

Chapter Two: “And,” “Or,” “Not”

2.1. Formal Logic: The Philosophy

Our conclusion so far is that reliably judging the validity of arguments, using just the unaided intellect and imagination, is liable to work only in the simplest cases, where an argument is obviously valid or obviously invalid. More complex arguments overwhelm these limited mental resources.

As clues toward developing a more systematic and reliable test of validity, consider these simple arguments.

1. Either Barbie will scale the cliff or Jack will scale the cliff.
2. Barbie will not scale the cliff.

∴ Jack will scale the cliff.

1. Either the Chess Club won the prize, or the Surf Club won the prize.
2. The Chess Club did not win the prize.

∴ The Surf Club won the prize.

Intuitively, these arguments seems obviously valid. In each case, if the premises are (both) true then the conclusion must also be true. And it is seems equally clear that this stems not from the subject matter of these arguments – from some special features of cliff-scaling or club prizes. Rather, the arguments exhibit a common pattern, illustrated like so.

1. Either ● or ▲ .
2. Not ● .

∴ ▲ .

(The little “●” and “▲” are just blanks where subject matter sentences would go.)

It looks like **any argument fitting this pattern is *bound to be valid*** – regardless of its subject matter.

There’s nothing unique about that pattern. The following two arguments provide another example.

1. Trixie’s playing poker and Elvis is playing poker.

∴ Trixie is playing poker.

1. Jake’s asleep and Jezebel’s asleep.

∴ Jake’s asleep.

While boring and uninformative, both these arguments do seem valid: in each case, true premise is bound to be followed by true conclusion. And these valid arguments likewise share a common pattern.

1. ● and ▲

∴ ●

Here again it seems clear that **any** argument with this structure would be valid, regardless of subject matter.

That last point presupposes something important about arguments: that an argument has two distinct components, its **subject matter** (cliff-scaling or poker-playing) and its logical skeleton – or, as we’ll call it, its **logical form**.

In saying that **any** argument with a certain logical form is bound to be valid, we’re asserting that the subject matter of the argument is, by contrast, **irrelevant** to its validity. That is: **the logical form alone makes the argument valid**.

That bold claim will act as our guiding hypothesis in developing a more systematic and reliable test of validity: if validity is solely a matter of logical form, then a test of validity need only assess the logical form of an argument. In that case our test of validity for ordinary language arguments will involve two steps.

- 1. Get the form of the argument.**
- 2. Test that form for validity.**

Of course we've here only looked at some suggestive bits of evidence, and used those as inspiration for a new angle of attack. Such sketchy comments fall well short of a proof that we're on the right track. The proof, for us, will come in the proving – in following out the details of a form-based test of validity, and seeing how well it works. We turn next to articulating each step in this new test of validity.¹

¹ As we'll see through the course of many chapters, there are many different languages of logical form, appropriate for different levels of detail in natural language arguments. So 'logical form' will end up something of a moving (or evolving) target, as we follow an expanding series of different, increasing strong languages of 'form'.