

Terminology

Important Note about Normativity

- One set of disciplines uses terms like “belief, “hypothesis,” and “theory” in a normally neutral way in order to conduct conversations about evaluative criteria.
- Another set of disciplines uses these same terms in a normally laden way in order to highlight the importance of meeting evaluative criteria.

It’s less important that we settle on one way to use these terms (i.e. normatively neutral or normatively laden) than it is that we’re clear about how we’re using the terms in any particular context. The terms are defined below in a normative neutral way.

Concept / Conceptual Framework

A concept is a mental category that is used to interpret phenomena.

A conceptual framework is a set of interrelated concepts

Examples:

- “Ghost” and “Person” are both concepts.
- “Ghost” and “Haunted” are part of same conceptual framework.

Things to Note:

- Important debates arise concerning the application of a concept (e.g. whether or not the concept “Religion” applies to a particular social organization), the relationship between concepts (e.g. whether or not the concept of “Person” and the concept “Nonhuman Animal” overlap), and the utility of a concept (e.g. whether or not the concept “Superego” is a fruitful interpretive category).
- Part of becoming familiar with an academic discipline is learning to see the world through the lens of the discipline by becoming adept in deploying the conceptual framework characteristic of the discipline.

Claim

A statement that is either true or false, although we might not know which.

Examples:

- The following are claims: “Madison is the capital of Wisconsin,” “Stevens Point is the capital of Wisconsin,” “There is intelligent life on other planets.”
- The following are not claims: “What time is it?” “Please pass the sugar.”

Things to Note:

- There are some common alternative terms for “claim,” including “proposition,” “assertion,” and “statement.” “Claim” has the advantage of being shorter.

- Toulmin uses “claim” for “conclusion,” but this deviates a bit from normal usage. It’s perfectly natural, for instance, to say “This claim follows from those claims.”

Related Terms that are Sometimes Useful:

- An **interpretation** is a claim that applies a concept to a phenomenon (e.g. “This person is *loitering*,” vs. “This person is *waiting*” convey different interpretations of the behavior by casting it under different categories).
- A **descriptive** claim describes its subject without in any way judging it (e.g. “The painting is three feet wide.” “Capital punishment kills the offender.”)
- A **normative** claim does express a value judgement (e.g. “The painting is ugly.” “Capital punishment is immoral.”)
- A **hypothesis** is a claim about the world that can’t be falsified or verified by direct observation (because it concerns past events, things that are imperceptibly small, things that are very far away, causal relationships, etc.). Hypothesis are frequently open to experimental testing.

Theory

A theory is a set of interrelated claims that explain or predict a set of phenomena.

Example:

- The Theory of Evolution, Freud’s Theory of Personality, conspiracy theories,

Things to note:

- Theories in the humanities differ from theories in hard sciences insofar as they are subject to different methods and standards of evaluation.

Explanation

A unit of reasoning that attempts to account for why something is the case by citing other facts as causes.

Example:

- “The sky is blue because molecules in the air scatter blue light more than they scatter red light.”

Things to note:

- An explanation can be the conclusion of an argument (see below) because we can make the case that one explanation of a fact is better than other explanation of that fact. For example, we might say, “The sky is blue because of the way molecules scatter light and not because the sky reflects blue oceans. We know this because we have seen how light behaves and because oceans, in fact, are not blue.”
- Explanations have internal structure and can be mapped much as arguments can be mapped (see below).

Argument

A unit of reasoning that attempts to show that one claim is true by citing other claims as evidence.

Example:

- This is an argument: “It’s a good idea to propose consistent terminology for use in critical thinking courses. There are two main reasons for this. First, students don’t easily transfer learning when different terms are used for the same thing, and transfer of learning is a central educational objective, so we should avoid using different terms for the same thing when we teach. Second, consistent terminology for critical thinking courses would facilitate interdisciplinary collaboration because it would help instructors communicate with each other across disciplinary boundaries. Of course, one might object that it’s a bad idea to propose consistent terminology for the critical thinking courses, claiming different disciplines have radically different vocabularies. But this is misguided. Many subjects share a healthy set of terms, and even if disciplinary vocabularies were more distinct than they are, instructors already adjust their courses to serve various pedagogical ends.”

Things to Note:

- Arguments internal structure and can be mapped.
- Figure 1 at the end of this document is the map of the above argument. Figure 2 is the map with the parts labeled.

Reason

In an explanation, a reason is the fact that is being cited as a cause of the phenomenon being explained.

In an argument, a reason claim that is being given as evidence for the truth of another claim.

Things to Note:

- Reasons are easy to identify in an argument map. They are at the beginning of an arrow, sitting at the non-pointy bit. (Looking at Figure 1, we could say that the reasons are at the top of the arrow, but it’s preferable to say “beginning” of the arrow because sometimes the orientation of a map is different, with the conclusion at the top and the reasons at the bottom. Regardless of which way the arrows happen to be pointing, however, the reasons will always be at the beginning of the arrows. Arrows point away from reasons.)
- Not all reasons need to be empirical. The kind of reason that’s appropriate in an argument depends upon the subject matter of the argument. Arguments in philosophy and mathematics, for example, usually use non-empirical claims as evidence. Arguments in the natural and social science depend upon empirical evidence. Normative reasoning about what should or shouldn’t be done usually depend upon empirical and non-empirical evidence working together. In any event, identifying the role of a claim (e.g. recognizing that a claim is *acting as* reason) is distinct from determining whether or not the claim is performing that role well (e.g. determining whether or not a claim is a *good* reason).

Conclusion

A claim that is supported by a reason.

Things to Note:

- Conclusions are easy to identify in an argument map. They are at the end of an arrow, sitting at the pointy part. (Looking at Figure 1, we could say that the reasons are at the bottom of the arrow, but it's preferable to say "end" of the arrow because sometimes the orientation of a map is different, with the conclusion at the top and the reasons at the bottom. Regardless of which way the arrow happens to be pointing, the conclusions will always be at the end of the arrows. Arrows point toward conclusions.)
- Because a claim can be at the end of one arrow and at the beginning of another, it's not hard to see how a claim can be both a conclusion from one claim (or set of claims) and a reason for another claim. Claim 4, for instance, is both the conclusion from claims 2 and 3 and a reason for 1.

Related Terms that are Sometimes Useful:

- If a claim is both the conclusion of one claim and a reason for another claim, it's "sub-conclusion." (It's a conclusion because a reason is being given for it, but only a "sub" because the reasoning continues from it. It is being given as reason for another claim.) Looking at Figure 1, we can see that claims 4 and 5 are both subconclusions.
- If a claim is acting as a conclusion and is not, itself, a reason for another conclusion, then it's where the reasoning stops. This can be called the "ultimate conclusion" to distinguish it from "sub-conclusions," but that's not common practice. Looking at Figure 1, we can see that claim 1 is the ultimate conclusion. It can also be called the "contention" or "thesis statement".
- If a claim is acting as a reason but is not, itself, the conclusion of another reason, then it's being effectively taken for granted by the argument (which is fine because reasoning needs to start somewhere). In this case, the reason can be called a "premise" or an "assumption." Either is acceptable, but "assumption" is more natural and so the recommended term. Looking at Figure 1, we can see that claims 2, 3 and 6 are assumptions. (Sometimes, people distinguish between different kinds of premise, e.g. "major premises" and "minor premises," but that isn't necessary and sometimes the categories don't apply.)

Dependent Reasons

Claims that must be taken together to support a conclusion.

Example:

- In Figures 1 and 2, Claims 2 and 3 are dependent reasons for claim 4.

Things to Note:

- Figures 1 and 2 indicate the dependent reason relationship with a bracket. This relationship can also be indicated by putting a plus sign between the dependent reasons.

Independent Reasons

Claims that don't need to be taken together to support a conclusion.

Example:

- In Figures 1 and 2, Claims 4 and 5 are independent reasons for claim 1.

Inference

The allegedly truth-conferring connection between a reason (or reasons) and the conclusion that these reasons attempt to support. We can say that the conclusion is “inferred from” the reasons.

Things to Note and a Related Term:

- Inferences are represented in an argument map as arrows. For ease of reference, the inference arrows in Figures 1 and 2 are green, but the color is unnecessary.
- **Deductive** inferences are such that if the reasons are true then the conclusion must be true as well. The conclusion is logically forced. Deductive inferences are often described as moving from the general to the specific, but not all deductive inferences are like that. Deduction is characteristic of mathematics and formal logic. (This is distinct from “deduction” as that term is used by Sherlock Holmes.)
- **Inductive inferences** tend to be generalizations from particular instances. Induction is characteristic of the sciences.
- Certain bad inferences are very common. We call such inferences **fallacies** and give them special names.
- Unless an inference is already deductively valid one can supply a **hidden assumption** (also known as a “**missing premise**”) that works as a dependent reason with the stated reason in support of the conclusion. For example, “Anything that facilitates interdisciplinary collaboration is a good idea,” is a hidden assumption that works with claim 5 to support claim 1 in Figures 1 and 2.
- These hidden assumptions are what Toulmin calls “warrants,” but the concept a warrant is restricting. (It's not clear how it applies to valid inferences, for example, or to dependent reasons in general.) It is also unnecessary. We already have the notion of dependent reasons and the concept of an assumption. That's all we need.

Objection

A claim that is being given as a reason to believe that another claim is false or that an inference is weak.

Things to Note and a Related Term:

- The objection relationship is represented in an argument map as an arrow with a line through it. For ease of reference, the objection arrows in Figures 1 and 2 are red, but the color is unnecessary.

- If an objection is targeting the inference, we can (if we wish) frame it as an objection to the hidden assumption required by the inference. In Figure 1, the function of claim 10 is represented in two ways. It is represented both as an objection to the inference from claim 8 to claim 7 (the red objection arrow going to the green inference arrow) and as an objection to the hidden assumption required by that inference (the red objection arrow going to the claim in the dotted blue box). It is represented it both way in Figure 1 just to show how both functions can be mapped, but typically it is represented in only one of those ways in any given map.
- A **rebuttal** is either an objection to an objection or an objection to the support that's given for an objection. In Figures 1 and 2, for instance, Claims 9 and 10 both rebut objection 7. The concept of a rebuttal is strictly unnecessary, replaceable with the concept of an objection to an objection.

Belief

A belief is the mental state of taking things to be a certain way.

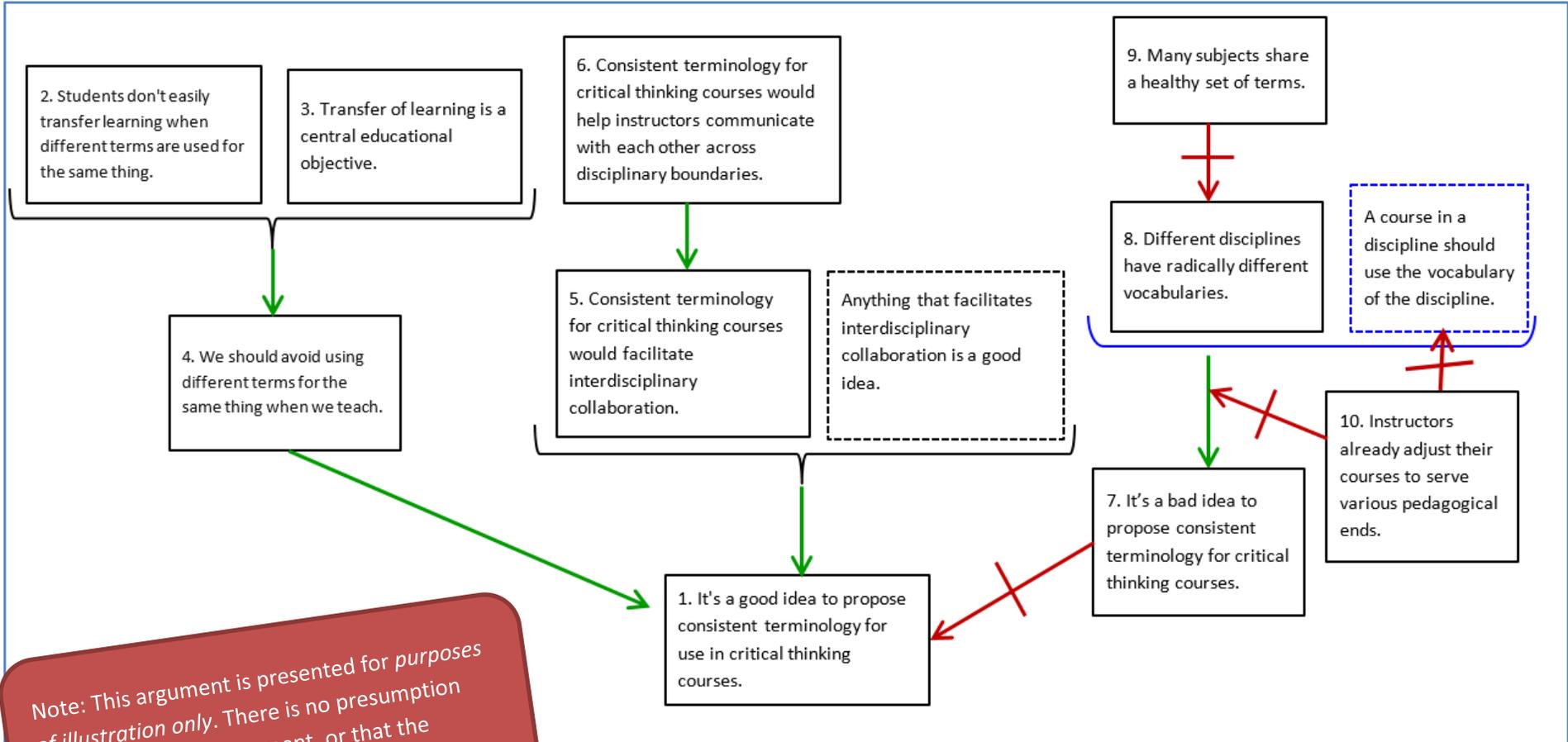
Examples:

- Someone who believes that there is milk in the fridge takes the world to be such that there is milk in the fridge.
- Someone who believes that capital punishment is unethical takes the world to be such that capital punishment is unethical.

Things to Note:

- A belief is true if it corresponds to the facts (e.g. the believe that there is milk in the fridge is true if there is milk in the fridge).
- A belief is justified if it is held for good reasons and unjustified if it is held for bad reasons (e.g. if someone believes that there is milk in the because she remembers purchasing milk yesterday, then her belief is justified. If she believes that there is milk in the fridge because she asked a Magic 8 Ball and received the answer 'It is decidedly so,' then her belief is unjustified.
- Beliefs can be untrue but justified (e.g. someone might have broken in the house and stolen the milk purchased the previous day).
- Beliefs can be true but unjustified (e.g. the Magic 8 Ball might have gotten it right, through sheer luck).
- **Important Point:** In some contexts, the terms "belief" and "believes" imply that the mental state is held without justification and possibly in opposition to the best available evidence. Someone might say, in such a context, "I understand the arguments in favor of evolution, but I still don't believe it," and by invoking the notion of 'belief' he would mean that his belief in creationism is grounded faith and resistant to empirical falsification. In contexts where "belief" is shorthand for "faith-based mental representations" someone might respond, "I don't believe in evolution. Evolution isn't a matter of belief at all. It's a fact." In other contexts, where "belief" is neutral with respect to the issue of justification, someone might respond, "I understand that you believe in creationism, but I'm unconvinced that this belief is justified

because the best available scientific evidence supports evolution. That's why I believe in evolution, which I take to be a fact."



Note: This argument is presented for purposes of illustration only. There is no presumption that this is a good argument, or that the conclusion is true.

Figure 1 – An Argument Mapped

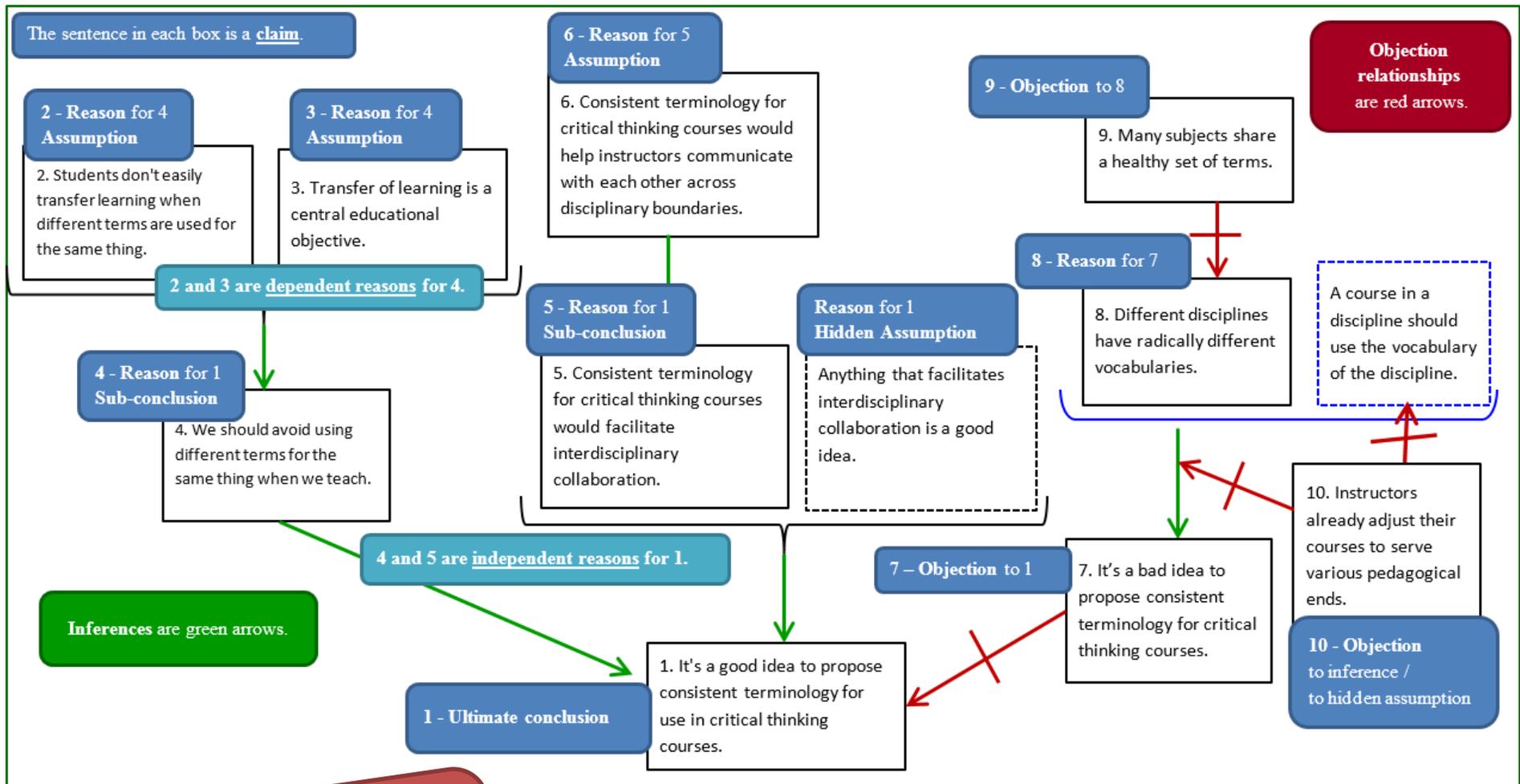


Figure 2 – An Argument with Parts Labeled

Note: This argument is still being presented for purposes of illustration only. There is still no presumption that this is a good argument, or that the conclusion is true.