

Action Sensitivity in Grammar

Class 2: Kaufmann & Kaufmann (2016): Modality and Mood in Formal Semantics.

Goal: to provide an overview of the rich literature on modality and the poor literature on mood. To what extent can mood be understood in terms of modality?

Let's start with modality.

- (1) Kim may be home
- (2) Kim must be home

Two aspects: modal flavor; modal force.

Modal flavor: source of the modality, such as knowledge (epistemic), wishes (bouletic), demands (deontic), intended/aimed (teleological), etc.

Modal force: consequence vs consistency (or: necessity vs possibility).

In English most modal forces are lexically encoded, but modal flavors much less so.

- (3) John may be the murderer.
 - In view of the rules of this game (deontic)
 - In view of what we know about the case (epistemic)
- (4) John can be the murderer.
 - In view of the rules of this game (deontic)
 - Not: in view of what we know about the case (*epistemic)
- (5) John cannot be the murderer.
 - In view of the rules of this game (deontic)
 - In view of what we know about the case (epistemic)

First steps: possible worlds:

(6) Let p, q be two sets of possible worlds.

q is a 'consequence' of p if and only if at all possible worlds at which p is true, q is also true.

(Equivalently, p is a subset of q .)

q is 'consistent' with p if and only if there is at least one possible world at which p and q are both true. (Equivalently, p and q have a non-empty intersection.)

Modal base: the set of possible worlds that in a particular context is evaluated.

Epistemic modal base: the worlds compatible with our knowledge and beliefs

Circumstantial modal base: the worlds compatible with our knowledge and beliefs

(7) Context: piece of fertile soil where only grass grows.

Tulips may grow here (false against an epistemic modal base; true against a circumstantial modal base)

(8) Let M be a set of propositions given by the modal base. Then:

Must p is true relative to M if and only if p is a consequence of M ;

May p is true relative to M if and only if p is consistent with M ;

This is the standard analysis of modals. But there is a problem.

(9) If you park your car on the wrong side of the street, you must pay a fine.

M is the set of worlds where people abide to the law. But if you abide to the law, you don't park your car on the wrong side of the street. In (9) it is said what you have to do in worlds where people abide to the law when you don't do so.

Solution: some worlds are more ideal than other worlds when it comes to some modal base:

Worlds where people always abide to the law > worlds where people pay fines when they violate the law
> worlds where people don't even pay fines when they violate the law but still don't kill their teachers >

...

This is called an ordering source. Then the sentence is true when we look at the following worlds: worlds where people pay fines when they violate the law. In other words, we only look at those worlds that are closest to the ideal world in question. These worlds are the most ideal worlds as everybody abides to the law except for you parking your car in the wrong way.

You can call those the 'best worlds'

- (10) For any set O of propositions and pair u, v of possible worlds, u is 'at least as close' (to the ideal) as v , written $u <_O v$, if and only if all propositions in O that are true at v are also true at u (and possibly more).
- (11) For any modal base M and ordering source O , let $BEST(M, O)$ be the set of worlds in M that are minimal under $<_O$ (i.e. those for which there is no strictly closer world in M).
- (12) For any modal base M , ordering source O , and proposition p :
Must p is true relative to M, O if and only if p is a consequence of $BEST(M, O)$;
May p is true relative to M, O if and only if p is consistent with $BEST(M, O)$.

Now, let's move on to mood.

Sentential moods can be understood as pairs of sentential form types and conversational functions these forms are conventionally associated with. Cross-linguistically, the most frequent types are declaratives, interrogatives, and imperatives.

Sentential mood is closely related to both modality and verbal mood. On the one hand, together with sentential particles, syntactic position, and intonation, verbal mood is generally taken to belong to the parameters that determine the relevant sentential form types. Specifically, imperative clauses can be marked by special verbal morphology; and some languages require special verbal morphology in interrogative clauses.

For instance, in German or English, subjunctive marking can occur in declarative and in interrogative clauses.

- (13) Wer wird/würde ihr helfen?
 who will.IND/would.SUBJ her.DAT help
 'Who will/would help her?'
- (14) Er wird/würde ihr helfen.
 he will.IND /would.SUB J her.DAT help
 'He will/would help her'

Conversational functions as used in the definition of sentential moods are described in terms of attitudes and commitments that figure also in the interpretation of modality. For example, interrogatives are conventionally used to ask information questions, a move that is felicitous only if the speaker can be taken to want to know, but not to actually know, the answer.

Similarly; canonically used imperatives convey that the speaker wants the addressee to act in a certain way.

Across languages, desiderative (e.g. want, wish) and directive (e.g. order) predicates, as well as impersonal modal constructions (e.g. it is possible), tend to select clauses whose main verbs appear in the subjunctive. In contrast, verbs of asserting, committing, and dreaming, as well as (non-emotive) factive verbs (e.g. know), generally select indicative complements. Other environments that trigger non-indicative marking include various types of conditionals, free relatives, and complements of causatives, emotive factives (e.g. regret), and, in some languages, non-factive verbs of mental judgment (e.g. think).

There is no consensus on what the meaning difference between an indicative and a subjunctive is, but it seems to have to do with modality. Portner (1997) argues that subjunctive is the default marking for complement clauses, and that indicative marking is licensed only in the scope of a predicate that introduces a modal context that is prototypically factive (i.e. it names a combination of conversational backgrounds such that the world of evaluation itself is typically an element of BEST(M, 0)).

Yet other authors argue that the distinction between indicative and subjunctive is similar to definite vs indefinite noun phrases, in the sense that the moods are used to introduce specific events or describe generic or future courses of events, respectively (Baker and Travis 1994 for Mohawk).

Somewhat relatedly, it is sometimes argued that the temporal orientation of the complement clause covers either a fixed and determined past or an open (branching) future, and that, therefore, indicative vs subjunctive marking is to be understood in terms of temporality (see Portner 2011 for discussion and references).