Chapter Two: What Makes a Good Argument?

- The proper form of an argument
- Deductive and inductive arguments
- Relevance

The Two Characteristics of a Good Argument

- In order to know whether an argument is good, two things must be determined:

1. The "True premises test": Are the premises of the argument true?

- Is what they say about the world accurate?

2. The "Proper form test": Does the truth of the premises support the truth of the conclusion?

- If the premises were true, would the conclusion be true as well?

A good argument **passes both tests**: It has **true premises and a proper form**.

Some terminology:

- A good deductive argument is called a **sound** argument.
- A good inductive argument is called a **cogent** argument.

True Premises

- True premises are claims that describe the world accurately.

- Evaluating the truth of the premises is related to the argument's audience.
- The **audience** of an argument is **the group that the argument purports to convince.**

- An argument should have **premises that the audience knows that are true.**
- Different groups will accept different claims as true.

- If it is not known whether premises are true or not, then it is not possible to know whether the argument is good or not.

Proper Form

- All arguments have a logical form.
- The logical form of an argument is the **relationship between the premises and the conclusion**.
- It is revealed by means of variables.

Example:

(1) If Anne goes to the café, (then) she will get a latte.	(1) If C, then L
(2) Anne goes to the café.	(2) C
Therefore,	Therefore,
(3) She will get a latte	(3) L

- An argument has proper form when, and only when:
- **If the premises are true, they provide support for the conclusion**.
- If this is not the case (if the truth of the premises does not support the truth of the conclusion), then the argument has an improper form.
- **No argument with an improper form is a good argument**.

The Form of an Argument: Example

- Consider the following two arguments:

(1) All roses are plants

(2) All roses have thorns

Therefore,

(3) All plants have thorns

(1) All Germans are Americans

(2) All Germans have large feet

Therefore,

(3) All Americans have large feet

- Now, substituting the particular terms mentioned for variables reveals that the two arguments have the same form, namely:

(1) All G1 are G2

(2) All G1 are G3

Therefore,

(3) All G2 are G3

[This is an IMPROPER form. Even if premises are true, they don't help making the conclusion true.]

Deductive and Inductive Arguments

Arguments have two basic types of forms: deductive and inductive.

- In **deductive arguments**, the truth of the premises **guarantees** the truth of the conclusion.
- True premises -------> **Full certainty** that conclusion is true

- In **inductive arguments**, the truth of the premises **makes it likely** that the conclusion is true (but does not guarantee it).
- True premises --------> A **high degree of certainty** that conclusion is true

Deductive Forms

- Here are two deductive argument forms [more will be discussed in ch. 5 and 6].

[Affirming the Antecedent]
(1) If S1, then S2
(2) S1
Therefore,
(3) S2

[Denying a Disjunct]
(1) Either S1 or S2
(2) Not S2
Therefore,
(3) S1

- S1, S2, etc. are variables that stand for statements.
- In deductive arguments, the conclusion will be true every time that the premises are true, regardless of what S1, S2, etc. stand for.

- When a deductive argument has proper form, it is called **a valid argument.**
- When a deductive argument has proper form and true premises, it is called **a sound argument.**
- Hence**, a good deductive argument is a sound argument.**

Inductive Forms

- Here are two inductive argument forms [more in chapters 7-9]:

(1) S has seen at least 40,000 X, and all of them had F.

Therefore,

(2) All X have F.

(1) S has seen at least 4 X, and all of them had F.

Therefore,

(2) All X have F.

- Inductive arguments give **good reason** to think that the conclusion is true. But the truth of the conclusion is **not guaranteed**.

- When an inductive argument has proper form, it is called **a strong argument.**
- When an inductive argument has proper form and true premises, it is called **a cogent argument**.
- Thus**, a good inductive argument is a cogent argument**.

Relevance

A premise is **relevant** to the conclusion when its truth provides some **evidence for the truth of the conclusion**.

- A premise is irrelevant when its truth provides no evidence that the conclusion is true.

When an argument has **proper form, premises are relevant** to the conclusion.

When it has improper form, premises are irrelevant.

Relevance comes in degrees: a premise can be more or less relevant to the truth of the conclusion.

Relevance: Examples

- Relevant premises:

(1) Oosh failed his College Algebra course.
Therefore,
(2) Oosh won't graduate on time.

The truth of (1) is good evidence for the truth of (2).

- Irrelevant premises:

(1) Luke is a cruel and unfeeling person.
Therefore,
(2) Luke's views about water conservation are false.

The truth of (2) is not good evidence for the truth of (2).

Dependent and Independent Premises

- **Independent premises** provide support for the conclusion **independently of each other**.
- An independent premise provides support even when the rest of the premises have been removed.

- **Dependent premises** provide support for the conclusion **only when combined** with another premise in the argument.

- Some premises might be relevant, yet dependent.

Dependent and independent premises: Examples

The premises of the following argument are **dependent**:

(1) Socrates was a human being.
(2) All human beings are mortal.
Therefore,
(3) Socrates was mortal

Each one of them on their own does not support the conclusion.

But they all together do; so the argument has relevant premises.

The premises of this argument are **independent**:

(1) The Toyota has better gas mileage than the Honda.
(2) The Toyota costs less and has a better repair record.
Therefore,
(3) You should buy the Toyota

Each premise can support the conclusion on its own.

Fallacies of Relevance

- **Fallacies** are common **bad argument forms** that often look like good arguments.

- **Fallacies of relevance** make **an error involving the relevance** of the premises to the conclusion.

- In fallacies of relevance, premises might be true, yet the argument does not pass the proper form test, because they are **not relevant for the conclusion.**

- The most common fallacies of relevance are:

Red Herring

Easy Target (Straw Man)

Appeal to Fear

Appeal to Pity

Appeal to Popularity

Appeal to Novelty/Tradition

Ad Hominem Fallacy

Appeal to Ignorance

1) Red Herring

- Consists in making a statement or offering an argument (here called R2) that **distracts attention** away from another argument (here, R1) that is given for a certain claim.

- The form of this fallacy is:

  (1) R2 is a true statement or a good argument.

  Therefore,

  (2) R1 is a bad argument.

- Red Herring avoids engaging with the original argument.
- Instead of refuting the argument, or giving a counterargument, it raises another issue.

Red Herring: Example

Argument against pesticides:

(1) Using pesticides on fruits causes harmful effects in those who eat them.
(2) Farmers should not cause harmful effects in people who eats their products.

Therefore,

(3) Farmers should not use pesticides in their fruits.

Red Herring fallacy:

(1) Fruits and vegetables are extremely nutritious. **<----true claim**

Therefore,

(2) The argument against pesticides is a bad argument.

2) Easy Target/Straw Man

- Easy Target is used to show that a view (here, S1) is false.
- Consists in creating a distortion of the original view (S2), such that it **is easier to attack**.
- Its form is this:

> (1) S2, a distorted version of S1, is false.
>
> Therefore,
>
> (2) S1 is false.

- An **inaccurate claim about someone else's views** is made.
- It is argued that the **inaccurate view is false**.
- The argument is taken to show that **the original view is false**.

Easy Target: Example

Original view: School lunches should be made with less fat and less sugar.

Distorted view: The government should decide what people can eat.

Argument for distorted view:
(1) If the government decided what people can eat, we wouldn't be able to have pop corn and soda at the movies.
(2) We should be able to have popcorn and soda at the movies.
Therefore,
(3) The government shouldn't decide what we can eat.

Easy Target then concludes with the **rejection of the original view**, namely:

(4) School lunches should not be made with less fat and less sugar.

3) Appeal to Fear

- Consists in claiming that if you do not do or believe something, **something bad will happen** to you.

Form:

(1) If you don't do A/believe S,

something bad will happen to you

Therefore,

(2) You should do A/believe S

Example:

(1) If you don't vote me captain,

I will beat you up.

Therefore,

(2) You should vote me captain.

- **Reasons are replaced with threatens**

4) Appeal to Pity

- Consists in claiming that if you do not do or believe something, then **something bad will happen to someone else**.

Form:

(1) If you don't do A/believe S, something bad will happen to someone else.

Therefore,

(2) You should do A/believe S

Example:

(1) If you don't give me a B in this class, I will lose my scholarship.

Therefore,

(2) You should give me a B in this class.

- **Reasons are replaced with emotion (compassion)**

5) Appeal to Popularity

- Consists in arguing that a view is true because **most people think it is true**.

Form:

(1) Most people believe S

Therefore,

(2) S is true

Example:

(1) Most people think that extra-sensorial perception exists.

Therefore,

(2) Extra-sensorial perception exists.

6) Appeal to Novelty or Tradition

- Consists in arguing that a statement is true **because people have either believed it for a short time (novelty) or for a long time (tradition).**

  Form:

  (1) S has been believed by people for a short/long time

  Therefore,

  (2) S is true

- However, how long people has believed a claim is irrelevant to its truth

Appeal to Novely/Tradition: Examples

Appeal to tradition:

(1) The Church has always excluded women from priesthood.
(2) The Church has always held that women should be excluded from priesthood.

Therefore,

(3) Women should be excluded from priesthood.

Appeal to novelty:

(1) The iPad is a revolutionary mobile tablet computer.

Therefore,

(2) You should buy an iPad.

7) Ad Hominem Fallacy

- It consists in **attacking the person instead of attacking the view** that he or she defends.

Form:

(1) H asserts statement S

(2) There is something objectionable about H

Therefore,

(3) Statement S is false

Example:

(1) Adolf Hitler believed that God exists.

(2) Adolf Hitler killed many innocent people.

Therefore,

(3) God does not exist.

[Alternatively:(3') H's arguments for S are bad arguments]

- Something **objectionable about the person** is pointed out.
- That is taken as evidence **that the argument or the view he/she defends is bad.**

Guilt by Association

- The fallacy of **Guilt by Association** is a version of the Ad Hominem fallacy.
- People is **attacked on the basis of their association with a view, person or group** that is considered objectionable.
- A view is claimed to be **false because some objectionable group** of people holds it.

8) Appeal to Ignorance

- Consists in claiming that a statement is **true because it hasn't been shown to be false.**

Form:

(1) It has not been shown that S is false
Therefore,

(2) S is true

Example:

(1) It has not been proved that aliens do not exist.

Therefore,

(2) Aliens exist.

- **Lack of evidence** for one claim is taken a evidence for another claim.
- But the proper conclusion that must be drawn from lack of evidence is rather:

(2*) It is not known whether S is false.