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Speech Acts in Discourse Context

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Abstract:
There is evidence for the existence across all known languages of three basic clause types: declarative, interrogative, and imperative (Sadock & Zwicky 1985, Zanuttini et al., to appear). Though this distinction in grammatical mood may be reflected in quite different ways (syntactic, morphological, lexical, etc.) in different languages, cross-linguistically we find a robust generalization: The choice of mood in a clausal utterance is reflected in a default correlation to one of the three basic types of move in a language game (Lewis 1969, Roberts 1996/2012): making an assertion (declarative), posing a question (interrogative), or proposing to one's address(s) the adoption of a goal (imperative). This is in striking contrast to the lack of regular correlation between the conventional content of constituents and speech act types in the tradition of Austin (1962) and Searle (1969). This paper sketches an approach to speech acts in which mood is distinct from illocutionary force; but, *pace* Wilson & Sperber (1988/1998), it is more than a "conventional indicator of force": In a clause, mood determines the conventional semantic type of the clause, and, given the nature of discourse, that type most naturally lends itself to serving as a particular type of speech act, i.e. to serving as one of the three basic types of language game moves.

On this view, what carries illocutionary force is an utterance (Bar-Hillel's ordered pair of a constituent and a context of utterance), not a sentence *per se*. The resulting account is simple and non-stipulative. The proposed semantics of grammatical mood is empirically well-founded, arguably yielding the correct semantic type for embedded as well as matrix clauses (Portner 2007, Kaufmann 2012, Roberts 2015). And it is explanatory: The proposed taxonomy of speech act types explains why we find just the three universally attested moods/clause types and why they are universally associated with the basic types of sentential force, i.e. canonically correlated with the three basic moves which are universally constitutive of the language game. And together with the theory of discourse as a language game, it permits us to explain the kinds of contextual factors that lead to the attested Searlean interpretations of particular speech acts (as in the accounts of Cohen & Perrault 1979, Allen & Perrault 1980, Perrault & Allen 1980, Cohen & Levesque 1985, Perrault 1990, based on Planning Theory), and is compatible with the account of performatives of Condoravdi & Laurer (2011).

1. Introduction: Speech acts in a QUD model of discourse[1]

If one is committed to the development of a scientific account of human language, aiming to explain how linguistic form is related to meaning in context, then an adequate theory of speech acts would need to satisfy the following desideratum:

[1] This paper developed out of a talk at the NY Philosophy of Language Conference on New Work on Speech Acts, at Columbia on September 29, 2013. My thanks to the organizers, Daniel Fogal, Daniel Harris and Matt Moss, for an excellent conference, and to the participants for a lively conversation. Thanks as well to the OSU Pragmatics working group, the MASZAT group at the Research Institute for Linguistics of the Hungarian Academy of Sciences, and the OSU Synners working group, for comments on earlier versions, and to B. Chandrasekaran, Hans-Martin Gärtner, and Mandy Simons for helpful conversations as the work evolved. Hans-Martin's challenges and suggestions were especially important in driving me to consider more carefully the semantics of the imperative.

But most importantly, whatever merit there may be in this work depends in large measure on the excellent previous work acknowledged throughout, and most especially that of John Searle; James Allen, Phil Cohen, Ray Perrault, and Rich Thomason; Magdalena (Schwager) Kaufmann, Paul Portner, and Nate Charlow, as well as Cleo Condoravdi and Sven Lauer. I hope I have managed to adequately convey my debt to all these scholars.

This work was largely completed while I was a Senior Fellow in 2014-15 at the Institute for Advanced Studies at Central European University, Budapest, Hungary, sponsored by Budapesti Közép-Európai Egyetem Alaptvány, The theses promoted herein are the author's own, and do not necessarily reflect the opinion of the CEU IAS. I am deeply grateful for their support, as well as to The Ohio State University, which also helped to make possible that fellowship year.

Linguistic desiderata for speech act theory:
A theory of speech acts should be linguistically motivated—grounded in the conventional content of the utterances used to make them—and explanatory, offering testable predictions about both (a) the kinds of speech acts attested across languages, and (b) in particular utterances, the kind of speech act we would take a speaker to proffer, given the conventional content of what she says and the context of utterance.

Then what is a speech act, and how do we differentiate different types? The Austinian tradition best exemplified by the work of Searle aims to classify the kinds of speech acts we perform. For example, here's the taxonomy from Searle (1975):

Assertives:
Commit the speaker to the truth of a proposition: suggesting, putting forward, swearing, boasting, concluding. *No one makes a better cake than me.*

Directives:
Atttempt to make the addressee perform an action: asking, ordering, requesting, inviting, advising, begging. *Could you close the window?*

Commissives:
Commit the speaker to some future course of action: promising, planning, vowing, betting, opposing. *I'm going to Paris tomorrow.*

Expressives:
Express how the speaker feels about a state of affairs: thanking, apologizing, welcoming, deploring. *I am sorry that I lied to you.*

Declarations:
Change the state of the state of the world to bring it into conformity with the propositional content: *You are fired, I swear, I beg you, I hereby pronounce you man and wife.*

This taxonomy may be of interest from the point of view of the theory of action or social theory. But it isn't clear that it would satisfy the linguistic desiderata above. I will offer an alternative, simpler taxonomy that's better motivated linguistically and, I will argue, under the proper understanding of the character of the goals and intentions of interlocutors in a discourse interaction, permits one to predict, for a given utterance in a particular context, which type of Searlean function that utterance might serve.

Searle offers several parameters which distinguish his speech acts. But the most important is *direction of fit*, of which there are two values: Speech acts display **word to world** fit just in case they portray the world as being so-described. Speech acts display **world to word** fit in case they propose that interlocutors behave in such a fashion that the world comes to fit the description. Searle notes "Direction of fit is always a consequence of illocutionary point. It would be very elegant if we could build our taxonomy entirely around this distinction in direction of fit, but though it will figure largely in our taxonomy, I am unable to make it the entire basis of the distinctions."

I'm going to argue that we can, and in fact should, do this. We can profitably distinguish speech acts in terms of this two-way distinction, with one natural elaboration:

- **assertion**: an act of proposing an addition to the interlocutors' C(ommon)G(round) (Stalnaker 1979). If adopted, this addition would commit the interlocutors to accepting that (and behaving as if) the *world fits the words*. Note that this is a weaker commitment than belief, in keeping with Stalnaker's characterization of the interlocutors' Common Ground.
- **suggestion**: an act of proposing that interlocutors adopt intentions to act in specific ways. There are two types of speech act proposals, reflecting an essential distinction in the types of goals interlocutors may propose in discourse:
  - **direction**: an act in which a speaker proposes to her addressee that he adopt a particular intention to act in the world. This is the sort of speech act typically performed with an imperative. It is a proposal to *make the world fit the words*.
  - **interrogation** or **question**: an act of proposing that the interlocutors collectively commit to collaborative inquiry, thus an act which would establish a direction for the discourse itself. It is a proposal that the interlocutors endeavor to *discover the proper fit between world and words*, thereby resolving the question.

In other words, on this view all speech acts are proposals to an interlocutor, and the central distinction lies in whether the proposal involves a commitment to truthfully portraying the world as it is, a proposal to adopt intentions to make the world change so as to conform to one's portrayal, or a proposal to find the correct fit. The distinction among the two types of suggestions is about whether the proposed inquisitive intentions should be jointly adopted with a view to the direction of discourse, or adopted by one of the interlocutors in a broader field of action.

This taxonomy cross-cuts Searle's at several junctures. Some of his Directives would be interrogations on this view (for example *asking*); while others would be directions (ordering, inviting, advising, …); and some might be classed here as assertions (*I hereby request you to close the window*). Speech acts which fall under my category of assertions may be found in all five of his types. Besides the Directive just noted and the Assertives, these would include most Commissives (*vowing*, as in the example *I'm going to Paris tomorrow*), Expressives (*I am sorry that I lied to you*) and Declarations (including performatives like *I hereby pronounce you man and wife*, to be discussed below). So it is clear that the present account approaches the question of what a speech act is, and how we might distinguish different types of speech acts, from a different angle.

If we are to develop a linguistically satisfying account of speech acts, and speech act types, we need to provide empirical evidence for the types of speech acts proposed and a theoretically interesting explanation for how they are differentiated and recognized by interlocutors. While most of the classical work on speech acts tended to focus on verb types, especially performative verbs, the linguistic evidence argues that the foundation of such an account should instead be in a theory of clause types and their semantics and pragmatics. There are two observations about grammatical mood, which I take to be language universals. Here is the first:

Mood (grammatical universal): All known languages display three basic clause types, characterized as a distinction in grammatical mood:

Declarative
Interrogative
Imperative

As Sadock & Zwicky (1985:160) put it, one might find it "a surprising fact that most languages are similar in presenting three basic **sentence** types with similar functions and often strikingly similar forms. These are the declarative, interrogative, and imperative."[2] These moods may be realized quite differently from language to language or even in one and the same language. For example, interrogative mood may be reflected morphologically in some languages (e.g., Japanese verbal morphology), syntactically in others (English word order and extraction), or even prosodically (English utterance final phrase accent and boundary tone). But it is generally agreed that mood arises as a function of the compositional morpho-lexical and structural semantics of the clause. Moreover, as Sadock & Zwicky note, there are a number of notable syntactic similarities in the imperative across languages, including the fact that even in ergative languages the addressee is almost always the subject in imperative sentences, whether transitive or intransitive, and a strong tendency for subjects, and even subject-verb agreement, to be suppressed in imperatives, even in languages which otherwise display an obligatory subject agreement feature on the main verb.

The grammatical mood universal is reflected cross-linguistically in a second universal, a robust generalization about the pragmatics of mood:

Mood (pragmatic universal): There is a strong correlation between choice of grammatical mood and intended type of move in a language game:

Declarative mood is typically used to make an **assertion**
Interrogative mood is typically used to pose a **question**
Imperative mood is typically used to issue a **direction**

We should be careful not to confuse this correlation with the *semantic content* of grammatical mood itself. One important reason is that each of these moods may be used in embedded clauses, which carry no illocutionary force themselves. Moreover, even in main clauses, one mood may be used to perform different types of acts, e.g. a declarative used to pose a question (looking at someone quizzically, I say *you're not hungry*, even without final prosodic rise) or issue an order (*you WILL clean your plate!*). Most formal semantic work on declarative and interrogative mood has taken them to conventionally indicate the semantic type of the resulting interpretation: a declarative denotes a proposition: type <s,t>, whereas an interrogative denotes a set of propositions: type <<s,t>,t> (intuitively, the alternative possible answers to the question). Recent work on the semantics of imperatives by Portner, Zanuttini and their colleagues (Portner 2007, to appear; Pak, Portner & Zanuttini 2008, 2015; Zanuttini, Pak & Portner 2012) has taken a similar tack, treating them as denoting a particular type of property: type <s,<e,t>> (indexed to

[2] See Portner (forthcoming; Chapter 3) for an excellent discussion and overview of the literature on the relationship between clause types, sentence types, and sentence force, and how (and why) we need to differentiate these notions. I assume that *grammatical mood* is what distinguishes the three types of clauses of interest here, a distinction which may be syntactically and morphologically complex, as Portner discusses in detail.

the addressee via an abstract agreement feature). If this were correct, then we could conclude that mood determines semantic type, the type then correlated by default with type of move, as summarized in Table 1:[3]

GRAMMATICAL MOOD	SEMANTIC TYPE	DEFAULT MOVE
Declarative	<s,t>	Assertion
Interrogative	<<s,t>,t>	Question
Imperative	<s,<e,t>>	Direction

Table 1: Semantics and Pragmatics of Mood

A declarative clause may denote a proposition, but its use does not, of course, inevitably amount to an assertion. As noted above, such clauses may occur embedded, as in *John believed that his breakfast was ready*, where the complement clause is not asserted. In parallel fashion, though a semantic question is a set of propositions, it is important not to confuse that object with a pragmatic question, as we also see in embedded uses: *John wondered whether his breakfast was ready* reports on John's consideration of a set of alternatives; it doesn't pose the corresponding question for discussion in the discourse in which the utterance occurs. Though it is less common, it is now generally recognized that imperative clauses may occur embedded as well in several languages (Pak, Portner & Zanuttini 2008, 2015; Charlow 2010; Kaufmann & Poschmann 2013; Kaufmann 2014; Stegovec & Kaufmann 2015). In such uses, as with the other mood-types, the imperative clause is not used to propose a direction to the addressee, but instead to report such an event of proposing.

Moves—assertions, questions, suggestions—are types of utterances, which in turn (Bar-Hillel 1971) are uses of a constituent in a context of utterance. Given the proposed conventional contents of the clause-types, we can see that their default use for the corresponding types of moves is functionally natural. This should be fairly obvious for the declaratives: Their semantic type is that of a proposition and what one asserts is a proposition. Similarly, interrogatives denote a set of propositions, and asking a question poses such a set of alternatives—intuitively, the possible answers to the question—for consideration. We'll say more about imperatives below. As a first pass, take the meaning of an imperative clause to be its realization conditions: it specifies what the world would be like if the targeted agent (typically the addressee) were to realize the property denoted. Then if the imperative is issued as a direction, it is a proposal that the addressee realize the property. If we take these three types of moves to be constitutive of the language game, then this suggests an explanation for the grammatical mood universal. Each language has some way of distinguishing the three basic semantic types because these are designed to serve those basic roles of an utterance in discourse. Of course, as Wittgenstein famously pointed out, just because a tool was designed for a particular use, that doesn't mean

[3] The idea that there is a semantic type assigned to each clause and pragmatically correlated with a basic illocutionary force is not new. See Hausser (1980), Huntley (1984), Pendlebury (1986), Wilson & Sperber (1988), and Portner (2004) for other ways of developing it; and Portner (forthcoming, Chapter 3, §3.1.3) for an excellent critical discussion of this literature. Of these, only Hausser and Portner take imperatives to denote properties, as here; and Hausser fails to offer an explanation for why this correlation should obtain, or how it works in discourse. And Pendlebury and Wilson & Sperber are vague about the semantics of the different clause types; while only Portner offers an account of why the correlation obtains, in a version of the framework in §2.

that it cannot be used in other ways. Just so, these natural correlations between mood and speech act type are defeasible. I will argue that this defeasibility, too, is natural and readily understood, as a function of the intentional structure of the discourse in which a move takes place.

This natural correlation contrasts with the lack of regular correlation between the conventional content of utterances and the classical speech act types of Austin or Searle. Thus, it seems, those classical speech act theories have no account of the two universals pertaining to mood.

The proposal here relies heavily on preceding literature: I draw on Portner (2004,2007,to appear) Schwager (2006)/Kaufmann (2012,2014) and Charlow (2011) for understanding important features of the semantics of imperative (and jussive) mood; the latter authors and Starr (2013) for an account of the relationship between the imperative and deontic modality; on Condoravdi & Lauer (2011) for their basic approach to performatives; and on Allen, Cohen, Perrault, et al. (as cited above) for basic ideas about the relationship between plans and speech act determination. I only provide enough detail about those very interesting accounts to flesh out and support the basic theory I am proposing here. What I offer is: (i) support for the mood-type correlation in Table I, crucially resolving the tension between those accounts of the semantics of the imperative which treat it as property denoting and those which treat it as denoting a modal proposition; and (ii) the use of an independently motivated theory of formal pragmatics to reveal how the observations from the previous literature fit together to provide an empirically motivated, elegant account of what a speech act is, how it's canonically reflected in the conventional content of the constituent uttered, the default nature of the content-speech act correlation, and how we infer the *intended* speech act type for a given utterance as a function of its grammatical mood and the context of utterance.

In what follows, in §2 I offer a brief overview of an approach to discourse in which the evident goals and intentions of the interlocutors, as partly reflected in the Question Under Discussion (QUD) and the interlocutors' evident domain goals, play a central role in structuring interlocutors' interaction in discourse and, especially, in facilitating and constraining interpretation. Then in §3, we turn to the semantics of grammatical mood. The standard assumptions about declarative clauses (denoting propositions) and interrogative clauses (denoting sets of propositions) are quite generally accepted, with only minor variations between theories. So there I'll focus on sketching a particular semantics of imperative mood, one which is well-supported empirically and is consistent with the proposed view of speech acts. Given these underpinnings, in §4, I discuss how they make possible a simple, non-stipulatory account of speech acts, explaining the universals about grammatical mood, while predicting that the observed correlations between mood (and semantic type) and move type can be overridden in context as a function of other pragmatic principles. In §4.3 we'll discuss the theoretical pay-off of this view for the classic issue of how to account for performative speech acts. In §5, I present some conclusions.

2. Discourse Structure and Context of Utterance

The proposed view of speech acts has its place in a general theory of the nature of human linguistic interaction, i.e. of discourse, proposed independently in Carlson (1982), van Kuppevelt

(1996), Ginzburg (1995,2012) and Roberts (1996/2012); in these theories, a question or topic under discussion both drives and constrains interpretation of individual utterances. In Roberts' version, adopted here, discourse is a game in which the interlocutors conduct a collaborative inquiry about the way things are, on the basis of their common fund of information about that world, the Common Ground (CG). Following Stalnaker (1979), we don't know which world we're in, but the CG is the set of propositions which we all purportedly take to truthfully characterize it (though some may be false, whether we know it or not). A proposition is represented by the set of worlds in which it's true. Hence, the intersection of the CG at a given point in discourse is the Context Set (CS), the set of candidate worlds for reality according to these interlocutors at that time.

Here are the basic assumptions of this view of discourse and of the context of utterance:

1. Language is **a game of collaborative inquiry structured by the recognized intentions of the interlocutors**.
   A **discourse** is one round of this game.
2. Intentions involve commitments to goals. In the language game, players attend to two principal kinds of goals:
   - **Domain goals** and the associated **plans** to achieve them are the things the interlocutors are publicly committed to achieving in the world and the strategies they adopt to do so. These are relevant in the language game insofar as they may indirectly motivate and constrain the interlocutors' linguistic interaction.
   - **Discourse goals** are a distinguished type of domain goal, those the interlocutors are jointly committed to achieving in the discourse itself. These are represented by questions, often implicitly posed, which guide the interlocutors' inquiry. You can think of these as issues or topics under discussion. These, too, are organized to reflect an underlying plan for achieving these goals, into **strategies of inquiry**.

   One's goals are generally partially ordered, both hierarchically, some feeding others (as in a complex plan), and by priority, some more important than others (especially among goals at the same level in the hierarchy, which might otherwise conflict). Hence the structure over goals may be quite complex.
3. The main goal in any round of the game is to share information about the way things are, adding to the interlocutors' **Common Ground**.
4. There are three kinds of moves in a language game:
   a) **Interrogations** pose questions; they are **set-up moves** in the language game: If accepted by the interlocutors, a question establishes a discourse goal to which the interlocutors are cooperatively committed: resolving the accepted Question Under Discussion (QUD).
   b) **Assertions** offer partial answers to the QUD at the time of utterance; if accepted, they are **payoff moves**, in which the interlocutors come closer to achieving their immediate discourse goal of addressing the QUD.
   c) **Directions** propose domain goals to the addressee, and hence are set-up moves as well. If accepted, they are added to the addressee's individual domain goals, with a consequent modification of her associated plans.
5. If discourse is to be maximally effective, it must be orderly. What serves to organize any game is the players' immediate goals and intentions in playing the game. Typically,

interlocutors in a discourse are already committed to certain domain goals. If a group of collaborating agents are rational, then in keeping with general constraints on rational agency (Bratman 1987):

- the goals they adopt and the plans they form to achieve them, are consistent, and in particular,
- discourse goals (QUD) should subserve pre-existing or over-arching domain goals.

Hence, addition of information to the CG is not random and unconstrained, but is guided by the mutually agreed upon topics for discussion, these in turn constrained by recognized domain goals. Interlocutors choose a topic for discussion and stick with it, even complaining if others inappropriately change the subject: *What's that got to do with the price of eggs?* As we might expect in a theory of linguistic pragmatics—of how context comes to bear on interpretation—the orderliness which characterizes felicitous discourse is surely in the interest (a) of more efficient information retrieval and storage, and (b) of the practical reasoning involved in intention recognition, and hence in meaning recognition:

> **The intentional structure of discourse**:
> The structure of a discourse interaction is designed to help retrieve the speaker's intended meaning for a given utterance, in view of the goals of the interaction. This is what makes it reasonable to intend that one's audience will recognize that one intends them to grasp a particular meaning, even when it is underdetermined by the conventional content of what one says.

A rational agent's intentions are ideally intrinsically bound up with her plans for action (Bratman 1987). Hence we have:

> **Rational Cooperation in a Discourse *D*:** Make your utterance one which promotes your current intentions in *D*. (cf. Grice's Cooperative Principle 1967, and its counterpart in Thomason 1990)

6. This orderliness is reflected in the crucial role of the QUD in interpretation. Thus, we can derive Grice's (1967) maxim of Relation from the nature of the game and standard assumptions about rational agency:

   > **RELEVANCE**: Since the QUD reflects the interlocutors' goals at any point in a discourse, in order for an utterance to be rationally cooperative it must address the QUD.
   >
   > An utterance *m* **addresses a question** *q* iff *m* either contextually entails a partial answer to *q* (*m* is an assertion) or is part of a strategy to answer *q* (*m* is a question) or suggests an action to the addressee which, if carried out, might help to resolve *q* (*m* is a suggestion).

7. Just as we develop plans to achieve our domain goals, to address complex questions, interlocutors usually develop **strategies of inquiry**, involving a series of related questions. These are sequences of moves designed to (at least partially) satisfy the aims established in a particular round of the game while obeying the game's general constraints. To be a strategy of inquiry, such a sequence must display a hierarchical structure based on a set of questions partially ordered by entailment. The constitutive moves and the overall strategy are

constrained by Relevance and what it is to be a rational cooperative agent. Rhetorical relations between utterances (Mann & Thompson 1987, Asher & Lascarides 1994,2003) pertain to features of such strategies (Roberts 2004).

8. The context of utterance in a language game can profitably be characterized as a **scoreboard** (Lewis 1979) tracking the distinguished bodies of information relevant for interpretation as these evolve under the rules of the game. A non-defective context is one in which the interlocutors share the same content in their individual representations of what's on the scoreboard. Here is a somewhat simplified version of the scoreboard for a language game (see Roberts 1996, 2012b for more details).

The **scoreboard for a language game** is a tuple, $\langle I, G, M, <, CG, QUD\rangle$, where:

I, the set of interlocutors at *t*

G, a set of sets of goals and priorities in effect at *t*, such that

for all $i \in I$, there is a (possibly empty) G_i which is the set of *i*'s prioritized desiderata, including those goals which *i* is publicly committed at *t* to trying to achieve

$G = \{ G_i \mid i \in I \}$.

$G_{com} = \{g \mid \forall i \in I: g \in G_i\}$, the set of the interlocutors' common desiderata at *t*.

$G_Q = \{g \in G_{com} \mid$ there is some $Q \in QUD$ and g is the goal of answering Q$\}$

for all $i \in I$, for all $g \in G_i$, *g* is a conditional goal $\langle c,t\rangle$, representing the intention to achieve the target goal *t* should its possibly trivial conditions *c* be realized in the actual world.

$G_Q = \{g \in G_{com} \mid$ there is some $Q \in QUD$ and g is the goal of answering Q$\}$

for any $G_i \in G$, there are several relations over G_i, including:

$Subs_i$: a pre-order (reflexive, transitive) s.t. $Subs_i(g,g')$ iff g subserves g' in G_i

$Plan_i$: $Plan_i(\langle g,\{g_m,\ldots,g_n\}\rangle$ iff *i* has a plan to accomplish *g* via realizing $g_m,\ldots,g_n$, and $\forall g' \in \{g_m,\ldots,g_n\}$: $Sub_i(g',g)$

$\leq_i$: a partial order (reflexive, antisymmetric, and transitive) s.t. $g \leq_i g'$ iff g is a higher ranked **priority** (more ideal) for *i* than g

M, the set of moves made by interlocutors up to *t*, with distinguished sub-sets:

$A \subseteq M$, the set of assertions

$Q \subseteq M$, the set of questions

$S \subseteq M$, the set of suggestions

$Acc \subseteq M$, the set of accepted moves

$<$ is a total order on M, the order of utterance

CG, the common ground, the set of propositions treated as if true by all $i \in I$ at *t*

$QUD \subseteq Q \cap Acc$, the ordered set of questions under discussion at *t*, s.t. such that for all $m \in M$ at *t*:

a. for all $q \in Q \cap Acc$, $q \in QUD(m)$ iff CG fails to entail an answer to q and q has not been determined to be practically unanswerable.

b. QUD is (totally) ordered by $<$.

c. for all $q, q' \in QUD$, if $q < q'$, then the complete answer to q' contextually entails a partial answer to q.

and in addition:

d. for all $Q \in QUD$ there is a $g \in G_{com}$ such that g is the goal of answering Q, and

e. for all $Q \in QUD$, it is not the case that CG entails an answer to Q

For all $i \in I$, if *i* is a sincere, competent and cooperative interlocutor in *D*, we can use G_Q to characterize two kinds of publicly evident desiderata and goals held by *i* (at time *t*):

Discourse Goals of *i* = G_Q
Domain Goals of *i* = $G_i \setminus G_Q$
$G_{com} \setminus G_Q$: the set of common Domain Goals of all the interlocutors

Since the CG includes all that the interlocutors take to be true, it includes information about the discourse scoreboard as well. The point of the more articulated scoreboard is not so much to *replace* the CG as to clarify the different types of information that interlocutors crucially track in discourse, and the different roles these types of information play in the evolution of felicitous discourse.

Clause (d) of the definition of the QUD: "for all $Q \in QUD$ there is a $g \in G_{com}$ such that g is the goal of answering Q", ensures that each of the questions under discussion, as agreed upon by the interlocutors, corresponds to a shared goal, that of answering that question. Since all of the questions in QUD are reflected in G_Q, any rational, cooperative interlocutor should address the QUD (unless more important goals interfere). Then we formally define RELEVANCE:

Given QUD *q*, a move *m* is **RELEVANT** iff *m* addresses *q*.

Given a particular QUD, the role of a given utterance in the intended plan of the speaker to address the QUD can be inferred, and in this way, the intended interpretation inferred, especially if we understand that the QUD subserves the larger domain goals of the interlocutors.

Part of the information available in the interlocutors' scoreboard is an indication, for each interlocutor *i*, of the set G_i of *i*'s evident goals. But in a rational agent, goals do not exist in a vacuum. Rather, they are the targets which drive and constrain behavior; and that behavior is strategic—organized so as to maximize the realization of the agent's goals. Further, because we typically have many goals, some of them difficult to reconcile, they must be prioritized. So the strategies we adopt to achieve them must take into account those priorities, as well as the circumstances in which the agent finds herself at potential realization times. Finally, goals themselves may be conditional in the sense that we may adopt a goal which is to be realized just in case certain conditions obtain in the circumstances in which we find ourselves. Thus is all reflected in the features of G_i for interlocutor *i*, in the conditional nature of goals and in the relations $Subs_i$, $Plan_i$ and $\leq_i$. Since both the circumstances and even our goals may change (be realized, abandoned, etc.), and one may change one's priorities, the character and organization of one's plans are complex and non-monotonic. Thus G_i is merely the tip of a complex, dynamic planning structure, always mediated by the agent's awareness of circumstances and the determination of priorities (see Charlow 2011 for excellent discussion).

The three principal kinds of moves in a discourse game, for which the above is the scoreboard, can now be characterized formally as follows, where for constituent κ $|\kappa|^D$ is the interpretation of κ in discourse context κ, and the diacritics **.**, **?**, and **!** stand for declarative, interrogative, and imperative mood, respectively:

Assertion: (following Stalnaker 1979)
If an assertion of $.\alpha$ is accepted by the interlocutors in a discourse D, $|.\alpha|^D$ is added to CG.

Interrogation: (Roberts 1996)
If a question posed by **?**α is accepted by the interlocutors in a discourse D, then $|?\alpha|^D$, a set of propositions, is added to the QUD.
A question is removed from QUD iff either its answer is entailed by CG or it is determined to be unanswerable.

Direction:[4] (cf. related proposals in Roberts 2004, Portner 2007)
If a proposed direction $!_i$P is accepted by the addressee *i* in a discourse *D*, then revise G_i and *i*'s associated evident plans to include the realization, under the applicable circumstances, of $!_i$P.
G_i is revised to remove the realization of $!_i$P once it *or the larger goals it subserves* is no longer potentially applicable (e.g., it has been realized, or else it is determined that it cannot be practically realized).

The conceptual foundations of this approach to pragmatics are Gricean. And the implications for pragmatic theory are wide-ranging.

One reason for this is that the way the three kinds of moves are modeled in the QUD framework is designed to dovetail with the independently motivated compositional content, realized in a formal semantics, of utterances with declarative, interrogative, and imperative mood, as I'll illustrate with the imperative in the next section. Thus, there is a natural formal **congruence between conventional content and default pragmatic function**. In the matter of speech acts, the semantic types of the three types of clause are the right sorts of objects to play the roles of the constitutive moves in the language game as characterized here. Thus, the formal pragmatic framework not only coordinates smoothly with compositional semantics, especially of the dynamic variety, but is compatible with the formal logics commonly used to model inference in discourse, including erotetic logics like the inquisitive semantics of Groenendijk and his associates (for introductions, see Groenendijk & Roelofsen 2009, Ciardelli et al. 2013, and Cross & Roelofsen 2015).

There are some additional consequences of this view of pragmatics for speech act theory. Making a given type of speech act entails that the speaker incurs certain commitments. For example,

- **All moves carry a commitment to RELEVANCE.** This goes well beyond information sharing *simpliciter*, and so marks a difference from Stalnaker's (1979) account of assertion. But unlike Sperber & Wilson's (1985) notion of Relevance, this one is inherently relational, a function of goals and intentions, and hence arguably closer to Grice's original notion.
- **Assertions have a doxastic flavor**:[5] making an assertion involves a commitment to believing (purporting to believe) that the proposition asserted is true and based on adequate evidence.
- **Directions pertain to priorities**, as reflected in the interlocutors' goals: These are often **deontic** (pertaining to permission and obligation), or under certain circumstances **buletic**

[4] This characterization of Direction is incomplete, since it does not cover what Kaufmann (2012) calls Expressive uses of imperatives, like *Be well!* See Roberts (2015) for modification of this pragmatics to cover those uses.
[5] doxastic: pertaining to belief

(pertaining to wishes). If proposed to an addressee, they propose the adoption of desiderata and/or goals, with a consequent adjustment of the addressee's plans. These goals are conditional, as we will see with imperatives, intentions to realize some property or other *should the relevant conditions obtain*. If accepted by an addressee, then she is (conditionally) committed to those goals—she *ought* or she *should* or she *must* do what's necessary to accomplish them, under the appropriate conditions, and under standard semantic accounts of the meanings of those modals.

These commitments, which follow from the nature of the game, amount to what Searle called **sincerity conditions on the performance of these acts, arising from the function of their canonical roles in the language game**. For speakers, assertions are associated with a commitment to truth, questions with a sincere commitment to inquiry, suggestions with a sincere belief that the realization of the proposed act by an addressee would further certain aims. Of course, this doesn't entail that speakers actually *have* the relevant intentions. But making a speech act does incur commitments: it puts the speaker and/or addressee under obligation, and as we shall see:

(a) This has consequences for our understanding of the way that imperatives interact with deontic modality, and hence for what the class that Searle called *Directives* has in common with my class of Directions.
(b) It provides the foundation of an explanatory account of performatives—Searle's Declaratives—and of performativity.

Moreover, the three basic speech act types, and the associated commitments to sincerity, relevance and other reflexes of Gricean cooperation are together **essentially constitutive of what it is to play the language game**. These acts are basic to the nature of the game. To display competence in the game is to be able to understand and use these three types of moves under the associated constraints on cooperativity and rationality. To grasp the use of these moves and their conditions and effects is to understand the language game. Thus, to the extent that understanding the structure of discourse in this way proves useful in explaining how we interpret the things speakers say, this argues that the proposed three-way distinction reveals a great deal about the way in which we share meaning in the Gricean sense. If so, then this is an illuminating taxonomy: It helps to explain the mechanisms by which we grasp a speaker's intended non-natural meaning.

Of course, in many languages grammatical mood is realized morphologically, e.g. with verbal affixes or particles. Once we have a paradigm, nothing prevents language uses from extending it in various language-particular ways. So, for example, in English and many other languages we also have exclamatives: *What a lovely day it is!*, *How odd that was!*. But so far as I know this clause-type is not universally realized across languages.

3. Clausal mood and the semantics and pragmatics of the imperative

As noted above, the correlation between declarative and interrogative mood, on the one hand, and the semantic type of proposition or question, on the other, is well accepted, as is the default correlation between clauses in these moods (with their associated types) and what it is to be an

assertion or a question in discourse. But the formal work on the imperative is more recent and as yet controversial, so that will be my illustrative focus here. I will offer a brief sketch of a new semantics and pragmatics for the imperative, with only a few illustrations to show how it works for the core cases. A full justification and comparison of this account with others in the literature can be found in Roberts (2015), along with detailed applications to a broader range of uses of the imperative, and to the more general mood that Zanuttini et al. (2012) call the *jussive*.

A **clause** is any sentential constituent with mood, even though clauses with different moods have different semantic types and differ in important syntactic features. Hence, a clause is not necessarily a constituent that denotes a proposition (e.g. an interrogative clause denotes a *set* of propositions), though it may denote a "complete thought" in the old-fashioned sense (e.g. there's nothing intuitively elliptical about a question). Nor need all clauses have overt subject constituents in the syntax. One can take imperative clauses to lack a syntactic subject, but they do typically carry subject-agreement features, and always have a semantico-pragmatic subject, the entity (usually the addressee) which serves as target for the directed property denoted by the clause. So they are not simple VPs, but sentential.

There are two main types of proposals for the semantics of the imperative in the recent literature: The first type, exemplified by Wilson & Sperber (1988), Han (2000), Schwager (2006)/Kaufmann (2012), and Condoravdi & Lauer (2012), takes an imperative clause to denote a proposition with a built-in modal component. This is closely related to the proposal in Charlow (2014), who takes an imperative to denote a property of a plan, always carrying the force of necessity. The most subtle and detailed formal realization of this general approach is that of Kaufmann (2012), who **focuses on the modal** component of the meaning of an imperative clause. Here, modality is modeled on the approach due to Kratzer (1977,1981, etc.), relativized to contextually-given parameters, the modal base and ordering source, that together yield a modal accessibility relation. For Kaufmann, the modal base and ordering source retrieve the "relevant criteria" for the directive, characterizing the types of worlds in which the proposed action is to be implemented. Because of this flexible parameterization, the account can capture attested features of a wide range of uses of imperatives, both matrix and embedded; directive and desiderative, and including "weaker" uses of the imperative, such as suggestions and depictives, as well as "stronger" commands. The deontic character of the modal base and ordering source for an imperative explains the attested relationship between directives and deontic assertions. For example, the following are synonymous on this account, though they have different presuppositions for felicitous use:

(1) Go to school!
(2) You should go to school!

Kaufmann's Kratzerian account naturally explains the common occurrence of conditional imperatives and gives them an intuitively plausible semantics. Kratzer treats conditionals as modal statements (which may have a merely implicit necessity modal in the main clause) with the *if*-clause serving as part of the restriction on the modal operator; technically, the proposition denoted by the *if*-clause is added to the propositions contextually retrieved by the modal base, and their intersection, further constrained by the ordering source, serves as the set of worlds over which the modal operator ranges. Thus, the *if*-clause in an example like (3), as in the corresponding modal conditional (4), gives part of the intended restriction:

(3) If you have trouble updating your software, delete the current copy and re-install.
(4) If you have trouble updating your software, you must delete the current copy and re-install.

The instructions in (3) include criteria for their application: in case of trouble with one's software.

Kaufmann's account also readily extends to embedded imperatives. Some languages, such as Slovenian (Stegovec & & Kaufmann 2015) have a wide range of uses of embedded imperatives. But even English has embedded imperatives, though their occurrence is more limited; e.g. in that language the understood target of the embedded imperative must be the actual addressee: *John said eat his share of the chicken. He won't get home til late*. This is an important argument against including the illocutionary force of the imperative in its semantics, *pace* Han (2000) and Charlow (2011), since such clauses do not display illocutionary force.

But there are problems with the modal proposition approach. One is that it fails to satisfactorily explain the lack of truth conditions associated with imperatives or why they cannot be used to make assertions. If someone tells me to wash my car, I can neither judge that true nor false. Since one can certainly make such a judgment about *You should wash your car*, this argues that the imperative and the deontic modal assertion are not synonymous. Kaufmann appeals to various pragmatic aspects of their meaning in order to explain this difference; for example, she argues that they cannot be used to make assertions because they are performative, and (supposedly) performatives cannot be used to make assertions. But ultimately it is a rather unsatisfactory feature of this type of account. Questions don't have truth conditions, and their semantic type explains why. We feel that the type of imperatives should offer the same kind of explanation.

Another problem, due to Gärtner (2015), is that imperatives do not take sentential adverbials. We cannot felicitously say (5), though its modal counterpart (6) is felicitous. And performatives can have sentential adverbials of this sort, as we see in (7):

(5) #Unfortunately, marry him!
(6) Unfortunately, you must marry him.
(7) Unfortunately, I now pronounce you man and wife.

Finally, this account by itself doesn't offer an adequate pragmatics of the canonical use of imperatives to issue directions; I refer the reader to Roberts (2015) for a critique in that vein.

The second prominent contemporary approach to imperative mood,[6] exemplified by Portner (2004, 2007), Roberts (2004), and Starr (2010), takes an imperative clause to denote a property indexed (typically) to the addressee; these accounts typically focus on the pragmatics of direction. For example, in Portner (2007) the imperative clause itself denotes a property indexed to the addressee. Then if proffered as a direction and accepted, the property is added to the addressee's To Do list. This gives a pragmatic explanation of the evident relationship between

[6] See also Bolinger (1977), a precursor.

imperatives and deontic assertions, so that while on this account (1) above is not synonymous with (2), its use and acceptance entail it. Roughly, as noted in the previous section, all content on the scoreboard is reflected in the CG, so that (a) any publicly evident goals and intentions of the addressee count as commitments to act (if possible) to realize them, and (b) such commitments are reflected in the CG, in this case as deontic propositions. Portner (2007) works this idea out in formal detail.

But there are problems with this approach, as well. Briefly, because there is no modality in the semantics of the imperative clause itself, unlike in Kaufmann's imperative propositions, there is no way to relativize interpretation to the flexible Kratzerian modal parameters, the modal base and ordering source, and so it is difficult to explain the full range of imperative flavors. Portner is aware of this issue, and addresses it by introducing multiple To-Do lists, with slightly different flavors, but this doesn't seem entirely satisfactory. Given the broad variety of ways in which different modal bases and ordering sources can come to bear, how many To-Do lists would we need for a given interlocutor, and how should those be related? Furthermore, without a modal base there is no way to naturally capture the semantics of conditional imperatives like (3).

In Roberts (2015) I propose an alternative which attempts to reconcile these two general approaches and preserve the best in each, without building illocutionary force into the semantics of the imperative mood, by treating an imperative clause as a certain type of property: an indexically anchored property which carries conditional presuppositions retrieved by a modal base and ordering source. This property, then, when proffered as a move in the language game—used to make a speech act—proposes a modification of the indexically targeted agent x_i's goals, plans and priorities G_i. If the imperative is accepted and the context updated as proposed, this is reflected in a deontic proposition in the CG, explaining the correlation between imperatives and deontic modal statements.

Just below is the proposed semantics for the English imperative, as an indexical, directed, conditional property. Something slightly more abstract would work for all the remaining imperative (and jussive) systems I'm familiar with, but with somewhat different constraints on resolution of the contextual parameters (e.g. for anchoring the indexical) from language to language. As noted above, for simplicity here I ignore Kaufmann's Expressive imperatives, but address them in Roberts (2015) with a slight modification of the pragmatics for imperatives.

Take $!_{f,g}[_S VP_i]$ to be the logical form of an English imperative clause, uttered in context K (the scoreboard, including information about interlocutors, their ContextSet, QUD, evident plans and goals, etc.), with modal base *f*, and ordering source *g*. As in Kratzer, *f* takes a world *w* and time *t* as argument to yield a set of propositions, each a set of worlds; *g* then plays a role in ordering the worlds in which all those propositions are true, $\cap f(<w,t>)$: $g(<w,t>)$ also yields a set of propositions—reflecting some relevant ideals (e.g. the wishes of either the speaker or addressee)—and orders the worlds in $\cap f(<w,t>)$ according to how close they come to realizing all those ideal propositions.

First we define the applicable circumstances for a directed property, relative to *f, g,* and the world and time of issuance <w,t>:

$$\textbf{Applic}_{f,g}(\langle w,t\rangle) = \{\langle w',t'\rangle \mid w' \in f(\langle w,t\rangle) \,\&\, \forall w'' \in \cap f(\langle w,t\rangle) : w' \leq_{g(\langle w,t\rangle)} w'' \,\&\, t' \geq t\}$$

The applicable circumstances relative to *f*, *g* at a given <w,t> are those <w′,t′> which are most g(<w,t>) ideal among those where all the propositions in *f*(<w,t>) are true. Moreover, the applicable circumstances must be non-past with respect to the issuance time *t*.[7] Then given felicity, an imperative's proffered content is its **realization conditions**, what would have to be the case for the proposed goal to be realized.

CONVENTIONAL CONTENT of English $\textbf{!}_{f,g}[_S VP_i]$:

Given context K and circumstance of evaluation <w,t> :

Presupposed content:

x_i = addressee(K),

f is a circumstantial modal base

g is an ordering source reflecting the ideals and priorities of some relevant agent

Proffered content: (type <s,<e,t>>)

$\lambda\langle w',t'\rangle\, \lambda x \in \{x_i\} \,.\, \langle w',t'\rangle \in \text{Applic}_{f,g}(\langle w,t\rangle) \rightarrow x \in [[\text{VP}]]^{\langle w',t'\rangle}$

The circumstance of evaluation <w,t> will be the circumstance of issuance. In matrix clauses, this will be the speech time/world <w*,t*>; in embedded clauses, the eventuality reported in the matrix.

The proffered content of an imperative takes as arguments a circumstance <w′,t′> and an entity *x*, to yield truth, so it is of type <s,<e,t>>, denoting a special type of property. Given its arguments, the function will be realized (yield the value true) at <w′,t′> just in case the circumstance is one in which the direction is applicable, *x* is the target (addressee) x_i, and in that circumstance x_i has the property denoted by the VP.

$\textbf{!}_{f,g}[_S VP_i]$ is **indexical** in that it is targeted to one of the interlocutors—typically, as here in English, the addressee. In Korean (see Pak et al. 2008,2015) the target might instead be the speaker (for a promissive), or the joint interlocutors (for a desiderative), so that we replace the first presupposition, x_i = addressee(K), with: $x_i \in$ {addressee(K), speaker(K)}. Just as we find shifting indexicals in some languages when embedded under certain attitude predicates, in Korean the target of an embedded imperative under a verb of telling may be the third person addressee in a reported issuance event, as we see in:

(8) ku salam-i inho-eykey [swuni-lul towacwu-la]-ko malhayss-ta.
that person-NOM inho-DAT [swuni-ACC help-IMP]-COMP said-DC
'He told Inho to help Swuni.' (Pak et al. 2008:170)

Here the third person addressee Swuni is the target of the embedded imperative clause headed by *towacwu*. An imperative is **directed** in that its extension is only defined for the targeted agent x_i in the applicable circumstances.

[7] Given the pragmatic role of a Direction, to add to the target's goals, and the fact that goals are of their nature future-oriented, this stipulation may be unnecessary. However, it remains to be seen how this plays out in embedded imperatives across languages, so I add this condition here for clarity.

An imperative is **conditional** in that the applicable conditions for which the property is defined are determined by the contextually given parameters *f* and *g* for the modal base and ordering source. These are the usual Kratzerian parameters used for modal operators, the modal base here presupposed to be circumstantial. As in Kratzer, a (non-biscuit-type) modifying *if*-clause adds its proposition to the modal base determined by *f*. Then as in Kaufmann (2012), the identities and relationship of the issuer and the addressee x_i, and the character of *f* and *g* all play a central role in determining the ultimate flavor of any direction issued with this clause—command, suggestion, etc. On this semantics, this comes about not via restricting the domain of a modal operator, but in the determination of the non-past applicable circumstances, Applic(<w,t>), those in which, should the imperative clause be used to issue a direction, the direction is intended to be realized.

Recall from the previous section that the default use of a matrix imperative clause, the natural use in view of its directed semantics, is to issue a direction to the target agent:

Direction:

> If a proposed direction $!_i$P is accepted by the addressee *i* in a discourse *D*, then revise G_i, and *i*'s associated evident plans to include the realization, in the applicable circumstances, of $!_i$P.
> G_i is revised to remove the realization of $!_i$P once it or the larger goals it subserves are no longer potentially applicable (e.g., it has been realized, or else it is determined that it cannot be practically realized).

Addressee x_i's acceptance of a direction leads to integrating the targeted property into G_i, which means that x_i's plans are revised to prioritize realizing VP should the relevant conditions of applicability obtain. Then, should x_i find herself in one of the circumstances in Applic(<w,t>), she implements a plan to realize VP.

As we saw in the scoreboard above, goals and the plans they motivate are themselves conditional, contingent on conditions of applicability; and a given agent's goals are complexly organized. Accordingly, the goals of an interlocutor are not a simple To Do list. A change in one's goals is reflected in a change in one's plans and priorities, and constitutes a commitment reflected in the CG. We have many conditional goals—intentions to realize some property or other *should the relevant conditions obtain*. We see this in instructions like (3) above. This does not imply that it's ideal to delete and re-install one's software. But **in case** one has trouble—under the applicable conditions—these instructions tell us that that *is* the best way to proceed. Similarly, with a recipe or directions, some are designed to be realized *at some appropriate time in the future*, when other conditions are right:

(9) When the egg whites are stiff from beating, fold in the sugar.
(10) When you see the red firehouse on the left, turn right at the next corner.

When the goal proposed by an imperative is added to G_i, the applicable conditions given by *f* and *g* restrict the set of applicable circumstances, and the resulting interpretation is effectively conditional in Kratzer's sense. But in the present account, we can say more. In the present framework, in their use with an imperative typically *f* and *g* themselves represent, respectively,

information available in the interlocutors' CG and the goals, plans and priorities of one or more interlocutor x_i (the issuer of a command, the target of a helpful suggestion, etc.), G_i. That is to say, the interpretation of an imperative both draws on and leads to changes in these parameters of the context of utterance.

We see this in how the account of imperatives as proposals to adopt a conditional goal not only yields a natural account of overtly conditional imperatives like (3), but explains yet further facts about how context affects the interpretation of imperatives, as illustrated in (11):

(11) A and B are strategizing about how their gang is going to rob a bank:

. . .

i. A: Suppose the police arrive while we're cleaning out the vault.
ii. B: We'll elude them by escaping over the roof.

iii. A: What if our short-circuiting software fails and the alarm goes off?
iv. B: Grab the cash in the drawers and run!

v. A: Suppose the guard gets untied.
vi. Should I shoot him?

(11) illustrates how interlocutors negotiate a plan. Besides directly planning how to achieve their goals, they consider various possible obstacles and contingencies and speculate about alternative ways of proceeding if/when they arise. So there are branching possibilities. In each branch, they consider 'what to do' *as if* acting out the plan. Earlier B might have said *then tie up the guard*, etc., just *as-if* they were in an actual situation in which that action was appropriate, modulo the anaphoric *then*. In this extended irrealis context, all proffered content is relativized to the hypothetical scenario being entertained, and as in modal subordination generally (Roberts 1989), the relativization has implications for the resolution of anaphora and other presuppositions. In (11i) A proposes consideration of one possible contingency; since this is a planning discourse, this raises the practical question of what to do in that circumstance. In (ii), B offers a plan to address that contingency; notably, the Reference Time for (ii) is clearly the immediate aftermath of the event described in (i), and *them* is resolved to the police. In (iii) A directly poses a question about how to plan for yet another possible contingency, and in (iv) B suggests what to do in that hypothetical circumstance, with the same relativization of Reference Time, and also domain restriction of *the cash* and *the drawers* to those in the bank. In (v), A proposes consideration of yet another contingency, and then in (vi) asks whether she should adopt a particular provisional plan in that case, shooting the arbitrary guard under discussion, thereby resolving *him* and, once again, the Reference Time—she's asking whether she should shoot the guard *at that point in time*. Note that the imperative in (iv) is a conditional suggestion: 'if the alarm goes off, grab the cash and run'. Just as the modal *should* in (vi) takes the background scenario in the bank plus (v) as part of its modal base, the understood goals and priorities both immediate (get the money) and longer-term (get away, avoid the worst potential legal consequences, stay alive) as its ordering source, yielding a conditional interpretation of the question: 'should I shoot the guard if he gets untied'; so the modal base of the imperative in (iv) takes (iii) as one of its premises for the modal base, the same general priorities for the ordering source. In all these cases, relevance to the question under discussion (as part of the practical

strategy being developed) and the interlocutors' understood joint and individuals goals in G play a direct role in restricting the applicable circumstances.

Deontic modality generally is a reflex of such complex planning structures, and the goals, circumstances and priorities which drive and constrain them. The proposed goal (for the subject) associated with a deontic proposition Modal-*p* is the realization of the prejacent *p*—making the world fit the word; and the circumstances in which the realization of the goal is applicable are those given by a combination of a modal base *f* and ordering source *g*, the latter reflecting some agent's relevant priorities (e.g., speaker's or addressee's, God's rules or the law, and/or the relevant permissions and obligations of the issuer or the target x_i). And not all one's ideals and goals are adopted as a consequence of a command, so that, e.g., a bouletic permission modal or imperative suggestion may be conditional on whether it pleases the target.

Imperatives, as characterized in the semantics above, are deontic in just this way. Via *f* and *g*, with the same range of factors bearing on their selection as in the deontic modal statements, we derive the observed wide range of flavors of the imperative. And just as the requirement that a modal proposition be Relevant to the QUD at the time of utterance helps to resolve the intended *f* and *g*, as we saw in (11v-iv), a competent cooperative speaker will intend that her direction be Relevant to the QUD at the time of utterance, and expect her addressee to expect that as well, as we saw in (11iii) and (iv), as well as in the over-arching set of decision problems ('what to do') being explored strategically in (11). Hence, Relevance to the QUD and other contextual factors is crucial for the recognition of the particular intended speech act intended by the speaker—here, differentiating among the different types of Directive in Searle's taxonomy: asking, ordering, requesting, inviting, advising, begging, and more besides.

Thus, like the theory of Kaufmann (2007), the account of the imperative here has the flexibility to account for a far wider range of uses than that of Portner (2007), but without predicting that the resulting interpretation is propositional.

Summarizing, the semantic denotation of an imperative clause thus is not a proposition, but a property. But it is a very special property, one which gives the **realization conditions** for the clause, indexically targeted to the addressee. These semantics involve no illocutionary force operators, and hence are suitable for embedded uses. It is only in the *use* of an imperative to make a speech act that it comes to propose a goal to the target, i.e. through the pragmatics of directions.

Assuming this analysis, then given the correlation standardly assumed between the other clausal moods and semantic types, we get the three-way distinction noted above:

Declarative:	proposition, type <s,t>
Interrogative:	question, type <<s,t>,t>
Imperative:	property, type <s,<e,t>>

4. Speech acts as moves in the language game

Against the background of the pragmatic framework in §2 and the characterization of the semantics of the three universal types of sentential mood filled out with the discussion of the imperative in §3, in §4.1 I argue that the Searlean speech act performed by a given utterance can be predicted as a function of (a) the semantics of the constituent uttered, (b) the specific context of utterance, and (c) general principles for discourse evolution and for plan recognition. Though space precludes an exhaustive survey of all the types of classical speech acts, the examples considered, building on insights from earlier work on planning theory and speech acts, are designed to show how the resources offered should generally suffice. In §4.2 we briefly consider again the default correlation between sentential mood and speech act type, and use the discussion up to that point to support the contention, reflected in the Force Linking Principle of Portner (2004) and Zanuttini et al. (2011), that this correlation, though quite robust, is merely pragmatic, not part of the conventional content of the sentences uttered. And in §4.3 I briefly consider a view of performatives due to Condoravdi & Lauer (2011), defending it from criticisms by Searle, in light of the general framework proposed here.

4.1 Speech Act recovery as intention-recognition

How do we recognize a particular type of speech act when we encounter it? We have just considered how the different types of Directives expressed by an imperative may be contextually differentiated. Here we consider a broader variety.

Consider utterance U by speaker S to hearer H, pertaining to act A. This utterance can be characterized as a Request or a Promise only if it satisfies these criteria, drawn from Searle (1975):

Directive (Request):

Preparatory Condition:	H is able to perform A.
Sincerity Condition:	S wants H to do A.
Propositional Content Condition:	S predicates a future act A of H.
Essential Condition:	U counts as an attempt by S to get H to do A.

Commissive (Promise):

Preparatory Conditions:	H is able to perform A. H wants S to perform A.
Sincerity Condition:	S intends to do A.
Propositional Content Condition:	S predicates a future act A of S.
Essential Condition:	U counts as the undertaking by S of an obligation to do A.

In the work of Austin and Searle, the development of such inventories tends to be lexically driven, the speech act typologies reflecting the acts we canonically perform in uttering an indicative with a verb like *request* or *promise*. But as definitions of act types, these conditions stand alone.

Now consider:

(12) Joan: a) I want you to get a checkup.
b) Please get a check-up!
c) Will you please get a check up?
Bart: OK. I'll make an appointment with Dr. Josephson for my annual physical.

Would any of these possible utterances by Joan constitute making a request of Bart? (12a) clearly does. Use of *want* instead of counterfactual *wish* (Heim 1992) implicates that so far as Joan knows Bart is able to get a check up, satisfying the Preparatory Condition of a Request. The Sincerity Condition is explicitly satisfied—*I want*. And the infinitival pertains to a future action on the part of the object, here the addressee, satisfying the Propositional Content Condition. Does (12a) count as an attempt by Joan to get Bart to get a check up? That depends on their relationship. If she is his wife, mother, sweetheart or close friend, one might assume that what she wants matters to Bart, who wants to please her; if she is his boss, he is *required* to please her by doing what she wants insofar as reasonable. In any such case, Bart is motivated to adopt any reasonable obligation Joan suggests, and they both know this. Thus telling him what she wants him to do constitutes an attempt by Joan to get Bart to get a check up. Satisfying all these criteria, Joan's (12a) is a request. Of course, here only the Sincerity Condition and the Propositional Content Condition are explicitly satisfied by Joan's utterance itself, the Preparatory Condition and Essential Condition being contextually inferable, i.e. pragmatically implicated. So the classical theory would say that Joan's (a) is only an indirect request. But it is quite clear in the context of utterance that this *is* the speech act performed. If it is also an assertion about Joan's desires, so be it.

(12b) is a direct request: By virtue of the fact that the imperative is directed to Bart, Joan proposes that he add the future realization of this property to his goals, thereby satisfying the Propositional Content Condition and the Essential Condition. Proposing that an addressee add a goal to their plans is only reasonable (and thus cooperative) if the speaker believes that the addressee is capable of realizing that goal, so in directing Bart to get a check-up, we can assume that the Preparatory Condition of a Request is satisfied so far as Joan knows. As for Sincerity, I think that proposing that someone do something, absent evidence that this is something the target himself wants, can typically be counted as direct evidence that one wants him to do it (under the applicable conditions); but here *please* makes that explicit. So we only have to figure out whether we think Joan means what she says in order to determine whether the Sincerity Condition is satisfied. But presumably that's the case more often than not with speech acts—one always has to gauge the sincerity of one's interlocutors (as opposed to, say, a sarcastic delivery). In the absence of evidence to the contrary, we take it that she does.

Asking if the addressee will do something as in (12c) implies that so far as the inquirer knows he is capable of doing so (Preparatory Condition)—otherwise, why ask?—and the future *will* satisfies the Propositional Content Condition. *Please* plays the same role in this question as in the imperative, satisfying the Sincerity condition. But even more, it marks the question as an indirect request, since just like *want* it conveys that the speaker hopes for a positive commitment to this action; then as in (12a) and (12b), the Essential Condition is satisfied by virtue of this evident desire on the part of Joan plus the same kind of contextual knowledge about Joan and

Bart's relationship that played a role in the other examples. So, as in (a), (c) is an indirect Request, but its status in that regard is perfectly clear from the context. Further, though *please* helped to make the Sincerity Condition clear in these examples, but if Bart knows Joan well, the request would be clear without it.

Then immediately following one of these utterances by Joan, I would argue that Bart's full response counts as a Promise to endeavor to see Dr. Josephson, fulfilling the conditions on that speech act type *in this context of utterance*. *OK* is a reply indicating agreement on the part of the speaker, Bart, with what the addressee, Joan, proposes, here understood by both to be a direct or indirect Request. The Preparatory Conditions and Propositional Content Condition on Promises are satisfied by Bart's reply in virtue of its being a positive, agreeable response to what counted as a felicitous (direct or indirect) Request: since those conditions were satisfied for Joan's utterance, they're entailed by the Common Ground at the time of Bart's. If Bart is understood to be making a sincere response and follow-up assertion, this satisfies both the Sincerity Condition and the Essential Condition: First, agreeing with a Request by saying *OK* in itself commits Bart to agreeing to accept Joan's proposal. Then in order to be relevant, his immediate follow up will be understood as standing in the Elaboration rhetorical relation with *OK*, indicating how he intends to fill that request. Sincerely asserting that one will do something, as an indication of a plan to fulfill an accepted goal, publicly commits one to intending to do it. Bart's failing to make the appointment would clearly disappoint Joan (given the satisfied Sincerity Condition of her request), and thus due to his motivation to please her, his *OK* plus this assertion about how he will do what she requests constitutes his undertaking an obligation towards Joan. So even though if it were uttered out of the blue *I'll make an appointment with Dr. Josephson for my annual physical* might not be understood as a promise (it could be just a strange kind of prediction, uttered in a trance by a medium foretelling his own future behavior), all of Searle's conditions are satisfied in this context of utterance, the Sincerity Condition directly.

Of course, one might say that in Bart's reply *will* is ambiguous, with one reading wherein it is simple future (the medium's trance), the other indicating an inclination on the part of the subject Bart (the promise). But given a general Kratzerian account of how modal auxiliaries are understood in context, the question is how we know which modal base and ordering source for *will* the speaker intends, and in the absence of an *if*-clause this is purely a matter of context. So the same kind of abductive inference is required to resolve the intended domain restriction for the modal as we use in determining whether the Searlean conditions are satisfied generally.

This conception of the speech acts performed in (12) might not conform to standard Speech Act theory analyses. But I want to underline how what matters on the analysis I've given is not the words uttered, but the meaning of the utterance and its implications in context. Searle's characterizations of the speech acts of Requesting and Promising and the more general description of the various features of a speech act developed by Searle & Vanderveken (1985) (see the nice summary in Green 2015:19-20), make these out to just be things one does in saying something or other. The conditions jointly define what it is to do that sort of thing. Though Searle and various others have attempted to root illocutionary force in particular conventional features of what is said, there has never been a consensus that this is successful (see Green 2015 §4 for an overview of some of the relevant literature). Searle, Austin before him, and speech act theorists generally have tended to focus on acts associated with the use and meanings of

particular verbs which, when used in an indicative sentence, might constitute an act of the relevant sort. But if you just take their characterizations seriously, without assuming any necessary correlation between the conventional content of what is said (e.g. the use of particular verbs) and the presuppositions and implications of what is said *in context*, we find that there are many ways of committing a certain type of speech act, not all involving utterance of the canonically correlated verbs. If all the conditions on a particular speech act type are apparently satisfied, then the utterance counts as an instance of that type of speech act. That is to say, on the present approach there's nothing deep about the distinction between direct and indirect speech acts; see Charlow (2011) for extended discussion of the topic of indirect speech acts, generally compatible with the view promoted here.

Generally, Searle takes it that a speaker performs an illocutionary act only if he intends that the hearer recognize his intention to perform that act. As Perrault & Allen (1980) point out, this is a Gricean condition. The sketch I have given here is intended to show how the realization of Gricean Relevance in the intentionally structured theory from §2, given transparent assumptions about the relationships between the interlocutors as reflected in the CG, make it reasonable for the speaker to intend and the addressee to recognize what they say *in context* as particular illocutionary acts, without necessarily using the performatives or other verbs that inspired these speech act characterizations to begin with.

This general approach to speech act recognition derives from the work on speech acts in Planning Theory, work that was formally implemented by a number of researchers working in computational linguistics in the 1980s and 1990s. I have given only an informal discussion here for reasons of space. See especially Cohen & Perrault (1979), Allen & Perrault (1980), Perrault & Allen (1980), Cohen & Levesque (1985), Perrault (1990), Thomason (1990), and the more recent developments in Asher & Lascarides (2001), Thomason, Stone & DeVault (2006) and Charlow (2011), all of which influenced the present proposal. All emphasize the role of practical reasoning: how we construct and implement joint plans and *recognize* the plans underlying the speech acts of our interlocutors. The basic thesis was that speech act type could be derived from conventional content plus the perceived goals and intentions of the interlocutors. E.g. Cohen & Levesque (1985) offer a theory of speech acts based on:

- an account of propositional attitudes like belief, knowledge, intention
- a theory of action and its relation to the attitudes, describing those conditions necessary to engage in action and those resulting from it
- a description of the effects of locutionary acts on the mental state of the participants
- definitions of the performance of illocutionary acts as "the performance of any action…under appropriate circumstances, by a speaker holding certain intentions"

The particular realization of the Planning Theory approach proposed here, in the framework for pragmatic analysis utilizing the notion of context sketched in §2, has another important payoff, already mentioned above. It affords the same kind of account as that pioneered by Portner (2004,2007) of the attested entailment relationships between imperatives and declaratives with deontic modality, without imputing modal propositional content to the imperative *per se*.

Though they contain no model operator *per se*, any directions issued using imperatives lead, **indirectly but regularly**, to modifications of the CG in the context of utterance, as Portner and

others have proposed. But here this needn't be stipulated, and instead follows directly from the nature of the language game and its scoreboard (§2) and the essentially deontic (though non-modal) semantics of the imperative (§3). The adoption of the goal associated with a direction is not an isolated matter, but requires revision of the target agent's complex structure of plans, with the understood *f* and *g* in the interpretation of the imperative reflecting relevant contingencies and priorities *in those plans*. Since the state of G on the scoreboard is always reflected in CG *as deontic propositions about the relevant agent(s) goals, etc*., the primary pragmatic effect of acceptance of a direction—update of G_i for the target x_i—regularly leads to the update of CG with corresponding deontic propositions.

Consider some of Portner's examples, illustrating a range of deontic flavors for paired imperatives and modal propositions:

(13) a. Sit down right now! (order)
b. Noah should sit down right now (given that he's been ordered to do so).
(14) a. Have a piece of fruit! (invitation)
b. Noah should have a piece of fruit (given that he's hungry).
(15) a. Talk to your advisor more often! (suggestion)
b. Noah should talk to his advisor more often (given that he wants to finish).

Because of the commitments involved in adopting a goal (see, e.g., Bratman 1987), when an imperative is accepted (as it must be in the case of an order issued by a legitimate authority), this publicly commits the addressee to intend to achieve that goal. Since all information on the scoreboard is reflected in the CG, knowledge of such commitments is encoded in propositions in CG to the effect that the addressee has those goals.

A proposition about goals is a modal proposition. Consider the proposition that agent *x* intends to bring it about that φ is true. This is a complex type of propositional attitude, a teleological attitude towards φ on the part of *x*. In terms of a Hintikka-style (1969) treatment of the attitudes, if the proposition that *x* bears this attitude toward φ is true in world *w* at time *t*, it means that all worlds *x*-teleologically accessible from *w* at *t* are worlds in which φ is true at some time *t′* s.t. $t \leq t'$. Hence, an agent's goals are reflected in teleological modal accessibility relations.

Typically a direction whose acceptance is appropriately reflected in the CG (and corresponding Context Set CS) may have an additional deontic flavor. For instance, if a Directive is issued (via utterance of an imperative) by a speaker who has authority over the addressee, this amounts to an order or demand, as in (13a). In that case, the addressee may have no choice but to accept the goal so proposed, and in addition, the corresponding proposition in the CG will not only be teleological, but also a very high priority—something the agent *must* do, according to the authoritative speaker. If Noah accepts the invitation of a friend in (14a), thus intending to eat a piece of fruit, the deontic in (14b) may be understood to range over worlds in which Noah is hungry (and presumably wants something healthy to eat), characterizing as ideal those in which he eats a piece of fruit. Without any authority of the speaker of (14a) over Noah, this will be a much less binding obligation than that in (13a), and accordingly (14b) may be true without Noah necessarily striving to make realize his goal. We might say that for social reasons, the realization of (13a) has to be a higher priority for Noah than the realization of (14a). Thus, a variety of

social circumstances (pecking order, etc.) and relations between the interlocutors will color the accessibility relations imposed on the CS as a consequence of acceptance of a Directive.

In the framework in §2, such propositions about goals for agent *x* restrict the worlds in the Context Set (CS, the worlds compatible with the CG) to those which the *x*-teleological modal accessibility relation maps to worlds in which *x* has achieved that goal at some future time. So all *x*'s goals as reflected in G_x on the scoreboard will be reflected in various kinds of teleological propositions in the CG. But this same type of teleological relationship between *x* and *x*'s ideal intentions is entailed by statements involving deontic modals like *should* in (13b), (14b) and (15b): In these examples, the speaker asserts a proposition which entails that the real world is one in which Noah ideally has certain goals—sitting down, eating fruit, talking with his advisor—and, if accepted, this assertion restricts the worlds in the CS to those which the *Noah*-teleological modal accessibility relation maps to worlds in all of which *Noah* has achieved the relevant goals at some future time. Accordingly, the resulting CG after (13a), (14a) or (15a) has been addressed to, and accepted by Noah, will entail the truth of their (b) counterparts.

On the other hand, it is a pragmatic consequence of (i) the meaning of the modal and (ii) the authenticity of the deontic authority appealed to, that the subject of (13b) is under obligation to perform the action in question. Thus *You should sit down right now!*, spoken to Noah by his father, when accepted has the same effect on the discourse scoreboard, and in particular on the publicly evident goals for the interlocutor Noah as if his father had issued a direct command to perform the act. Accordingly, corresponding to such modal propositions in the CG, there arise appropriately conditioned goals in G_{Noah}. See Mastop (2005), Charlow (2010,2011) and Portner (?2013, to appear) for detailed technical expositions of the general approach to the relationship between imperatives and deontic modality (and other "priority" modalities—Portner to appear) just sketched here.

Moreover, the relationship just sketched follows naturally on the present account, where goals and plans are taken to be a central factor in the organization and direction of discourse. In contrast, Portner (to appear, p.26) claims:

> I do not see any way to account for this close connection between imperatives and modals within a classical speech act theory, since the effect of a directive act is not given a linguistically relevant representation.

Finally, in the QUD framework, a Directive response to a QUD may have a particular deontic flavor as a consequence of the meaning of the question itself. To see this, first consider the following three contexts for the use of the direction *Take a taxi*.

(16) [Joan is tired and has a lot of bags to carry home after a long day shopping. Her usual way home would be via the subway, but her girlfriend says sympathetically:] Take a taxi.

(17) [The boss is angry and irritated with an employee Joan who has been late to work several times lately because her car keeps breaking down. She claims he can't afford to get a new car, but the boss gives her a withering look and says:] Take a taxi.

(18) [Joan had to work late and her husband is worried about her traveling home late at night on the subway alone. Talking to her on the phone before she leaves the office, she insists she'll be just fine, but he says:] Take a taxi!

The speakers in (16)-(18) are all proposing to the addressee Joan that she adopt the goal of taking a taxi to the relevant location. But they have different power relationships to Joan in these three scenarios, the speakers themselves have different motives for proposing this goal, and in each case Joan herself would be understood to have different motives for possibly adopting it. As a consequence, we understand these speech acts in different ways. In (16) presumably the friend's goal is to help Joan but she's may have no particular desire for Joan to adopt this plan, and Joan's motives to adopt the proffered advice may be relatively weak, so this constitutes a suggestion or advice. In (17), the boss's goal is to force the employee to get to work on time, and Joan, subject to his authority, wants to keep her job, so this constitutes an order. In (18), we might take the husband's goal is to be to protect Mary, and Mary herself might be afraid. Depending on the husband's tone of voice and the general relationship between them, we might take this to either be a plea (begging), a request (there's something in it for the husband too), or even an order.

But now consider cases where the Directive is issued in response to a question by Joan:

(17′) Seeing the boss' anger, Joan asks: What must I do?
(18′) In response to her husband's concern about her safety on the subway, Joan says: Well honey I have to get home. What can I do?

In these cases, the force of the interlocutors' reply is understood partly as a function of the nature of the modal in the question. Deontic *must* implicitly recognizes the boss' authority over Joan. But *can* in (18) is circumstantial**:** This is a question of what Joan's practical options are, and no dominion is implied.

In all these cases, the evident goals and intentions of the interlocutors, as well as their common knowledge, including knowledge of their power relationships, play a role in the calculation of the intended effect of the speech act. But when there is a QUD, it plays an over-riding role: Even though the situations are the same, if Joan asked her husband the question *What must I do?*, she'd be acknowledging her husband's Biblical dominion over her, and his answer would be understood as an order. Following such a question, the only way to avoid the response as an order would be to explicitly deny that dominion, as with presupposition rejection generally—*Honey, you can do whatever you want, but I suggest that you take a taxi*. This illustrates the special force of the QUD in interpretation, in this case in speech act determination.

In sum, as in the Planning based accounts, speech act recovery is intention-recognition, involving abductive inference to the best explanation, in view of the score and the nature of the game. And in the framework in §2, the nature of the context of utterance puts strong constraints on the type of speech act which it would be felicitous to make with a given utterance.

But note that, as reflected in the theory of Cohen & Levesque (1985) sketched above, the classical Planning-based approach was entirely pragmatic, and in this respect it wasn't entirely

satisfactory. This is partly because it failed to note any regular relationship between conventional form and speech act type. Morgan (1990:189ff) remarks on this problem: What is the bridge between the conventional truth conditional content of an utterance and the kinds of beliefs, desires and intentions which Perrault and his colleagues take to be basic features of how speech acts arise? And, extending this observation, why should we expect to find the universally attested three types of clausal mood and their correlation to specific speech act types? The missing component in these accounts is the canonical relationship between grammatical mood and illocutionary force, via semantic type. This is remedied in the present account by making the default force of an utterance—assertion, direction or question—to be given by its grammatical mood, as discussed in the following section, and by the standard pragmatics of these three kinds of speech acts, as spelled out formally in §2.

4.2 The default correlation between mood and speech act type

Recall from §2 above, the default correlation between sentence form and speech act type:

Mood	Speech Act
declarative	assertion
interrogative	interrogation/question
jussive/imperative	direction

One central issue has been evident in speech act theory from the outset, as reflected in Searle's (1975) taxonomy, from above. Portner (to appear) calls this the **conventionalization** question. Generally, how do particular utterances of questions come to be associated with the force they are attested to have? Here is how he poses the question for imperatives:

> **The conventionalization question**: How do imperative sentences come to be associated with directive sentential force? In particular, what are the linguistic principles that associate certain grammatical representations, namely those which we identify as imperatives, with directive force, rather than with some other force, or no force at all?" (Portner 2013)

Zanuttini et al. (2012), Kaufmann & Poschmann (2013), and Portner (to appear) offer several reasons to take the correlation to be pragmatic rather than semantic. Among them, Portner notes:

- There are distinct means of formally marking clausal mood even within a single language:
  "The syntactic diversity of imperative sentences within languages like Greek and Italian shows that there is no simple correlation between grammatical form and the imperative speech act type. This fact poses a problem for speech act theory's approach to the conventionalization question. As pointed out by Zanuttini and Portner (2003), it seems that it is not possible to identify any discrete piece of the morphosyntactic representation with the force marker."
- The same morphological form may be used in different moods.
  "Kaufmann & Poschmann (2013) present evidence that colloquial German allows wh-interrogatives with imperative morphology and the associated directive meaning. They point out that this combination of the interrogative and imperative meaning is difficult to

account for on the view that sentences are typed through the presence of an operator which assigns them their illocutionary force."

In addition to these complex many-one correlations between mood and speech act type, in both directions, there are other reasons to take the correlation to be merely pragmatic—a function of the rules of the game, not grammatical—determined by the semantics of the moods. One, noted above, is that embedded uses are not speech acts, have no independent illocutionary force; insofar as the semantics proposed above gives the correct contribution to truth conditions in these embedded uses, then it seems preferable to leave illocutionary force out of the compositional semantics.

Finally, the fact that features of the speech acts can be derived from features of the language game, as illustrated in the previous section, and so needn't be stipulated in the semantics of the moods themselves, argues that the principled separation of semantics from illocutionary force, the latter a function of pragmatics, results in a more explanatory account of speech acts.

Portner (2004) and Zanuttini et al. (2011) argue in detail for a picture along these lines, where root sentences have non-illocutionary, compositionally derived semantic objects as their semantic values, and the linkage between sentence type and force is determined by basic theses of pragmatic theory. Inspiring the present proposal, semantic type explains the correlation with force. They assume that declaratives denote propositions and that imperatives denote properties formed by abstracting over the subject; they further propose that a To-do List is a set of properties, in contrast to the common ground, which is a set of propositions. Given this, a basic principle answers the conventionalization question.

Force Linking Principle (Portner 2004, Zanuttini et al. 2011)
a. Given a root sentence S whose denotation [[S]] is a proposition, add [[S]] to the common ground.
b. Given a root sentence S whose denotation [[S]] is a property, add [[S]] to the addressee's To-do List.

We might add a third clause:

c. Given a root sentence S whose denotation [[S]] is a set of propositions, add [[S]] to the QUD stack.

Though the mood-force correlation is not part of the conventional grammar on this account, it is canonical in the following sense: The correlation noted in the Force Linking Principle is natural. The semantic types of the root sentences lend themselves naturally to the tasks they canonically serve. The *canonical part*, the rule government, lies in the rules of the game, and in the requirement that the moves in question have the right content to contribute to the scoreboard as such a move should.

Mandy Simons (p.c.) suggests that we think of the Force Linking Principles as *conventions of use* in the sense of Morgan (1978): norms associated with particular forms, for reasons based in

general pragmatic considerations. Because the norm is associated with a particular form, it need not be "calculated" on each occasion of use. But because a norm has this pragmatic foundation, it can also be over-ridden when other general pragmatic considerations or other linguistic conventions indicate a different intended interpretation. In any case, a convention of use isn't a *grammatical rule*.

4.3 Performatives

A central motivation for speech act theory was Austin's observations about the performatives, a special class of speech acts which are self-verifying, in the sense that their very performance accomplishes a conventionally associated perlocutionary act:

> *I now pronounce you man and wife.*
> *You're fired!*
> *I promise that I'll fix dinner next Sunday.*
> *You're hereby ordered to report to jury duty.*

These are all included in Searle's (1989) Declarations.

There have been many attempts over the years to provide accounts of the performatives which reduce them to some form of assertion (Lemmon 1962, Hedenius 1963, Bach & Harnish 1979, Ginet 1979, Bierwisch 1980, Leech 1983, among others). These are accounts in which, as Searle (1989) puts it "it is just a semantic fact about certain verbs that they have performative occurrences". In other words, their conventional semantic contents guarantee that when a speaker makes a felicitous assertion using one of these verbs as head in a first person present tense root declarative sentence, the result is automatically true. Most of these accounts, including the Planning Theory views discussed in §4.1, have not been entirely satisfactory in the terms established by Austinian Speech Act theory as developed by Searle.

Searle (1989) argues for the following desiderata for any theory of explicit performatives:[8]

(a) performative utterances are performances of the act named by the performative verb which is the head of the (declarative) sentence used;
(b) performative utterances are self-guaranteeing; as Jary (2007) puts it, explicit performatives' content gets added to the CG automatically, unlike assertions, which are conditioned on the acceptance of the addressee.
(c) performative utterances achieve (a) and (b) in virtue of their literal meaning, which, in turn, ought to be based on a uniform lexical meaning of the verb across performative and reportative uses.

Moreover, Searle takes the performatives to involve in their essential meaning a speaker's intention corresponding to their sincerity condition. E.g., in the case of a promise:

[8] There are others (see Searle 1989, pp.539-40), but they are more easily addressed. These are the most problematic for the assertoric accounts.

> "in what does [a statement's] being a promise consist? Given that the preparatory and other conditions are satisfied, its being a promise consists in its being intended as a promise." [p.545]

If this were so, then (he claims):

(1) no assertoric account could meet (a) – (c), because it could not guarantee that the speaker has the requisite intention:

> "Such an assertion [as proposed in those accounts] does indeed commit the speaker to the existence of the intention, but the commitment to having the intention doesn't guarantee the actual presence of the intention." Searle (1989:546)

And:

(2) "If the occurrence of the performative effect depends on the hearer drawing an inference, then such sentences could not be self-verifying, for the hearer may well fail to draw the inference." (p.2)

But one recent assertoric theory of performatives, due to Condoravdi & Lauer (2011), seems to me to successfully address these issues: They give detailed formal semantic analyses of three performatives, *claim*, *promise* and *order*. For each, in keeping with desideratum (c), they begin by giving the lexical semantics for the predicate *based on its meaning in non-performative uses*, with third person subjects and non-present tense. On the basis of this analysis, they then explain how its use with first person subject and present tense satisfies desideratum (b), whereby in making the assertion the speaker makes the assertion true, leading to its automatic addition to the Common Ground. With respect to criterion (a), they agree that this should obtain, but argue that Searle has misunderstood what it is to be a promise or a claim or an order. That is, for example, a promise does *not* require that the speaker intends to keep his promise, but only that he is committed to doing so. Thus, they call into question Searle's Sincerity Condition on promises, discussed above.

Here is how one might understand their rebuttal (though this is not how they present it): Consider Jason Stanley's (2013) complaint about Fox News' misrepresentation of their commitment to presenting a Fair and Balanced view of public affairs: Trust is crucial to the maintenance of the social compact underlying the language game. Fair enough. It's trust that leads us to assume that a speaker is observing Gricean Quality, hence to be inclined to add the propositions they assert to the CG. Without this trust, we cannot achieve the goals of the game, to make progress in joint understanding. Similarly, it's trust that leads us to *expect* that someone who has made an explicit promise intends to keep it. But though *dis*trust can generally lead us to refuse to add an assertion to the CG, it doesn't prevent us from adding a promise when it's explicitly made, even if we think the speaker does not intend to keep his promise. This is because **the act of asserting that one promises just *is what a promise is*:** It's about incurring an explicit commitment to act, and it is that commitment which is all that is required for it to *be* a promise. Thus, in this case the assertion is self-verifying, so is added to the CG despite one's lack of confidence in the speaker's intentions to meet her commitments.

This account is consistent with the non-performative use of *promise*. Consider:

(19) He promised to come, but none of us believed he really meant it.

This sounds true and non-contradictory. If the fellow didn't come, we can say he broke his promise, though nobody expected he'd come.

Hence Condoravdi & Lauer "circumvent [Searle's first problem for assertoric accounts] by requiring only that the speaker be committed to having a belief or an intention (in our terms, an effective preference). On our view, **what matters for speech acts, or at least the truth conditions of performative verbs, is public facts**" [CR's emphasis]. I concur.

About the automatic update of the Common Ground, they argue that no hearer inferences are required to derive the self-verifying nature of performatives. In the language game sketched in §2, the fact that an assertion happened always automatically enters the CG, even if that assertion is not accepted. But with the performatives, by virtue of the meanings of the predicates in question and certain social facts, **the utterance is a witness for its own truth**, i.e. "the content of the assertion is entailed by the fact that the assertion happened, and so this content will become part of the common ground automatically." In my terms, the meaning of the performative predicate plus the way the game works together guarantee an update that entails the truth of the performative utterance.

More generally, successful, felicitous speech acts don't guarantee speaker *intentions*, only speaker *public commitments*.

Consider the counterpart for the common ground: As Stalnaker has argued, the common ground isn't really a joint doxastic state—the set of propositions that the interlocutors believe and reflexively believe that each other believe—but instead is the set of propositions that they jointly *purport to believe*. Thereby they incur certain commitments, and these have consequences in the language game, and beyond. But we all know that it is likely that the common ground CG is nonveridical in certain respects; someone may have lied, and certainly some of our beliefs are false. Similarly, for any interlocutor *i*, the representation of their goals on the scoreboard in G_i isn't the set of goals that agent *intends to (attempt to) achieve*, but instead those that it is publicly apparent that she is committed to achieving. The same can be said for the QUD: These represent the discourse goals that the interlocutors are committed to addressing. And here again, there are consequences in the language game for such commitments: One can be called to task for not sticking to the subject, and whatever one *does* say will be taken to be relevant to the QUD unless it is explicitly noted that it is an aside (i.e. irrelevant from the point of view of that question). But that's all that's required for the game to work as it does. To require sincere intentions is more than is needed or is attested by our colloquial understanding of verbs like *assert* or *ask* or *order*, as in the example (19) above.

Condoravdi & Lauer give a similar account of the other performatives they consider, and I think it generalizes quite nicely. Also, they note that their account, unlike the speech act story can explain the interaction of performative predicates with the progressive, which cannot be used performatively even in the present tense. If performatives are accomplishments, then the progressive form doesn't commit the speaker to the existence of an accomplishment (progressive doesn't entail the culmination of the described event), and only the accomplishment entails the commitment.

One more point: Searle claims that Performatives have both directions of fit, word-to-world and world-to-word. The performatives considered in this section have word-to-world fit, on the present account, by virtue of the fact that they are assertions. But as we saw in §4.1, a performative Promise also has world-to-word fit, in the same way that a deontic assertion *you must do P* can put the addressee under an obligation to act if the interlocutors are in an appropriate power relationship. In the case of the Promise, this world-to-word fit is a pragmatic consequence of (a) the meaning of the predicate in question, (b) the nature of the act denoted by that predicate, and (c) the commitments incurred in making an assertion, since the utterance itself is witness to the truth of the proposition expressed. In virtue of the fact that meaning of the assertion is clear, and that the goals on the scoreboard are introduced whenever they are publicly evident, then this goal is automatically added to those of the speaker. Similar explanations can be given for other performatives that have deontic consequences. Hence, the only uptake required for such speech acts is that they be understood. Any other uptake—a belief in their justice or truth, commitments to achieving goals—is not necessary for the agent to incur the relevant commitments.

5. Conclusion

A central focus of classical speech act theory is on the kinds of speech acts made with particular verbal predicates, with special attention to those typically used to make performative speech acts with first person subjects. Instead, on the present view, the core conventional distinction that bears on speech act type is clausal mood—declarative, interrogative, imperative, each determining the semantic type of the clause in which it occurs: a proposition, set of propositions or property, respectively. In turn, these semantic types are canonically correlated with particular speech act types—assertion, question, direction—though unlike semantic type, the correlation between mood and illocutionary force is pragmatic and hence can be contextually over-ridden. I.e., on the account of speech acts proposed above, though sentences are conventionally marked with clausal mood, what carries illocutionary force is not a sentence, but an utterance—Bar-Hillel's (1971) ordered pair of a constituent and a context of utterance.

The resulting account is simple and non-stipulative. The formal characterization of the notion of context of utterance as the scoreboard in a language game is independently motivated, and has been shown over the past twenty years to support illuminating accounts of a wide variety of pragmatic phenomena.[9] Against this theoretical backdrop, the three basic illocutionary forces constitute the three basic types of moves in a language game, resulting in three basic types of update of the scoreboard. Making a move using one of these basic types is a speech act. All other speech act types discussed in the literature, including those in Searle's taxonomy in §1, are more specific instances of those three types, their differences pragmatically implicated in particular contexts of use. The bridge between conventional content and illocutionary force is a pragmatic, default correlation, Portner's (2004) Force Linking Principle, between the grammatical mood of the utterance and illocutionary force.

[9] See the evolving bibliography at http://www.ling.ohio-state.edu/~croberts/QUDbib/ for a sample of this work.

The proposed semantics of grammatical mood, determining the semantic type of the utterance in which it occurs, is empirically well-founded, arguably yielding the correct semantic types for embedded as well as matrix clauses. This is illustrated in §3 with a natural, elegant account of the semantics of imperative clauses which has these empirically superior features:

- An imperative clause is not propositional, so we avoid Kaufmann's incorrect predictions in this regard. Its semantic type is that of a property.
- Imperative mood presupposes a Kratzerian modal base *f* and ordering source *g*, which permit us to capture the deontic, conditional character of imperatives but without modal operators *per se*. This permits us to retain what's best in Kaufmann, including the wide variety of flavors found in directions issued with imperative clauses.
- The imperative interacts pragmatically, both in the essential effect of its default use as a move in the game (as a direction) and in the way that *f, g* are selected, with the independently motivated, complexly structured record of the interlocutors' evident goals G, in a fashion that's natural given the nature of the language game and discourse scoreboard. Thereby:
  - The account avoids Portner's problems with the too-simple To-Do list(s).
  - It affords a natural implementation of Portner's (2007) characterization of imperative-deontic relations. This turns out to be a specific instance of the way that indirect speech acts are generated, through regular pragmatic effects rooted in plan recognition and update in a context structured by intentions. So again, no stipulation is required.

A similar account of the illocutionary force of interrogatives as questions is given in Roberts (1996), and all this is consistent with Stalnaker's (1979) account of declaratives as Assertions.

This account is not only empirically superior, it is explanatory, offering a functionally motivated explanation for the linguistic universals noted in §1: these three basic speech act types are universal because they serve as the three main types of moves in a language game. Each directly contributes to one of the three central repositories of information on the discourse scoreboard: assertions to the common ground (CG), imperatives to the interlocutors' evidence goals and plans (G), and questions to the distinguished set of goals that drive and constrain felicitous utterances and their interpretations (QUD). Since we assume that the nature of the game, as reflected in this model of the context of utterance, is not language-specific but reflects what it is to engage in discourse, it is not surprising that (a) the three clause types occur across languages, universally correlated with the semantic types argued for here, and (b) the pragmatic correlation between semantic type and illocutionary force obtains across languages as well.

Moreover, this view of illocutionary force affords an account of how contextual factors evident to the interlocutors (as reflected in the scoreboard, and particular in CG, G and QUD) regularly determine both

- what counts as a felicitous speech act in a given context, thereby constraining the speaker's production in that context, and
- how the particular illocutionary force of an utterance is to be understood, thereby guiding interpretation.

It does this by implementing insights into speech act determination and indirect speech acts from the earlier work in Planning Theory and Charlow (2011). We can derive the kinds of speech acts which the Austin/Searle theory takes to be basic, without stipulation or the implication that there is some finite list of speech act types. Not only do speech acts contribute to the scoreboard, but we understand what someone means by an utterance —what speech act they intend to make—as

a function of the interlocutors' evident information (CG), goals and plans (G) and the question under discussion (QUD). In an imperative or modal assertion or a question, CG contributes directly to the determination of the modal base *f*, while G contributes to the ordering source *g*; and in any case the resulting interpretation must be relevant to the resolution of the QUD. Speech acts needn't be direct or fully explicit, so long as the context makes clear only one contribution that would satisfy all the constraints contextually imposed. But this particular implementation of the pragmatic derivation of illocutionary force addresses Morgan's (1990) problem for the earlier work, by offering a bridge between the conventional truth conditional content of an utterance and the kinds of illocutionary force an utterance can be taken to have—the default Force Linking Principle of Portner (2004).

Finally, the proposed theory is consistent with a natural account of performatives as self-verifying assertions, meeting Searle's (1989) objections to such accounts.

I don't mean to suggest that Searle's speech act types are without interest. He isn't taxonomizing verb types, of course, but types of act (which can be performed with these verbs). Thus, the resulting taxonomy may be of interest in its own right in a theory of action, and especially in a theory of status functions and their role in social institutions (as he discussed in Searle 2013). However, it arguably isn't motivated by linguistic pragmatics *per se*. With an adequate theory of the latter, I have argued, we can explain how particular "performative" verbs, in their basic meaning, give rise to acts of the relevant sorts when used with a first person subject and present tense. More generally, we can derive Searle's speech act types from the simpler taxonomy I propose, in combination with the conventional content of the utterances involved, the nature of the acts in question, and contextual information in the discourses in which they are used.

Most of the present account of speech acts, as acknowledged above, derives from prior work on the linguistic semantics of clause types, and on the role of plans and intention recognition in the determination of the speech act intended by an utterance in a given context. The contribution here is to use the discourse framework in §2 and a particular account of the semantics of imperatives in §3 to make clear how multiple factors simultaneously come to bear on speech act recognition: conventional content, including clausal mood and the corresponding semantic type, background information and presuppositions (CG), the interlocutors' evident goals and plans (G) and the question under discussion (QUD). On this model, interpretation is like solving a simultaneous equation in multiple variables. The scoreboard tracks the contextual factors that enter in, and in turn its update *in all those dimensions* is the target of speech acts. All these factors are independently motivated by other pragmatic phenomena, but they play exactly the role we need for speech act retrieval.

Bibliography:

Allen, James & C. Raymond Perrault (1980) Analyzing intention in utterances. *Artificial Intelligence* 15:143-178.

Asher, Nicholas & Alex Lascarides (1994) Intentions and information in discourse. In *Proceedings of the 32nd Annual Meeting of the Association of Computational Linguistics (ACL94)*, pp. 34-41. Las Cruces, New Mexico.
Asher, Nicholas & Alex Lascarides (2001) Indirect speech acts. *Synthese* 128(1-2):183-228.
Asher, Nicholas & Alex Lascarides (2003) *Logics of Conversation*. Cambridge University Press.
Bach, K. & R. M. Harnish (1979) *Linguistic communication and speech acts*. Cambridge, MA: MIT Press.
Bar-Hillel, Yehoshua (1971) *Pragmatics of Natural Language*. Dordrecht: Reidel.
Bierwisch, Manfred (1980) Semantic structure and illocutionary force. In John R. Searle, Ferenc Kiefer & Manfred Bierwisch (eds.) *Speech Act Theory and Pragmatics*. Dordrecht, Reidel, 1-35.
Bratman, Michael E. (1987) *Intentions, Plans, and Practical Reason*. Harvard University Press, Cambridge, MA.
Carlson, Lauri (1982) *Dialogue games: an approach to discourse analysis* (Synthese Language Library 17). Dordrecht, The Netherlands: D. Reidel.
Charlow, Nathan (2010) Restricting and embedding imperatives. In Maria Aloni, Harald Bastiaanse, Tikitu de Jager & Katrin Schulz (eds.) *Logic, language and meaning*, volume 6042 of Lecture Notes in Computer Science, 223–233. Berlin/Heidelberg: Springer.
Charlow, Nathan (2011) *Practical language: Its meaning and use*. Ph.D.Dissertation, University of Michigan.
Ciardelli, Ivano, Jeroen Groenendijk & Floris Roelofsen (2013) Inquisitive semantics: A new notion of meaning. *Language and Linguistics Compass* 7(9):459-476. DOI: 10.111/lnc3.12037.
Cohen, P. R. & H. J. Levesque (1990) Rational interaction as the basis for communication. In P. Cohen, J. Morgan, and M. Pollack. eds. *Intentions in Communication*. MIT Press, Cambridge, MA.
Cohen, Philip R. & C. Raymond Perrault (1979) Elements of a plan-based theory of speech acts. *Cognitive Science* 3(3). 177–212.doi:10.1207/s15516709cog0303_1.
Condoravdi, Cleo & Sven Lauer (2011) Performative verbs and performative acts. In Reich et al. (eds.) Proceedings of Sinn & Bedeutung 15:1-15. Universaar – Saarland University Press: Saarbrücken, Germany.
Condoravdi, Cleo & Sven Lauer (2012) Imperatives: Meaning and illocutionary force. In Christopher Piñon (ed.) *Empirical Issues in Syntax and Semantics* 9:37-58.
Cross, Charles & Floris Roelofsen (2015) Questions. *Stanford Encyclopedia of Philosophy*.
Gärtner, Hans-Martin (2015) Root infinitivals and modal particles. An interim report. Ms., HAS-RIL, Budapest.
Ginet, Carl (1979) Performativity. Linguistics and Philosophy 3(2):245–265.
Ginzburg, Jonathan (1996) Dynamics and the semantics of dialogue. In Jerry Seligman & Dag Westerståhl (eds.), *Logic, language and computation*, vol. 1 (CSLI Lecture Notes 58), chap. 15, 221–237. Stanford, CA: Center for the Study of Language and Information (CSLI), Stanford University.
Ginzburg, Jonathan (2012) *The Interactive Stance*. Oxford University Press.
Green, Mitchel (2015) Speech acts. *Stanford Encyclopedia of Philosophy*: http://plato.stanford.edu/archives/sum2015/entries/speech-acts/.
Grice, H.P. (1967) Logic and Conversation, William James Lectures, Harvard. Published in Donald Davidson and Gilbert Harman (eds.), 1976, *The Logic of Grammar*. Reprinted in Grice (1989) *Studies in the Way of Words*, Cambridge, MA: Harvard University Press.

Groenendijk, Jeroen & Floris Roelofsen (2009) Inquisitive semantics and pragmatics. Stanford workshop on Language, Communication and Rational Agfency, Mary 30-31, 2009. Available online at www.illc.uva.nl/inquisitivesemantics/papers/publications.

Han, Chung-hye (2000) *The Structure and Interpretation of Imperatives, Mood and Force in Universal Grammar*. NY: Garland.

Hausser, Roland R. (1980) Surface compositionality and the semantics of mood. In J.R. Searle, F. Kiefer & M. Bierwisch (eds.) *Speech Act Theory and Pragmatics*, Reidel, Dordrecht, 71-95.

Hedonius, I. (1963) Performatives. *Theoria* 29:115-136.

Heim, Irene. (1992). Presupposition projection and the semantics of attitude verbs. *Journal of Semantics* 9:183–221.

Hintikka, Jaako (1969) *Models for Modalities*. Dordrecht: Reidel.

Huntley, M. (1984). The semantics of English imperatives. *Linguistics and Philosophy* 7:103-134.

Jary, Mark (2007) Are explicit performatives assertions? *Linguistics and Philosophy* 30(2):207-234.

Kaufmann, Magdalena (2012) *Interpreting Imperatives*. Springer, Studies in Linguistics and Philosophy 88. Revised version of Schwager 2006, below.

Kaufmann, Magdalena (2014) Embedded imperatives across languages: Too rare to expect, too frequent to ban. Handout from a talk, Department of Linguistics, SUNY Stony Brook.

Kaufmann, Magnalena (2014) Fine-tuning natural language imperatives: between logic and linguistics. Slides of a talk at DEON, Ghent, July 2014.

Kaufmann, Magdalena & Claudia Poschmann (2013) Embedded imperatives and echo-questions. *Language* 89.3:619-637.

Kratzer, Antelika (1977) What 'must' and 'can' must and can mean. *Linguistics and Philosophy* 1:337-355.

Kratzer, Angelika (1981) The notional category of modality. In H. J. Eikmeyer & H. Rieser (eds.), *Words, Worlds and Contexts* (pp. 38--74). Berlin: de Gruyter.

Leech, Geoffrey N. (1983) *Principles of Pragmatics*, vol. 30 of the Longman linguistics library. London and New York: Longman.

Lemmon, J.E. (1962) Sentences variable by their use. *Analysis* 12:86-89.

Lewis, David (1979) Scorekeeping in a language game. In R. Baüerle, U. Egli, and A. von Stechow (eds.) *Semantics from a Different Point of View*. Springer, Berlin.

Mann, W. C. & S. A. Thompson (1987) Rhetorical Structure Theory: Description and construction of text structures. In G. Kempen (ed.) *Natural Language Generation: New Results in Artificial Intelligence, Psychology and Linguistics*. Martinus Nijhoff, Dordrecht, 279-300.

Mann, W. C. & S. A. Thompson (1987) Rhetorical Structure Theory: A theory of text organization. In L. Polanyi (ed.) *Discourse Structure*.Norwood, NJ: Ablex.

Mastop, Rosja (2005) *What can you do: Imperative mood in semantic theory*. Ph.D. dissertation, University of Amsterdam.

Morgan, J. L. (1978) Two types of convention in indirect speech acts. In Cole, Peter (ed.), *Syntax and Semantics Volume 9: Pragmatics*. New York: Academic Press, pp. 261–280.

Morgan, Jerry (1990) Comments on Jones and on Perrault. In In P. Cohen, J. Morgan, and M. Pollack (eds.) *Intentions in Communication*. MIT Press, Cambridge, MA, 187-194.

Pak, Miok, Paul Portner & Raffaella Zanuttini (2008). Agreement in promissive, imperative, and exhortative clauses. *Korean Linguistics* 14:157–175.

Pak, Miok, Paul Portner & Raffaella Zanuttini (2015) Embedded imperatives in English and Korean. Class notes, LSA Summer Institute, University of Chicago, July 2015.
Pendlebury, M. (1986). Against the power of force: Reflections on the meaning of mood. *Mind*, 95(379):361-372.
Perrault, C. Raymond (1990) An application of default logic to speech act theory. In P. Cohen, J. Morgan, and M. Pollack (eds.) *Intentions in Communication*. MIT Press, Cambridge, MA
Perrault, C. Raymond & James Allen (1980) A plan-based analysis of indirect speech acts. *American Journal of Computational Linguistics* 6(3-4):167-182.
Portner, Paul (2004) The semantics of imperatives within a theory of clause types. In K.Watanabe & R. Young (eds.) *Proceedings of SALT 14*. CLC Publications. http://semanticsarchive.net/Archive/mJlZGQ4N/.
Portner, Paul (2007) Imperatives and modals. *Natural Language Semantics* 15:351-383.
Portner, Paul (to appear) Imperatives. To appear in Maria Aloni & Robert van Rooij (eds.) *Cambridge Handbook of Formal Semantics*. Cambridge University Press.
Portner, Paul (forthcoming) *Mood*. For Oxford University Press Surveys in Semantics and Pragmatics. Chapter 3: Sentence Mood.
Roberts, Craige (1989) Modal Subordination and Pronominal Anaphora in Discourse. *Linguistics and Philosophy* 12.6:683-721. Reprinted in Javier Gutierrez-Rexach (ed.) *Semantics: Critical concepts in linguistics*, Routledge, 2003.
Roberts, Craige (1996/2012) Information Structure: Toward an integrated theory of formal pragmatics. In Jae Hak Yoon and Andreas Kathol (eds.) *OSUWPL Volume 49: Papers in Semantics*, 1996. The Ohio State University Department of Linguistics. Published, with a new afterword, in *Semantics and Pragmatics* 5.7:1-19. http://dx.doi.org/10.3765/sp.5.7.
Roberts, Craige (2004) Discourse context in dynamic interpretation. In Laurence Horn and Gregory Ward (eds.) *Handbook of Contemporary Pragmatic Theory*, Blackwell, pp.197-220.
Roberts, Craige (2012b) Information Structure: Afterword, with bibliography of related work. *Semantics and Pragmatics* 5.7:1-19. http://dx.doi.org/10.3765/sp.5.7.
Roberts, Craige (2015) Plans and imperatives: A semantics and pragmatics for imperative mood. Ms., The Ohio State University and the Institute for Advanced Studies of Central European University, Budapest.
Sadock, Jerrold M. & Arnold M. Zwicky (1985) Speech act distinctions in syntax. In Timothy Shopin Ed.) *Language Typology and Syntactic Description I: Clause Structure*. Cambridge University Press, ppl.155-96.
Schwager, Magdalena (2006) *Interpreting imperatives*. Ph.D. Dissertation, University of Frankfurt. See her subsequent work under the name *Kaufmann*, above.
Searle, John R. (1969) *Speech Acts: An essay in the philosophy of language*. Cambridge University Press
Searle, John R. (1975) A taxonomy of illocutionary acts. In K. Gunderson (ed.) *Language, mind, and knowledge*. Minneapolis: University of Minnesota Press.
Searle, John R. (1989) How performatives work. *Linguistics and Philosophy* 12(5). 535–558.
Searle, John R. (2013) Speech act theory after fifty years. Talk at the New York Philosophy of Language Workshop, Columbia University, September, 2013
Searle, John R. & Daniel Vanderveken (1985) *Foundations of Illocutionary Logic*. Cambridge University Press, Cambridge.
Sperber, Dan, & Deirdre Wilson (1986) *Relevance: Communication and cognition*. Harvard University Press, Cambridge, MA.

Stalnaker, Robert (1979) Assertion. In Peter Cole (ed.) *Syntax and Semantics* 9.
Stanley, Jason (2013) Counterbalancing and communication in politics and the media. Talk at the New York Philosophy of Language Workshop, Columbia University, September, 2013.
Starr, William B. (2013) A Preference Semantics for Imperatives. Ms. Cornell University, URL http://williamstarr.net/research/a_preference_semantics_for_imperatives.pdf.
Stegovec, Adrian & Magdalena Kaufmann (2015) Slovenian Imperatives: You can't always embed what you want! In *Proceedings of Sinn und Bedeutung* 19: 620-637.
Thomason, Richmond (1990) Accommodation, meaning, and implicature: Interdisciplinary foundations for pragmatics. In P. Cohen, J. Morgan, and M. Pollack (eds.) *Intentions in Communication*. MIT Press, Cambridge, MA, 325-364.
Thomason, Richmond H., Matthew Stone & David DeVault (2006) Enlightened Update: A computational architecture for presupposition and other pragmatic phenomena. Ms., University of Michigan, Rutgers University, University of Edinburgh. Talk at the NSF-sponsored Workshop on Accommodation, OSU.
van Kuppevelt, Jan (1996) Inferring from topics: Implicatures as topic-dependent inferences. *Linguistics and Philosophy* 19(4). 393–443. http://dx.doi.org/10.1007/BF00630897.
Wilson, Deirdre & Dan Sperber (1988) Mood and the analysis of non-declarative sentences. In J. Dancy, J. Moravcsik & C. Taylor (eds.) *Human agency: Language, duty and value*. Stanford U. Press: 77-101. Reprinted in A. Kasher (ed.) (1998) *Pragmatics: Critical concepts*, Volume II. Routledge, London: 262-289.
Zanuttini, Rafaella, Miok Pak & Paul Portner (2012) A syntactic analysis of interpretive restrictions on imperative, promissive and exhortative subjects. *Natural Language and Linguistic Theory* 30.4:1231-1274.