

# Deductive Validity

## An Example

Consider the following argument:

- Premise 1: If Corey's hair is messy, it must have been windy outside.
- Premise 2: It was not windy outside.
- Conclusion: Corey's hair is not messy.

We want to know whether this argument is valid. There is a method we can use to demonstrate whether it is valid or invalid:

*Assume the premises are true, and see whether the conclusion could be false.*

So we assume the premises are true. If we assume the first premise is true we know that *at most one* of the following things is the case:

1. My hair is messy. (This is the *antecedent* of the conditional.)
2. It was not windy outside. (This is the *negation*, the opposite, of the consequent.)

We know this because because a conditional, like premise 1, says that it is *not* the case that the antecedent is true and the consequent false. If the antecedent is true, the consequent must be as well, and if the consequent is false, the antecedent must be as well.

Now, the other thing we are assuming is, premise 2, that it was not windy outside. On our list of things of which at most one could be true, this is item number 2! So we know that item number 1, the antecedent of the conditional, must be false.

If item number 1 on the list is false, then its *negation* must be true. The negation of that proposition is that my hair is *not* messy.

BUT WAIT. "Corey's hair is not messy," is the conclusion of our argument! If both of our premises are true, then the conclusion must be as well. So we've demonstrated that the argument is deductively valid.