

# The Semantics and Pragmatics of Argumentation

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**Why do you think both linguists and philosophers find the phenomenon in question interesting?** Arguments have been the object of philosophical interest for a long time. Logicians and philosophers have studied the formal properties of arguments at least since Aristotle and have long discussed the logical sense of arguments as sets of premises and conclusions (Hamblin 1979; Walton 1990, Parsons 1996, Rumfitt 2015). The structure of arguments has been investigated by epistemologists (e.g., Pollock 1987, 1991ab, 2010) and has given rise to formal argumentation theory, which has developed into a branch of computer science in its own right (e.g., Dung 1995, Wan 2009, Prakken 2010). Philosophers of mind have contemplated the nature of reasoning and inference as mental acts and theorize about the relation between those mental acts and doxastic states, such as beliefs and credences (e.g., Longino 1978, Broome 2013, Neta 2013, Boghossian 2014). By contrast, comparatively less attention has been paid to arguments as a distinctive kind of *discourse*, with its own semantics and pragmatics. Most work on speech act theory fails to discuss arguments as a kind of speech act (cf. Austin 1975, Searle 1969, Searle 1985). Even recent discussions of speech acts tend to focus primarily on assertions, orders, imperatives, and interrogatives (cf. Murray and Starr 2020, Fogal et al. 2018). Though arguments have not been widely studied *qua* linguistic constructions, they are central to linguistic theory and to philosophy. Just like we use language for exchanging information, for raising questions, for issuing orders, for making suppositions, etc., we also use language to give arguments, as when we argue on behalf of a certain conclusion and when we share our reasonings. Indeed, giving arguments is one of philosophers' favorite speech acts; and it is quite remarkably widespread outside the philosophy classroom.

**What recent developments in linguistics and philosophy do you think are most exciting in thinking about the phenomenon in question?** Recent developments in linguistics provide ample new resources for providing a semantics and pragmatics argumentation. We make arguments through constructions of the form:

- (1) a.  $P_1, \dots, P_n$ . Therefore/thus/hence/so  $C$ ;
- b. Suppose  $P_1, P_n$ . Then  $C$ .

These constructions are sets of sentences — or *discourses*. It is therefore natural to study these constructions by looking at semantic approaches that take discourses rather than sentences to be the main unit of semantic analysis. Because of this, dynamic approaches to the semantics of arguments will be at the center of my discussion. In particular, I will discuss the resources that discourse coherence approaches (Hobbs 1985, Asher 1993, Asher 2003, Kehler 2002) as well as dynamic semantic approaches to the study of language (Veltman 1985, 1996; Beaver 2001; Kaufmann 2000; Brasoveanu 2007; Gillies 2009; Murray 2010; Willer 2013; Starr 2014, 2014b; Pavese

2017, Pavese 2021; Kocurek and Pavese 2021) have to understand the semantics and dynamics of arguments.

**What do you consider to be the key ingredients in adequately analyzing the phenomenon in question?** Speech acts tend to be conventionally associated with certain linguistic features. For example, assertions are associated with the declarative mood of sentences; suppositions with the subjective mood, orders with the imperatival mood, questions with interrogative features, etc. Like other speech acts, giving an argument is conventionally associated with certain grammatical constructions of the form as (1-a) and (1-b) above. In order to study the speech act of giving an argument, I will therefore look at the semantics and pragmatics of words such as ‘therefore’, ‘thus’, ‘so’, ‘hence’, and ‘then’ — argument connectives as Beaver (2001, p. 209) calls them — which are used in natural languages to signal the presence of arguments and to express relations between premises and conclusions. These argument connectives exhibit a distinctive *anaphoric behavior*. Their anaphoric component enables arguments to make use of multiple bodies of information at once. They often consist of multiple suppositions (as in proof by cases), suppositions within suppositions (as in conditional proofs), and so on. As we will see, in order to model these anaphoric relations, discourses have to be thought not simply as a sequences of sentences, but as sequences of labeled sentences — which can track different information states as different sets of premises and suppositions. It also requires thinking of contexts as more structured as usually required in dynamic semantics — not simply as information states or sets of possible worlds, but as having a distinctive *layered* (indeed, tree-like) structure (Kocurek and Pavese 2021).

**What do you consider to be the outstanding questions pertaining to the phenomenon in question?** Here are a few outstanding questions pertaining the semantics and pragmatics of argumentations: what does the speech act of arguing and making an argument amount to? In particular, how does it affect the context set? What relations do argument connectives express (if any) between premises and conclusions? In virtue of what mechanisms (i.e., presupposition, implicature, etc.) do they get to express those relations? How does the semantics of these words compare to their counterparts in formal languages? How are we to think of the syntax of argumentative discourses and how are we to model contexts in order to model the dynamics of argumentative discourses? Can a unified semantics of argument connectives be provided across their deductive, practical, causal, and inductive usages? How are we to think of the syntax of argumentative discourses and how are we to model contexts in order to model the dynamics of argumentative discourses? Is ‘therefore’ a presupposition trigger and if so, what consequences does the presuppositional nature of ‘therefore’ have on how to think of arguments? What is the nature of the support relation tested by argument connectives? How are we to model the subtle differences between argument connectives — between ‘therefore’, ‘then’, ‘so’, ‘thus’, and ‘hence’? What makes a discourse an argument, rather than an *explanation*? How are we to characterize the distinctive utterance force of arguments versus explanations? Are there such things as zero-premises arguments in natural languages? How do deductive arguments in natural language differ, if at all, from proofs in natural deduction systems — such as Fitch’s proofs?