

## 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 tend to overwhelm these limited mental resources.

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

1. Either the test is on Tuesday, or the test is on Thursday.
2. The test is not on Tuesday.

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∴ 3. The test is on Thursday.

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

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∴ 3. The Surf Club won the prize.

Intuitively, these arguments seems clearly 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 peculiarities of quizzes and Tuesdays, or chess clubs and prizes. Rather, the arguments exhibit a common pattern, illustrated like so.

Either ● or ▲ .

Not ● .

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∴ ▲ .

(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. It’s warm and it’s sunny.

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∴ 2. It’s warm.

1. We have class on Tuesdays and we have class on Thursdays.

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∴ 2. We have class on Tuesdays.

While rather 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.

● and ▲ .

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∴ ● .

Once again it seems quite 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** (Tuesdays and quizzes, chess clubs and prizes) and its logical skeleton – or, as we will call it, its **logical form**.

In saying that **any** argument with a certain logical form is bound to be valid, we assert that the subject matter of the argument is, by contrast, **irrelevant** to its validity. That is: **the logical form alone makes the argument valid**. This will be 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 involves two steps.

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

These sketchy comments provide only a bit of orientation in our new approach to validity, and none of the details of how to perform either of the two tasks. We turn next to articulating each step.