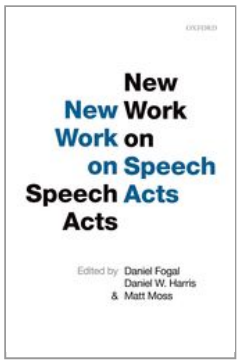

New Work on Speech Acts
Daniel Fogal, Daniel W. Harris, and Matt Moss

Print publication date: 2018
Print ISBN-13: 9780198738831
Published to Oxford Scholarship Online: August 2018
DOI: 10.1093/oso/9780198738831.001.0001

Dynamic Pragmatics, Static Semantics

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DOI:10.1093/oso/9780198738831.003.0014

Abstract and Keywords

Semantic-pragmatic theorizing took a dynamic turn in the 1970s, but at the time the dynamics remained in the pragmatics and retained a more or less traditional static conception of compositional semantics. Later dynamic semantics built rules for context change into the semantics. This essay argues that the phenomena that motivated the dynamic turn are best explained at the pragmatic level, retaining a notion of propositonal content, and a distinction between content and force. It is argued that while a partial notion of propositional content can be recovered from a dynamic conception of semantic value as context-change potential, some information that plays an important role in the broader explanation of discourse is lost. It is then argued that it is important to retain a notion of speech act force, separated from content.

Keywords: dynamic semantics, pragmatics, discourse context, speech act, propositional content

14.1 Introduction

Semantic-pragmatic theorizing took a dynamic turn in the 1970s, motivated by the recognition of at least three problems, or problem areas: first the problem of presupposition projection, second, puzzles about conditionals, which later generalized to problems about epistemic and deontic modals; third, problems about anaphora, including cross-sentential anaphora. At first the strategy was to explain discourse dynamics in pragmatic terms, retaining a more or less traditional static conception of compositional semantics. Later, in the 1980s and 90s, several versions of dynamic semantic theories were developed that built the dynamic processes into the compositional semantics. My aim in this paper is to clarify the contrast between the two approaches and to consider the costs and

benefits of each. The dynamic semantic theories are more elegant and parsimonious in some respects, but I will argue that the phenomena that motivate the dynamic turn are best explained at the pragmatic level. All agree that there is considerable interaction between compositional rules and the dynamics of discourse, but I think we get a clearer view of this interaction if we represent the structure of discourse in a way that is independent of the linguistic mechanisms by which the purposes of the practice of discourse are realized, and if we retain the traditional distinction between the content of a speech act and the force with which it is expressed.[1]

By a "more or less traditional static conception of semantics," I mean a conception that treats semantics as a theory of the truth-conditional content of sentences, and of the compositional rules that determine those contents as a function of the meanings of their constituents. The conception is only "more or less traditional" since it allows for a semantics for context-dependent expressions such as tenses, demonstratives and personal pronouns. So David Kaplan's logic and semantics for demonstratives, and the formal semantic theory that Richard Montague called "Pragmatics" are more or **(p.385)** less traditional in this sense. While these theories allow for context-sensitivity, they abstract away from any substantive account of context, representing it by a sequence of parameters that are somehow determined by the situation in which an utterance takes place, but saying nothing about the features of the situation that determine what values those parameters take.[2]

My plan is this: in section 14.2 I will sketch the outlines of the pragmatic story developed in the 1970s, at least my version of it. In section 14.3 I will sketch a contrasting framework that builds the dynamic process into the semantics. There are a number of different dynamic semantic theories (Discourse representation theory, dynamic predicate logic, update semantics, for example), but I will focus on Irene Heim's file change semantics,[3] highlighting the central contrasts between this approach and the more traditional one. In section 14.4, I will focus on the notion of propositional content—*what is said* in a speech act, arguing that the partial notion of content that is recoverable from the dynamic semantic theory leaves out something important. Then in section 14.5, I will consider the notion of speech act force, arguing that it is useful to retain a notion of force that is abstracted from content.

14.2 Dynamic pragmatics

A notion of *context* plays a central role in both the dynamic pragmatic and dynamic semantic stories. A context, in the sense that is relevant to both approaches, is an information state represented by a set of possibilities. The intuitive idea is that the possibilities in the *context set* are all and only those that are compatible with the presumed common background knowledge shared by the participants in a conversation. This body of information plays two roles: first, it provides a resource that speakers may exploit in determining how to say what

they want to say; second, it identifies the possibilities between which the participants aim to distinguish in their speech, and so provides a resource for the explanation of speech acts in terms of the way the act is intended to change the context. To play these two roles, the information state will include two different kinds of information: first, information about the participants in the conversation—about what they know about each other and their common environment; second, information about the subject matter of their discourse. The relevant information state is generally assumed to have an iterative structure, following the pattern of the notion of common knowledge (what a and b **(p.386)** both know, what they both know that they both know, what they both know that they both know … etc.)

The context set is constantly changing as the conversational parties interact, and as their environment changes. The dynamic theories, both pragmatic and semantics, are theories about systematic ways that contexts change in response to what happens as a discourse proceeds. One can distinguish two kinds of changes: (1) changes in response to manifest events in the environment (including facts about what is said), and (2) changes in response to the conventional rules of a language, constitutive rules that specify how a speech act is intended to change the context. The pragmatic story[4] explains the second kind of context change by giving a general illocutionary-force rule. The rule for the speech act of *assertion* (the only rule specified in this early work) says that a successful assertion changes the context by adding the information that is the content of the assertion to the common ground (the context set). Assertions may be rejected, but in the simple idealized "language game" of assertion, the presumption is that an assertion changes the context in this way unless it is rejected.

The pragmatic story retains the traditional distinction between content and force. The idea is that the semantics, with its compositional rules, delivers a proposition, and then a speech act force rule specifies, in general, for an arbitrary proposition, how that proposition alters the context.[5]

But the semantics may specify the propositional content as a function of context (the same context which the speech act aims to change). So the process gives rise to a two-way interaction between context and content: first the context constrains content (as determined by the indexical semantics); second, the content of an assertion in turn changes the context (as determined by the speech act force rule), and this changed context will constrain the content of subsequent speech acts. This interaction may give rise to systematic relations between the contents of successive speech acts, relations that are not explained (with a traditional static semantics) on the semantic level. In particular there might be an inference that seems to be valid, and valid in virtue of the abstract form of the premise and conclusion, but where the force of the inference derives from the context-content interaction. The example that I used to illustrate this

pattern[6] was an inference involving indicative conditionals, the or-to-if inference, **(p.387)** which is an argument of the following form: either φ or ψ, therefore, if not-φ, then ψ. (Either the butler or the gardener did it; therefore, if the butler didn't, the gardener did.) The or-to-if argument presents a prima facie puzzle, since on the one hand it seems intuitively to be a valid argument. But on the other hand, it is semantically valid (in a truth-conditional semantics) only if the material conditional analysis is correct. But that analysis seems to have intuitively unacceptable consequences. The solution was to argue that while the argument is not *semantically* valid, its force could be explained by the interaction of context and content in something like the following way: first, the premise of the argument is appropriate only in a context in which it is an open question whether the butler did it, and also whether the gardener did it. Second, the content of the premise rules out all other options, so the posterior context, after the premise is accepted, includes possibilities in which the butler did it, possibilities in which the gardener did it, but only possibilities of one of these two kinds. Third, it was assumed that the semantic rule for the conditional was this: "if φ, then ψ" is true (in a given possible world) if and only if ψ is true in a selected possible world in which φ is true, but which otherwise differs minimally, if at all, from the given world. The relevant notion of minimal difference is determined by context. Fourth, it was assumed that for the *indicative* (as contrasted with the so-called *subjunctive*) conditional, it is a constraint on the interpretation of this context-dependent parameter (the notion of minimal difference) that possibilities compatible with the context have priority over those that are not.[7] It follows from these four assumptions that the conclusion of the argument (interpreted in its context) will be true if and only if the premise of the argument was appropriate, and accepted. But it does not follow that the proposition expressed by the premise semantically entails the proposition expressed by the conclusion.

This proposed account of the indicative conditional was idealized and schematic, but the main point was just to illustrate the way in which context-content interaction might help to explain some apparently logical (and so apparently semantic) relations between sentences in a discourse sequence.

A second example of the strategy of giving a pragmatic explanation for an apparently semantic phenomenon was the pragmatic response to the problem of presupposition projection. This problem, much discussed in the early 1970s in the linguistics literature on presupposition, was the problem of explaining the relation between the presuppositions required by speech acts performed with complex sentences in terms of the presuppositions required by the speech acts performed with their component parts. The problem was originally seen as a problem of compositional semantics, and it was taken for granted that presupposition was itself a semantic property of sentences: a sentence *presupposes* a proposition if and only if the sentence has a truth-value, true or false, only if the proposition presupposed is true. So it seemed that what is

required, for example, to generate the presuppositions of a sentence of the form (φ and ψ) **(p.388)** was to generalize the two-valued truth table for conjunction to a three-valued rule that specified the truth-value of the conjunctive sentence (true, false or neither) as a function of the semantic values of the conjuncts. But the data suggested that the rule would have to be quite complex. It seemed to be non-truth-functional (depending on the meanings, and not just the truth-values of the constituent sentences), and also non-symmetric, unlike the two-valued rule for conjunction. The pragmatic response to the problem was, first, to redescribe the phenomenon to be explained in pragmatic terms, and second, to explain the redescribed data in terms of conversational dynamics.[8] Presupposition was understood, not as a semantic property of a sentence, but as a feature of context: what the speaker presupposes is what she takes to be entailed by the background information taken for granted by participants in the conversation. For a *sentence* to presuppose that **P** is just for its use to be appropriate only in a context in which the speaker takes for granted that **P**. It was taken to be a datum, for example, that "France is a kingdom, and the king of France is bald" does *not* presuppose that France has a unique king, even though the second conjunct does presuppose it. We redescribe this datum in pragmatic terms as follows: a speaker does not need to take it as given that France has a unique king in order to speak appropriately in saying, "France is a kingdom, and the king of France is bald," but she would need to take this as given in order to speak appropriately in saying, "The king of France is bald." Now the explanation is obvious: the presupposition required by the second conjunct need not be taken for granted for the appropriateness of the conjunctive statement since it is introduced by the first conjunct.

Both of these examples of pragmatic explanation of facts about discourse dynamics are oversimplified, and they are old news. The point of reviewing them is first to bring out the pattern of interaction between context and content, and second to set up the contrast between this kind of explanation and the kind of theory that builds the pattern into the semantics.

14.3 Dynamic semantics

A dynamic *semantic* story proposes to streamline the process of context change. Instead of context affecting content, that in turn affects context, we have a theory that goes directly from context to context, eliminating the middleman. The semantic value of a sentence is not a proposition, determined as a function of context, but instead a context-change potential: a function from contexts to contexts. In the traditional theory, the compositional rules specify how the proposition expressed by the complex sentence is a function of the propositions and other semantic values expressed by the parts; in the dynamic semantics, the compositional rules will specify the context-change potential of the complex sentence as a function of the context-change potentials of the parts.

To account for presupposition, the file-change semantic theory assumed that sentences would be *admissible* only in certain contexts, and part of the specification of the context-change potential of a sentence was a specification of the class of contexts in **(p.389)** which the sentence could be used. So for example it will be an admissibility condition for the sentence, “Hazel’s husband is a good cook” that the prior context be one that entailed that Hazel is married. That is, it must be true in all the possible worlds in the prior context set that Hazel is married. Then the context change rule for the sentence would specify, for any prior context meeting this condition, the posterior context that would result from an assertive utterance of the sentence. A sentence φ presupposes a proposition **P** if and only if all of the admissible contexts for φ entail the proposition **P**.

The dynamic semantic move then can use the same pattern of explanation for presupposition projection phenomena that the pragmatic account gave, but incorporate the pattern into the compositional semantics. So, for example, the compositional rule for a sentence of the form ‘φ and ψ’ says roughly the following: an assertive utterance of (φ and ψ) changes the context by first applying the context-change rule for φ to the given prior context, and then applying the context-change rule for ψ to the posterior context that results from the first change. So even though “Hazel’s husband is a good cook” presupposes that Hazel is married, the conjunctive sentence, “Hazel is married and Hazel’s husband is a good cook” does not have this presupposition, since the intermediate context (the one that results from the application of the context-change rule for the first conjunct) will satisfy the admissibility conditions for the second conjunct, even if the prior context for the whole sentence does not.

The old story about presupposition projection (before the introduction of the notion of pragmatic presupposition) was that the problem was a problem for compositional semantics in a language that allowed for truth-value gaps. The dynamic pragmatic account argued that while truth-value gaps may play a role in explaining why certain pragmatic presuppositions are required, the phenomena to be explained should be described in terms of conversational dynamics, and not compositional semantics. The dynamic *semantic* story is a kind of synthesis that builds conversational dynamics into the compositional semantics.

14.4 Propositional content

It is an elegant theory, but the streamlining of the dynamic process loses some distinctions that are made by the pragmatic account. As noted above, the pragmatic story retains the traditional distinction between *content* and *speech act force*, while the dynamic semantic theory builds speech act force into the semantic values of the constituents of sentences, and into the compositional rules by which the constituents are combined. I will consider in section 14.5 some reasons for retaining a general notion of speech act force, abstracted from

content, but first I want to look at what the dynamic semantic theory has to say about truth-conditional content. In the streamlined theory, sentences do not express propositions at all, instead specifying the way that an arbitrary information state that meets certain admissibility conditions would be altered by a use of the sentence. But one can, as Irene Heim has emphasized, recover a notion of truth-conditional content from the prior context and the context-change rule in the following way: for any possible world *w* that is a member of a context set *c*, if *w* is in the posterior context set that results from applying the context-change rule for a sentence S to context *c*, then we can say that sentence S (as used in that context) is true in world *w*. On the other hand, if *w* is one of the worlds **(p.390)** *eliminated* by the context-change rule, then the sentence is false in *w* in that context. On the traditional picture, the assertive utterance of the sentence changes the context as it does *because* the semantic rules for the sentence give it certain truth-conditions. Heim's proposal is that the explanation should go in the opposite direction. The semantic rules for the sentence define its CCP (context-change potential), and we then can "give an—albeit partial—definition of truth of a sentence in terms of the CCP of that sentence."[9] The definition is only partial because it "says nothing about the truth of S when *c* [the context] is false." That is, it gives truth-conditions for S (when used in context *c*) only for possible worlds compatible with that context. This means that if *anything* false is being presupposed, or taken for granted by the speaker in a particular context in which S is used to say something, then S, as used in that context, receives no truth-value in the actual world. Heim expresses the opinion that this partial definition is good enough, but I want to look more closely at the distinctions that are lost by restricting the truth-conditions of sentences in this way.

On either the dynamic pragmatic or the dynamic semantic story, a context for a particular token utterance is a specific information state defined by what the speaker in that particular situation is presuming to be common background knowledge. If the speech act performed in the context is appropriate, then the context will be an a*dmissible* context for the sentence used, but what is presupposed by the speaker will always be more than what she is *required* to presuppose in order for the sentence used to meet the admissibility conditions—more than what is presupposed in *all* admissible contexts. Even in a perfectly well behaved discourse, speakers may be presupposing *some* things that are in fact false. Any such case will be one where the dynamic semantic truth-conditions dictate that what is said is neither true nor false in the *actual* world.

Consider an old example that Saul Kripke used to make a point about reference:

> Two people see Smith in the distance and mistake him for Jones. They have a brief colloquy: "What is Jones doing?" "Raking the leaves."

In the context of this banal exchange, it is presupposed by both parties that the person they see, who is in fact Smith, is Jones. So in all the possible worlds compatible with the context—all the worlds in the prior context set—it is Jones who they see in the yard, and the second speaker's statement changes the context by eliminating the possibilities in which Jones is doing something other than raking leaves. That is indeed what happens in this talk exchange, but we may also be interested in the question, was what the second speaker said true or false? The speaker said that Jones was raking leaves, and (assuming that Jones was not at the time raking leaves somewhere else), it seems obvious that what he said was false. That is, while the statement was true in the nonactual possible worlds compatible with the posterior context, it was false in the actual world—the world in which the statement was made, which is a world that is outside of the context set. We might contrast Kripke's case where a proper name is used with a variation where the questioner uses a demonstrative pronoun: "What is he doing?" the first speaker asks, as they both are looking at Smith. "Raking leaves," the second **(p.391)** speaker answers. The speaker's prior presuppositions are the same as they are in the original case: they both mistakenly take for granted that the person they see is Jones. But in this case, the presupposition that it is Jones rather than Smith who they see, seems to be irrelevant to the determination of the referent, and to the determination of what is said. In this case, it seems that it was Smith rather than Jones who the second speaker said was raking leaves, since his answer to the question picks up the referent of the demonstrative pronoun.[10] The two contrasting exchanges change what is essentially the same context in exactly the same way, but there seems to be a contrast in what is said in the two cases—a contrast that is made only by considering the truth-value of what is said in possible situations outside of the context set. But by Heim's definition of truth-conditional content, what the second speaker said, in both the original example and the variant, is neither true nor false.

Now I think it is intuitively clear that there is a contrast between the truthconditional content of what is said in the two cases, and more generally clear that we routinely make judgments about the truth-values of statements in possible situations that are not compatible what is presumed to be common knowledge in the particular context in which the statement is made. But does it matter? One might argue that the semantic theorist's job is to explain what goes on in a discourse—the way it evolves in accordance with the rules governing the language. What matters for this purpose is not what is actually true, but what is true and false in the possible situations that are compatible with what the participants presuppose in the discourse. But I will argue that this is a mistake. Semantic theory should be part of a functional theory that aims to explain language as a device that serves certain purposes, including the exchange of information, rational deliberation, and debate. Success or failure in serving some of the functions of language will depend on whether what is said in a

discourse is actually true. More generally, truth-values of what is said in possible situations that are outside of the specific local context in which they are made make a difference to the broader situation in which statements are used and assessed. If I understand and accept what is said in a context, then normally I acquire a belief that I can detach from the particular context in which it is acquired, leaving behind all of the parochial presumptions about the particular situation that define that context, presumptions that may have played a role in determining what was said, but do not become part of the content of what was said. Even if I later learn that some of what we were taking for granted about the situation of our discourse was false, I may continue to believe in the truth of something said in that discourse. Furthermore, we often retrospectively assess a speech act performed in an earlier context. I may concede that you were right, even though I was skeptical at the time. Judging that a statement made in a different context was true or false requires judging that the same statement that changed the earlier context in a particular way affects the present context, constituted by different possible situations. And by "same statement" we don't mean "sentence with the same context- **(p.392)** change potential," since sentences with the same context-change potential may say different things in different contexts, and the same thing might be said, on different occasions, with sentences with a different context-change potential.

The difference between the meaning of a sentence and the statement that the sentence is used to make is a familiar one in the more orthodox truth-conditional semantics for a language with tenses, demonstrative, and personal pronouns. David Kaplan's semantics for demonstratives, for example, distinguishes the *character* of a sentence from its *content*.[11] When you and I use the sentence, "I was born in New Jersey," to make a statement, we say different things, but we use the same sentence, with the same character, to say them. Context-change potential is like character: the context-change potential of "I was born in New Jersey," when said by me, is the same as the context-change potential of your statement made with the same sentence. But there is no object distinguished by the dynamic theory corresponding to the intuitive notion of *what is said*.

Suppose I say, "It has just started snowing," and you say the next day, in a context in which the earlier conversation is remembered and salient, "It had then just started snowing." Your 'then' is anaphoric to the time of utterance of my earlier statement; what you say echoes what I said; what I said is true if and only if what you said is true. Recognizing this relation between our two statements, which used different sentences with different context-change potentials to change different contexts, requires crosscontext comparison—cross-context calibration of content. These broader relations between what is said in different context are important for theorizing about speech behavior broadly construed.

One obvious place where cross-context comparison of content is important for the interpretation of speech is the interpretation of sentences or clauses embedded in speech and attitude ascriptions. We may talk explicitly in one context about what was said in another, or about what attitudes are held by a person who is not necessarily a participant in the context in which the attitude is attributed. The interpretation of embedded sentences or clauses will involve derived, subordinate, or "local" contexts, with their own presuppositions about what the subject believed or was presupposing. One can see these derived contexts as devices for calibrating what is going on in different contexts, and getting clear about embedding requires getting clear about the background problem of connecting different specific speech contexts, and the cognitive situations, at different times, of the parties to them.

The straightforward extension of a dynamic semantics to such constructions will treat the semantic value of a that-clause occurring in an attitude ascription as a context change potential. Malte Willer makes this proposal explicit: "We may … understand attitude verbs as expressing relations between individuals and CCPs." He argues that this proposal is not very different from a traditional view: "To say '*S* believes that φ' is to claim that *S* stands in the belief relation to the meaning of φ, that is, [on the traditional view] a proposition or—if one prefers the dynamic view—a CCP."[12] But the meaning of a sentence (on a static semantics for a language that allows for contextdependence) is not a proposition but something that determines a proposition as a **(p.393)** function of context. On either a static or a dynamic semantics, it should not be the meaning of a sentence that is the object of an attitude, or of an act of saying; it should be what that sentence is used to say in the relevant context. As I have noted, one of the things that is lost in the dynamic semantic streamlining of the pragmatic process of context change is the distinction between meaning ("character", in David Kaplan's terminology) and content, a distinction based on the contrast between two different roles that the facts play in determining the truth-value of a sentence, in context: first the facts determine *what is said* by a given use of a sentence; second the facts determine whether what is said is true or not.[13]

So we have two interconnected problems: first, dynamic semantics delivers only a partial proposition—a proposition that is defined only for the possible situations that are compatible with the presuppositions of the specific context in which the speech act takes place. Second, dynamic semantics does not distinguish the two roles that information plays in determining the truth-value of what is expressed in a speech act. I have argued that the restriction of truth-conditions to the possible worlds compatible with the context is a problem since we are, in many cases, interested in the truthvalue of what is said relative to a wider range of possible situations. But while in many cases we can detach a piece of information expressed in a context from the context in which it is expressed, there are also cases where the information communicated is more difficult to separate from the situation in which it is communicated, and the

means used to do it, and cases of this kind fit well with the dynamic semantic approach. I have used an example of John Perry's to illustrate the point:[14] the context is one in which it is presupposed that John and his interlocutor are looking out at the bow of a ship, most of which is blocked by a large building, and at the stern of a ship visible behind the other end of the building. The prior context is compatible with the possibility that there are two different ships, and also compatible with the possibility that the bow and stern are parts of the same ship. When John says, "*That* ship [pointing at the bow] is the same as *that* one [pointing at the stern]," he changes the context by excluding the first of these possibilities. If we think of the *information* communicated as an increment of information—the change from the prior to the posterior information state—then it is clear enough what information is conveyed. But if we look for a detachable item of information—a proposition that is independent of the particular circumstances in which John's identity claim was made—it is not so clear what was said. Suppose later John's interlocutor sees this ship out on the open sea, and says, pointing twice at it, "John told me that *that* ship is the same as *that* one." This report does not seem to be an accurate account of what John told her. She needs to tell a longer story about what the context was, but that story will not identify (in the later context) the proposition that was expressed.

Indicative conditionals and epistemic modals may (in some cases) also provide examples of what I have called "essentially contextual" statements. There are just **(p.394)** three possible suspects, the butler, the gardener, and the chauffeur. I have information that decisively excludes the chauffeur, so I say, "If the gardener didn't do it, the butler did." You have information that excludes the butler, so you say (in a different context), "If the gardener didn't do it, the chauffeur did." As later becomes clear to both of us, the gardener did it, but which of us was right about who did it if it wasn't the gardener? In this case, retrospective assessment seems inappropriate; the question "no longer arises" after we learn that the culprit was in fact the gardener. The dynamic semantic story, with the information identified with the increment, seems to get things right. But the dynamic *pragmatic* story, with its representation of propositional information as a function from possible worlds to truth-values, can accommodate partiality. The function with which a proposition expressed by a sentence in a given context is identified may be defined for wider or narrow domains of possibilities. It is a minimal condition for appropriate speech that one use a sentence that expresses a proposition that is defined *at least* for the possible situations compatible with the particular local context in which the sentence is used. In some cases, truth-values may be undefined beyond that, but in other cases it may be straightforward how to assess the truth-value of what is said relative to a much wider range of possible worlds. In a reasonable semantic framework, cross-context comparisons, retrospective assessment, and ascriptions of speech and thought should be possible, but not necessarily easy or

automatic. The combination of static semantics and pragmatic dynamics allows for this flexibility.

14.5 Speech act force

I have so far been focusing on the role of a notion of propositional content in the explanation of semantic/pragmatic phenomena. I will conclude with a brief look at the content–force distinction from the other side: at the role of a general notion of speech act force, abstracted from content.

On the pragmatic story, it is assumed, in general, that speech act force is to be explained in terms of the way that the expression of a proposition with that force changes the context. The speech act rules are thus what drive the dynamic process, to the extent that it is governed by rules of the language. In the development of this approach, just one speech act rule was given: a rule for assertion. The rule was highly idealized—best thought of as a rule for an artificial assertion game that provides a simplified model for the way one kind of discourse evolves. And "assertion" is probably not the best name for the kind of speech act modeled, since the rule applies to a wider range of speech acts, including some that do not necessarily satisfy the norms that serious assertions are supposed to satisfy. But all assertions, in the broad sense intended, are speech acts that aim to cut the context set down, which is to say to add information to what is presumed to be the common knowledge of the participants in the conversation. It was never assumed that this was the only speech act, or that others can be reduced to assertion, in this broad sense. Some speech acts will raise questions, rather than answering them, and as has recently been emphasized in the discussion of epistemic modals, a speaker may aim to expand rather than contract the context set: to subtract from what is presumed to be common ground, rather than to add to it. The dynamic semantic strategy for representing the idea that *might* **(p.395)** statements affect contexts in this way is to build a rule for the expansion of the context set into the context-change potential for the modal word. Willer puts the idea this way: "my suggestion is that *might*-statements … are designed to change possibilities that are merely compatible with the agent's evidence into 'live possibilities'—possibilities that are compatible with the agent's evidence, and that the agent takes seriously in inquiry."[15] His formal implementation of this suggestion represents a context, not as a single set of possible worlds, but as an overlapping set Σ of sets of possible worlds. If a possible world *w* is a subset of *some* member of Σ, then it is not excluded from the context, but it is a "live possibility", one taken seriously in the context, only if it is a member of *every* set in Σ. So the context-change rule will change the context not by eliminating possible worlds from a context set, but by eliminating sets of possible worlds from a set Σ that provides a richer representation of a context.[16]

This rule is not, on the face of it, a rule for expanding, rather than contracting a context set, but if we think of the context set as the intersection of all the sets in Σ (that is, as the set of serious possibilities in the prior context), then by eliminating sets from Σ, we expand the set that is the intersection of the revised set of sets (the set of serious possibilities in the posterior context).

An alternative more constrained way of implementing the context-change rule, using more familiar semantic resources, is to think of a context as a set of nested spheres of possible worlds, or equivalently as a set of worlds plus an ordering source. The inner sphere, or the highest ranking possible worlds, form the basic context set, and the others provide a procedure for expanding the set as a function of a proposition that is compatible with the whole set of worlds, but incompatible with the inner sphere, or the set of highest ranking worlds.[17]

It is good to ask, in seeking a semantic analysis of the epistemic *might*, how a *might* statement changes the context, but I think it is also possible and useful to isolate a distinctive *content* for the modal statement, and to explain why its use has the context-change potential that it has in terms of both a distinctive kind of force and a distinctive content. A simple model for the kind of explanation I have in mind (a model I have used as an analogy for an account of epistemic modals) is provided by a simple language game of commands and permissions designed by David Lewis. Let me sketch Lewis's game, and then make the analogy between the deontic modals in the game and epistemic *might* and *must*.[18]

Lewis's game has a master who has the authority to issue commands, and to give permission, to a slave who is obliged to do what the master says. There are two deontic **(p.396)** modal operators, '!' and '¡' (pronounce 'fiat' and 'taif '): '!φ' says that the slave is obliged to bring it about that φ, and '¡φ' says that the slave is permitted to bring it about that φ. These deontic sentences are straightforwardly true or false at any point in the game, with their truth-values depending on what the master has commanded or permitted up to that point. So they have a distinctive deontic *content*: someone other than the master can make ordinary assertions with these sentences. (The game has a third player, a kibitzer who may comment on the state of play, or remind the slave or the master what the slave is required or permitted to do.) But when the master utters a deontic sentence, it has a distinctive illocutionary *force* in virtue of her authority. It is a rule of the game that when the master issues a command, the "sphere of permissibility" that determines what is required and permitted adjusts in the minimal way required to make the statement true.

In this game, both deontic content and a distinctive kind of illocutionary force play a role in explaining the effect of the master's commands and permission statements, and the content is truth-conditional content. What distinguishes the force of a command from the force of an assertion is that the content of the command is *prospective*: the deontic sentence is interpreted relative to the

posterior context, rather than the prior context. In the case of an assertion, the content is first determined, relative to the *prior* context, and then the assertion is understood as a proposal to change the context by adding this content to the information in the common ground. With a command, the proposal is to change the context (by adjusting the sphere of permissibility) so that the proposition expressed by the deontic sentence is true in the context as adjusted. The prospective force rule introduces a potential circularity, since the content that changes the context is determined relative to the context that results from the change. To put it in dynamic semantic terms, if f is the CCP for a command and c is the prior context, then f(c) must be a fixed point: a c' such that f(c') = c'. To get the uniqueness that the rule requires, we need to say that the context change is the *minimal* change that achieves a fixed point. For commands, it is clear enough what the minimal change required is: when the master says '!φ', this eliminates from the sphere of permissibility all the worlds in which φ is false. It is less clear what possibilities should be *added* to the sphere of permissibility when the master issues a permission, for example saying '¡φ' in a prior context in which bringing it about that φ was forbidden. There is no obvious minimal change, given the simple structure provided by the deontic framework, that make it the case that the slave is permitted to bring it about that φ. (This is the "problem about permission" that Lewis raises for his game.) So some additional structure needs to be added in order to have the resources to state a determinate force rule for permissions. For example if the sphere of permissibility was the smallest sphere in a set of nested spheres of the kind alluded to above, that might provide what we need.

Epistemic *might* statements, according the analysis I have suggested,[19] are analogous to the permission statements in Lewis's game. The *content* of a statement of the form "it might be that φ" is as given in a standard modal semantics: the statement is true (in world x, in a given context c) if the prejacent, φ, is true in **(p.397)** some possible world in a set of worlds determined by the context. In simple cases, the relevant set of worlds will be, simply the context set itself. But the force rule for the epistemic modals proposes to interpret them relative to the *posterior* context. The *might* statement is, in effect, a proposal to adjust the context to ensure that the prejacent is true in some possible world in the posterior context set. This account, because of the "fixed-point" rule, faces a problem exactly analogous to Lewis's problem about permission, and the solution is similar: we need a structure to provide "backup" contextual possibilities, the kind of structure suggested above in the context of dynamic semantics.

In Lewis's artificial game, one player has authority: only the master can issue commands and give permission, and there is no provision for the rejection of these speech acts. With epistemic modals (and also with a more realistic account of deontic discourse), no one has this kind of absolute authority. *Might* statements, like assertions, can be rejected, and can be a subject of negotiation.

You say that the keys that we are looking for might be in the car (to use a simple and familiar example), but I reply that, no, I remember having them after coming into the house, so they can't be still in the car. You were proposing to add to the context, or to make salient, keys-in-the-car possibilities. I reject your proposal, suggesting instead that we are in a position to rule out those possibilities. I am not suggesting that we *were* in a position to exclude those possibilities in our prior joint epistemic situation, but that (based on my knowledge) we now should adjust the context to exclude them: to make the *might* statement false in the posterior context. Neither of us has authority here. We are negotiating about how the context set, which represents the possibilities that are the live options for us, given our joint epistemic situation, should evolve. In the example of the car keys, my rejection of your *might* statement will normally settle the matter, but in other cases, disagreement may persist. We are considering, early in the 2016 presidential campaign, whether Donald Trump might win the Republican nomination. "No way," I say (along with most reasonable people at the time). "We can exclude that possibility." But while you are not prepared to say, at that point, that he *will* get the nomination, you insist that he *might*. We are, you think, not yet in a position to rule that possibility out. But I am not moved to concede that this might happen, I continue to contend that we have sufficient reason to conclude that it won't. I give you my reasons for thinking this surely won't happen, and you reply with reasons why my considerations are not sufficient.

On the kind of account I am suggesting, the context-change potential of a *might*-statement (in the case where it is accepted by the addressees) is exactly as it is in a dynamic semantic account such as Willer's. But I think it is useful, particularly in understanding the disagreement cases, to separate content from force in the explanation for why the statement changes the context in this way. When we are negotiating about how our context should change, we are carrying out that negotiation in a context, and in the context of that negotiation, it is common ground neither that Trump might win the nomination, nor that it is not the case that he might. To properly represent the context of our disagreement, we need possible situations in which it is true that he might win, and contrasting possibilities in which this is false. These are possibilities that the *content* of the *might*-statement distinguishes between, in the context of our negotiation. **(p. 398)**

As things developed, it turned out that you were right: we would not have been correct to rule out that possibility. But suppose things had gone differently, with Trump fading after the early primaries, and in the end losing out to Jeb Bush. That of course would not show that you were wrong—you only said that he *might* win. But depending on how things went, it could become clear, in a retrospective context, that I was right—that we were in a position, at the earlier time, to rule out the possibility, and that your skepticism about my reasons was unwarranted.

Or alternatively, it could become clear that *you* were right—that even though my claim was true, my reasons were not sufficient, at the time, to know that it was.

There is also a third way that the retrospective assessment could go. Epistemic modal statements are fragile, and the account that gives them propositional content is not committed to the claim that there is always a fact of the matter about whether they are actually true. The distinctions we make between the possibilities that define the common ground at a given point in a debate, deliberation, or exchange of information are the distinctions we need in order to account for what we agree and disagree about in that situation. Some disagreements are practical disagreements about how (given its purposes and our epistemic situations at that point) the context should evolve, and the distinctions between possibilities that represent such practical disagreements may be more fine-grained than the distinctions between the possibilities that are decided by the facts. But the distinction between more robust propositions, defined for a wide range of possible situations beyond those that are compatible with the immediate local context, and more fragile propositions, about which one may say later, the question of whether they are actually true or false does not arise, is a distinction that cannot be made in advance. A static truth-conditional semantics, combined with a systematic pragmatic account of the dynamics of context change can account for the phenomena that motivate dynamic semantics, and also give us the flexibility we need to account for the role of discourse in our cognitive lives.[20,21]

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Notes:

([1]) I develop and defend the general view in more detail in Stalnaker 2014. In this paper I will not discuss problems concerning anaphora, but I address some of them in Chapter 5 of Stalnaker 1999. On this issue, see also K. Lewis 2014, which argues for a pragmatic treatment.

([2]) I will say more below about the distinction between content and speech act force, but at this point I should note that most developments of the traditional static conception of semantics, including the theories of Montague and Kaplan, restricted themselves to a semantics for declarative sentences, and did not have much to say about uses of language to do things other than say how things are. But a semantic theory might be “more or less traditional” in the sense I intend even if it provided for wider uses of language, for example to ask questions, to make requests or to issue commands, as well as to make statements. On one traditional view, imperatives have the same kind of *content* as declarative sentences; the difference between assertions and commands is explained in terms of the force with which the content is expressed. Questions must have a different kind of content, but they are taken, in a traditional semantics for questions, to have, as their content, sets of propositions (the possible answers to the question).

([3]) Heim 1982.

([4]) See the papers reprinted in the first section of Stalnaker 1999 for the way I understood and developed the pragmatic dynamic story in the 1970s.

([5]) The traditional distinction between content and force is compatible with a wide range of different accounts of just what speech act force is, and how it is marked in a language. In my account of assertion, the idea was to explain speech act force in terms of the way that a speech act is intended by the speaker

to change the context. On the simple and highly idealized model of assertion that I offered, the intention is to add the content to the context set—the set of possible worlds representing the shared information, and that is the effect of the assertion if it is not rejected by one of the other participants. 'Assertion' is probably too narrow a term for speech acts with this force, since it has a connotation of seriousness not shared by all declarative speech acts with this aim.

The grammatical differences between declarative, interrogative, and imperative sentences certainly play a role in determining the force of a speech act, but it is not obvious that they are definitive. The commanding officer statement, 'you must return to base by noon tomorrow' seems as much a command as the imperative, 'return to base by noon tomorrow', and, 'you will be back in town by the weekend?' (with the question mark indicating a rising intonation), seems as much a question as, 'will you be back in town by the weekend?'

([6]) See chapter 3 of Stalnaker 1999, first published in 1975.

([7]) The fourth assumption, which specifies a constraint on indicative, but not subjunctive conditionals, is motivated by the following independently motivated thesis: the distinctive grammatical features—tense, aspect, and mood—that characterize the subjunctive conditionals are interpreted as markers that presuppositions are being suspended for the interpretation of the conditional, and the presumption is that without these markers, the presuppositions are maintained under the supposition.

([8]) See chapter 2 of Stalnaker 1999 (first published 1974) and Karttunen 1974.

([9]) Heim 1988, 400.

([10]) At least this seems to me to be the right account of what is said with the demonstrative, but intuitions about the case may differ. The referent of the demonstrative is the person intended by the speaker, but in this case the speaker had two intentions that he mistakenly presupposed to come to the same thing: (to refer to the person they were seeing, and to refer to Jones). My judgment is that it is the first of these intentions that determines the referent.

([11]) Kaplan 1989.

([12]) Willer 2013, 62–3.

([13]) It must be conceded that Kaplan himself at one point suggested that the *cognitive value* of a statement (which is presumably the belief expressed by the speaker in making the statement) was the character of the sentence used to make the statement. (See Kaplan 1989, 530.) But I don't think this suggestion withstands scrutiny.

([14]) The original example is in Perry 1977. I discuss in in Stalnaker 2008, chapter 4.

([15]) Willer 2013, 50.

([16]) Willer's intuitive gloss on the meaning of this set is that it is something like a vague context set, where vagueness is given a supervaluationist representation. A world *w* is compatible with the context if it is a member of every set in Σ, and incompatible with the context if excluded by every set in Σ. If *w* is a member of some members of Σ and not of others, then it is indeterminate whether it is compatible with the context. In this case, *w* is not ruled out, but also not a salient possibility that is taken seriously.

([17]) So *might*-φ will expand the context set by adding the set of worlds determined by applying the context-change rule for the prejacent, φ to the "context" determined by the smallest subset compatible with φ.

([18]) See D. Lewis 1975 for his account of the game. See Stalnaker 2014, chapter 6 for a development of the analogy with epistemic modals.

([19]) Stalnaker 2014, ch. 6.