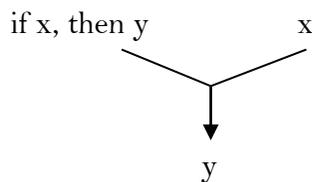


Conditionals

Reading (before seminar)

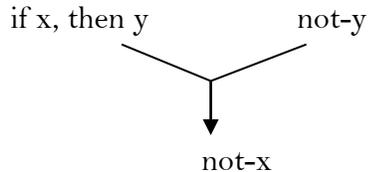
The **indicative conditional** is typically expressed by the English phrase “if ... then ...” The precise logical and linguistic structure of the indicative conditional is disputed. Still, most theorists agree that the two forms of argument below involving the indicative conditional are highly effective. In particular, any argument of these forms must have a true conclusion *as long as* it begins from true evidential claims.

The first effective form of argument is known as *modus ponens*:



Example: “If it is raining, then I should carry an umbrella. And it is raining. So I should carry an umbrella.”

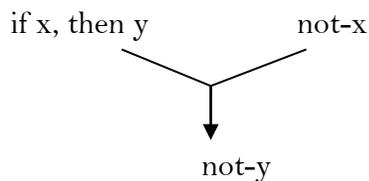
The second effective form of argument is known as *modus tollens*:



Example: “If this whisky is Laphroaig, then it has strong notes of smoked fish. But it does not have strong notes of smoked fish. So this whisky is not Laphroaig.”

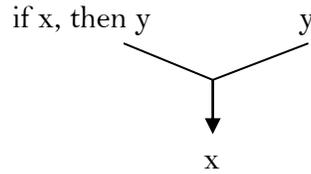
Though these are not the only effective argument forms involving the indicative conditional, many nearby argument forms are fallacious. Here are two:

The fallacy of **denying the antecedent**:



Example: “If something is an alligator, then it is green. But this [referring to a lime] is not an alligator. So it is not green.”

The fallacy of **affirming the consequent**:



Example: If something is an alligator, then it is an animal. This [referring to a dog] is an animal. Therefore, it is an alligator.

Note also that the phrase “if ... then ...” does not always express the indicative conditional. For example, the claim “If I were a basketball player, then I would be much taller” uses a very different kind of conditional known as the *counterfactual conditional*.

Practice (in seminar)

Develop two original good arguments using *modus ponens* and *modus tollens*, respectively. Then develop two original bad arguments that commit the fallacies of denying the antecedent and affirming the consequent, respectively.

Homework (after seminar)

Fill in the blanks below to create effective arguments or explain why this cannot be done. Hint: avoid using your intuitions. Instead, focus on the form of the argument.

- (a) If roses are red, then violets are blue. But violets are not blue. Therefore, _____.
- (b) If you love me, then you'll let me go. But you won't let me go. Therefore, _____.
- (c) If _____, then virtue can be taught. But virtue cannot be taught. Therefore, virtue is not a form of knowledge.
- (d) If piety is a type of virtue, then virtue cannot be defined in terms of piety. But piety is not a type of virtue. Therefore, _____.
- (e) If the Earth is larger than the sun, then the Earth is larger than Mars. But _____.
- (f) _____. But I am not sick. Therefore, the water supply has not been poisoned.