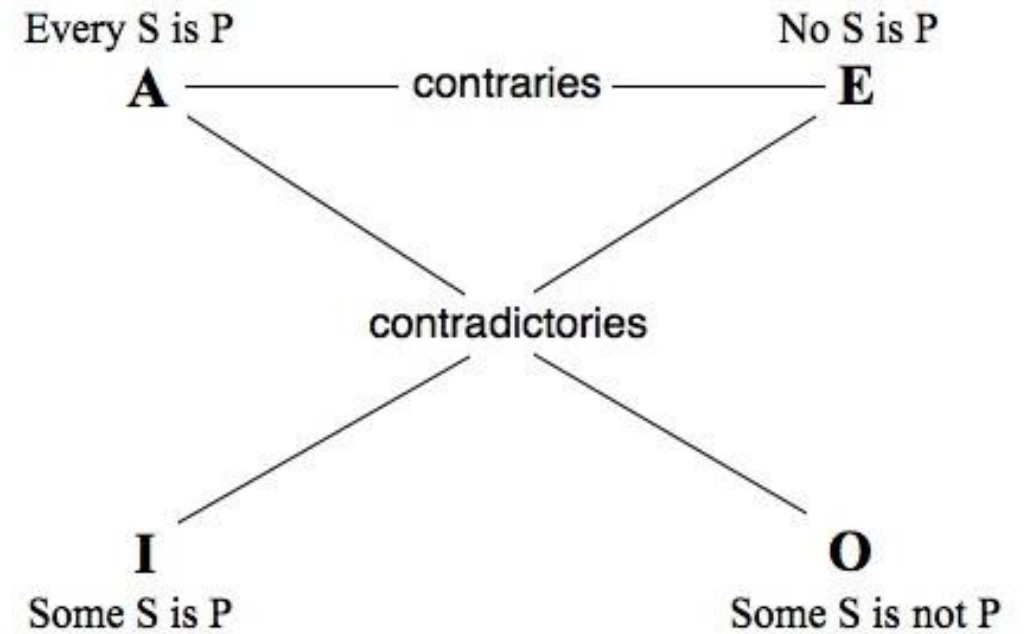


Universal (Kulli) And Particular (Juzz'i)

	are	are not
all	<p>All X are Y</p> <p><i>"ALL people ARE out for themselves"</i></p> <p>(UNIVERSAL AFFIRMATIVE)</p>	<p>All X are not Y</p> <p><i>"NOT ALL people ARE out for themselves"</i></p> <p>(UNIVERSAL NEGATIVE)</p>
some	<p>Some X are Y</p> <p><i>"SOME people ARE out for themselves"</i></p> <p>(PARTICULAR AFFIRMATIVE)</p>	<p>Some X are <u>not</u> Y</p> <p><i>"SOME people ARE NOT out for themselves"</i></p> <p>(PARTICULAR NEGATIVE)</p>

Universal and Particular Cont'd

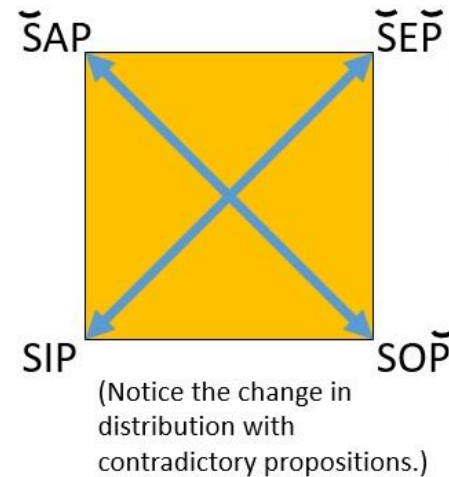
- A = كلية موجبة universal affirmative
- E = كلية سالبة universal negative
- I = جزئية موجبة particular affirmative
- O = جزئية سالبة particular negative
 - سالب = negative
 - موجب = necessary, affirmative, positive



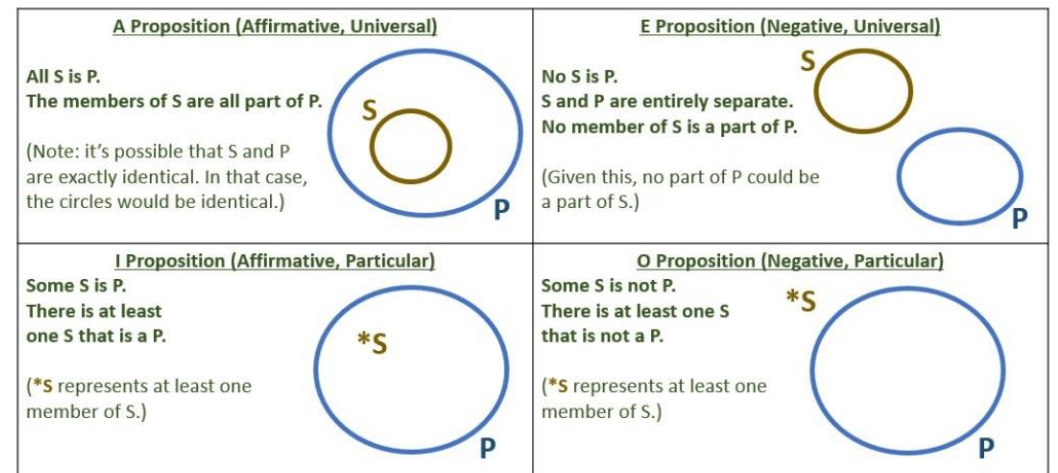
Distributed/Undistributed Categorical Propositions

1. **Universal propositions**, by their very definition, will always have distributed **subjects**. Every member belonging to the subject is being referenced. Hence, *all of the extension* is being referenced of the subject in **A** and **E** propositions.

Negative propositions, as the subject is being *excluded from the entire extension of the predicate*, will always have distributed predicates. There is no way otherwise to deny a predicate of a subject. Hence, predicates will be distributed in **E** and **O** propositions.



Proposition Type	Distributed Terms
A	Subject
I	No Term is Distributed
E	Subject and Predicate
O	Predicate



29- فَمُنْفِهِمُ اشْتِرَاكِ الْكُلِّيِّ

كَأَسَدٍ وَعَكْسُهُ الْجُزِّيُّ

30- وَأَوَّلًا لِلذَّاتِ إِنْ فِيهَا انْدَرَجَ

فَأَنْسُبُهُ أَوْ لِعَارِضٍ إِذَا خَرَجَ

31- وَالْكُلِّيَّاتُ خَمْسَةٌ دُونَ انْتِقَاصِ

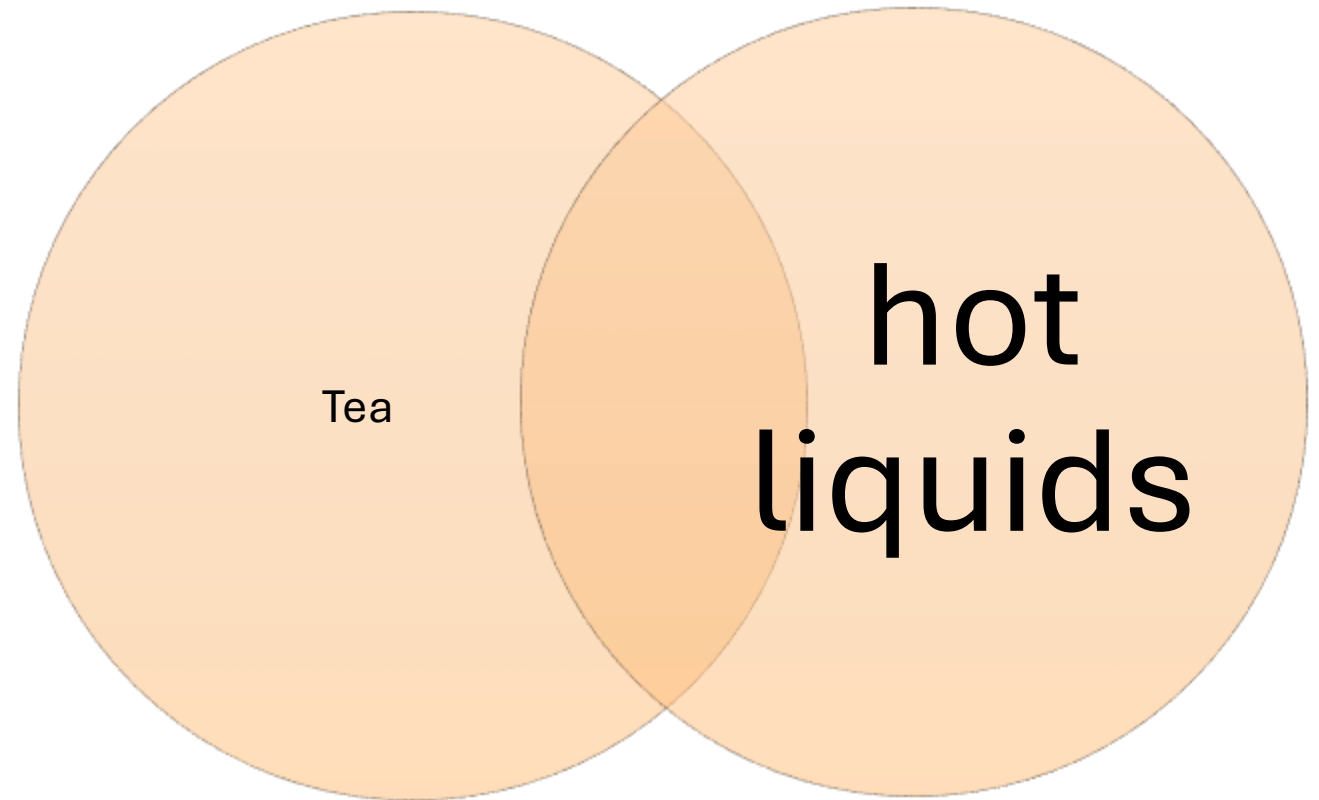
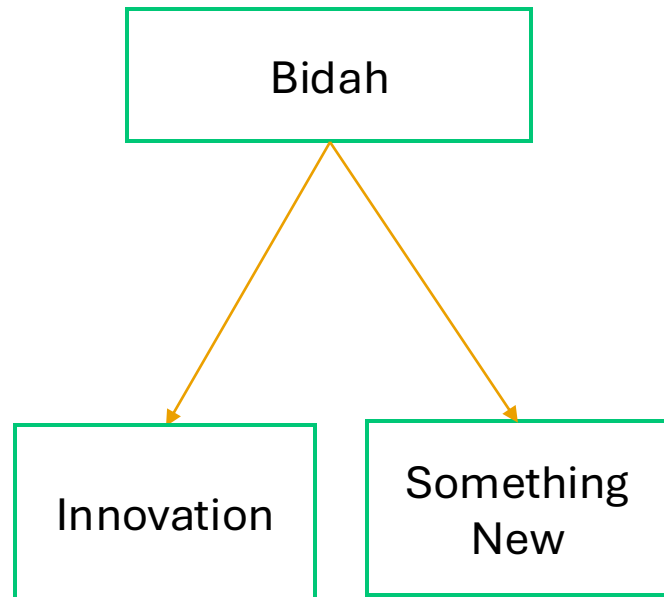
جِنْسٍ وَفَصْلٍ عَرَضٍ نَوْعٍ وَخَاصٍ

32- وَأَوَّلُ ثَلَاثَةٍ بِأَلَا شَطَطُ

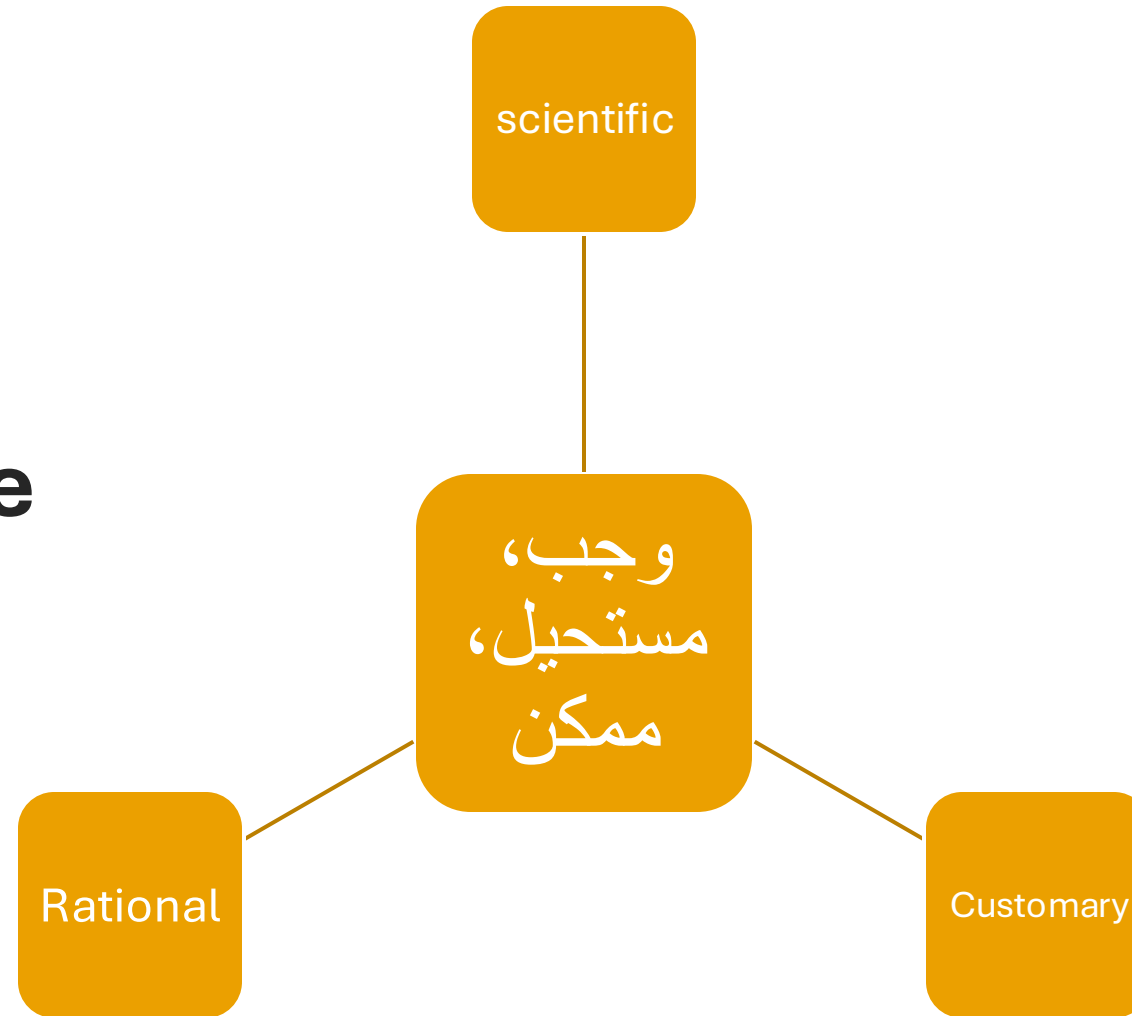
جِنْسٌ قَرِيبٌ أَوْ بَعِيدٌ أَوْ وَسَطٌ

- Kulli is that which belongs to a class – like “Lion”
- As for the Juz’iy (particular) it is that

Fallacy of Equivocation/Division/Composition



Mode: Relationship between the Subject and the Predicate



Relationship Between Groups/Categories

- تساوي – same
- تباين - distinct
- عموم و خصوص مطلق – one encompasses the other
- عموم و خصوص من وج - overlapping

Quick Review: Propositions

“Categorical Logic”

Relationships between class/categories

- Universal/Particular, Affirmative/Negative
 - Distribution
 - do the subject/predicate apply generally or not?
 - Refer to the AEIO table
- Mode – nature of relationship b/w S and P
 - Necessary/impossible/Possible
 - Is that judgement based on *Aadah*, logic/reason, or scientific observation?
- Categorical Logic is the Fundamental Building Block of More complex logical systems

Translation to Categorical Statements

- Turning Everyday Language into logical expressions (categorical propositions)
 - AEIO formulation
 - !Identify your Subject and Predicate (both must be nouns)
 - Must convert adjectives and verbs into categorical nouns
 - This enables structured analysis
- NB difference between:
 - Definition by Extension (“All members are X”) – something that APPLIES to all
 - Definition by Essence (General Traits) – a general/typical characteristic
- Identify and Avoid Logical Fallacies
 - Equivocation (same word, different meaning) - “Bark”
 - Division (different words, same meaning) –
 - Composition – “Quran”
- Review of Mode

Indirect Inference

- All Muslims are Monotheist
- Abdur'Rahman is a Muslim
- (Therefor) Abdur'Rahman is a Monotheist

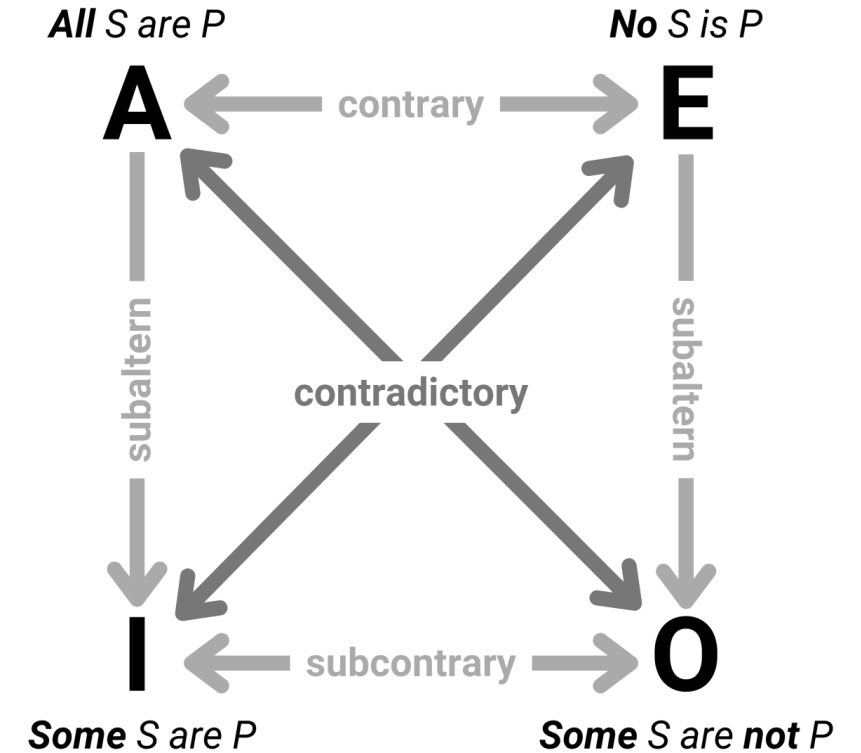
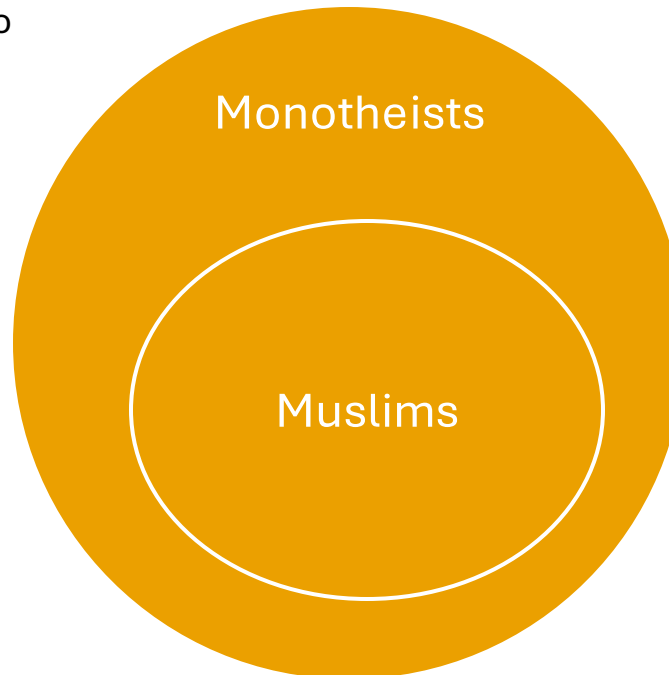
Immediate Inferences and Conversions

- Immediate Inference – drawing a conclusion from a single proposition
 - No Muslims are polytheists
 - No Polytheist are Muslims
 - Subtypes:
 - Conversion
 - Obversion
 - Contradiction




Conversion – عكس مستوی

- Swapping the Subject and the Predicate
 - Leave the Quantifier the same
 - No Muslims are Polytheists -> No Polytheists are Muslims
 - Works for E and I every time
 - No S is P -> No P is S
 - Some S is P -> Some P is S
 - A is unpredictable
 - A can become I
 - All S are P -> SOME P are I
 - “All Muslims are Monotheists”
 - Fallacy of Illicit Conversion



O-Conversion – not Possible



Immediate Deduction Inference: Conversion

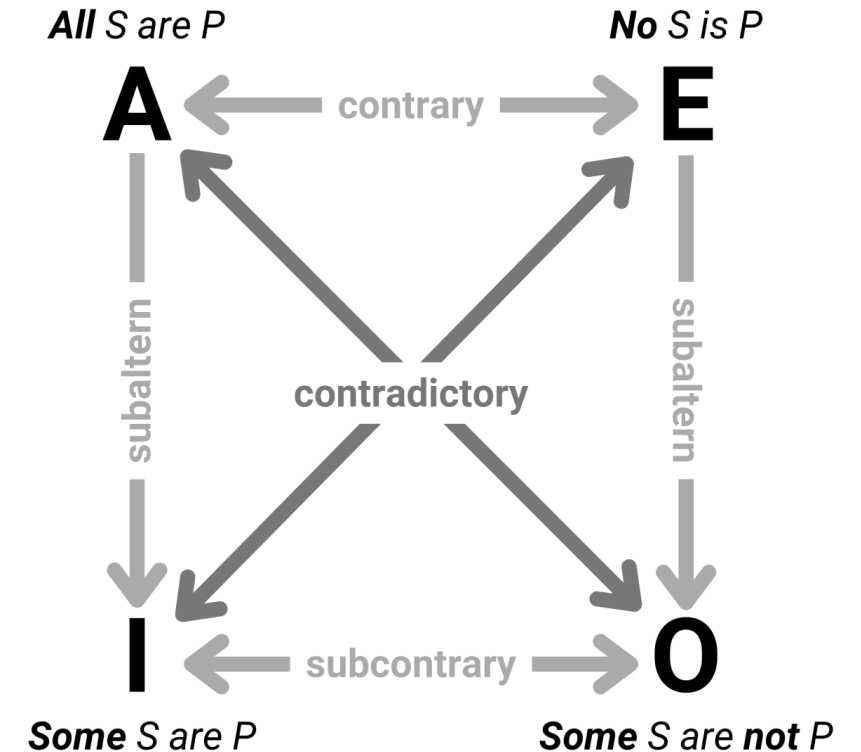
	CONVERTEND		CONVERSE
A	All S is P. Ex. All chairs are tables.	I	Some P is S. Some tables are chairs.
E	No S is P. Ex. No pen is pencil.	E	No P is S No pencil is pen.
I	Some S is P. Ex. Some teachers are poets.	I	Some P is S Some poets are teachers.
O	Some S is not P	-	No Valid Conversion

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- Some Muslims are Not Hanafi
 - ?Some Hanafis are not Muslim
- **There is NO consistent conversion of O**

Some other Examples...

- All Muhajir are companions
- No Muhajir is a hypocrite
- Some prayers are not (compulsory prayers)
- All Ramadhan fasts are (compulsory fasts)
- Some women are not mothers
- No cars are flying objects
- All babies are (cute things)
- No (Hadith in Bukhari) are(Fabrications)
- Some books are (expensive items)



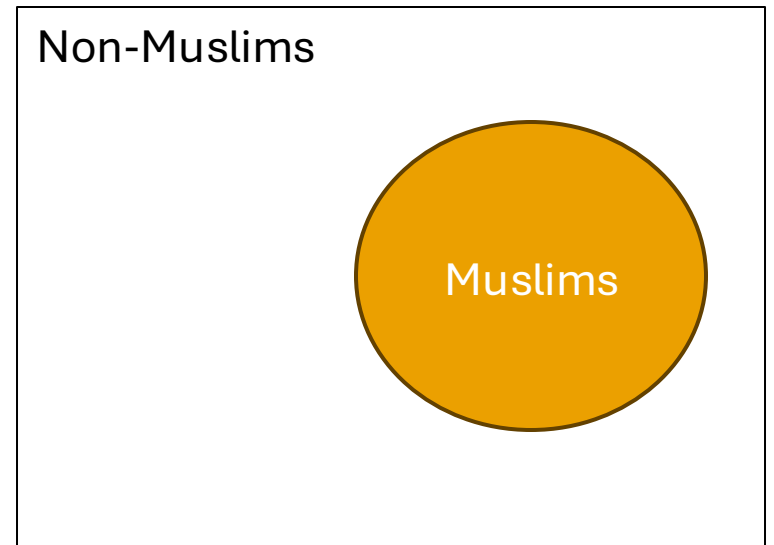
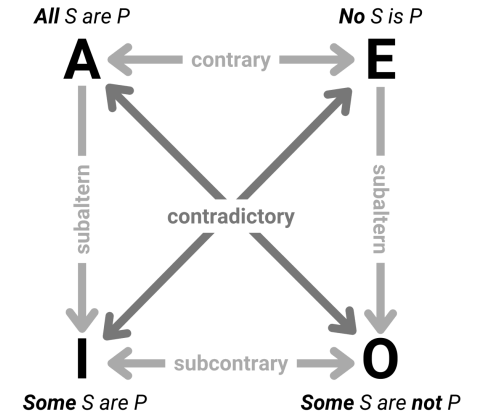
Some other Examples...

- All Muhajir are companions • O
- No Muhajir is a hypocrite • E
- Some prayers are not (compulsory prayers) • O
- All Ramadhan fasts are compulsory • A
- Some women are not mothers • O
- No cars are flying objects • E
- All babies are cute • A
- No Hadith in Bukhari are Fabricated • E
- Some books are expensive • I

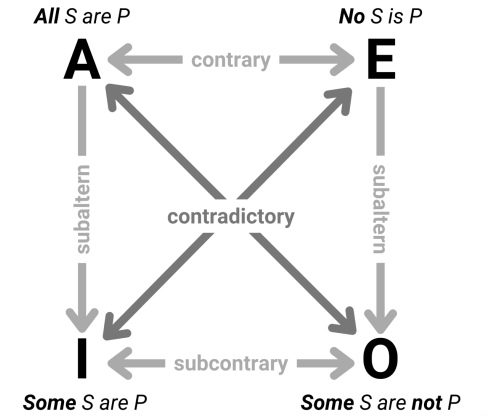
Obversion

“Logical Equivalency”

- Obversion = A/I moves to E/O, but with the Predicate Compliment
 - flip the quality of the Subject (All >- No)
 - Replace predicate with the predicate **compliment**
- **(No Muslims) are (Polytheists)**
 - **(All Muslims) are (Monotheists)**
 - A becomes E (No S is non-P) – double negative...
 - I becomes O (some stays)
 - For I, predicate needs a clear compliment
 - Some marked exams are passes
 - (won't work if you don't know if all the exams have been marked...)
 - Otherwise cannot do it
- Every man is trustworthy -> No man is untrustworthy
- No man is indispensable -> Every man are dispensable
- Some creatures are (lucky) -> Some creatures are not (unlucky)
- (Not all) commodities are not expensive



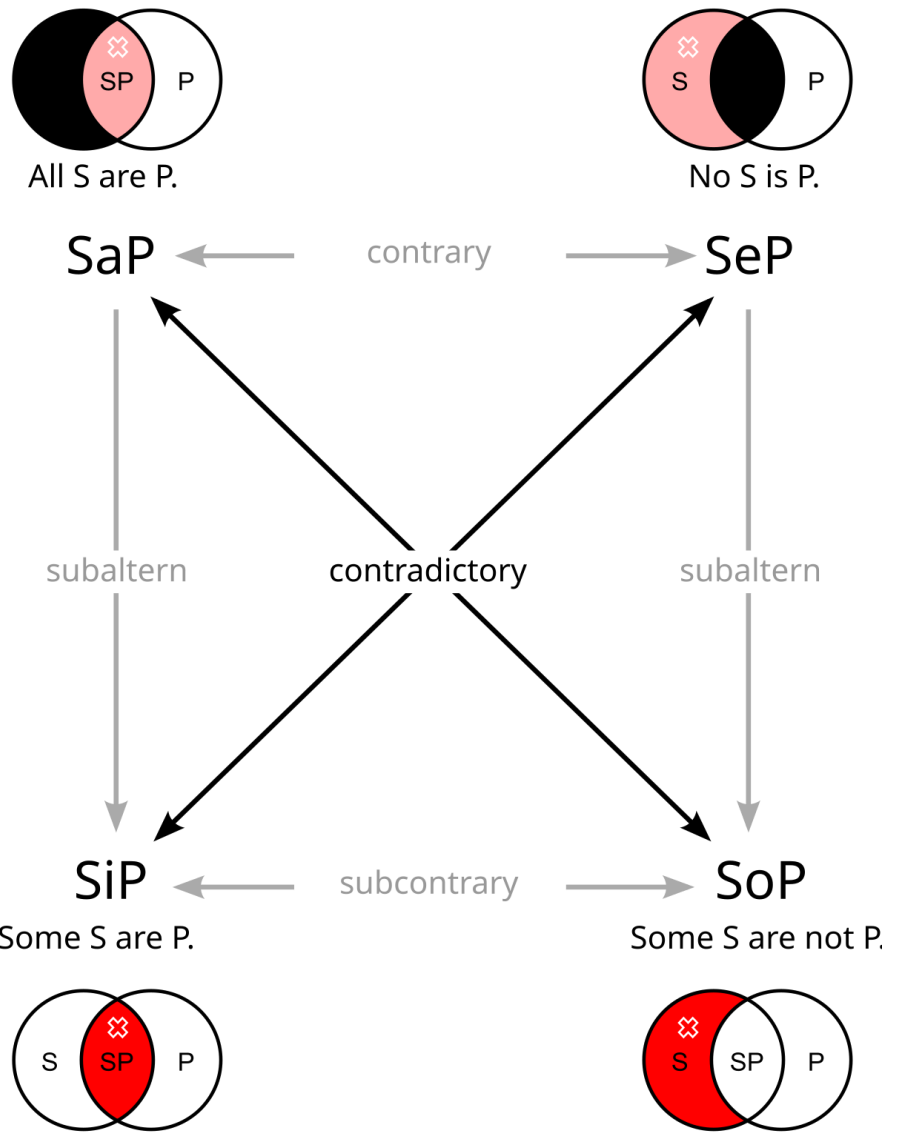
Obversion cont'd



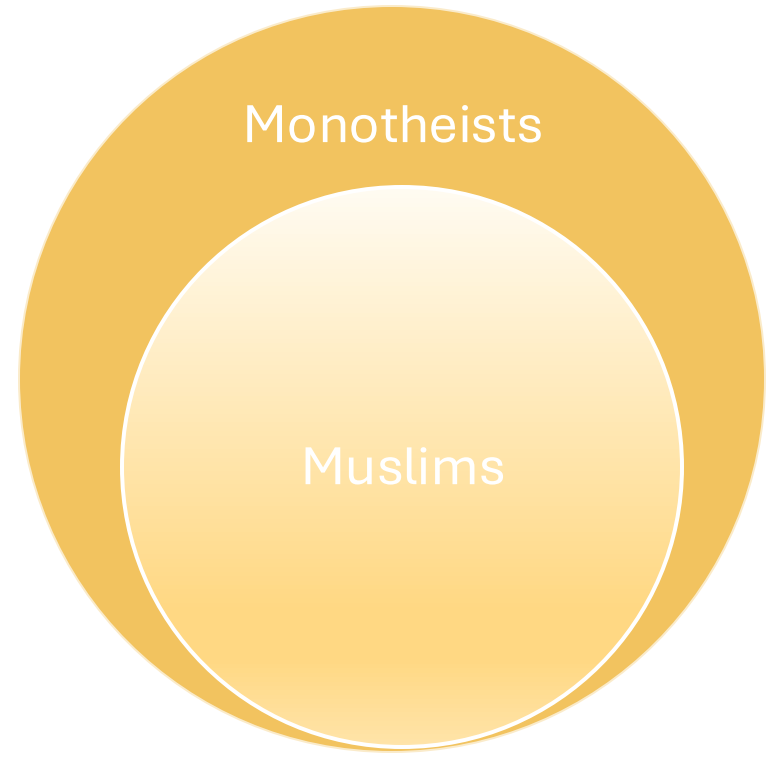
Obversion: Change Quality, and Replace Predicate Term with Term Complement.

Given statement	Obverse	Truth value
A: All A are B.	No A are non-B.	Same truth value as given statement
E: No A are B.	All A are non-B.	
I: Some A are B.	Some A are not non-B.	
O: Some A are not B.	Some A are non-B.	

Contradiction تناقض



- If one statement is true, the other is necessarily FALSE
- All Muslims are monotheists
 - ?Some Muslims are Monotheists



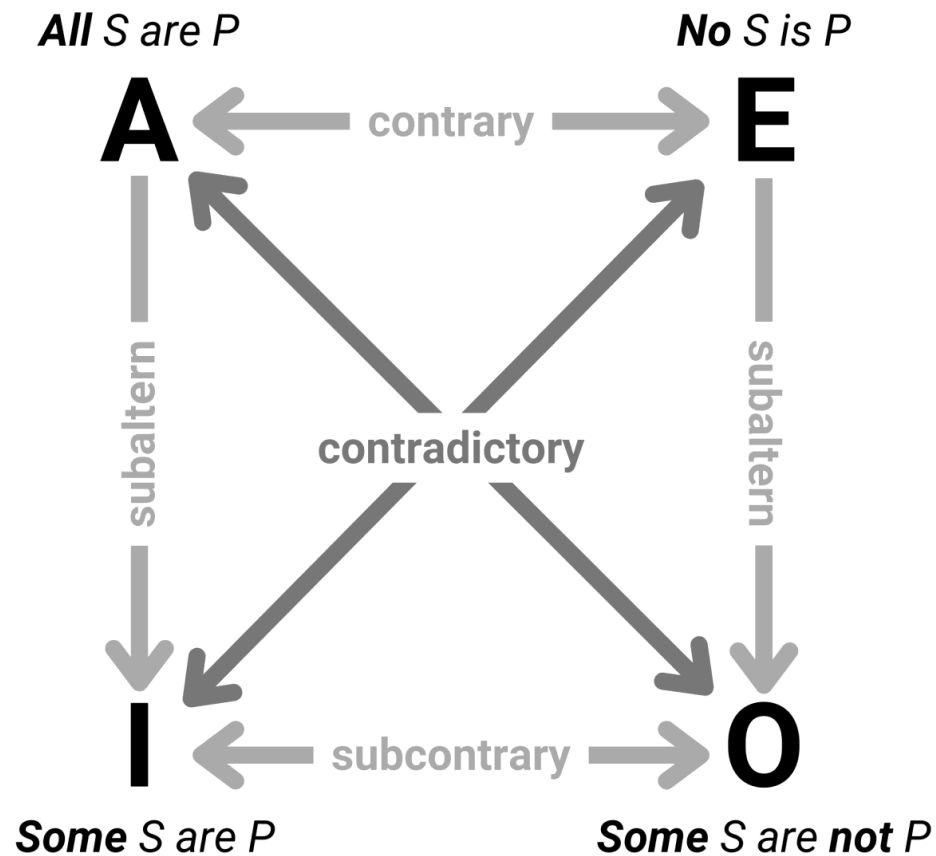
Conditions of Contradiction

Establishing its reality

- Contradiction Requires Unity of:

1. Subject
2. Predicate
3. Place
4. Time
5. Capacity and Reality (بالقوة و الفعل)
6. Condition
7. Whole and Part
8. Relationship

All the students are (potentially) great scholars
Some students are not (actually) great scholars



Examples

- قَالُوا مَا أَنْزَلَ اللَّهُ عَلَىٰ بَشَرٍ مِّن شَيْءٍ
- قُلْ مَنْ أَنْزَلَ الْكِتَابَ الَّذِي جَاءَ بِهِ مُوسَىٰ
- **No man is a receiver of revelation**

Examples

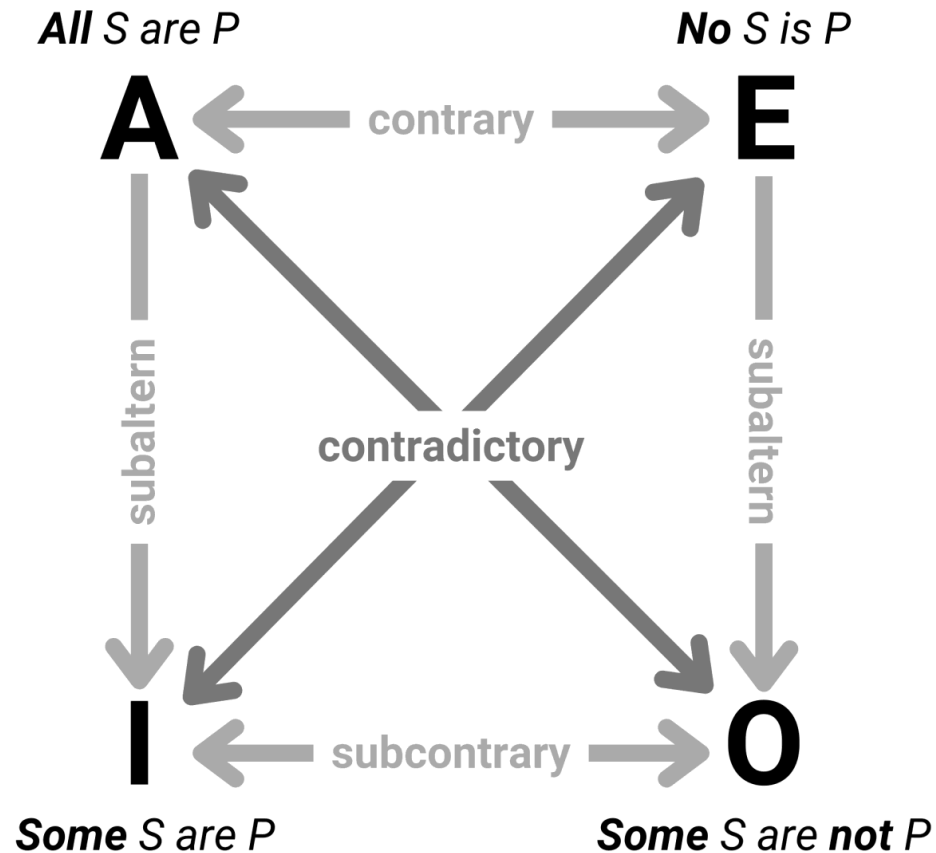
Unity of Predicate

وَقِفُّوهُمْ ^ط إِنَّهُمْ مَسْئُؤُونَ

فِيَوْمَئِذٍ لَا يُسْأَلُ عَنْ ذَنْبِهِ إِنْسٌ وَلَا جَانٌّ

سؤال الاستعلام

سؤال التوبيخ



Unity of Place

• إِنَّا أَنْزَلْنَاهُ فِي لَيْلَةِ الْقَدْرِ

بِالْقُوَّةِ وَ الْفَعْلِ

• إِنَّ الْإِنْسَانَ لَظَلُومٌ كَفَّارٌ

• الْجِنْسِ أَوْ الْاسْتِعْرَاقِ

• مَعَ نُوحٍ إِنَّهُ كَانَ عَبْدًا شَكُورًا

Is Logic Only for Experts and Geniuses?

- Cognitive Skills are the Building Blocks of Learning and Mastery
- Logic is a cognitive skill that will only strengthen through exercise/application
- Logic and Reasoning are amongst the core cognitive skills



Unity of Time

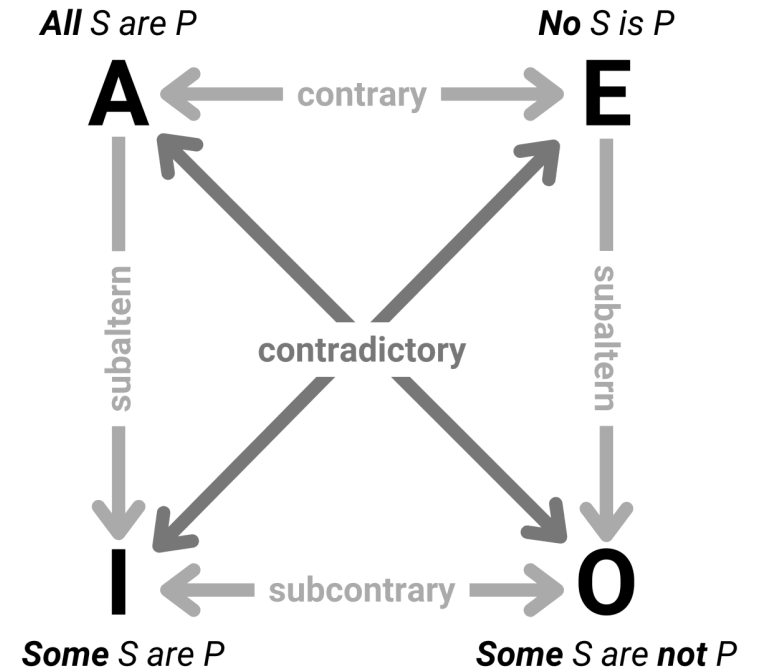
- إِنَّ اللَّهَ لَا يَغْفِرُ أَنْ يُشْرَكَ بِهِ وَيَغْفِرُ مَا دُونَ ذَلِكَ لِمَنْ يَشَاءُ
- لَا تَقْنَطُوا مِنْ رَحْمَةِ اللَّهِ إِنَّ اللَّهَ يَغْفِرُ الذُّنُوبَ جَمِيعًا

Further Considerations when translating from Regular to Categorical Language

- Categorical Logic Only examine the relationships between two objects
 - Therefore everything must be converted into object form
- Adjectives -> Set of Objects
- Verbs -> Set of Objects
- Alternative Quantifiers
 - Every, any = ALL
 - None = NO
 - Most, a few, several, majority of/minority of = SOME
 - A is not P = No A is P
- “Only” – Only S is P = P is only S = All P is S

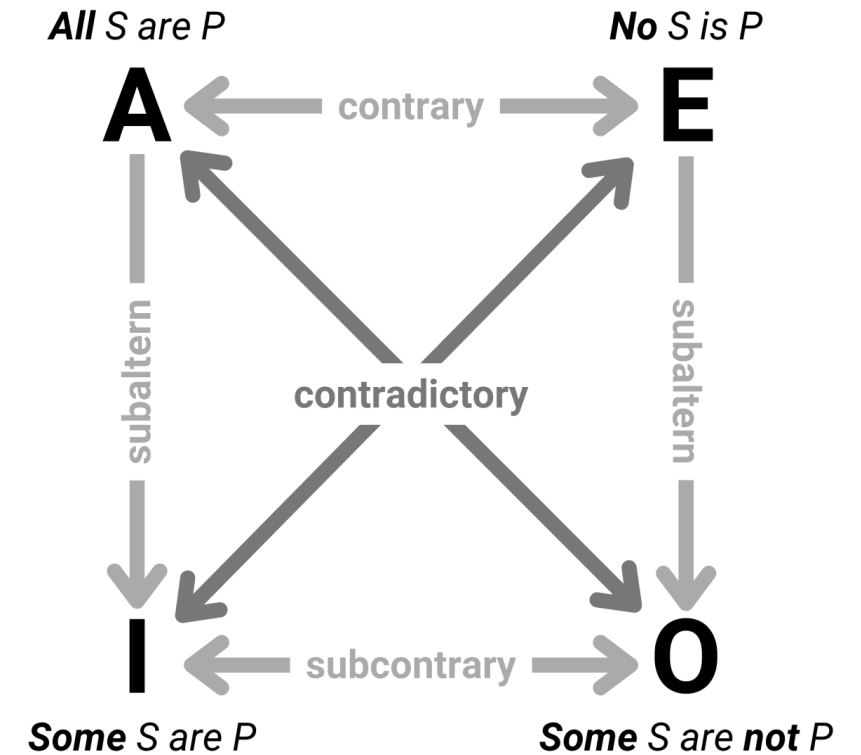
Examples

1. orchids are not fragrant
2. not everyone worth meeting is worth having as a friend
3. happy indeed is she who knows her own limitations
4. only members can use the front door
5. if he is asked to say a few words, he talks for hours
6. none of my students is failing
7. if you live in the dorms, you can't own a car
8. the only tests George fails are the ones he takes
9. you have nothing to lose but your chains
10. unless you pass this test you won't pass the course
11. most home movies are boring
12. not every part of Michael Jackson's face is original

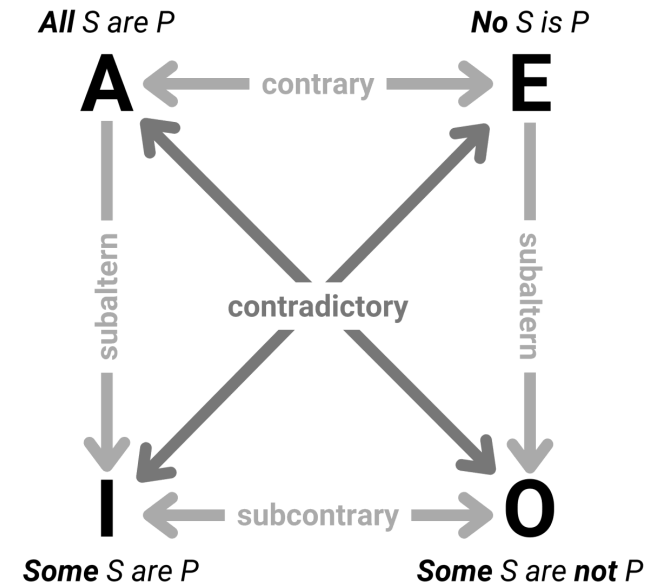


Some Further Notes on Categorical Logic and the Square of Opposition

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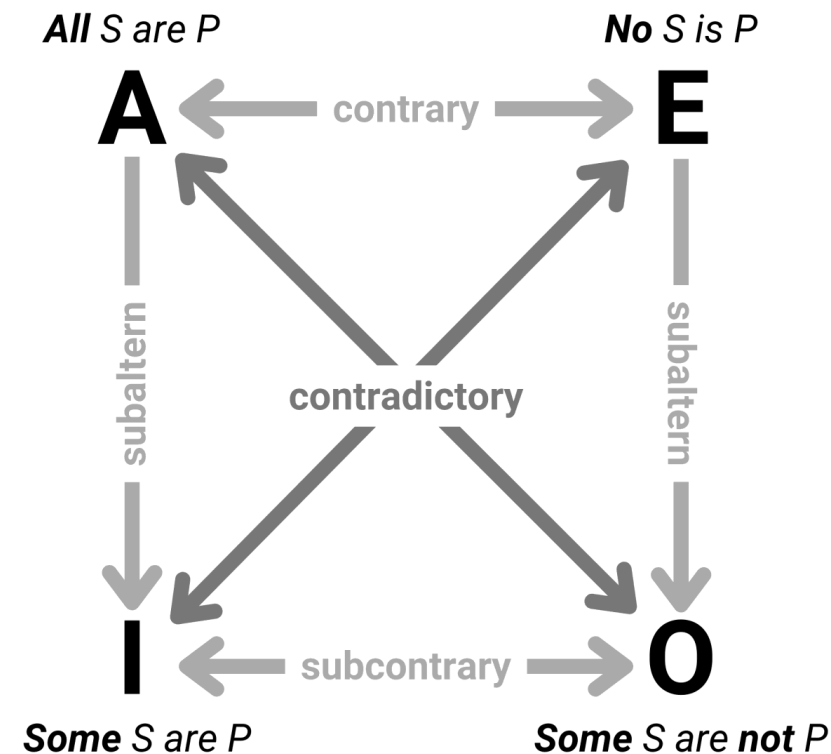
Contradictions cont'd



-
- Corresponding Propositions
 - Contradictories
 - If one is true, the other **MUST** be false
 - Cannot have the same truth value
 - A – All Oranges are Sweet
 - E – No Oranges are Sweet
 - I – Some Oranges are Sweet
 - O – Some Oranges are Not Sweet

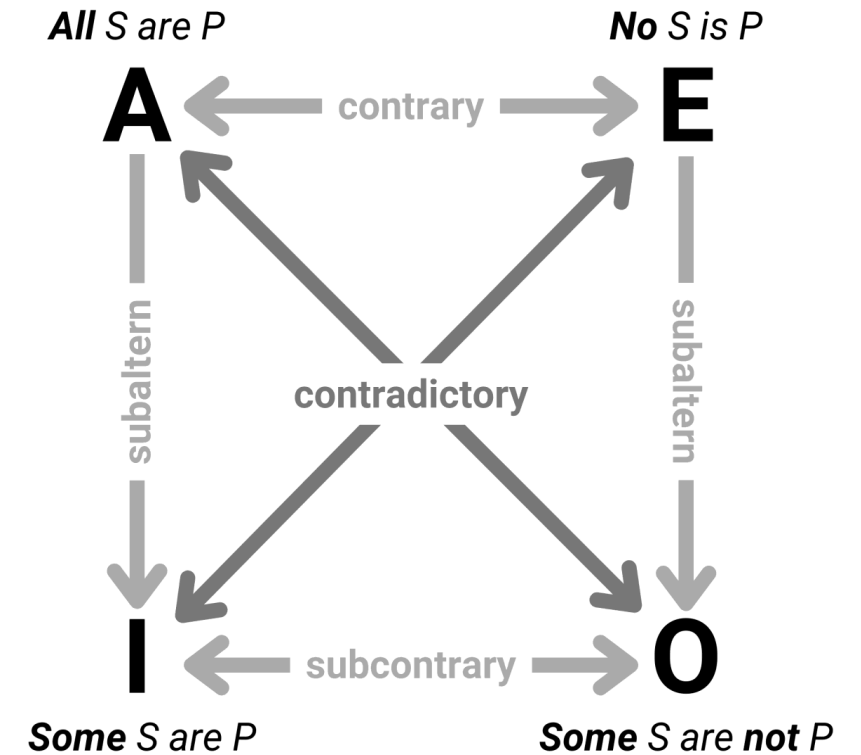
Contrary/SubContrary

- Contrary: A → E / I → O – All or Nothing
 - CAN'T both be true,
 - All Oranges are Sweet/No Oranges are Sweet
 - but CAN both be FALSE
 - It is not true that all oranges are sweet, nor is it the case that No Orange is Sweet [Some oranges are sweet]
 - Universality is not achieved
- SubContrary – Some-Some, but not none
 - Both CAN be true (I and O are not mutually exclusive)
 - Both CAN'T be FALSE – if one is false, the other MUST be true
 - If both were false, BOTH A and E would have to be true, which is impossible – their both being false implies a universality
 - يُضِلُّ بِهِ كَثِيرًا وَيَهْدِي بِهِ كَثِيرًا ۚ وَمَا يُضِلُّ بِهِ إِلَّا الْفَاسِقِينَ



Subalternation

- If A is true, then I must be true, BUT NOT VICE VERSA
- If E is true, then O must be true, BUT NOT VICE VERSA

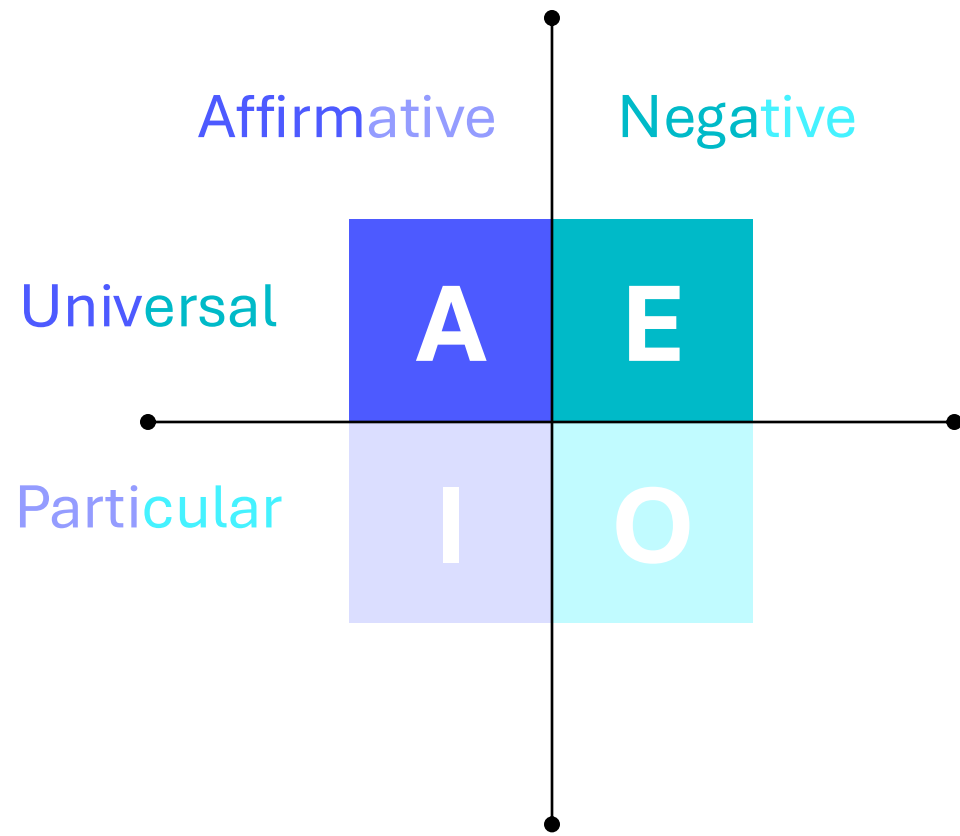


More Examples of False Contradiction

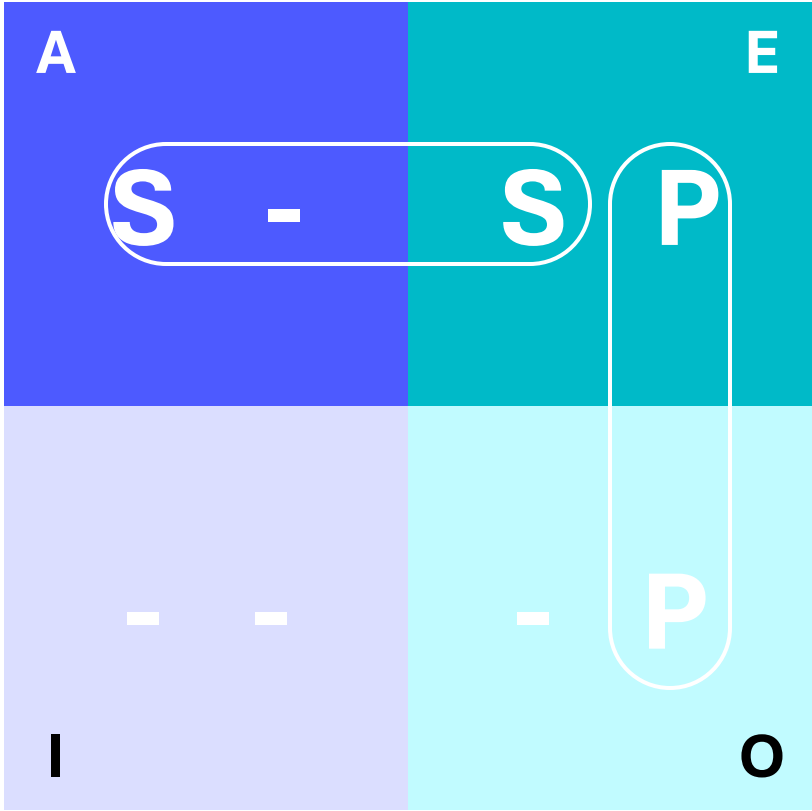
- Need Help?
 - Too Many Cooks spoil the broth
 - Many hands Make light work
- Is it good to hurry?
 - التَّائِي مِنَ اللَّهِ وَالْعَجَلَةَ مِنَ الشَّيْطَانِ
 - وَسَارِعُوا إِلَىٰ مَغْفِرَةٍ مِّن رَّبِّكُمْ وَجَنَّةٍ عَرْضُهَا السَّمَاوَاتُ وَالْأَرْضُ أُعِدَّتْ لِلْمُتَّقِينَ ﴿٥١﴾
- Is it better to be like others or unique?
 - Great minds think alike
 - Fools Seldom Differ

Categorical Logic

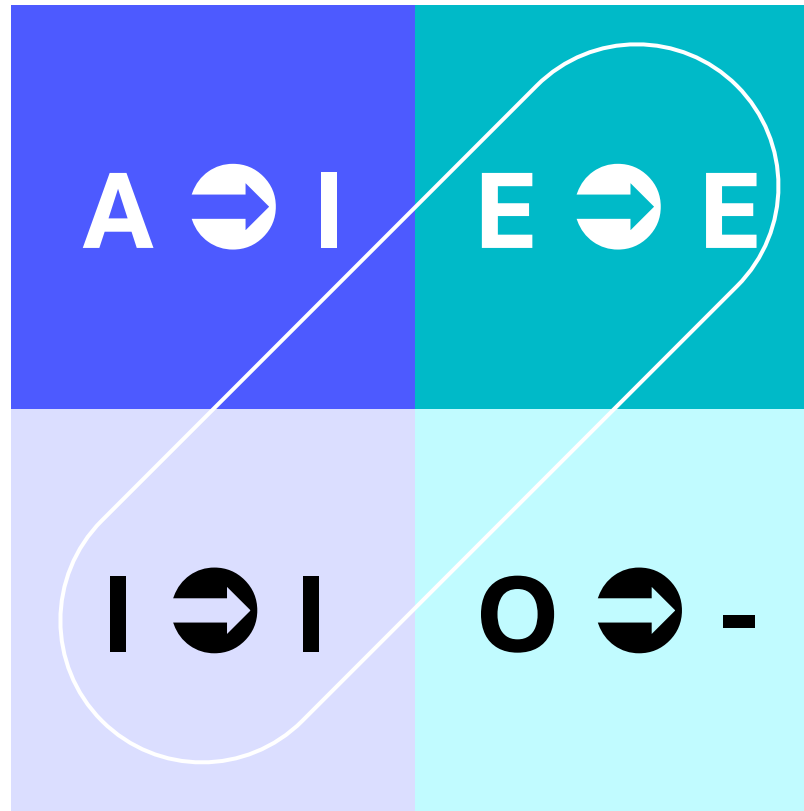
RECAP



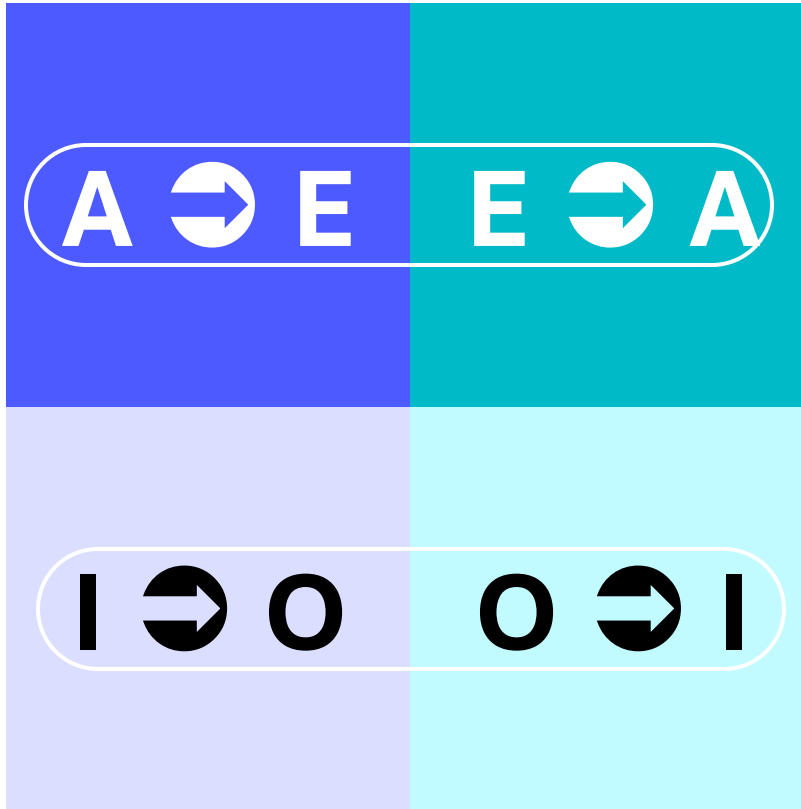
Distribution



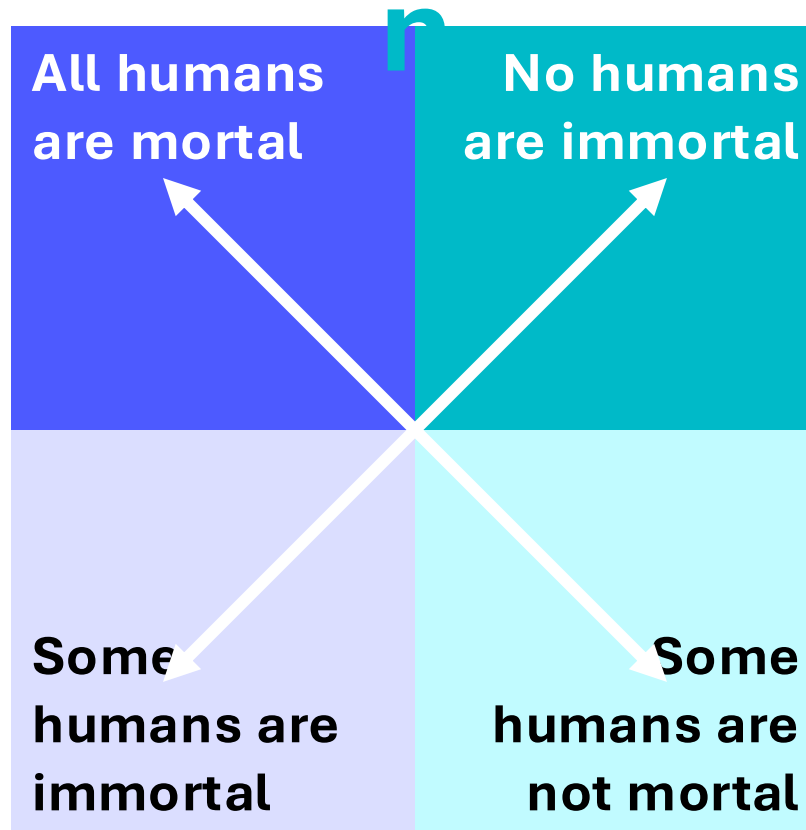
Conversion



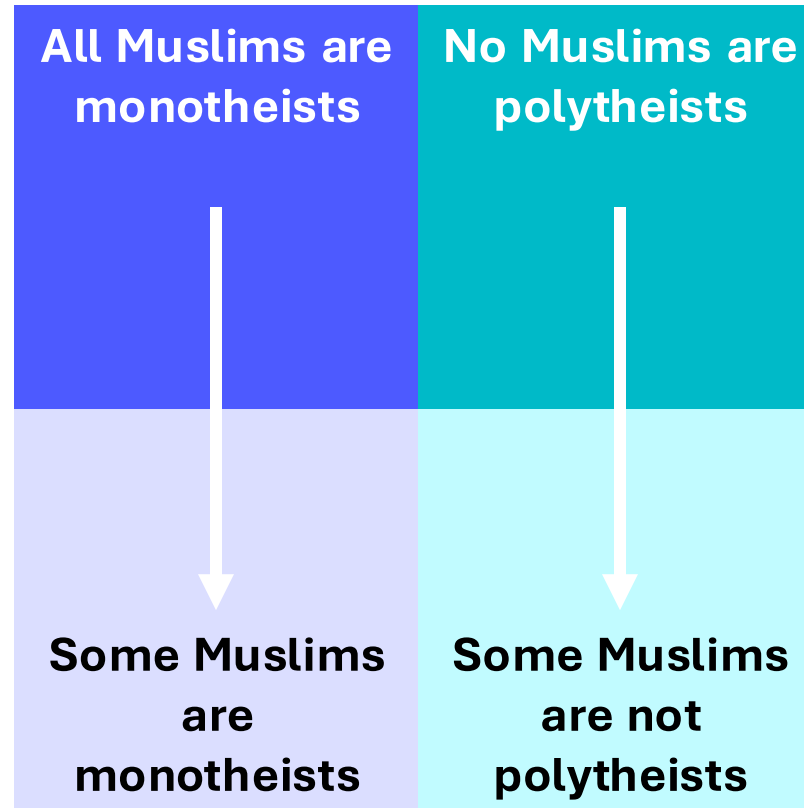
Obversion



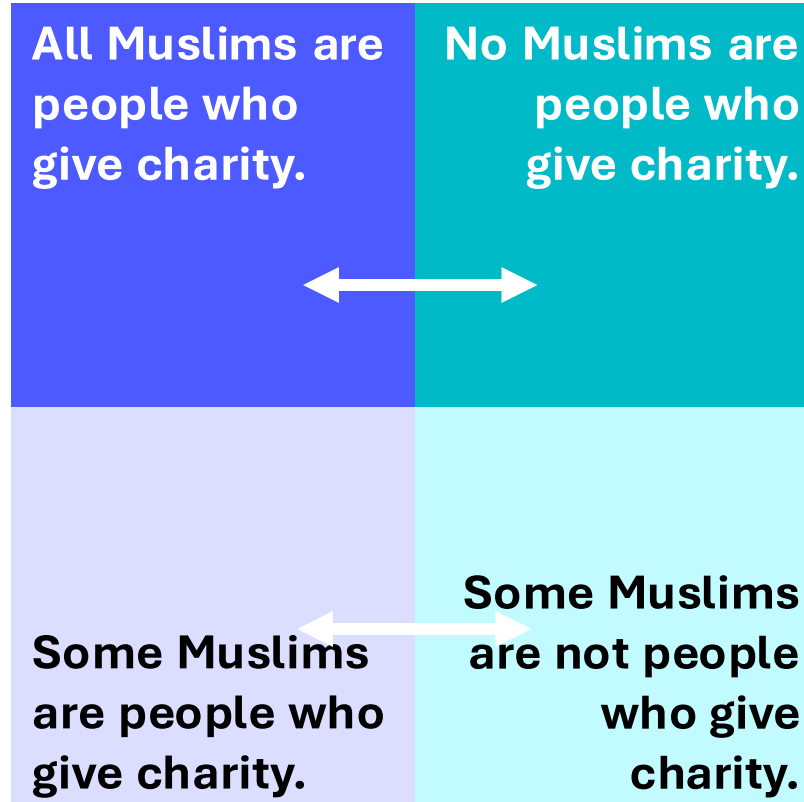
Contradiction



Subaltern



Contrary



Sub-Contrary

Inference

Direct

Indirect

Conversion

Obversion

Contradictory

Sub-altern

Contrary

Sub-Contrary

Deduction

Induction

Analogy

Logical Syllogisms and Indirect Logic

Indirect Inference

• Indirect Inference

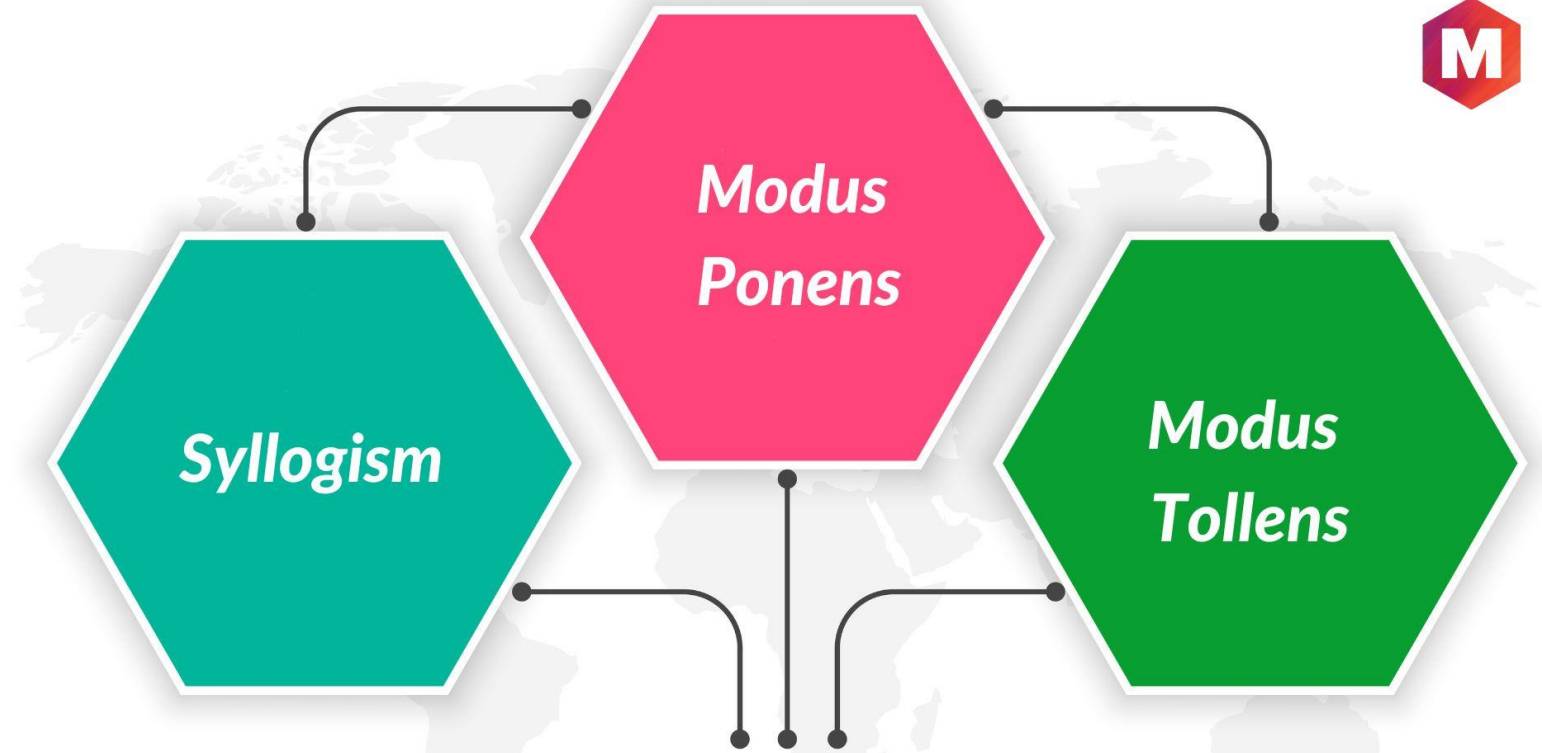
- A conclusion reached from multiple propositions

All students in this class are hardworking
students.

Ahmad is a student in this class .

Ahmad is hardworking.

Deduction



Types of Deductive Reasoning

INDIRECT INFERENCE

If it is raining, then the ground will wet, then the sidewalk will be slippery. Therefore, if it is raining, then the sidewalk will be slippery

- **Deduction**

- Reasoning from a universal to a particular

All students in this class are hardworking.

Ahmad is a students in this class .

Ahmad is hardworking.

(Categorical) Syllogism

DEDUCTION

All students are hardworking.
Middle Term

} Premise

Ahmad is a student.
Middle Term

} Premise

Ahmad is hardworking.

} Conclusion

All students are hardworking.

Middle Term

Major Term

Major
Premise

Ahmad is a student.

Minor Term

Middle Term

Minor
Premise

Ahmad is hardworking.

Conclusion

All students are hardworking.

الْحَدُّ الْأَوْسَطُ

الْحَدُّ الْأَكْبَرُ

الْكُبْرَى

Ahmad is a student.

الْحَدُّ الْأَصْغَرُ

الْحَدُّ الْأَوْسَطُ

الصُّغْرَى

Ahmad is hardworking.

النَّتِيجَةُ

• Enthymeme

- A categorical syllogism in which all three propositions are not mentioned explicitly.

- “I am sorry, I cannot allow you in as you do not have a ticket.”

- كلکم راعٍ وکلکم مسئولٌ عن رعیتہ

Inference

Direct

Conversion

Obversion

Contradictory

Sub-altern

Contrary

Sub-Contrary

Indirect

Deduction

Induction

Analogy

Categorical Syllogism

Hypothetical
Syllogism

Disjunctive
Syllogism

Conjunctive
Syllogism

Major Term /
Major Premise

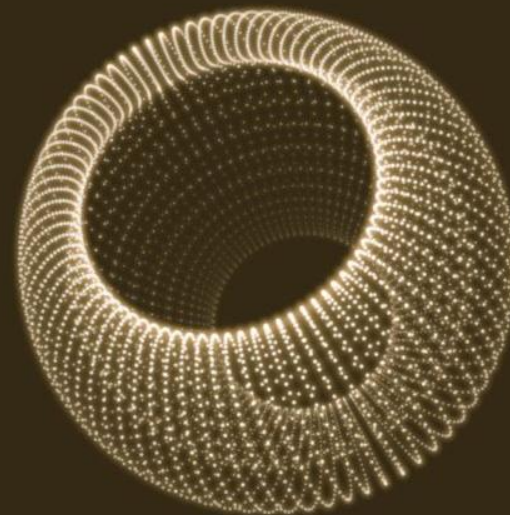
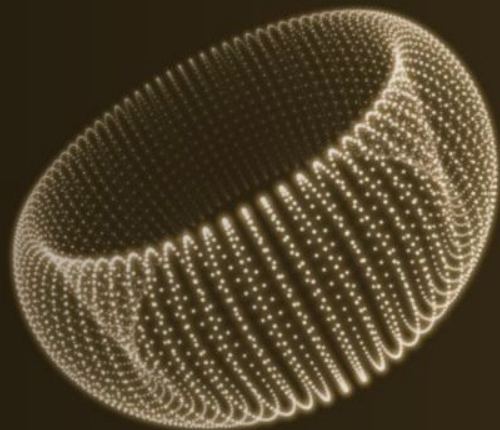
Minor Term /
Minor Premise

Middle Term

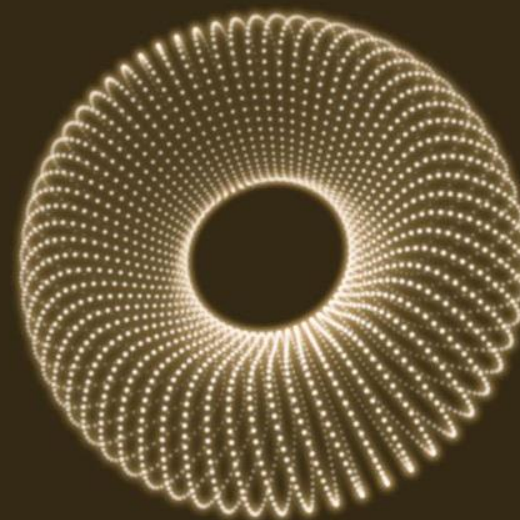
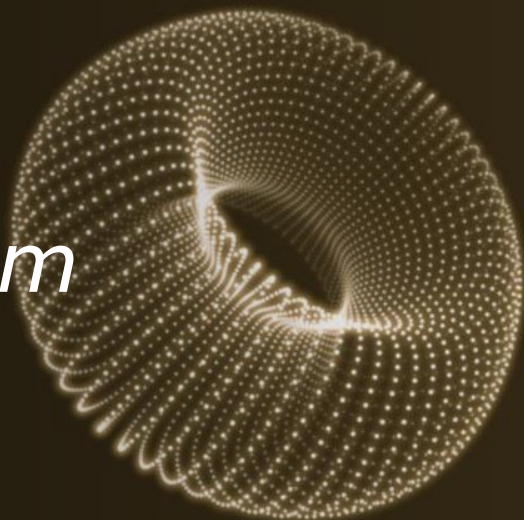
Conclusion



FORMS

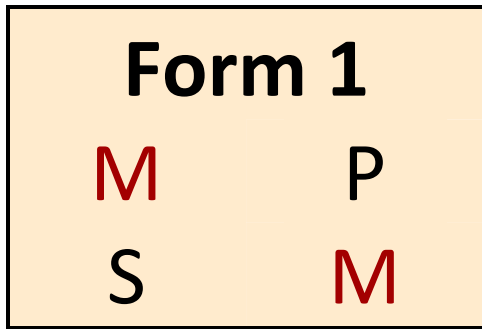


Categorical Syllogism

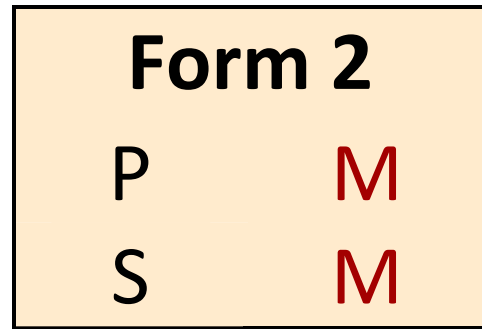


Forms

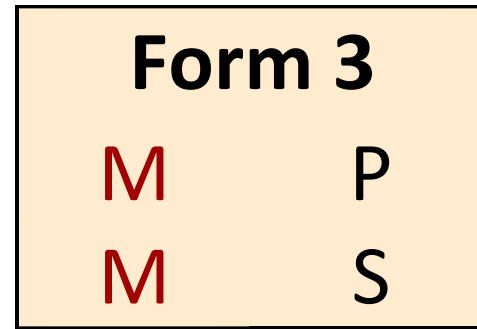
الأشكال الأربعة



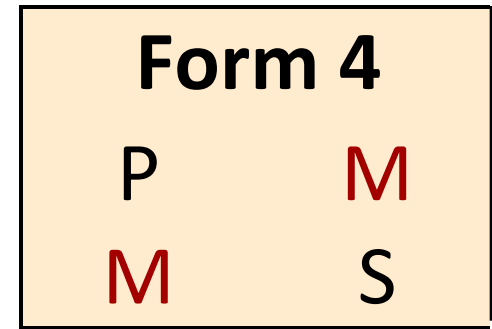
64



64



64



64

W

256

24

All Muslims pray five times a day (A)
 You are a Muslim [some people are Muslims]
 (I)
 Therefore you pray five times a day [Therefore
 some people pray five times a day] (I)
 (Dariii)

Figure 1	Figure 2	Figure 3	Figure 4
Barbara	Cesare	Datisi	Calemes
Celarent	Camestres	Disamis	Dimatis
Darii	Festino	Ferison	Fresison
Ferio	Baroco	Bocardo	<i>Calemos</i>
<i>Barbari</i>	<i>Cesaro</i>	<i>Felapton</i>	<i>Fesapo</i>
<i>Celaront</i>	<i>Camestros</i>	<i>Darapti</i>	<i>Bamalip</i>

8 Rules of Categorical Syllogism

Categorical Syllogism

- **#1: Fallacy of four terms**

- A syllogism must have three an only three terms.

All students in this class are hardworking.

Ahmad is a teacher .

Ahmad is hardworking.

All bidat is misguidance.

Taraweeh in Congregation is a bidat.

Therefor Taraweeh is misguidance.

حُرِّمَتْ عَلَيْكُمْ أَلْمِيتَةُ

• #2: Fallacy of Four Propositions

- A syllogism must have three and only three propositions.
- One syllogism may flow from another.

All muhajir are companion.

Abu Bakr is a muhajir .

Abu Bakr is companion.

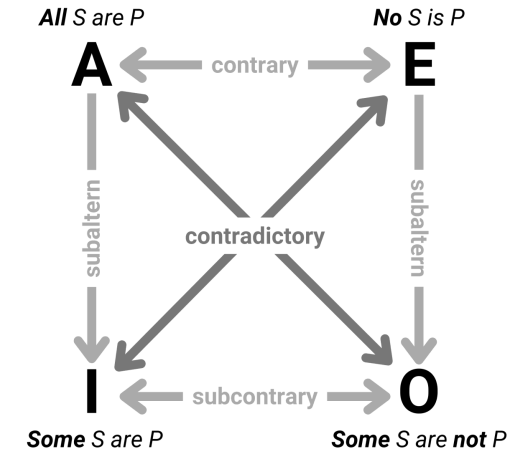
All companions are persons whom Allah is pleased with.

Abu Bakr is a companion .

Abu Bakr is a person who Allah is pleased with.

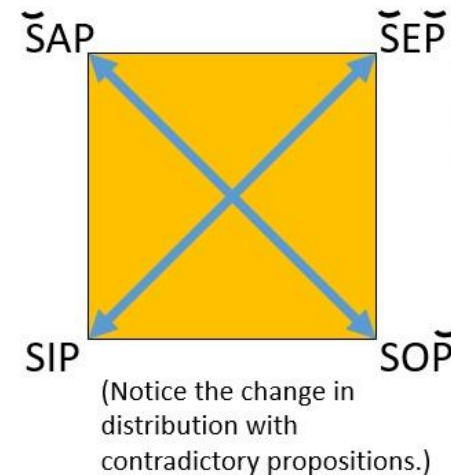
Fallacy # 3: The Undistributed Middle

The middle term must be **distributed** at least once in either the major or minor proposition



All men^d are humans^o
 Some women are not human
 Therefor some men are not women

No Saudis wear red scarfs
 Ahmed wears a red scarf
 Therefor Ahmad is not Saudi



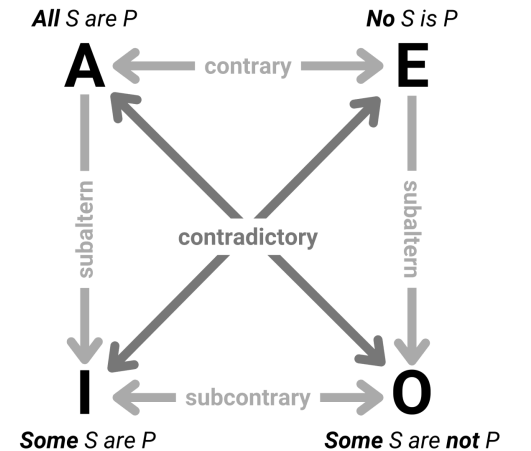
Proposition Type	Distributed Terms
A	Subject
I	No Term is Distributed
E	Subject and Predicate
O	Predicate

Masha'allah, you know Arabic. Are you a scholar?

All [scholars]^d are [people who know Arabic]

[You]⁰ are [a person who knows Arabic]

[You] are [a scholar]





(I): Some [Muslims] are [thawb wearers]

(I): [You] are [a thawb wearer]

[You] are [a Muslim]

*All lions are animals.
All cats are animals.
Therefore, all lions are cats.*

*All ISIS members are Muslims
Abdullah is a Muslim
Therefore Abdullah belongs to ISIS*

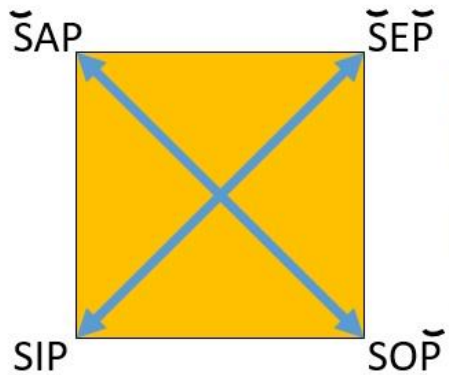


PENGUINS ARE BLACK AND WHITE.
SOME OLD TV SHOWS ARE BLACK AND WHITE.
THEREFORE, SOME PENGUINS ARE OLD TV SHOWS.



**Logic: another thing that
penguins aren't very good at.**

All Anti-Semetic (people criticize Israel)
 You criticize Israel
 Therefore you are anti-Semetic



(Notice the change in distribution with contradictory propositions.)

Proposition Type	Distributed Terms
A	Subject
I	No Term is Distributed
E	Subject and Predicate
O	Predicate



Fallacy of undistributed middle term cont'd

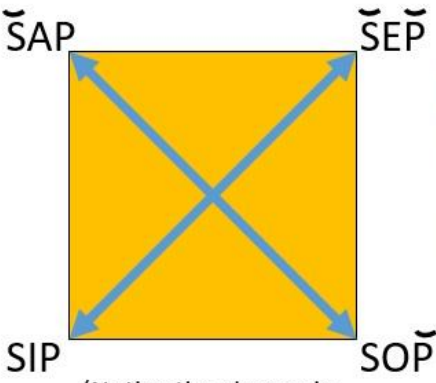


You are a diver!!!

I: Some [MUFC players] are [divers]. (I - no distributed term)

I: [You] are [MUFC player]. (Also I)

I: [You] are [divers]. (Also I)



(Notice the change in distribution with contradictory propositions.)

Proposition Type	Distributed Terms
A	Subject
I	No Term is Distributed
E	Subject and Predicate
O	Predicate

#4: Fallacy of Illicit Major/Minor

- 4) If a term is distributed in the conclusion, it **must** be distributed in the premise where it appears (in either the major or minor premise).
- **Fallacy of illicit major** – failure of major term to be distributed in the major premise
- **Fallacy of illicit minor** – failure of the minor term to be distributed in the minor premise

Premise 1: All (cats)^d are mammals.

Premise 2: No (dogs)^d are (cats)^d.

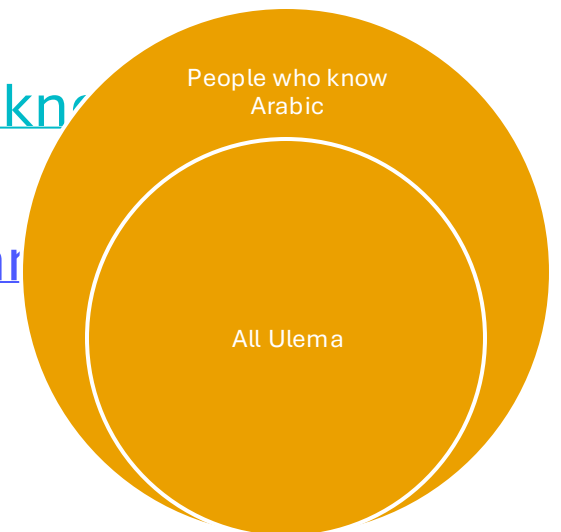
Conclusion: Therefore, no (dogs)^d are (mammals)^d.

All Ulama^d are (people who know Arabic)⁰.

No (people in this city)^d are (people who know Arabic)⁰.

No (people in this city)^d are Ulama.

(this is a valid conclusion)



#4: Fallacy of Illicit Major/Minor



A: All [knee takers]^d are [BLM supporters]⁰

O: [x] is not [knee taker]^d.

O: [x] is not [BLM supporters]^d.



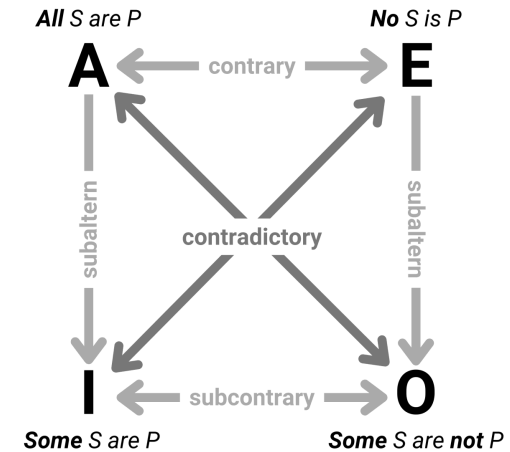
- Performing nafl prayers, is a sign of devoutness to Allah. It is sad to see many ulama and students not punctual in their nafl prayers. A non-devout scholar will not be of benefit to the ummah.

I: Some [devout people]⁰ are [people who pray Nafl]⁰.

O: [x]^d is not [people who pray Nafl]^d.

O: [x]^d is not devout^d.

invalid argument, but there is actually a forced claim that ALL devout people are people who pray nafl.



A: All [non-devout people]^d are [non-beneficial].

I: [x] is [non-devout].

I: [x] is [non-beneficial].

-
- #5 Fallacy of Exclusive Premises:
 - No syllogism can have two negative premises.

No books are expensive.

No pens are books.

No pens are expensive.

#6 - If ANY one premise is negative, the conclusion must be negative.

No students in this class are hardworking.

Ahmad is a student in this class .

Ahmad is not hardworking.

-
- 7) No syllogism may have two particular (“some”) premises.

Some students in this class are hardworking.

Ahmad is a student in this class .

Ahmad is hardworking.

-
- 8) If a syllogism has a particular premise, it must have a particular conclusion..

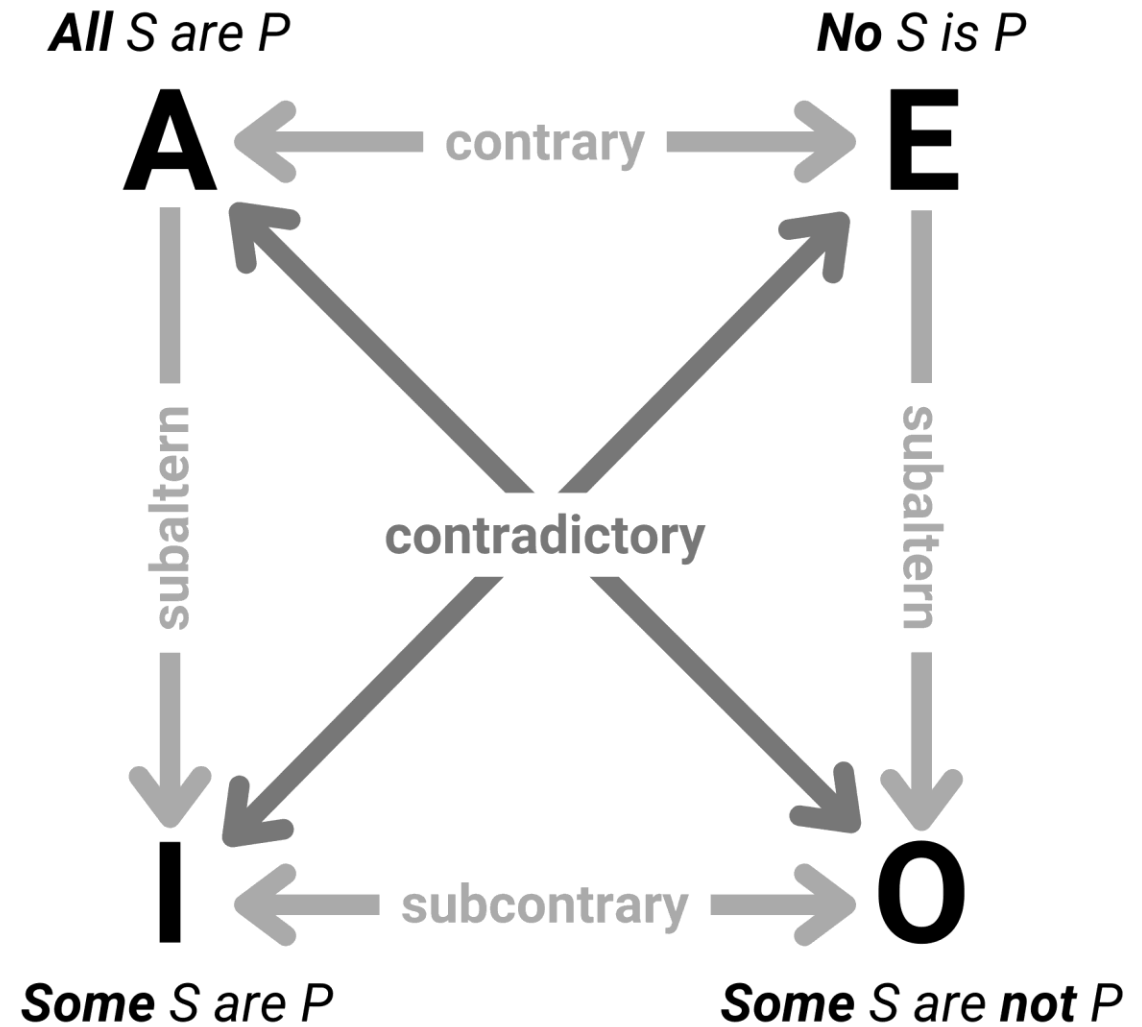
All students in this class are hardworking.

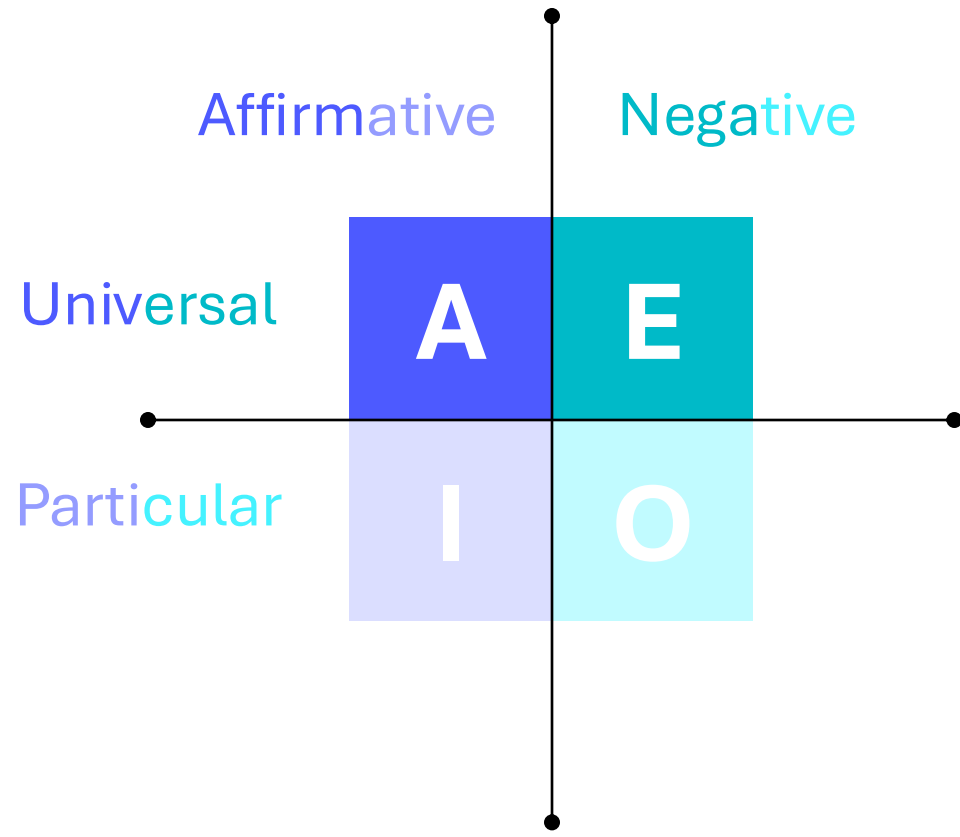
Ahmad is a student in this class .

Ahmad is hardworking.

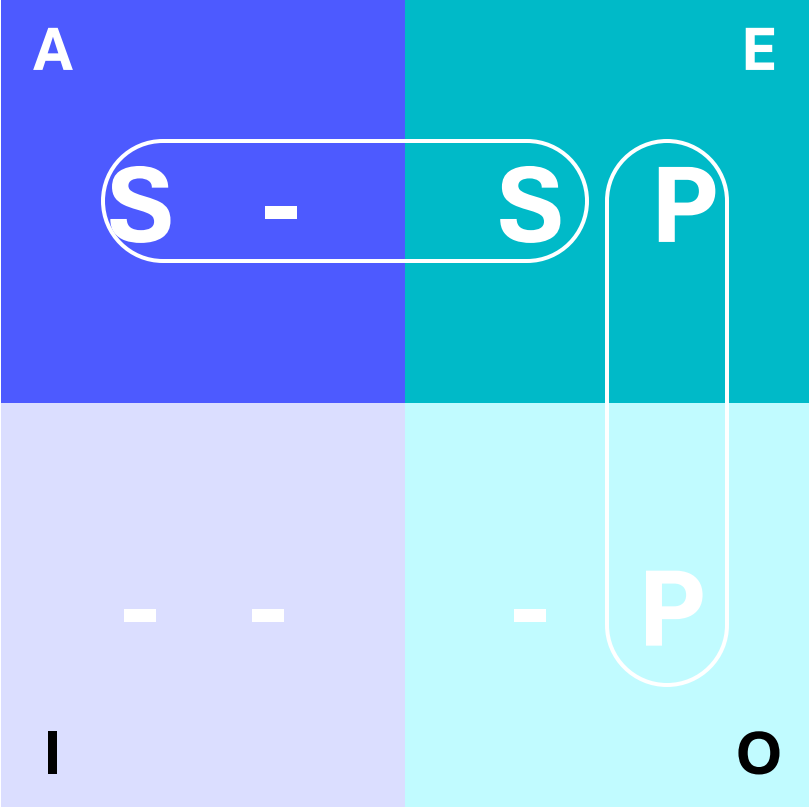
Categorical Logic

RECAP

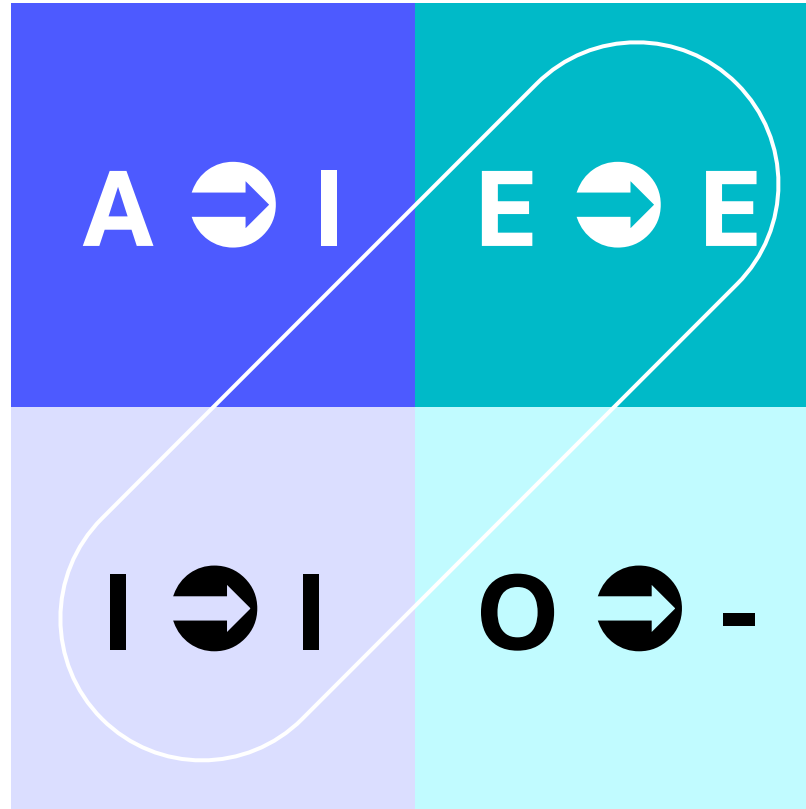




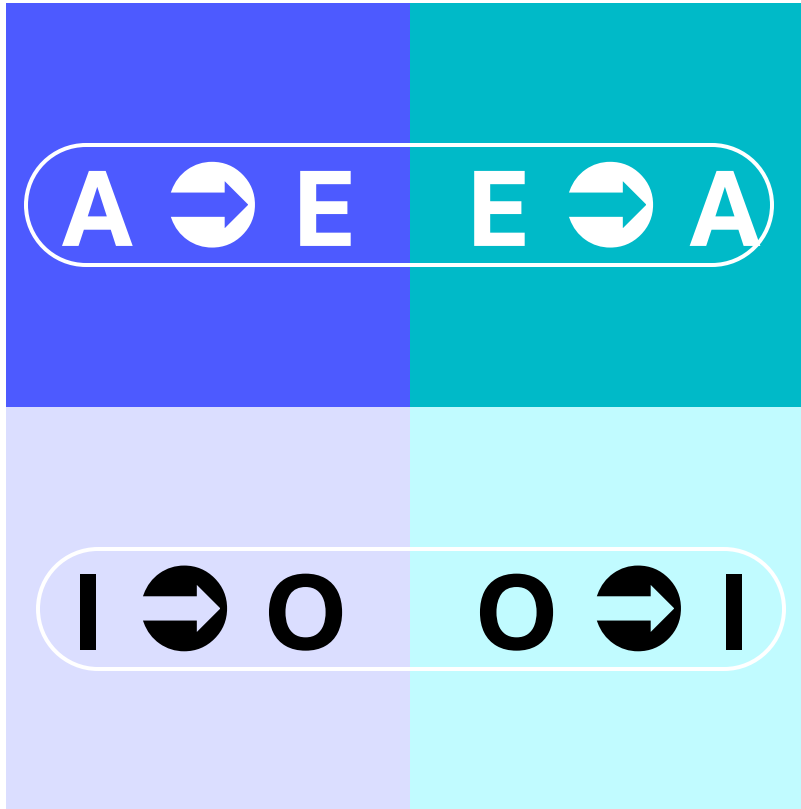
Distribution



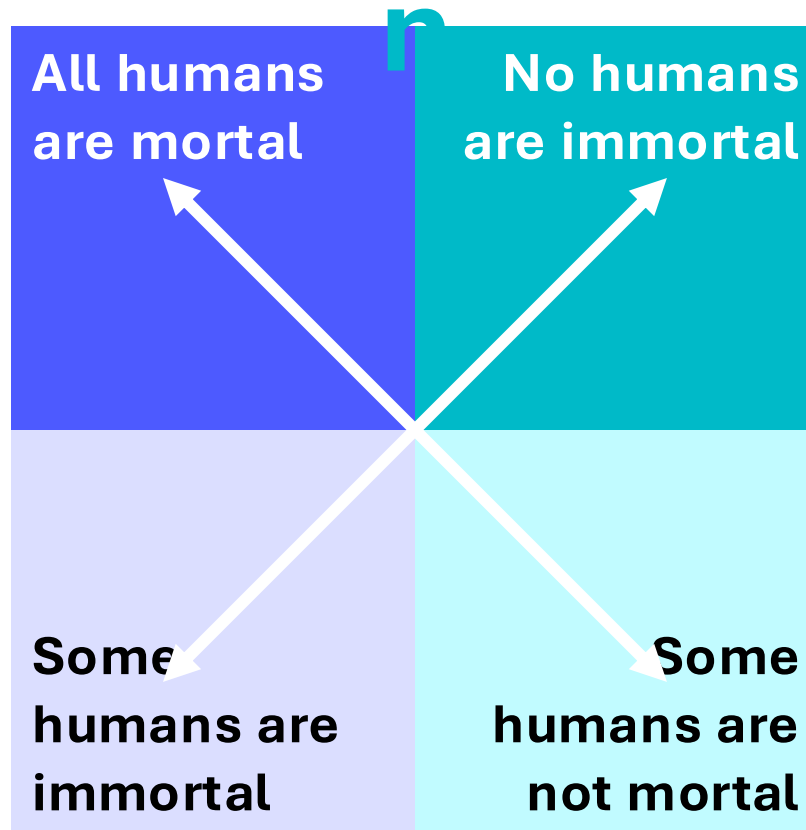
Conversion



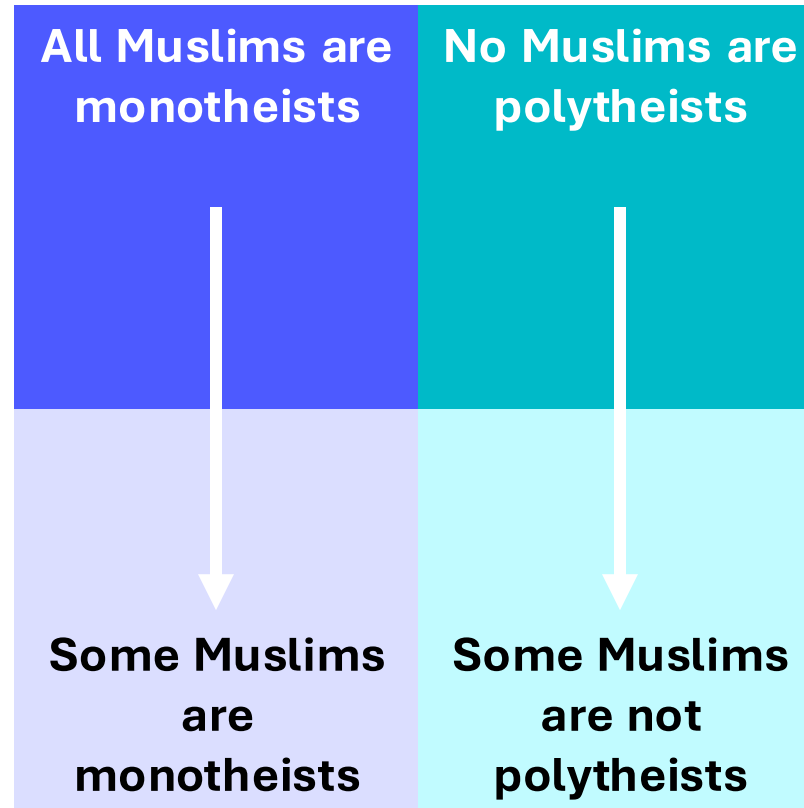
Obversion



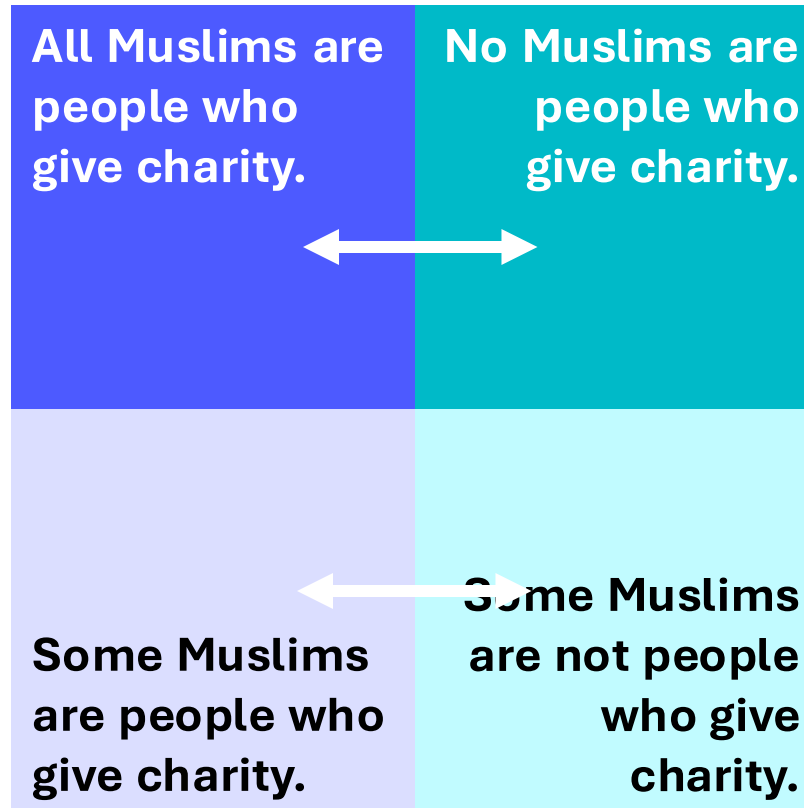
Contradiction



Subaltern



Contrary



Sub-Contrary

Inference

Direct

Conversion

Obversion

Contradictory

Sub-altern

Contrary

Sub-Contrary

Indirect

Deduction

Induction

Analogy

Categorical Syllogism

Hypothetical
Syllogism

Disjunctive
Syllogism

Conjunctive
Syllogism

Major Term /
Major Premise

Minor Term /
Minor Premise

Middle Term

Conclusion

-
- **Fallacy of four terms**
 - **Fallacy of four propositions**
 - **Fallacy of undistributed middle**
 - **Fallacy of illicit major / Fallacy of illicit minor**

-
- **No two negatives**
 - **If one premise is negative, conclusion must be negative**
 - **No two particulars**
 - **If one premise is particular, conclusion must be particular**

VENN DIAGRAM

Categorical Syllogism

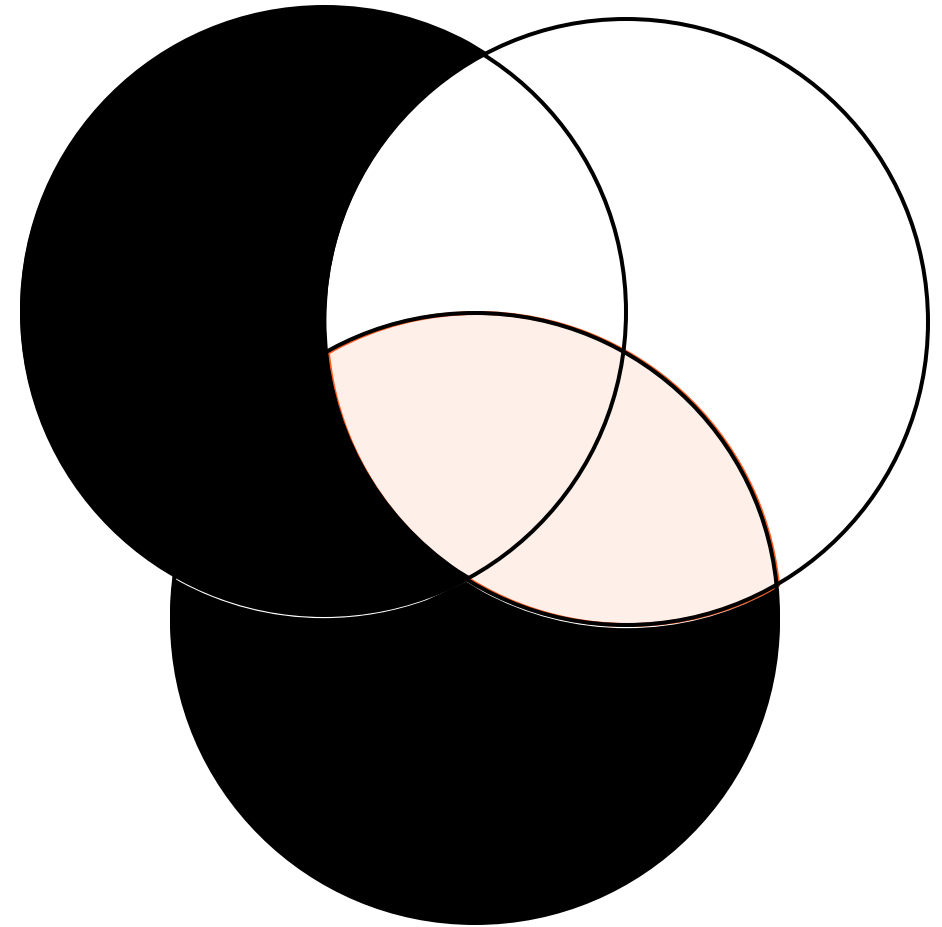
All nafs are mortal.

Ahmad is a nafs.

Ahmad is mortal.

Nafs

Mortal



Ahmad

Fallacy Of Undistributed Middle

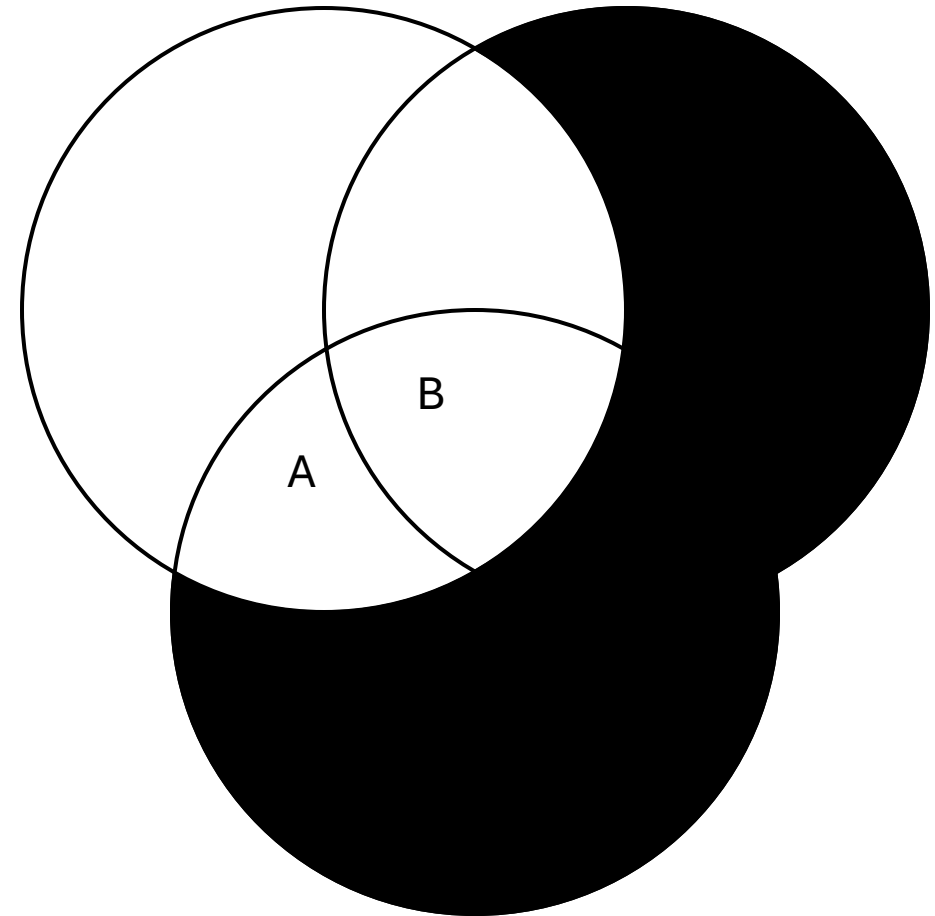
All racists are Brexit voters.

John is a Brexit voters.

John is racist.

Brexit

Racist



John

Fallacy Of Illicit Major

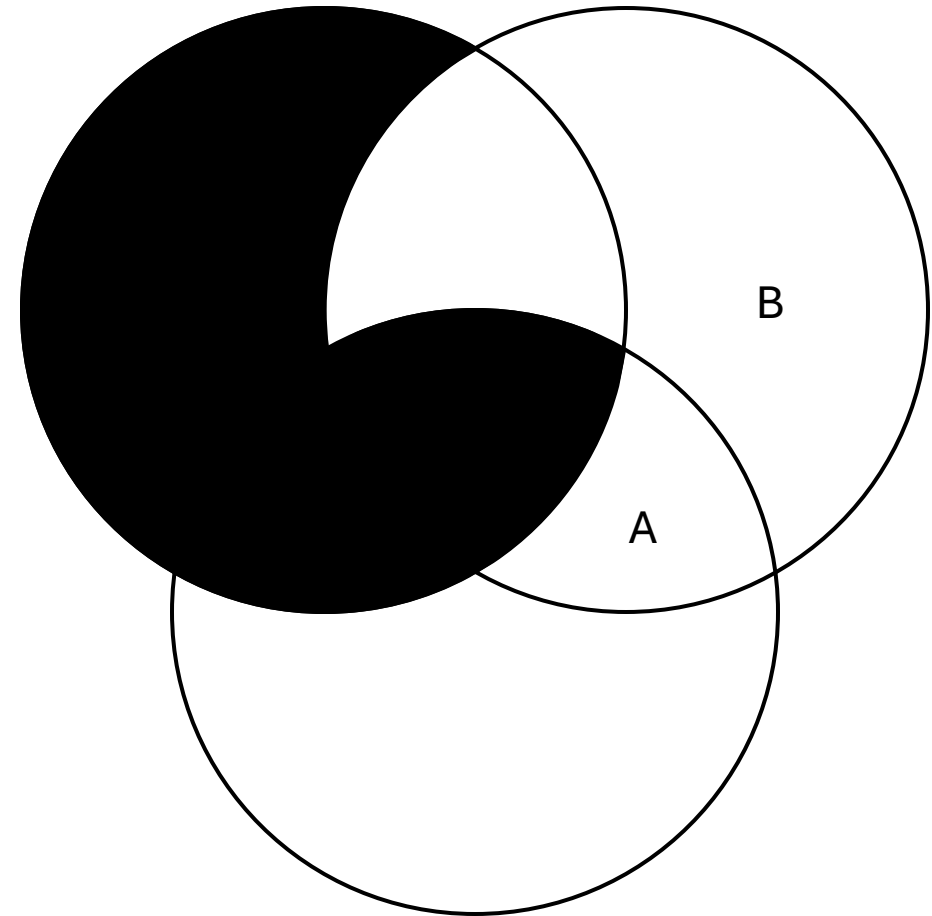
All Ulama are people who studied the Quran.

No [people in this city] are ulama.

No [people in this city] are [people who studied the Quran].

Ulama

Quran



People
in City

Fallacy Of Illicit Minor

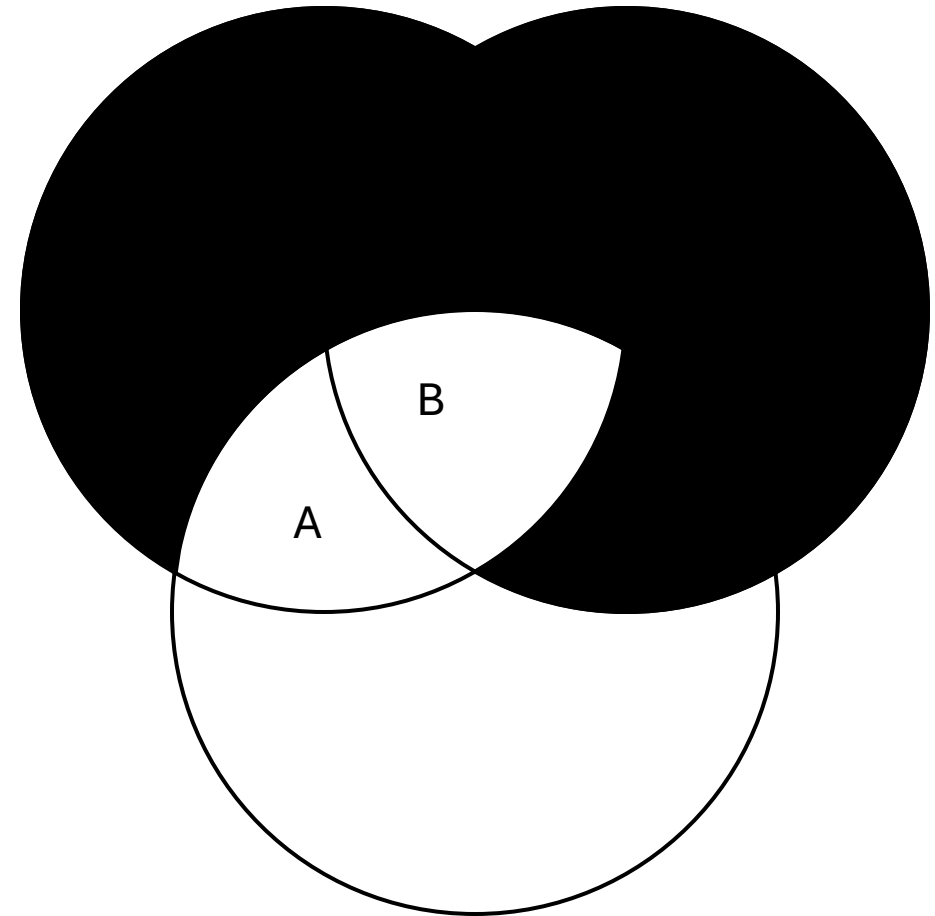
All doctors are people who earn £100K.

All people who earn £100K are people who pay 20%.

All people who pay 20% are doctors.

£100K

Doctors



20%

Fallacy Of Two Negatives/Exclusive

Premises

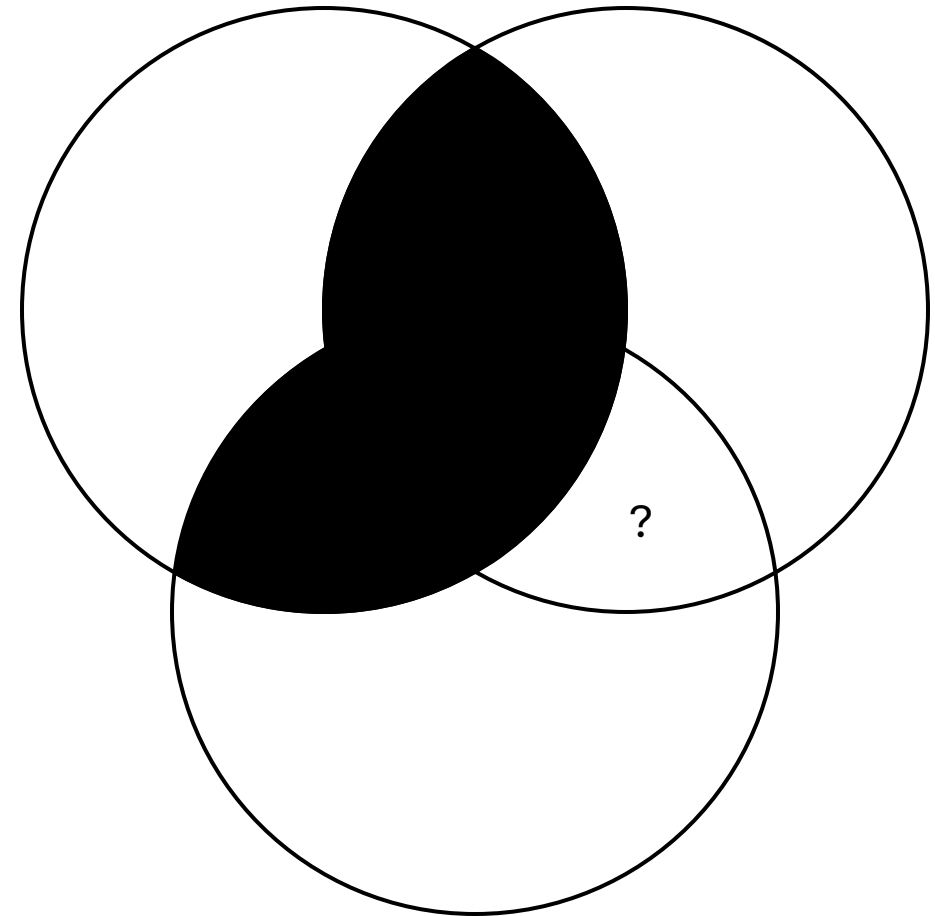
No pens are cheap things.

No books are pens.

No books are cheap things.

Pens

Cheap



Books

Fallacy Of Two Particulars

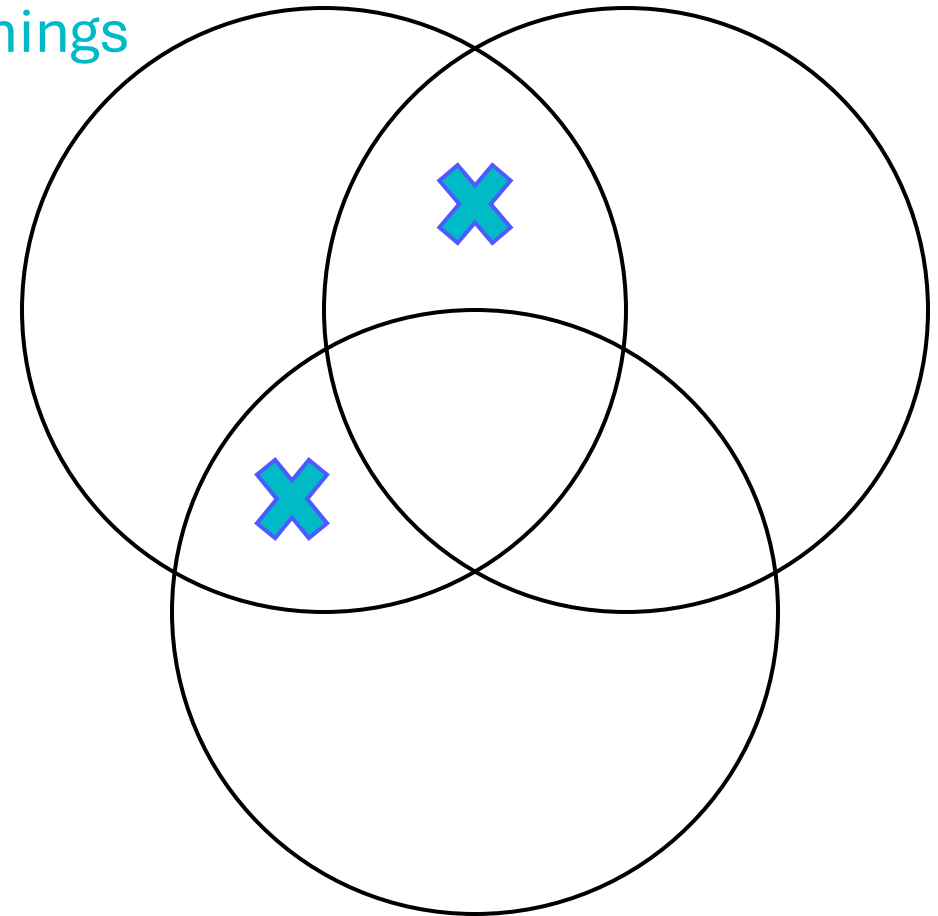
Some pens are cheap things.

Some books are cheap things.

Some books are pens.

Cheap
Things

Pen



Books