

**The Curious Incident of the Dog in the Night Time... or, Sherlock Holmes strikes again!**

- Watchdogs bark at strangers. ...*major premise*
- The watchdog did not bark at the thief. ...*minor premise*
- Therefore, the thief was not a stranger. ...*conclusion*

**Syllogism**

A **syllogism** is a *deductive argument* consisting of two premises and a conclusion. It represents a *pattern of reasoning*. An **argument** can either be *valid* or *invalid*. Invalid patterns of reasoning are called **fallacies** (singular is **fallacy**).

**Truth versus Validity**

- ✓ Truth is concerned with what is the case & is the property of statements;
- ✓ Validity is concerned with whether conclusions follow from premises & is the property of arguments.

We can say an argument is valid if the conclusion follows logically (i.e., necessarily) from the premises. The argument is invalid if the conclusion does not follow logically from the premises. **Significant:** *The validity of an argument is independent of the truth or falsity of the premises it contains.*

<p><i>All polar bears are green. Mr. Foz is a polar bear. Therefore, Mr. Foz is green.</i></p>	<p><i>All ostriches are teachers. Mr. Foz is an ostrich. Therefore, Mr. Foz is a teacher.</i></p>
--	---

**Belief Bias...**

**Consider:** *“Democrats are in favor of free speech. Since dictators are not democrats, they are obviously opposed to free speech!”* Is this a **valid** or **invalid** argument...?

**Activity:**

Can a *Venn Diagram* help determine whether these arguments are valid/invalid...?

<p>All Italians eat spaghetti. Gino Rossi eats spaghetti. Therefore, Gino Rossi is an Italian.</p>	<p>All bull-fighters are brave people. Some brave people are compassionate. Therefore, some bull-fighters are compassionate.</p>	<p>Some monks are Tibetans. All Tibetans are good at yoga. Therefore, some monks are good at yoga.</p>
<p>No Martians have red noses. Rudolph has a red nose. Therefore, Rudolph is not a Martian.</p>	<p>All bobos have dogs. No doctors have dogs. Therefore, no bobos have doctors.</p>	<p>No alphas are betas. No gammas are betas. Therefore, no gammas are alphas.</p>
<p>Some astrologers are frauds. Some frauds are not wealthy. Therefore, some astrologers are not wealthy.</p>	<p>All rookies are red-heads. All red-heads are runners. Therefore, all rookies are runners.</p>	

**D  
E  
D  
U  
C  
T  
I  
V  
E  
  
R  
E  
A  
S  
O  
N  
I  
N  
G**

**Source:** TOK for the IB Diploma by Richard van de Lagemaat, pages 117/118. Reprinted with permission from author.