Categorical Propositions
Four Statements about the World
Categorical Logic
The Categorical Propositions

Categorical Proposition: any statement which relates two classes or categories of entities.

I. The Components of Categorical Propositions -

A. Subject Term - first category or class
B. Predicate Term - second category or class
Cats are mammals.

Opossums are marsupials.

Astronomical objects do not have fur.
I. The Components of Categorical Propositions -

A. **Subject Term** - first category or class

B. **Predicate Term** - second category or class

C. **Copula** - the grammatical link (verb) between subject and predicate terms.
Cats are mammals

subject

copula

predicate
Opossums are marsupials.
Astronomical objects do not have fur.
Categorical Logic
The Categorical Propositions

I. The Components of Categorical Propositions -

A. **Subject Term** - first category or class
B. **Predicate Term** - second category or class
C. **Copula** - the grammatical link (verb) between subject and predicate terms.
D. **Quantifiers** - words that specify the quantity of the subject and predicate terms.

1. **Universal** -
   a. affirmative - ‘all’ (*includes all of a class*)
   b. negative - ‘no’ (*excludes all of a class*)
2. **Particular** - ‘some’ (*includes part of a class*)
Four Standard Forms
of Categorical Propositions

*All* members of the *Subject* class *are* members of the *Predicate* class.

All S are P.

*None* of the members of the *Subject* class *are* members of the *Predicate* class.

No S are P.

*At least one* member of the *Subject* class *is* a member of the *Predicate* class.

Some S are P.

*At least one* member of the *Subject* class *is not* a member of the *Predicate* class.

Some S are not P.
Universal Affirmative

All S are P.

Every member of the subject class is also a member of the predicate class.
Universal Affirmative

All S are P.

Every member of the subject class is also a member of the predicate class.
Universal Negative

No S are P.

*No members of the subject class are members of the predicate class.*
Universal Negative

No S are P.

*No members of the subject class are members of the predicate class.*
Particular Affirmative

Some S are P.

At least one member of the subject class is also a member of the predicate class.
Particular Affirmative

Some S are P.

At least one members of the subject class is also a member of the predicate class.
Particular Negative

Some S are not P.

At least one members of the subject class is not a member of the predicate class.

Subject   Predicate
Particular Negative

Some S are not P.

At least one members of the subject class is not a member of the predicate class.
<table>
<thead>
<tr>
<th>Proposition</th>
<th>Symbol</th>
<th>Quantity</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>All S are P.</td>
<td>A</td>
<td>universal</td>
<td>affirmative</td>
</tr>
<tr>
<td>No S are P.</td>
<td>E</td>
<td>universal</td>
<td>negative</td>
</tr>
<tr>
<td>Some S are P.</td>
<td>I</td>
<td>particular</td>
<td>affirmative</td>
</tr>
<tr>
<td>Some S are not P.</td>
<td>O</td>
<td>particular</td>
<td>negative</td>
</tr>
</tbody>
</table>
Distribution of Terms

A term in a categorical proposition is said to be **distributed** when it makes an assertion about every member of a class.

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Distributed Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - All $S$ are $P$.</td>
<td>subject</td>
</tr>
<tr>
<td>E - No $S$ are $P$.</td>
<td>subject <em>and</em> predicate</td>
</tr>
<tr>
<td>I - Some $S$ are $P$.</td>
<td><em>none</em></td>
</tr>
<tr>
<td>O - Some $S$ are <strong>not</strong> $P$.</td>
<td>predicate</td>
</tr>
</tbody>
</table>
Universal Affirmative

A - All S are P.

Subject       Predicate

The *whole* subject class is *part* of the predicate class.
Universal Negative

\[ E - \text{ No } S \text{ are } P. \]

Subject \hspace{1cm} Predicate

*No* members of the subject class are members of the predicate class.
Particular Affirmative

1 - Some S are P.

We are talking about neither all of, nor none of, either class.
Particular Negative

\( \Box - \) Some S are not P.

Subject \( x \) Predicate

The *whole* predicate class is *excluded* from the subject.