

Conditionals and prediction

Time, knowledge
and causation in
conditional constructions

BARBARA DANCYGIER

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Conditionals and Prediction

Time, Knowledge, and Causation in Conditional Constructions

This book offers a new and in-depth analysis of English conditional sentences. In a wide-ranging discussion, Dancygier classifies conditional constructions according to time-reference and modality. She shows how the basic meaning parameters of conditionality, such as causation and logical sequence, correlate to formal parameters of the linguistic constructions which are used to express them.

Dancygier suggests that the function of prediction is central to the definition of conditionality, and that conditional sentences display certain formal features – verb forms, typical clause order, or intonation, each of which correlates to aspects of interpretation such as the type of reasoning involved, the role of causality, the use of contextual information, or the speaker's knowledge.

Although the analysis is based primarily on English, it provides a theoretical framework that can be extended cross-linguistically to a broad range of grammatical phenomena. It will be essential reading for scholars and students concerned with the role of conditionals in English and many other languages.

Barbara Dancygier is a Visiting Scholar at the University of California, Berkeley.

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in Conditional Constructions*

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1 *Conditionals as a category*

1.1 **Constructions, conventional meaning, and the grammar of conditionals**

This book is an attempt to provide a description of a certain fragment of the grammar of English, namely, conditional sentences. By “conditional,” I will mean primarily the sentences so labeled by grammarians (rather than logicians): complex sentences, composed of the main clause (sometimes also called *q*, or the apodosis) and a subordinate clause (*p*, or the protasis). The subordinate clause is introduced by a conjunction, the least marked of English conditional conjunctions being *if*.

The analysis of conditionals attempted here will focus on providing an explanation of how aspects of conditional form give rise to a variety of meanings that conditional sentences express. That is, following the framework of cognitive linguistics, I will not treat the “grammar” as an autonomous formal description of linguistic structure, but rather as a representation of the speaker’s knowledge of linguistic convention. In the cognitive approach (advocated by Fillmore 1977, 1982, Lakoff and Johnson 1980, Langacker 1987, 1991a, 1991b, Lakoff 1987, Fillmore, Kay, and O’Connor 1988, Fillmore and Kay 1994, and many others), it is not possible to speak of grammar in isolation from meaning, on the contrary, grammar is meaningful and essentially symbolic in nature. In Langacker’s Cognitive Grammar, for example, lexicon, morphology, and syntax form “a continuum of symbolic units serving to structure conceptual content for expressive purposes” (Langacker 1987: 35). In Construction Grammar (Fillmore 1988, Fillmore, Kay, and O’Connor 1988, Fillmore and Kay 1994) each grammatical construction (whether lexical or syntactic) has a semantic and/or pragmatic interpretation as part of its description. In cognitive approaches every aspect of the structure and wording of a given sentence is thus considered to make a contribution to its overall interpretation in ways that are governed by linguistic convention. In this work I will attempt to describe how various aspects of the form of conditionals (including the choice of the

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conjunction, verb morphology, intonation, and clause order) map onto various aspects of their interpretation.

Conditionals pose a number of questions. Their logical structure has been a puzzle to philosophers since Aristotle. They have been used as a testing ground for some of the most influential theories in the philosophy of language, such as, for instance, the theory of implicature. Their linguistic form also seems to escape elegant, uniform descriptions and they have been an object of interest to research in a whole range of fields, including syntax, semantics, pragmatics, discourse, language acquisition, history of language, language universals, and language teaching. This is because conditionals have an imposing variety of forms, and a still more overwhelming variety of interpretations. They are an area of language use where the interaction of form, meaning, and context is exceptionally complex and fascinating.

Attempts at unified accounts of conditional meaning have generally been easy targets for criticism precisely because the misleadingly simple *if p, q* structure can receive a great number of widely divergent interpretations. I would like to mention just two examples from two disciplines which have tried to describe conditionals. On the one hand, we have seen a long history of speculation among philosophers about the criteria for the truth of a conditional. The earliest truth-conditional treatment which involves material implication ran into trouble not only because of well-publicized paradoxes, but most importantly, perhaps, because it could not offer an even remotely convincing account of all conditionals. For example, the so-called indicative ones clearly required a different treatment from the so-called subjunctive, or (as many logicians call them) counterfactual ones. Since material implication means that a conditional is false when *p* is true but *q* is false, we might be able to account for truth values in examples such as *If a bird has wings, it can fly*; but we can already see difficulties looming even in cases with future reference (not yet “true”), and worse ones for “counterfactuals” like *If pigs had wings, they could fly* (how do we even evaluate the truth of a conditional where *p* is presumed to be false?). The more recent and more broadly accepted possible worlds solution, at least in one of its versions (Lewis 1976, 1979), acknowledges that a different interpretation is required for indicative and subjunctive conditionals. One might note here that both of the philosophical (or logical) solutions focus on the truth-conditional meaning of conditional sentences, practically disregarding differences in linguistic form. Thus, the assumption seems to be that *if p, q* is indeed a sufficient formal description of a conditional – it just needs to be paired with a similarly transparent logical formula.

On the other hand, there exists an equally longstanding tradition of describing

conditionals in pedagogic grammars. These accounts (e.g. Eckersley and Eckersley 1960, Graver 1971, among hundreds of others) are centered around revealing formal differences among three major types of sentences, such as:

- (1) If I catch/caught/had caught the 11.30 train, I will get/would get/would have gotten to the meeting on time.

The description focuses on the verb forms used in such sentences, while the analysis of meaning is reduced to an absolute minimum: grammars usually mention that different forms may mark temporal reference and reality versus unreality of the condition. No examples of conditionals which have other, less regular verb forms are mentioned. In this model, then, the patterns of forms are the main concern, while other data or arrays of interpretation are not addressed.

Interestingly, a similar focus on the patterns of verb forms is characteristic of some approaches whose objective is primarily the description of syntax, viewed as an autonomous language system. For example, Hornstein (1990) proposes an account of well-formedness of sentences based on what he calls “the syntax of tense.” The account is based on Reichenbach’s theory of tense and offers a formalism which is designed to filter out ill-formed tense configurations. It makes specific claims about the grammatical tense configurations in conditionals, but treats them strictly in formal terms. That is, the principles proposed are meant to obtain regardless of the actual interpretation of sentences, and to account for possible and impossible pairings of verb forms in *p* and *q* clauses independently of the semantic, pragmatic, and contextual factors involved. Thus Hornstein’s analysis (which will be reported in some detail in chapter 2) attempts to reduce the study of conditionals to the study of their form.

The two approaches mentioned are thus trying to describe conditionals either from the point of view of their (logical) meanings or from the point of view of the forms used. It is doubtful, however, that we could obtain a unified analysis by combining the two descriptions into one. First of all, the impression is that different sets of sentences are in fact being interpreted. For example, logicians’ favorite examples, such as *If all men are mortal, then Socrates is mortal* are not considered relevant by the analysts interested in form (like Hornstein) because they fail to show the sort of tense-sequencing manifested in examples like (1). At the same time, some sentences that might be interesting from both a logical and a formal point of view will escape a linguistically revealing analysis because they are too bizarre to be readily contextualized (consider Goodman’s famous *If the match had been scratched, it would not have been dry*). It seems implausible that we can hope to obtain a unified and linguistically sound account of conditionals by combining approaches that have different goals in

analyzing at least partially complementary sets of data; on the other hand, single-framework accounts often fail either by disregarding part of the data and providing an account only of certain “central” cases, or by stretching a single analysis beyond credibility to account for the outlying areas of data.

“One solution fits all” kind of approaches are not common among linguists, because a linguistic analysis cannot fail to notice the significant differences between types of conditionals. Therefore we have seen many interesting proposals which address specific formally distinguished types, uses, or interpretations of conditional sentences (Haiman 1978, 1986, Haegeman and Wekker 1984, Funk 1985, Akatsuka 1986, Van der Auwera 1986, Fillenbaum 1986, König 1986, to mention but a few). There have also been attempts to offer broad guidelines as to what an analysis of conditionals should be sensitive to (Traugott 1985, Comrie 1986). Finally, purely descriptive grammars have become more open to data beyond the realm earlier ruled by language pedagogy – for example, Quirk, Greenbaum, Leech, and Svartvik (1985) use a much broader data base than the one reflected in the earlier 1972 edition of what appears to be the most comprehensive description of the English language. Consequently, we have now been given studies of conditionals which describe the variety of interpretations possible and recognize more of the complex ways in which conditional interpretations are arrived at.

However, in spite of their obvious merit and many fascinating insights into the nature of conditionality, these works have not created a unified analysis of the form and meaning of conditionals. In fact, it is still possible that many of the accounts offered do not even share a common view of what a “conditional” is. What has not emerged from all the impressive work and what is missing is a concept of a conditional as a category. So the crucial question now seems to be not so much “what differences are there?”, because much has been said about them, but rather, “what is it that these various conditionals share over and above the notorious *if p, q*?” If we can identify a common function of the *if p, q* formal structure, it will then be possible to examine the ways in which interpretations of actual conditionals are based on that common function, in combination with the meanings contributed by other formal elements (verb forms, clause order, etc.) and with contextual factors. Divergent meanings of conditionals need not be attributed to divergence in the meaning or function of *if p, q* itself.

In this approach it is not satisfactory to simply document the various meanings of conditionals. Instead, we have to show how they are motivated compositionally. So we have to find out which formal aspects of conditionals are relevant to which aspects of their interpretation. In other words, we need to discover the parameters of conditional meaning as well as the parameters of

conditional form and see how they correlate. It is through this type of analysis that we can discover what different conditionals share in their meaning and their form and thus reveal both the similarities and the differences. In order to do that, we need to not only identify those aspects of the form of conditional sentences that contribute to interpretation but also be able to specify the aspects of the interpretation each formal distinction is connected with. The description will thus cover the role of the component clauses and the conjunction, but will also look for other exponents of grammatically relevant meaning – morphological clues, function words, word and clause order, etc. It will also have to consider the significance of these formal exponents in context.

The grammatical description outlined above will thus view a conditional sentence as an example of a **construction**, as defined and exemplified in works such as Fillmore 1986, 1988, Fillmore, Kay, and O'Connor 1988, Fillmore 1990a, 1990b, Fillmore and Kay 1994, Goldberg 1994, Shibatani and Thompson 1996. A construction is described as a conventional pattern of linguistic structure which is paired with features of interpretation. A construction may thus be specified with respect to lexical, morphological, or syntactic properties, but it will also be provided with semantic and/or pragmatic features of interpretation. The structural part of a construction may involve an assembly of patterns found elsewhere in the language, but in any particular construction the selected patterns are associated with special meaning (semantic, pragmatic, or both). The way in which constructions receive their interpretations is not fully compositional, but the non-predictable semantic and pragmatic information is in fact associated with the formal features of the construction in a conventional way. Therefore, a description of a construction involves an explanation of how its lexical and structural features are mapped onto aspects of interpretation in ways that may be construction-specific.

I will argue that conditionals can be best described within such a framework. Their meaning is determined by a number of form–meaning correlations which are construction-specific. For example, their verb forms signal important aspects of the interpretation (such as the type of reasoning involved, or the speaker's and the hearer's knowledge which constitutes the background for the reasoning), but they do so in ways that affect the whole construction, rather than one clause, and which are specific to conditionals. Furthermore, conditionals in fact represent not a single construction but a set of related constructions, involving a central category (which has a further set of specific constructional characteristics) and other peripheral categories (which inherit only the general conditional construction, and derive the rest of their form from the grammar of English at large). The relatively rich constructional specification of the central

category of conditionals (constraints on verb forms and on pairings of verbs between *p* and *q*, clause order, etc.) is accompanied by a richer and more precise specification of the function of such conditionals; the meaning of the other formal components constrains and adds to the meaning of the general construction. For the types of conditionals with fewer formal specifications, there is a corresponding lack of constraint on the interpretation of the conditional relationship, whose nature will therefore be contextually determined. The constructional approach allows one to identify the formal correlates of conditionality and show how they are assembled to foster a particular type of interpretation.

The analysis of conditionals undertaken here will thus focus on describing what various aspects of conditional form conventionally contribute to interpretation. Conventional meaning includes aspects of interpretation which have been variously labeled as semantic or pragmatic by previous analysts, but which appear to be regularly attached to forms by linguistic convention. It attaches to forms on various levels of linguistic structure: morphemes, phrases, as well as whole constructions. Thus, the fact that the protasis of a conditional construction can be interpreted as a comment on the speech act in the apodosis (Van der Auwera 1986, Sweetser 1984, 1990), or on the choice of linguistic expression used there (Dancygier 1992), is a conventionally established option for interpretation, though it would not be included in the semantics of the construction under a narrowly truth-conditional definition of semantics. Nevertheless, as I will try to show, such interpretations arise in constructions which can be distinguished by some formal parameters, independently of being contextualized in some special way. To sum up, I will review features of conditional form, such as the use of lexical items (first of all, the conjunction *if*), morphology (the verb forms), and structure (clause order and intonation), from the point of view of what they conventionally contribute to the interpretation of conditional constructions. The aspects of interpretation motivated in this way may be semantic and/or pragmatic in nature, and they will affect the overall interpretation of the construction, rather than any of the particular expressions used.

Two recent works on conditionals address the issues raised above at least partially. Sweetser (1990) reveals a dimension of conditional interpretation which shows that conditionals are used as wholes to conduct specific types of reasoning. That is, they cannot be viewed as logically or syntactically governed combinations of randomly selected clauses. They are more accurately described as constructions in which the clauses are connected by specific types of relations. The nature of the relations, in turn, depends on the cognitive domain in which the assumptions expressed by *p* and *q* are considered: in the

content domain causal relations hold between the described events and situations, in the **epistemic** domain the construction links premises and conclusions, in the **speech act** domain *p*'s are used as comments on the speech acts performed in *q*'s. The use of conditionals in the three domains is exemplified in (2), (3), and (4):¹

- (2) If Mary goes, John will go.
(The event of Mary's going might bring about or enable the event of John's going.)
- (3) If John went to that party, (then) he was trying to infuriate Miriam.
(If I know that John went to the party, then I conclude that he went to infuriate Miriam.)
- (4) If I haven't already asked you to do so, please sign the guest book before you go.
(For the purposes of our interaction, let us consider that I make the following request if I didn't previously make it.)

Sweetser shows that ambiguity and semantic change of various other expressions (verbs of perception, modals, conjunctions) result from their being interpreted in these cognitive domains; what is more, the domains themselves are linked via a metaphor which motivates extensions of meaning from the physical into the mental and social domains. The approach not only reveals a fascinating dimension of the interpretation of conditionals, but also, or perhaps first of all, shows that different meanings can and should be analyzed as growing one out of the other. That is, in an analysis of a given ambiguous form it is not enough to say what the differences are, one also has to be able to express generalizations about the relationship between the meanings of polysemous or polyfunctional forms. Sweetser treats the general *if p, q* construction as having a general semantics, which is (in the sense of Horn [1985, 1989]) pragmatically ambiguous between content, epistemic, and speech-act level interpretations of the conditional relationship.

Another recent study of conditionals (Fillmore 1990a) analyzes the verb forms in conditional sentences as indicative of two aspects of their interpretation: temporal reference and **epistemic stance**. For example, the present tense form *catch* in (1) above is indicative of neutral epistemic stance towards a future event, while *caught* signals **negative epistemic stance** to it. The third form, *had caught*, is here used to express negative stance towards a past event. In this way, Fillmore accounts for a great variety of conditional sentences, showing important form–function correlations. Fillmore thus treats conditionals as constructions, in which the choice of a verb form in one clause is related

¹ All examples and glosses from Sweetser 1990.

to the choice made in the other in a way which is dictated by the overall interpretation of the construction in terms of time and epistemic background, rather than by any strict rules of well-formedness. For example, the choice of “present” and “future” verb forms in the clauses of *If I catch the 11.30 train, I will get to the meeting on time* are not made independently; but the dependence is not based on some formal constraint on sequence of verb forms. Rather, the pairing itself is connected constructionally to a given variety of conditional interpretations. In Fillmore’s analysis the verb forms are thus treated as contributing to the construction’s interpretation in a regular, conventionalized way. The analysis offered in this book has profited a great deal from the insights offered by Fillmore’s work, although the actual contributions of conditional verb forms are here described differently.

There is, however, yet another dimension of analysis to be considered. In a project which seeks to show how interpretations are arrived at, it is important to be able to account for inferential mechanisms which guide interlocutors in their choice of the best form of expression and in interpreting utterances against the contexts in which they are used. There is indeed a rich tradition of frameworks offering explanations of the nature of inferential aspects of interpretation, the origins of which go back to the Gricean theory of implicature. Grice’s (1975) original proposal of the interpretive maxims of Quantity, Quality, Relation, and Manner was a major advance in our understanding of the relation of form-specific conventional meaning to contextually conveyed meaning. In particular, it allowed linguists to see that there were regularities to be observed in contextual interpretation, as well as in “grammar” *per se*. Grice’s treatment of *or* remains a classic example of an analysis which successfully combines a general (or minimally specified) semantics with further interpretive constraints to account for unexpected variation in actual interpretation of a form; *or* does not *mean* exclusive *or*, but *implicates* the exclusive interpretation. (Why would a speaker say *or* if she meant that *and* was a possibility?)

The original seminal concept of implicature stimulated a growth of new ideas in at least two directions: on the one hand, many analyses focused on the possible ways of distinguishing propositional and non-propositional meaning, and on the other hand, attempts were made to revise or expand the set of maxims first proposed by Grice. For example, R. Lakoff (1973) proposes a special set of maxims of politeness (e.g. “Don’t impose,” “Give options,” “Make interlocutor feel good”), while other analysts formulate more general principles of inference, which often involve questioning the validity of particular Gricean maxims. In the latter area, particularly interesting proposals were

made by Horn (1984), who reduces the Gricean maxims to two principles: the Q principle (related to Maxim of Quantity), and the R principle (related to the Maxim of Relation) and shows how inferences based on these give rise to implicata.

An approach which revises the Gricean idea in perhaps the most interesting way is the theory of relevance (Sperber and Wilson 1986), which reduces the set of maxims to just one principle – the Principle of Relevance – and offers an explicit account of inferential processes involved in interpreting utterances. The relevance-theoretic approach claims that utterances come with a guarantee of their optimal relevance, which means that they present the message to the hearer in the way which ensures maximal communicative gain (in Sperber and Wilson's terms, maximal contextual effect) and at the same time minimizes the hearer's processing effort. Hearers are thus assumed to conduct their search for the most relevant interpretation by weighing what was said against what they already know, and (as is argued in Sperber and Wilson [1993]) inferential processes are involved at all levels of interpretation, including the possibility of inferential enrichment of logical form.

What the theory of relevance offers, then, is the most elaborate account of inferential aspects of interpretation, set against a special understanding of the nature and role of context. In most pragmatic theories to date the context is a given, and therefore an interpretation of an utterance is arrived at by eliminating the ambiguities which are incompatible with the context and supplying contextually derived information where the utterance is vague or indeterminate. In Sperber and Wilson's theory, the context is dynamically built in the process of arriving at the optimally relevant interpretation and does not have to be limited to the immediate location and history of the particular speech event. The context, therefore, is not only what the interlocutors have said in the exchange or the immediately surrounding situation, it is all the knowledge the participants bring to bear for the purposes of the interaction. As will be seen throughout this book, such a treatment of context helps to explain how more pragmatically complex relations between protases and apodoses are constructed and understood.

A proper understanding of inference and context is necessary in accounting for important aspects of conditional interpretations. However, there remains the question of the relationship between the aspects of interpretation arrived at via inference, and the rest of the meaning. In a number of theories, the theory of relevance included, it is assumed that pairing the truth-conditional meaning with what is inferred against the context is sufficient to explain the meaning of all utterances. In the constructional approach advocated by Fillmore and Kay,

however, important aspects of meaning of constructions are seen as conventionally associated with certain aspects of their form, in ways which are independent from the interaction of truth-conditional meaning and context. As was shown in Fillmore and Kay (1994), constructions may have a pragmatic force which does not arise from general strategies of inference and which is conventionally associated with the morphosyntactic properties of the construction. Work in Construction Grammar has focused on the aspects of meaning, “semantic” or “pragmatic,” which conventionally attach to a construction. This, however, does not rule out the possibility that interpreting a construction involves recovering both the conventional aspects of meaning and those arising via non-linguistically motivated inference. In fact, I will claim that conditionals are best accounted for if both aspects of their interpretation are treated as equally important. Therefore, I will rely on the constructional approach in looking for meaning correlates of aspects of conditional form, and on the inference-in-context approach (following workers in Relevance Theory) in accounting for contextually determined aspects of conditional interpretations.

To sum up, the description of conditionals to be proposed in this book will be based on several assumptions:

- that it is possible to offer a general and motivated account of the full range of conditional constructions;
- that the description must centrally address form–meaning correlations;
- that among the various uses of a construction some are more central while others more peripheral;
- that the peripheral uses of the construction bear some resemblance to the core;
- that the more central the use of the construction the greater the reliance on conventional meaning; and
- the more peripheral the use of the construction the greater the reliance on the (dynamically constructed) context.

1.2 **Basic parameters of conditionality**

It is necessary, in describing conditionals, to choose a set of descriptive parameters. In my choice, I have been particularly influenced by the work of Comrie (1986) and Fillmore (1990a). Comrie’s proposed set of parameters for the description of conditionals is richer, and therefore more useful, than more parsimonious delineations of conditionality. He accepts a material implication

account of conditionals, but also proposes a list of formal and interpretational parameters which provide guidelines for analyzing conditionals in any language. Among the proposed descriptive dimensions there are some which have to do with the form of a conditional construction (clause order, markers of the protasis and the apodosis), and those that relate to the interpretation (the type of link between *p* and *q*, hypotheticality, temporal reference). Also, as Comrie argues, the description has to address the question of the way in which various aspects of interpretation arise in the construction. For example, in Comrie's analysis some aspects of constructional meaning traditionally associated with the form of the conditional (like counterfactuality) are claimed to arise through implicature.

The description to be offered in this book will try to characterize conditional constructions in English along major parameters of form and interpretation, very much like the parameters proposed by Comrie. The sections below will give a brief description of the parameters chosen.

1.2.1 *The if p, (then) q frame: its aspects and varieties*

The first requirement of a more general analysis of conditionals is a definition of the category to be analyzed. For precisely what class of forms are we seeking a motivated treatment? In the first paragraph above I suggested that the broadest definition should see conditionals as complex sentences composed of two clauses: the main clause and the subordinate clause. The subordinate clause is also introduced with a conditional conjunction *if*. This definition seems to be most appropriate from the point of view of the task undertaken here: it provides a general specification of a broad formal class. *If p, q* covers a range including the most common conditional sentence types; it likewise shows a wide variety of interpretations, which have proven difficult for analysts to bring together. There are other constructions which have conditional meaning, but a different form – for example, coordinate constructions with imperatives, as in *Say one more word and I'll kill you*. These constructions have repeatedly been claimed to be (at least partly) derived from conditionals or to be conditionals in disguise (e.g. Lawler 1975, Bolinger 1977, Lakoff 1972a, Fraser 1969, 1971). They do undoubtedly have an interpretation which resembles that of many conditionals, but they will be treated here as independent constructions. There is, of course, an interesting question to consider: how is it possible for two different constructions to share an area of interpretation? I will touch upon the question in the last chapter and point out some features that certain conditionals share with coordinate imperative constructions, but the assumption throughout the book will be