'If' Strings in English
A New Syntactic and Semantic Analysis

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Unless otherwise acknowledged, the research carried out in this thesis is my own work.

[Signature]

Miguel A. de Castro
ॐ श्रीमहागणपतये नमः

Gaar tura rikab bat be maig ke,
Indoki an egin hit, yodem rikow
Namam zoal bebi etu.

Juktake, bu, biotzeg.
"Remembering the dog, I felt better. Surely the dog had come back because dogs like Mark and Mark had gone off with it. But where?

He might have climbed into the goods yard, or run back to the river, or fallen into one of the barges, and been carried away with the rubbish. I counted up to a million ifs and all the time I was shouting his name at the top of my lungs, knowing he couldn't hear me because of the trains."

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Abstract

Present Day English if is, on the one hand, a nonassertive (interrogative) marker; on the other, a 'conditional' marker. If suffers from semantic schizophrenia.

This thesis tries to lend support to the conjecture that if is always a nonassertive marker. If correct, we shall not only have a new semantic and syntactic analysis of 'conditional' Sentences but we shall also have cured if of its long-standing schizophrenia. The conjecture does seem to be justified both on systematic and historic grounds.

Coordinators describe special kinds of relations. Adverbial Subordinate Clauses describe special kinds of entities. Present Day English if does not describe a special kind of relation called 'conditional'. Nor do if Clauses describe a special kind of entities called 'conditions'. That is, if is not a Coordinator like and, or and but or an adverbial Subordinator like when and where. If structures describe any kind of entity in almost any kind of relation. What are traditionally called 'conditionals' are Sentences where the event or proposition described by the if Clause is in a causal or logical relation to another event or proposition. Most logical properties of 'conditionals' are properties of the relation, not of if.

So, what does if signal? If signals that the entity described by the Clause it heads is possible (as opposed to being actual). More exactly, the speaker, at the time of the utterance, believes that there is or may be someone who does not take the entity described by her/him to be actual. If is, then, a scope and a speech-act marker, like perhaps and not.
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Chapter 1

Introduction

This introduction has the following structure. First, we present our main conjecture on *if* structures and the plan of the thesis. Then, we compare our conjecture with some of the standard linguistic theories. The comparison proceeds from syntax to semantics. In the third place, we compare it with some standard logical theories. As before, we start out with syntax and then go to semantics. Then, we propose an alternative approach of *if* sentences.

The rest of the introduction is devoted to methodological matters. We explain what we mean by a model, a category, a feature, etc. Also, we give an idea of how we want conditional sentences to be modelled.

1.1 Why this Thesis?

My original problem was to study connexive logics. The motivation to accept connexive theses like ‘Aristotle’ or ‘Boethius’, it seemed to me, ran along strong consistency lines. But for all the noise logicians have made about them, they seemed to be pretty unimpressive. Then, I came across [GZ71], and their notion of ‘invited inference’. I was particularly interested in Negation of the Antecedent, a *frappant* case of fallacy used by a majority of speakers of English. But, was this not what I had been looking for? This did look like a strong connexive principle, with ultraconsistency lurking inside. The problem seemed to be that we have gone all the way to equivalence. Looking for a strong arrow we had defeated our purpose. Or had we?

Little by little, I realised that there was something wrong about the way Contraposition worked. We had to juggle a bit with tense correlation if we wanted to get things right when going back to English. The problem seemed to be that the tenses ordered the events quite independently of whether *if* was attached to one clause or

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1 Classical references are: [Ang62], [McC63], [McC66], [McC67b], [McC67a], and further back, [Nel30] and [Nel33].
the other. The idea came after examining sentences that described natural events connected causally, but I soon realised that the same point could be made with respect to logical structures, where time is not a relevant parameter. Here, there was an order between the propositions, if a logical one. Anyway, the conclusion I arrived at was that if was not the glue between the two clauses. Negation of the Antecedent, if valid, had nothing to do with if.

By this time, however, the central question in my mind was: if if is not a connective (as logicians maintain), what is it? I started working on the linguistic literature. I had independent reasons to do so. I had been trained as a logician, and these people (particularly the philosophically oriented ones) balk at the (alleged) fact that her/his logic is better than anyone else's when it comes to formalise English, if not 'Natural Language'. But they do not usually bother supporting their claim. I wanted to do something in this area. In any case, I discovered that some linguists (e.g., [Gei85]) take a different view at conditionals than logicians do. In fact, when I was at school I always studied conditionals as a kind of adverbial subordinate clauses. For the grammarians who wrote my books if was obviously not a coordinator. Did perhaps conditional clauses refer to 'conditions'? I was not convinced.

Meanwhile, the problem concerning Negation of the Antecedent had been given a provisional solution. Negation of the Antecedent was an informationally valuable rule of inference in cases where the only possibilities were 'yes' and 'no'. After all, this seemed to be the way if statements normally worked in many programming languages, viz. if the if clause is true, an action is taken; else, by default, that action is not taken (in fact, no action is taken). This suggested a connexion between conditionals and yes-no questions.

The rest is easy to imagine. If is indeed an interrogative marker (as well as a conditional one) in English and other languages, and conditional markers in several unrelated languages had been traced back to nonassertive and possibility markers. This threw me directly into the main topics developed in the thesis. First of all, we had to show that if was a nonassertive marker. This way, we would be able to explain the fact that yes-no indirect interrogative clauses and conditionals share a common marker. This proved difficult. One of the problems was that I had lots of strings that did not seem to be either interrogatives or conditionals. I started building up a classification of if strings. The second, related problem was that I needed neat syntactic and semantic labels for my classification. At the time, I was interested in computational grammars (categorial in particular). Apart from its value as implemented grammars, it seemed obvious to me that categories (both syntactic and semantic) were better labels than the incredibly messy array of traditional labels. So, I developed a systematic terminology, both syntactic and semantic, to deal with if structures. I realised that only by taking a very broad perspective and, at the same
time, by being systematic could I achieve firm and interesting results.

Slowly, chapter 2, parts of chapter 3 and chapter 5 were built up. Chapter 3 was partly due to my training as a philosophical logician – where the topic is popular –, and especially to my reading Dudman’s papers on tense and conditionals. Finally, chapter 4 was the link between linguistics and logic.

As it turned out, the thesis was far too long and prolix, and I had to cut it down. Most of the logic disappeared to the point where connexive logic does not appear any more and Negation of the Antecedent occupies a tiny space in chapter 4. Also, most of the formal framework was suppressed, leaving what we shall call categories as pure labels without any connexion to a formal grammar, leaving what we shall call points also as pure labels, independent of a model structure, and leaving the notion of entailment we shall propose as a methodological tool, alien to a particular (logical) calculus. There was another reason to skip all this formal material, viz. ‘the thesis had become largely unreadable as a whole to either logicians or linguists. I hope this is not the case any more.

1.2 The Main Conjecture

This thesis tries to give support to the idea that English if was, and in the main still is, a dubitative marker.

In the terminology we shall use in the thesis, we want to propose that if is a scope marker which selects one of the possibilities present to the consideration of the speaker at a given point in discourse. It is also a speech-act marker which signals that the information supplied by the structure it heads is not assertive. As we shall see, these two ingredients, selection of a single possibility and nonassertion make up doubt. Therefore, to say that if is a singular, nonassertive marker is the same as saying that if is a dubitative marker.

In more plain language, the idea is that the speaker who uses if believes that there is someone who doesn’t know whether what (s)he says was, is or will be the case (at a certain place, time and world), but gives it as likely (or unlikely). (S)he has several possibilities in mind. Of those, (s)he chooses one as the one likely (or unlikely) to be the case. Semantically, then, if is roughly similar to perhaps or maybe. Consequently, if has in its scope one phrase and, more usually, one clause, i.e. if is not a coordinator.

How does this conjecture conflict with accepted theories? Linguists and logicians

2[Dud83], [Dud84a], [Dud84b], [Dud85] and [Dud87].

3On many occasions, this amounts to saying that if is a topic marker. But, fuzzy as it is, we have avoided this term in the thesis as much as possible.

4See Section 2.6.
are at odds at this point, if one is to believe [Gei85].

Linguists list conditional clauses as adverbial subordinate clauses. Presumably, they also play a semantic role similar to the role played by other adverbial subordinate clauses, viz. they refer to a peculiar kind of entity. Clauses of place refer to places, temporal clauses, to times (whether instants or periods). Likewise, conditional clauses should refer to conditions or some such.

Logicians, on the other hand, have favoured the view that if structures are coordinate, if is a coordinator, and its semantic role is to stand for a peculiar kind of relation, called conditional.

We shall oppose both views. Our conjecture is that if is a dubitative marker. Therefore, if is not a (full-fledged) adverbial subordinator. But it is not a coordinator either. It does not describe a peculiar kind of entity called ‘condition’, but it does not stand for a peculiar kind of relation called ‘conditional’ either. We do not deny that English or other languages include conditions as a peculiar entity or as a peculiar relation in their ontologies. But, we contend, English if does not signal either.

1.3 Plan of the Thesis

Besides this introduction the thesis has four chapters. Chapter 2 is about defending our conjecture against the linguist and the logician. If is considered in its utmost generality, i.e. all kinds of if structures are taken into account. Chapter 3 deals with finer details concerning some particularly interesting if structures. The goal is to arrive at ‘conditionals’ and, on the way, show that there are structures similar to ‘conditionals’ but not quite. Once in the ‘conditionals’ arena, we show that it is by no means easy to classify them, as some philosophers want us to believe.

Methodologically, chapter 2 and 3 use a syntactic and semantic framework specific enough so that we can make the necessary distinctions when dealing with if structures but, at the same time, general enough so that if structures can be studied in relation to the rest of the language.

Chapter 4 presents an analysis of the information supplied by, and derived from, ‘conditionals’. The chapter shows that the main conjecture is coherent with such an analysis.

Finally, chapter 5 is meant to show that our conjecture is coherent with the historical origin and development of if.

5To be sure, our analysis is not without precedents. Cf. e.g. [Jam86, 456] who holds that “the word if, like not is a modal qualifier”. [Jes40, 373–4], on his part, links at least some conditionals to questions. Another example is [Rub83, especially 87–103].

6From now on, we shall use the term ‘condition’ and derived ones in inverted commas, as referring to either of the standard notions.
But let us see in a little bit more of detail what the contents of each chapter are. Chapter 2 is perhaps the key chapter. It has two parts. In the first part, we study if structures in Present Day English in relation to adverbial subordinate clauses (particularly wh-clauses), and coordinate sentences. The study shows that there are significant differences between if and either adverbial subordinators or coordinators. This part is, therefore, a negative one in that we try to show that neither the linguist’s analysis nor the logician’s analysis are adequate.

The second part of chapter 2 is, by contrast, a positive one. It is devoted to establishing the adequacy of our main conjecture, viz. that if is a dubitative marker.

To that end, we define three semantic features, called axis, speech-act and scope. Each of these assigns a value to a given structure. Axis assigns a value to a structure depending on the kind of entity the structure describes. Temporal clauses, e.g., describe times; therefore they are assigned an axis value called ‘time’. Clauses of place describe a place; therefore they are assigned an axis value called ‘place’. And so on. Speech-act is understood in a very broad sense to refer to the epistemic, desiderative or imperative status of the information given by the structure. Thus, we talk of assertive and nonassertive structures, statements of like and dislike, advices and warnings, to name just a few. Negation and counterfactuality are also taken to be speech-acts. Scope refers to the number of possibilities the speaker describes from among the ones (s)he makes available to her/himself at the time (s)he produces the string. It can be just one or several. Scope also refers to quantification. A group of entities may be taken collectively by the speaker, i.e. as a single possibility, or they may be taken individually, i.e. as a set of possibilities. The distinction will become more clear in due course.

Equipped with these three features we show that if is an axis-neutral marker, that if is a nonassertive marker, and, finally, that if is a singular marker.

Now that our conjecture has been given initial support, it is time to direct our attention to ‘conditional’ structures. Chapter 3 attempts to do that. It has also two parts.

The first part tries to define what ‘conditionals’ are. To that end, a fourth semantic feature called connexion is introduced. This feature assigns a value to a structure depending on the kind of relation it describes as holding between its members. Thus, a because sentence is assigned a value called ‘causal’, and an and sentence, a value called ‘conjunctive’. We showed in chapter 2 that if is not a ‘conditional’ marker. Thus, we are able to produce if sentences which bear a whole gamut of connexion values. What are, then, the so-called ‘conditional’ sentences? They are if sentences which describe either a causal or a logical relation between two states-of-affairs, properties, events, etc. (events in our terminology) or two propositions respectively.
The second part of the chapter attempts to show that the traditional classification of 'conditionals' based on time and modality is fuzzier than it has been suggested.

There seems to be, however, an emerging paradigm. This paradigm is used as a guide to define time and modality values. Time is the fifth and last semantic feature we shall use in this thesis. Modality is not a separate feature, but it is embedded under the speech-act feature. Past and nonpast will be time values, counterfactual and noncounterfactual, modality values.

In chapter 4 we draw some of the consequences our conjecture has for an information analysis of 'conditional' strings. The chapter, as usual, is divided into two parts.

The first part sets up a simple theoretical framework to deal with information. Strings containing a subset of the information contained in the original string are called primitive entailments. Strings generated from those plus properties associated to the objects described by those strings are called derived entailments.

Then, we propose a basic information analysis of the primitive entailments generated by 'conditional' strings. The analysis is coherent with (but more detailed than) the bare conjecture that if structures are dubitative. In particular we deal with the nonepistemic component of 'conditionals'.

The second part of chapter 4 sketches some of the (logical) consequences of our conjecture as regards derived entailments. Focusing on the connexion holding between the two clauses, we discuss the status of Contraposition and Negation of the Antecedent as (logical) properties associated to a 'conditional' connexion. The main thrust of this section is that symbolisms that use a single connective to formalise 'conditionals' lack enough expressive power. They are unable to distinguish between if and the connective glueing the clauses. This way, different if sentences have to be mapped onto the same formula, and different properties of 'conditionals' appear as incompatible.

Chapter 5 is a flashback. The study of if and if strings back in history has an intrinsic value. Moreover, it is our belief that showing that if was a dubitative marker in the past strengthens our main conjecture.

The first part of the chapter deals with the origin of if. Morphosemantic evidence linking if to several other items in various Indoeuropean (IE) dialects is given. The picture that emerges is that there was an emphatic marker in IE, which specialised variously in the dialects, viz. usually as an assertive marker, occasionally as a nonassertive marker. In Germanic the particle probably functioned as a focus-sensitive emphatic marker, and then became a topic marker on the one hand, and a nonassertive marker on the other. Finally both collapsed morphologic and semanti-
cally. The evidence adduced is both direct and indirect. As direct we count evidence related to 'conditional' and 'interrogative' particles morphologically relatable to English if. As indirect, evidence supplied by items which are morphosemantically related to these particles.

The second part of the chapter focuses primarily on the syntactic development of if strings in Germanic and Old English. The reconstruction goes that if, as a focus-sensitive device, was a phrase marker in Germanic. Then, it went through a period where it was attached to subordinators, but it was not a subordinator itself. Finally, it became clause initial and, thus, it became increasingly analysed as a subordinator.

In relation to the rest of the thesis, the main thrust of this section is that in Old English if was not a subordinator yet. This adds credibility to the idea that Present Day English if is not a full-fledged subordinator.

1.4 The Linguist, the Logician and our Conjecture

1.4.1 A Standard Linguistic Approach to 'if' Sentences

Grammarians usually treat if structures either as 'indirect questions' (when Direct Objects) or as 'conditional adverbial clauses' (when adjuncts). 'Indirect question' is just another name for what we shall call nonassertive Direct Object. At this point, then, we agree with grammarians. However, that if adjuncts are 'conditional' adverbial clauses we find arguable. Let us focus, then, on the latter.

According to the standard theory, if strings are primarily adverbial subordinate clauses, i.e. they belong to the same syntactic category adverbs belong to, i.e. they fill verb form slots as adverbs do. As expected, if clauses behave like other adverbial clauses. In particular, if clauses behave like wh-clauses. This means that if sentences have the same syntactic structure as wh-sentences, and also, that there is a semantic congruence among the various types of clauses. Wh-clauses describe entities accepted in the ontology of the speaker. Thus, e.g., where and when adverbial clauses describe places and times respectively. Therefore, if clauses must likewise describe entities, viz. conditions or cases or the like.

We shall show that 'conditional' clauses are nonassertive (as indirect questions are). In fact, we shall claim that if clauses are not restricted to being either indirect questions or 'conditionals'. Semantically if strings can function in a gamut of roles, ranging from Subject or noun Complement to Phrase Modifier. And, in all these roles, their primary semantic value is that they express nonassertion.

In other words, if there is a semantic congruence, there is a single semantic category that allows to classify if and wh-clauses in a uniform manner, that is, if and wh-clauses are types of adverbial clauses with respect to a single semantic category. That semantic category we shall call axis.

See section 1.6.1 for an explanation of these terms.
In the standard theory (unlike in ours) *if* strings are semantically heterogeneous: *if* adjuncts are mainly 'conditional' whereas *if* Direct Objects are, in general, questions.\(^9\) This schizophrenic semantic treatment of *if* strings is the most important single problem for the standard theory of *if* strings.

There are two simple ways of curing this schizophrenia, giving *if* strings a well-deserved common semantics, viz. either all *if* strings, including *if* Direct Objects, are interpreted as 'conditional', or all *if* strings, including adjuncts, are interpreted as interrogative. In other words, either we reduce, derive or at least link the semantic notion of 'conditionality' to the notion of interrogativity or the other way round. This thesis attempts a variation of the former. On our approach all *if* strings are nonassertive. Interrogation is a kind of nonassertion. 'Conditionality', on our account, derives from nonassertion through the notion of (epistemic) possibility. 'Conditionality' does not make any reference to peculiar entities as in the standard account.

The differences between the standard account and ours are not as dramatic as it may seem. *Wh*- markers, e.g., were originally nonassertive in English. In time, they became subordinators. Semantically, *wh*- clauses became descriptions of particular kinds of entities. Likewise, there is no reason why, in principle, *if* strings could not become descriptions of a particular kind of entities.

All our conjecture says is that, unlike other *wh*- strings, *if* strings have not fully reached the status of a subordinator. Semantically, *if* clauses do not describe 'conditions' or the like.\(^10\)

### 1.4.2 A Standard Logical Approach to 'if' Sentences

Be it as it may, we think Present Day English 'conditional' sentences are best analysed as coordinate-type structures. In this we partially follow the logical tradition, which [Gei85] criticises. There are big differences, though.

Logicians seem to believe that 'conditional' sentences are on a par with *and* and *or* strings: they are composed of two sentences and a connective. Semantically, the connective stands for a particular kind of relation. *And* describes a conjunctive

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\(^9\)Even this much is problematic. [SQG72, e.g., 746] has examples of *if* Disjuncts and [LN79] find difficult to interpret some *if* Direct Objects as indirect questions.

\(^10\)Whether this is ever going to be so is not something that concerns us in the present study. However, it is worth noting that 'conditional' clauses, unlike *wh*- ones, are generally reluctant to move to final position in the sentence, to the point that initial position for 'conditional' clauses is one of Greenberg’s language universals (cf. [Gre78, 84], universal 14 and also [F+86, 9ff]). And this is the case independently of the position of Subordinate clauses in particular languages. In languages like English, where Subordinate clauses are final, this probably means that 'conditional' clauses are reluctant to become full-fledged Subordinate clauses, or else, if that process is realised, that English is the exception rather than the rule.
relation, or a disjunctive relation and if, allegedly, a 'conditional' relation.\footnote{In fact, in classical logic, if formul\ae{} are interdefinable in terms of and and or formul\ae{} (with the help of negation).}

For us, 'conditional' sentences show a coordinate structure. But if is not the coordinator (the connective joining the two sentences), but only a nonassertive operator affecting the clause it heads.

The standard account has its problems though. First of all, despite claims that it is the meaning of if that is captured by a logicians' set of axioms and rules, only 'conditional' sentences are taken into account. Indirect questions, e.g., are left aside. But even within the domain of sentences which are allegedly 'conditional' there are problems. In some cases, there seems to be no way of relating the propositions through a relation of 'conditionality'. Worst of all, it is unclear what 'conditionality' itself amounts to.

Again, the differences between this account and our proposal are not as dramatic as it may sound. On the one hand, some \textit{wh-}forms were nonassertive markers and then were used as coordinators in English (before they became subordinators). So, in principle, if could become a coordinator, and, as such, express a peculiar kind of relation (call it 'conditional').

Our point is that if is not (yet) a coordinator, a connexion marker, as, e.g. or and are.

\subsection{1.4.3 An Alternative Approach to 'if' Sentences}

Semantically if is not on a par with \textit{when} and \textit{where}. Nor is it on a par with and or. In fact, it has closer connexions with not, which is also a speech-act (polarity) marker, and even more so with perhaps and maybe, which are nonassertive markers.

Now, we agreed before that 'conditional' sentences are coordinate-type structures. So, there is indeed a connexion between the two clauses of a 'conditional'. What is this connexion then? This question amounts to asking what makes a sentence 'conditional'. The answer to this question will be given in chapter 3. Basically, our position is that 'conditionality' can be defined in terms of connexion. A sentence is 'conditional' if one of its clauses is nonassertive and the connexion between the two clauses is either causal or logical.

But not all if sentences, not even all if adjuncts, describe a causal or a logical connexion. On the other hand, not all causal and logical sentences are marked by if. So, this cannot constitute the semantic core of if.

The existence of this causal or logical relation does not end the issue, though. If a sentence is causal, one of the events described (the effect) depends on the other (the cause). If a sentence is logical, one of the propositions (the consequent) depends on
the other (the antecedent). However, besides this causal or logical dependence, there is another, epistemic, dependence. The main clause depends epistemically on the if clause.\textsuperscript{12} This is due to the fact that if marks uncertainty. And this uncertainty is inherited by the main clause.

The fact that the semantic value of if (nonassertion) is passed onto the main clause does not transform if into a coordinator though. The situation is similar to:

\begin{enumerate}
\item \textit{Don't go with her and I'll do whatever you like},
\end{enumerate}

where our knowledge of the speaker's doing whatever the listener likes depends on our knowledge of the listener going. That there is such a dependence is due to the presence of the imperative.\textsuperscript{13} However, this does not make a connective out of the imperative. The connective is \textit{and}, which in this case stands for a causal relation (viz. the speaker's doing whatever the listener likes causally depends on the listener's going).

In the same way as the imperative is a nonassertive marker (not the coordinator) in (1), in a 'conditional' sentence if is a nonassertive marker (not the coordinator). In the same way as \textit{and} is the coordinator in (1), the coordinator in a 'conditional' is zero (juxtaposition) or a comma.\textsuperscript{14}

Juxtaposition is a generic connective, usually conjunctive, very rarely disjunctive. So, 'conditional' sentences are conjunctive sentences. In fact we can be more precise. They are not adversative (as, e. g., \textit{but} or \textit{although} sentences are) but copulative, as \textit{and} sentences are. Even more precisely, they are not just 'plain' symmetric copulative, but asymmetric sentences. That means that the clauses cannot be moved around without change of meaning.\textsuperscript{15} We can be even more precise about the type of relation holding between the two clauses of a 'conditional' sentence. We can say that there is an order between the two clauses and, therefore, between the events or propositions they describe. This order can be causal, or it can be logical. In the former case, it is the order holding between a cause and its effect; in the latter, it is the order between an antecedent and its consequent. This is what juxtaposition amounts to in the case of 'conditionals', viz. it stands for a conjunctive, asymmetric, order relation, where

\begin{enumerate}
\item One might argue that perhaps 'conditionality' stands for this epistemic dependence holding between the \textit{if} and the Main clauses of a 'conditional' sentence. This, we shall argue, has problems within a theory of information unless we recognise the existence of the other, causal or logical, relations. See section 4.4.1.
\item Which, by the way, is itself a nonassertive marker.
\item More rarely in Present Day English, the structure is correlative (\textit{if}...\textit{then}).
\item An example of asymmetric conjunction with \textit{and} is:
\end{enumerate}

\begin{enumerate}
\item \textit{I ate too much and fell asleep.}
\end{enumerate}
the order is either causal or logical. But (let us say it again) the connexion is marked iconically not by if.

So, 'conditional' sentences exhibit two distinct orders. One is the epistemic order induced by if; the other, the causal or logical order induced by juxtaposition. These two orders must not be confused. To be sure, they usually overlap. But not always.

An important consequence for logic is that we need two operators to symbolize 'conditionals' in a general way, a one-place operator (if) and a connective (juxtaposition). Using just one, we shall not be able to distinguish the two orders when they become actually distinct.

In sum, if is neither a subordinator, as the linguist claims, nor a coordinator, as the logician wants us to believe. Semantically put, if clauses do not describe a peculiar kind of entities called 'conditions', nor does if stand for a peculiar kind of relation called 'conditional'. If is a dubitative marker, used in all kinds of structures. When used in 'conditionals', it is a dubitative marker too, the connective being juxtaposition.

1.5 The Bigger Framework: Discourse Representation and Discourse Evaluation

We are not concerned with evaluating English strings against the Real World. Instead, we are concerned with representing the information supplied by those strings in the best possible way, and with evaluating them against the contextual information held by the participants in discourse at the time when the string is produced. In short, we are concerned with discourse analysis.

We take a piece of discourse (a set of strings), along with the participants in that

16 Or, as [Hai85, 92] would put it, 'languages model two dimensions along which symmetry or asymmetry may be expressed: that of temporal sequence or simultaneity on the one hand, and that of importance on the other'. We think 'temporal' and 'importance' are too restrictive. Therefore, we prefer 'objective' and 'subjective', 'real' and 'epistemic', etc. In the background, it is the old Aristotelian distinction between a real order and an order of knowledge that is lurking.

17 When they do not, the sentences will be called backtracking sentences. Think of:

(3) If you scratch a match it lights,

where both the scratching of the match and our knowledge of the scratching of the match are prior to the lighting of the match and our knowledge of the lighting of the match respectively. Now, compare it with:

(4) If the match was lit, you scratched it,

where the causal connexion arguably goes in the same direction, i.e. the scratching is prior to the lighting, but where our knowledge of the lighting of the match is prior to the knowledge of the scratching. We know that the match had been scratched inferentially. We first know that the match was lit and then infer that it was because it had been previously scratched.
piece of discourse. We also take those participants’ assumptions which are relevant to the piece of discourse in question. Those are the relevant parameters, not the real world. All those parameters make up a situation.

Consequently, we do not care about truth in the sense of ‘correspondence’ with the real world. In fact, we do not use the term at all. Instead, the more neutral, pragmatic, term ‘appropriateness’ will be used. For us, a string providing a piece of information is appropriate in a situation and for a linguistic community if it is used by speakers of that community in that kind of situation to provide that kind of information.

1.5.1 A Picture of the Discourse

We can draw a picture of a (linguistic) situation to obtain a more intuitive idea of what is going on. This is, among other things, what a model is meant to be for.

So, let us take a piece of paper (that we shall call the Universe of discourse) and let us make a map of the situation. Each relevant element in the situation will be represented by a point or a number of points. First, we have the speaker. (S)he should go somewhere. Then, there is the string, which usually lives where the speaker lives. Then we have what the speaker says, the information provided by the string. Each relevant bit goes to one point. Moreover, we have the bits of information owned by the speaker and relevant to the string we are making a picture of. We can go on, complicating the picture. We can, e.g., represent not only the speaker, but also the listener, or all the participants in discourse, each with her/his own ideas, relevant to what has been said by the speaker. We could take a set of strings, and not only one, drawing a history of the piece of discourse, of how the information is shared, abandoned, questioned, etc. by the participants. But the simpler, monological, one-string picture will do for our purposes. In the simpler picture we have one speaker producing one string, sitting at a point of our map. We also have a scenario as described by that string. And finally, we have a context, i.e. what the speaker assumes (as relevant) when describing that scenario. In the simpler picture a string is appropriate if, in a normal situation, the information it supplies reflects (or at least does not contradict) the speaker’s assumptions.

This will be our background picture throughout this thesis. But our main worry is not discourse evaluation, but discourse representation. In particular, how are we going to represent the information supplied by if strings?

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18Our context is a discourse-bound version of what [Lyc84, 440ff] calls ‘reference class’.
1.5.2 ‘If’ Strings and ‘Conditionals’

How can we represent information? Well, first of all, we must be able to get clear about what kind of information we want to represent. In other words, what the semantic features relevant to represent the information supplied by a string are. If we want to represent the information supplied by a negative string, we must have some means of representing negation. If we want to represent strings expressing other speech-acts, like questions, we must figure out how to represent questions, or speech-acts in general. If we are only interested in assertive strings, perhaps entities and relations are all we are after. If time is relevant, we need an object in our picture that does the job.

Now, according to our main conjecture, if strings are singular and nonassertive. Singularity is a scope value. So, we must have some way of representing scope information. Nonassertion is a speech-act. So, we must also be able to represent speech-acts in our model.

Now, what about ‘conditionals’? Well, apart from scope and speech-act we need a way of representing at least (conjunctive, copulative) order relations, causal and logical. Finally, ‘conditionals’ describe events or propositions respectively. So, we must have some way of representing events and propositions.

But we have to do all this in a general way. We must not only indicate how nonassertion can be modelled, but also how assertion can; not only show how to represent singularity, but also duality and plurality; not only model causal and logical relations but also other sorts of relations; not only represent events and propositions, but all sorts of entities. In sum, we must take four semantic features, speech-act, scope, connexion and axis, say what values we shall deem relevant to represent our piece of discourse and show how they can be uniquely represented in our model. Moreover, we must account for other semantic features, which, without being distinctive of ‘conditionals’, play an important role in their behaviour, and are relevant to see the differences between different ‘conditionals’. Thus, we must account for time, the fifth of our semantic features. Also, speech-act must not only draw the broad distinction between assertion and nonassertion. We must be able to model negation, counterfactuality, desires and commands. Similarly, scope must not only allow us to distinguish singular, dual and plural strings. We must be able to represent collections and individuals as well. Finally, we are not only interested in whether the connexion is causal or logical, but also in whether the connexion is necessary or just possible.

This thesis is not about how to draw pictures. Its goal is both humbler and less exciting, viz. to show that our main conjecture is plausible. That is, to show that speech-act and scope are required to represent the information supplied by if strings in general, by ‘conditionals’ in particular. However, we hope that, by giving an idea of
the picture we have in mind, this thesis can be better understood. This is particularly
the case with logicians, for whom, the idea that if is a dubitative marker may seem
both extravagant and not very interesting. It is by its (logical) consequences that
the conjecture is going to be judged. But, as we said at the beginning, most of the
logical stuff has been left out. There are only two examples in chapter 4 of how the
conjecture is relevant to logic. But there are no pictures there. So, let us give a
general idea of how ‘conditionals’ are supposed to work.

1.5.3 Modelling Dual, Necessary ‘Conditionals’

Recall what we said a few paragraphs earlier. A string describes a scenario. The first
thing we must do is to set up that scenario for ‘conditional’ strings. In fact, given the
way philosophical logic has gone about it, and our own interest in connexive logics,
the model we are most interested in is not a general model for ‘conditionals’, let alone
a general model for if strings, but a model for dual, necessary, ‘conditionals’. We use
those terms at several points in the thesis. Let us say here briefly what we mean by
them.

A (linguistic) situation is dual if, when producing a string, the speaker is only
considering as relevant two possibilities, and one is the negation of the other. Suppose
Dominic tells Maria: yes, I will, as an answer to the question: will you come with me
tomorrow? In a normal situation, Dominic is considering only two possibilities: going
and not going. We shall call <going> an event, and <not going>, the corresponding
negative event. This is a dual situation. There are only two possibilities, and one is
just the negation of the other.20

It seems that only events and propositions pointing to events are liable to generate
dual situations. Whether this is true or why this is true does not concern us here.
The fact of the matter is that logicians usually think that ‘conditionals’ talk about
events or propositions, and these are indeed capable of being dual.

Now, a ‘conditional’ sentence has two clauses and each clause describes either an
event or a proposition. So, in a dual ‘conditional’ situation, the context contains only
four entities, two events and the corresponding negative events, or two propositions
and their negations. And the ‘conditional’ establishes a connexion between some of
those. A dual situation, to use a more familiar terminology, requires a model where
there are only two worlds and two events to chuck into those two worlds. One of
the worlds contains all the events that, according to the speaker, happen (and all the

19Contextual possibilities will be enclosed in <>’s.

20For comparative purposes, this is not a dual situation. Dominic tells Maria Peter is as an
answer to the question who’s going with you? The possibilities may be <Peter, Bronwyn, Salome> or
perhaps just the first two. But, in any case, either there are more than two possibilities or, if two,
one is not the negation of the other.
propositions that hold good according to the speaker); the other world contains all
the events that do not happen. Or, from the other end, an event happens if it belongs
to the world which contains the events that happen.

This elementary set-up provides us with a very natural modelling of negation.
Assertive, negative, strings describe negative propositions or negative events. These
are dumped into the world that contains the events that do not happen. Moreover, it
supplies us with an exciting modelling of noncounterfactuality. Instead of positioning
the speaker at the world where things happen, we position her/him at the world
containing things that do not happen. This may sound arbitrary, but there are good
reasons for it.\textsuperscript{21} In addition, if we accept a nonstandard set theory, such that set
inclusion is multivalued, we can model nonassertion. Instead of having an event or
a proposition in a world or in the other, we can have it in both, in various degrees.
Dual yes-no questions, e. g., could be modelled so that an event or proposition is half
in one world and half in the other.

The second of our restrictions is that we are interested in necessary ‘conditionals’,
as opposed to possible ones. The distinction has been around for some time under
various labels. E. g., ‘would-and-might’ has been used in the context of counterfactu-
als. The distinction between possible and necessary ‘conditionals’ makes reference to
the modality exhibited by the connexion between two clauses. If the sentence is, e. g.

\begin{align*}
(5) & \text{It chucked it down all day; so they drank all the beer up,} \\
\end{align*}

both events, the raining and the drinking, are given as actual. The drinking is a
necessary consequence of the rain as it were. Perhaps the terminology is not too
happy. But it is clear that there is a difference between (5) and:

\begin{align*}
(6) & \text{It chucked it down all day; so they probably drank all the beer up,} \\
\end{align*}

where the drinking is given just as a possible consequence of the rain.\textsuperscript{22}

To model necessary and possible connexions is easy if we accept that inclusion
comes in various degrees. We can just say that two events or propositions are neces-

\textsuperscript{21} Negation and counterfactuality show some interesting interconnexions. Some of these are hinted
at in section 4.3.3.

\textsuperscript{22} ‘Conditional’ examples are:

\begin{align*}
(7) & \text{If it had chucked it down all day they’d have drunk all the bottle up} \\
\end{align*}

and

\begin{align*}
(8) & \text{If it had chucked it down all day they might have drunk all the bottle up.} \\
\end{align*}

Whether probably as in its scope the clause where it is contained or the connective between the two
clauses will be left out of this thesis. We shall assume that, in some cases, the latter is the case, and
shall restrict our attention to those cases.
sarily connected if both belong in the same degree to a world,\textsuperscript{23}; otherwise, they are possibly connected.

So, we can depict, if in a rough and ready fashion, some of the ingredients of a ‘conditional’ sentence. We can represent nonassertion, viz. by assigning various degrees of inclusion to events or propositions. We can also represent singularity, viz. by assigning a higher degree of inclusion to an event or proposition in a world than in the other. Moreover, we can also model copulative conjunction. Two events or propositions will be copulatively conjoined if both are included in the same world more than in the other.

What we cannot do is be more fine-grained than that about connexion. For that, we need either more worlds, some of them of one kind (containing events and propositions), some of them of another kind (containing negative events and negative propositions) and a way of ordering them, or we need to have more structure within our original worlds. For instance, we can magnify our original worlds, and draw a line in each, the line of time (if we fancy linear time), or the line of proofs, or the line of causality.

But let us stick to the simpler picture, where only conjunction can be modelled. After all, that is what extensional models like truth-tables do. Now, what is the scenario we get for a dual, necessary, ‘conditional’ string?

Well, first, there are two worlds only (duality). Secondly, the event or proposition described by the \textit{if} clause belongs to both worlds (nonassertion) but to one more than to the other (singularity). Thirdly, the event or proposition described by the unmarked clause belongs to each world in the same degree as the \textit{if} clause event or proposition (necessary connexion).

We shall not talk about models any more. We hope this sketch is sufficient for model-minded readers. As we pointed out earlier, our task now is to show that \textit{if} can be plausibly viewed as a dubitative marker, and, thus, that this picture is a promising representation of English ‘conditionals’.

\subsection{1.6 Categories and Features}

\textit{If} has been accused of being a ‘conditional’ subordinator and of being a ‘conditional’ coordinator. We want to say that \textit{if} is a singular, nonassertive marker, neither a coordinator nor a subordinator, and definitely, not ‘conditional’ if by ‘conditional’ we mean that it signals a particular kind of entity or connexion.\textsuperscript{24}

\textsuperscript{23}Note: not necessarily to the same world.

\textsuperscript{24}There is no problem if we want to say that it is ‘conditional’ because it signals a particular kind of speech-act, viz. what we have called nonassertion, and moreover, because it selects a single
We shall be using traditional syntactic and semantic terminology, but sometimes in a slightly nonstandard way. So, let us explain it a bit.

1.6.1 A Menagerie of Syntactic Categories

Our two more general labels are those of syntactic categories and semantic features. Syntactic categories are things like Subject, Object and Clause. Also things like noun (or nominal Phrase), preposition Complement and verb form. In case some of the labels are not sufficiently clear, let me give some examples of the kind of syntactic categories we shall use to label linguistic structures.

Let us start by the most general label, viz. that of (linguistic) structure. A linguistic structure is any discourse segment. We shall call String any linguistic structure, which, roughly speaking, is delimited by full stops. So, Yes! He did it, He did it to pay him on time, He left but she stayed and He did it so that you could pay him before Maria arrived are all Strings. We shall also talk of Phrases, Clauses and Sentences. Phrases are structures like yes, time, on time, which, roughly speaking, do not contain verb forms. Clauses are structures like he did it, to stay, but she stayed, so that you could pay him on time. Roughly speaking, they are structures which contain exactly one verb form. Sentences are, roughly speaking, structures which contain more than one verb form. Examples are He said he'd pay, That he left doesn't surprise me, He left but she stayed, So that you could pay him and He did it so that you could pay him before Maria arrived.

As we said earlier, we shall move at the String level, considering one String at a time, though sometimes a context will be supplied by giving some Strings preceding the one we are currently interested in.

We shall sometimes talk about independent Phrases, Clauses and Sentences to make clear that they are Strings. Since we shall be mainly looking at structures introduced by a header, we shall refer to the structures by the header. Thus, we shall talk of whether Clauses or if Phrases. In addition, we shall call a Sentence which contains a Clause or Phrase so marked by the name of the marker too. Thus, a 'conditional' Sentence like If he goes I'll go as well is an if Sentence, I'll go wherever he goes is a wherever Sentence, and so on.

Besides those categories we shall talk of noun Complements to refer to relative Clauses and Appositives like who was staring at me in the lass who was staring at me, and of preposition Complements, to refer to Phrases which are headed by a preposition like in the swimming pool. Some verb Complements will receive traditional labels like Subject, Direct Object and Indirect Object. The rest will be called just verb Complements (prepositional Complements if they are headed by
Finally, we shall use the labels Coordinator and Subordinator to refer to connexion and axis markers (conjunctions) respectively. What is a coordinate or a subordinate structure is one of the issues at stake in the present study. Not to pre-empt that issue, and since we shall be dealing mainly with Strings containing two Clauses one of which is headed by a conjunction, we shall use marked Clause to refer to the Clause headed by either a Coordinator or a Subordinator and unmarked Clause to refer to the other Clause. Thus, in He did it so that you could pay him, he did it is the unmarked Clause and so that you could pay him is the marked Clause. In He did it and run away, he did it is the unmarked Clause and and run away is the marked Clause.25

1.6.2 Five Semantic Features

Going now to the semantic features, we shall introduce five of those, viz. axis, speech-act, scope, connexion and time. Axis is just a name for what kind of entity a String describes (if any). So, to the question what the axis of money is, we shall answer that its axis is object, since money describes a sum of money, and money is an object. Our working ontology is very limited. We are only interested in entities supposedly described by Clauses, in particular Clauses headed by wh-items, that, if, although, because, so that, etc. Our toy ontology will have objects (what, which) and persons (who), events (what), times (when), places (where), and (partially, at any rate) causes (why, because) and aims (what for, so that). The possibility of finding referents for although, if and whether Clauses will be precisely the central question in chapter 2.26

Speech-act is a feature which, in standard linguistic terminology, gathers information related to modality, polarity and speech-act. Thus, it tells us if a structure is assertive or nonassertive, affirmative or negative, noncounterfactual or counterfactual. It also tells us if the structure is imperative or desiderative, and in what degree. In sum, speech-act points at where the structure is in the epistemic, imperative and desiderative scales. For instance, Eat! is an affirmative nonassertion, and moreover either a wish or a command. The cat is on the mat is an affirmative noncounterfactual assertion (with no signs of being desideratively or imperatively valued). The cat wouldn't be on the mat is a negative counterfactual assertion (again, showing no signs of being defined in relation to the desiderative or imperative scales).27

To explain what scope is we need to look back at what we said about discourse

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25 With apologies for the nonstandard treatment of Coordinate structures this presupposes.
26 For more details, see section 2.4.
27 For more details see section 2.4.1.
representation. Remember that we said that a situation comprised at least three objects, viz. the speaker and the String, the scenario described by the String, and the context, the information owned by the speaker and relevant to that particular String in the particular situation where the String was produced. Suppose Alf says *The cat is on the mat.* Alf and *The cat is on the mat* are the first element of the situation. The second element is the cat lying on the mat. To know what is in the context we need to know more about the situation. Suppose Alf’s being asked by mum where the cat is. Alf’s answer supplies the required piece of information. That bit of the String that supplies the information asked for will be called the focus of the String. The rest is nonfocus. In our example, *on the mat* is the focus.

Now, the existence of a focus presupposes that there were several possibilities available to the speaker at the time (s)he produced the String, and (s)he chose one as the focus. For example, Alf and her mother know that the cat sometimes is on the roof or by the kitchen window. What Alf is pointing out to mum is that the cat is not in those places, but on the mat. <On the roof, on the mat, by the kitchen window> are possible places for the cat to be on or by, for mum and Alf, at that point in time. Alf’s String selects one of those possible places.

This relationship between the focus of the String and the possibilities open to the speaker in a given situation is precisely what scope is about. In our example, *on the mat* is a single possibility, and therefore the String is singular. But this is not always so. If Alf had said something like *The cat must be somewhere inside the house,* and the possibilities had been that the cat was on the mat, on the roof or in the kitchen, the String would not have selected just one of those possibilities but two, viz. on the mat and in the kitchen.

A fourth semantic feature is connexion. **Connexion** is about the relations between entities (and descriptions of entities). We are mainly interested in Coordination. So, connexion is about conjunction, disjunction, etc. Remember that one of the things at stake in this thesis is whether *if* is a Coordinator, i.e. whether *if* describes a peculiar kind of connexion between events. In principle, then, we should allow conditionality as a kind of connexion between Clauses and events described by those Clauses. Anyway, the concept of connexion as a semantic feature extends beyond the concept of Coordination. Thus, in *Pete ate the mushrooms* we want to say that Pete is the agent and eating is an action, so that Pete and eating are connected by an agent-action connexion or something like that.

Finally, **time** is probably one of the best studied features in knowledge representation. For our purposes, only past and nonpast will be time values. The main battle

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28 And will be boldfaced if required. For details cf. [Jac72].
29 For further details see section 2.5.2.
30 For further details see section 3.2.
as regards time will be to show that tenses (as the basis to classify 'conditionals') are not just time markers. 31

So, axis, speech-act, scope, connexion and time will be the parameters that we have deemed relevant to study if Strings. Axis and connexion are needed because if has been regarded as an axial marker by the linguist and as a connexion marker by the logician. Speech-act and scope are needed because our conjecture says that if is a speech-act and a scope marker. Connexion is also needed to define what 'conditional' Sentences are, i.e. to characterise the connexion holding between the two Clauses of a 'conditional'. Time is needed to classify 'conditionals'.

1.6.3 Back to Discourse Representation and Evaluation

Semantic features are the coordinates relevant to represent information in our picture. We must find a way to tell, by looking at the picture, that the String is affirmative, singular or past. In fact, we need more than that. We need a criterion to draw the picture, to tell when a String is affirmative, singular or past. And we also need a criterion to tell when the String is appropriate or not.

In the simple model described earlier, criteria to represent the information and to evaluate the String in question are easy to state. But, as with Tarski's criterion of truth, not very informative. A representation criterion would say that the String is assigned a given value if the relevant structure is marked accordingly. On the other hand, a String would be appropriate (in normal situations) if there is a match (or at least there are no inconsistencies) between the scenario described by the String and the contextual information owned by the speaker in the given situation. Finally, we should be able to tell that a particular scenario has certain properties (corresponding to the semantic features of the String which described the scenario) by looking at it. So, the criterion in this case would read: a scenario has a given property if it is structured accordingly.

We said earlier that we would not be looking at modelling in this study. That leaves us with two criteria relevant for what follows, viz. marking and evaluating. The above criteria per se are of little practical value. What we are after is what markers mark, and whether a String marked in a certain way is used to describe a certain piece of information. We want to say that if marks nonassertion and singularity. We want to say that if Strings aimed at signalling actual or plural situations are inappropriate.

We shall disqualify Strings as inappropriate either because they do not convey the information they should or because they are not used at all to convey any kind of information in English. Thus, *He lick the ice-cream is inappropriate (nongrammatical in standard terminology), whereas *He licked the ice-cream is inappropriate

31 For further details see section 1.3.
(semantically incorrect, pragmatically unfelicitous) in a situation where he has not yet the ice-cream, we have not mentioned any ice-creams before, etc.32

1.7 The Third Vortex: the Context

Our little discourse model has three vortices, viz. the String, the scenario described by the String and the relevant context. We have seen how the String has something called focus, and how part of the contextual information relevant in a situation is about what possible foci there are for the speaker in that situation. We do not need much more than that for our analysis. However, the concept of focus is of frequent use in the literature on discourse analysis, usually as opposed to topic. So, a word of warning is in order.

Take our former example, viz. The cat is on the mat, in the situation described above. Alf and mum are talking about the cat. They are interested in the cat's whereabouts. In this situation the focus is on the mat, the topic is the cat. It looks as if the topic is the 'entity talked about' and the focus is the 'information about that entity', and (one of) the traditional characterisations of focus and topic is methodologically sound. But do not think it is.

Topic and focus are independent of each other. On the one hand, topical elements can be on focus; on the other, not all nontopical elements need be in focus. Suppose we are talking (gossiping perhaps) about Roger. We get to the point where we describe his encounter with Marie:

(9) He had met Marie a long time ago. In fact, he was in love with her since the very beginning.

The String we are interested in is In fact... In the situation we have set up we are talking about him. He is the person about whom the piece of information being-in-love...is. So, he is the topic. The rest is nontopic. In particular, she is a person that had already shown up in previous discourse (in the previous String), but it is not part of the topic. Now, her can be the focus of the second String (he was in love with her, not with Julia, who was her official girlfriend at the time). Her can also be part of the focus. Suppose the focus is with her since the very beginning. The information provided by the String is, e. g., that, unlike with Julia, who took him a while to fall in love with, Marie was love at first sight. Finally, her can be outside the focus. For instance, if the focus is was in love, the information may be that he was in love as opposed to just feel vaguely attracted.

We have also said that the topic can be focal. Well, suppose he is the focus of the String. The information provided would be in this case, e. g., that he was in love with

32 Inappropriate Strings will bear an asterisk. Doubtful ones, either one or two question marks.
her though, unfortunately, she was not. A follow-up of our piece of discourse would be in this case:

(10) He had met Marie a long time ago. In fact, he was in love with her since the very beginning. That led him to committing suicide.

The examples show that we need more than focus and topic. The concept of topic will hardly be used in this study. Anyhow, remember that the model is fourfold. We distinguish between focus and nonfocus, topic and non-topic. Informally, the topic is the entity or set of entities talked about at a point in discourse. The focus contains the materials 'in focus' at that point in discourse, what is described (asked, affirmed, denied, etc.) with respect to an entity or set of entities.
Chapter 2

A New Analysis of ‘if’ Strings

2.1 Introduction

This chapter attempts to give support to our main conjecture, viz. that \textit{if} is a dubitative (i.e. nonassertive, singular) marker in Present Day English.

We have seen how \textit{if} is analysed either as a ‘conditional’ Coordinator, or as a ‘conditional’ adverbial Subordinator. So, we must first show that \textit{if} is neither. In the terminology that will be introduced later on in the thesis, we must show that \textit{if} is neither a connexion nor an axis marker.

How can we go about it? If our conjecture is right, \textit{if} structures should be able to function in any semantic role. They should be able to be Subjects, Direct Objects, noun Complements, etc. However, they do not appear to be so (due to the syntactic structure they exhibit). So, we have preferred to introduce things gradually to avoid negative reactions on the part of the reader. We shall, then, start by adopting a ‘syntactic’ perspective. From this perspective, \textit{if} can introduce a Direct Object (indirect question) or an adjunct (‘conditional’ protasis). Less advertised is the role of \textit{if} structures as adjective Complements and (perhaps a new trend) as preposition Complements.

We shall go very quickly through some of the less noticed functions (adjective and preposition Complement). We shall also say something about Indirect Objects and Subjects. The main results in this area are that \textit{whether} and \textit{if} are virtual synonyms as Direct Object headers (i.e. both introduce indirect questions and they are often interchangeable). Second, \textit{whether} is used instead of \textit{if} in Indirect Object and adjective and prepositional Complement environments with the same semantic function it has in Direct Object environments. Third, \textit{if} seems to be replacing (or
at least joining) whether in some of those environments, especially the preposition Complement one.

Once we have cleared our way, we go straight into the core of the first part of the chapter, viz. showing that if is neither an axis nor a connexion marker. This section of the chapter relies on the behaviour of where, when, although, because, so that and if Sentences when embedded as noun Complements. We shall see how we can embed both the marked Clause and the whole Sentence. We shall also look at what kind of antecedent is appropriate in each case.

The idea is to compare the behaviour of if structures with where, when, because, so that, and although structures in relation to embedding. Where and when Clauses are the paradigm of adverbial Subordinate Clauses. Although is an adversative Coordinator. Because and so that, as we shall see, show mixed features. If if structures behave like when and where ones, or even like because and so that ones, the linguist will be right, i.e. if Clauses will be adverbial Subordinate Clauses (at least in relation to this criterion).

But if structures are shown to behave like although ones, not like when and where ones. Therefore, if Clauses are not adverbial Subordinate Clauses as when and where Clauses are. Thus, if is not an axis marker as when and where are.

So, is if a Coordinator, a connexion marker, as although is? Not at all. In a second moment we show that not all if Sentences describe 'conditional' relations. So, if if is a Coordinator, it is not primarily a 'conditional' marker. Well, perhaps it is something else. An important result is that case and, even more so possibility, are appropriate antecedents of both if Clauses and if Sentences. But both case and possibility describe speech-acts (not entities or connexions). In fact, condition is also a speech-act marker. Therefore, if structures do not describe a peculiar kind of connexion, but a peculiar kind of speech-act, viz. nonassertion. Thus, if is not a connexion marker, but a speech-act marker. And this is also its semantic value as a Direct Object header.

That concludes the first part of the chapter. The second part is a positive one. Here we show that if is indeed an axis neutral marker. We show this by taking a semantic feature called axis (which keeps track of what kind of entity is described by a structure) and seeing what kind of entity is described by various if Direct Objects and adjuncts. The result of the enquiry is that an if structure can describe any kind of entity. Therefore, if is not an axis marker, as when, where are.

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1 We give only some examples. The issue is dealt with at length in section 3.2.
2 We leave the other half, viz. showing that if is indeed a connexion neutral marker for section 3.2.
3 Direct Objects and adjuncts, remember, are the only possible slots that if structures can fill from a syntactic point of view.
The last section of the chapter is an attempt to give positive support to our conjecture, viz. that *if* is a scope (singular) and speech-act (nonassertive) marker.

The methodology is the same as before. We define two new semantic features, viz. speech-act and scope, which allow us to see what is going on in *if* structures in these fronts. As before, *if* Direct Objects and adjuncts are compared with *that*, zero and *as, since, when*, etc. Clauses.

The results are that *if, *since, as, when* and *that* are scope markers. That is, *if, *since, as, when* and *that* Clauses select a single possibility from those available in a given (linguistic) situation. However, *that, *since, as, when*, etc. structures are assertive, whereas *if* Clauses are nonassertive. Therefore, *if*, unlike the other markers, is a nonassertive marker.

### 2.2 A Syntactic Overview of ‘if’

Traditionally *if* Clauses are either indirect questions (Direct Objects) or adjuncts (adverbal Subordinate Clauses or coordinate Sentences). Later on we shall show that semantically *if* Clauses and Phrases can fill a much greater variety of slots. For the time being, let us look at the traditional syntactic slots they can fill.

To start with, *if* Indirect Objects seem to be inappropriate. Whether Indirect Objects, on the other hand, are possible though rare, For example:

(11) I gave *[whether / *if] I wanted to go some thought.*

In this case, the *to* Indirect Object seems to be treated as any other preposition Complement.

---

4 Notice that most marked Clauses are reluctant to fill this role anyway. Exceptions are *who(m), what* and *which* Clauses. There seem to be semantic reasons for it. Objects (personal or not) seem to go rather naturally with the idea of recipient commonly expressed by Indirect Objects whereas places and times do not. Nonetheless, we have found examples of *when* and *where* Indirect Object Clauses.

5 [SQG72, 732]'s example, viz. *We're simply got to give whether to accept his offer some thought* was rejected by a high percentage of speakers. Alternative substrings will be separated by a slash and delimited by square brackets.

6 Compare the above example with:

(13) *I gave too much importance to when he had left;* which show that marked Clauses are weird in this environment too. *That* Clauses, like *if* Clauses seem almost out of the question:

(14) *I gave too much importance to that he was an alcoholic.*
It is generally accepted that if Clauses cannot follow a preposition. Again, whether Clauses seem to do the job. However, there seems to be a trend towards accepting them some of the time:  

(17) It depends on [whether / ?if] he will stop drinking.

An interesting question is why if Clauses cannot be Indirect Objects or prepositional Complements, but wh-Clauses, in general, can. On our view the reason is the same which explains why if Clauses cannot be noun Complements, but wh-Clauses can, viz. wh-Clauses are treated as nominal Phrases, as entity descriptions, whereas if Clauses are not treated that way.  

If Clauses can function as adjective Complements to a higher degree than they can as preposition Complements. Again, if is interchangeable with whether:

(20) It is arguable [whether / if] he was an alcoholic.

But not always. Whether is inappropriate in the following example, but why?

(21) It'd be interesting [*whether / if] he turned out to be an alcoholic.

The reason seems to be related to the fact that, despite the misleading similarity between the two structures, the semantic role of the if Clause in (20) and in (21) is very different. In (20) the if Clause is semantically akin to an ‘indirect question’; in

Notice that the introduction of a noun as antecedent of the marked Clause makes the Clause a noun Complement and the String appropriate:

(15) I gave too much importance to the fact that he was an alcoholic.

This is hardly possible with if, since if Clauses cannot function syntactically as noun Complements.

7 wh-Clauses are usually appropriate as preposition Complements. That Clauses are really bad, but, as before, the inclusion of a noun as antecedent of the that Clause makes it appropriate:

(16) I thought about [when / ?that / the fact that] he was an alcoholic.

For details see section 2.3. If we are right, although, because and so that Clauses should not be appropriate in these environments either:

(18) He relies on [*because / *so that / *although] he stopped drinking.

Why and what . . . for are, however, possible:

(19) It depends on [why he stopped drinking / what he stopped drinking for].

8 Incidentally, notice that, though syntactically classifiable as adjective Complements, the if and whether Clauses are semantically Subjects. In a cleft structure it is just an anaphoric in place of
(21) the if Clause is similar to a 'conditional protasis'. In the terminology we shall use soon, in (20) the if Clause is interrogative; in (21) it is dubitative. 10

The phenomenon is not restricted to adjective Complements. There is a subtle difference between:

(25) Let me know whether you are coming

and:

(26) If you are coming, let me know.

In (26) we are asking the listener to inform us if (s)he decides to come. In (25) we are asking the listener to inform us of her/his decision, whatever that turns out to be. (25) reports an 'indirect question'; (26) is a 'conditional'. The existence of this borderline cases is well known. 11 Whether Let me know if you are coming means the same as (25) or as (26) is left for the reader to decide.

In sum, if adjective Complements are appropriate but they present peculiarities absent from the preposition Complement environment. On the one hand, adjective Complements seem to be semantic Subjects, which shows that if Clauses can function in a broader range of roles than they are traditionally thought to. 12 On the other hand, not all if adjective Complements (and perhaps not all if Direct Objects) are replaceable by whether Clauses. Here 'conditional' and interrogative if meet. 13

the marked Clause. As we shall see, if Clauses cannot be syntactic Subjects or noun Complements, but they can be semantic Subjects and noun Complements. The trick is to juxtapose the if Clause to the unmarked Clause and to use an anaphoric instead of the if Clause.

10 Thus, (20) can be paraphrased in such a way that the marked Clause is a syntactic Subject (though we cannot use if but only whether):

(22) *[If / Whether] he was an alcoholic or not is arguable.

On the other hand, (21) can only be paraphrased by a correlative structure, where the if Clause is anaphorically referred to by a pronoun. In this case, of course, we cannot replace if by whether:

(23) *[If / Whether] he turned to be an alcoholic that’d be interesting.

Nor can we put the marked Clause as a syntactic Subject:

(24) *[Whether / If] he turned to be an alcoholic would be interesting.

11 Cf. [SQG72, 747]: I wouldn’t object if you took a rest.

12 For further details see section 3.2.

13 By the way, wh- adjective Complements are ok.

(27) It is rare when he drinks.

More interesting perhaps is the fact that that Clauses are also appropriate, which shows that these Clauses are treated differently to preposition Complements. If we are right, this means that they are
If Subjects are inappropriate. Whether Subjects, as when and where Subjects,\(^{14}\) are often ok, though a bit weird:

(31) [*If / Whether] he’ll turn to be an alcoholic is everybody’s question today.

Unlike wh- Clauses, if preposition Complements (and to Indirect Objects), though gaining some currency, are basically inappropriate. When appropriate, they are semantically replaceable by the corresponding whether Clauses. If adjective Complements, on the other hand, are ok. However, they are replaceable by whether Clauses (indirect questions) sometimes only. In other cases they seem to behave as ‘conditional protases’.

We have advanced a possible explanation for these data, viz. that the degree of appropriateness of a marked Clause as a preposition Complement, Indirect Object or Subject depends on the degree to which that Clause is treated as a nominal Phrase. If this is correct, where, when and whether Clauses show a high degree of nominalisation – though not complete, since they are not fully appropriate as Subjects –, whereas if Clauses show a very low degree of nominalisation. Moreover, if we distinguish between interrogative and dubitative (‘conditional’) if Clauses we notice that interrogative if Clauses show a higher degree of nominalisation, since most examples of preposition and adjective Complements seem to be of interrogative if.\(^{15}\)

2.3 ‘If’ is neither an Axis nor a Connexion Marker.

How to use Noun Complements to show this

A nice way of distinguishing between ‘conditional’ and interrogative if Clauses is by embedding the if Clauses as noun Complements. If we do that, the antecedent of the if Clause should tell us what entity the noun Complement describes (if any), since the noun Complement and the noun refer to the same entity. Thus, a ‘conditional’

\[
\text{(28) It is remarkable that he was an alcoholic.}
\]

\(^{14}\) Noun plus relative Clauses structures are preferred:

\[
\text{(29) [When / The time when] he was in the rehabilitation centre was one of the happiest times in her life;}
\]

\[
\text{(30) [Where / The place where] he was living resembled a big old castle.}
\]

\(^{15}\) For more details see section 2.3.3.
Clause should bear such antecedents as *condition* or the like, interrogative *if* Clauses, such antecedents as *question* and the like.

More in general, we can ascertain whether a marked Clause describes an entity or not, depending on whether the Clause can be embedded as a noun Complement or not, and if it can, what entity it describes.\(^{16}\)

But there are more advantages in using noun Complements. Even if a marked Clause cannot be embedded, sometimes the whole Sentence (containing the marked Clause) can. In this case, the antecedent seems to refer to the connexion holding between the marked and the unmarked Clauses. As before, the antecedent serves also to identify the object described, in this case, what kind of connexion the Sentence describes.

In other words, we can test whether the marker can function as a connexion marker (as a Coordinator) or as an axis marker (as a Subordinator). If we accept the hypothesis advanced in section 2.3.3, this means that we can test the degree of nominalisation of a marked Clause. If the marked Clause can function as a noun Complement, it shows a high degree of nominalisation; otherwise, it shows a low or null degree of nominalisation. If the marked Sentence can function as a noun Complement the Sentence is Coordinate, i.e. the marker is a connexion marker; if it cannot, the marker is not a Coordinator.

There is an observation to make here. The antecedents must refer to a kind of entity or to a kind of connexion. It is possible to have general antecedents like *fact* or *case*, which admit almost anything as a noun Complement (i.e. marked Clauses and Sentences alike). But they are useless to check whether a marked Clause is Coordinate or Subordinate, i.e. whether a marked Clause describes a peculiar kind of connexion or a peculiar kind of entity, i.e. whether a marker is a connexion or an axis marker.

However, they are useful on another count. *That case, that possibility* and the like are nonassertive, singular antecedents; *that fact* and the like are assertive, singular antecedents. Thus, their noun complements, independent of their axis or connexion values, will be speech-act and scope marked as nonassertive, singular and assertive singular respectively.

In sum, noun Complement structures allow us to check whether a marker is a Coordinator (a connexion marker), a Subordinator (an axis marker) or a speech-act marker. In this section we want to use these structures to show that linguists who hold that *if* is an axis marker, as *when* and *where* are, are wrong. Also, we want to show that logicians who maintain that *if* is a connexion marker, as *and*, *or* and *although* are, are wrong too. Thirdly, we shall show that our conjecture is plausible,

\(^{16}\) Thus, *when* Clauses have antecedents denoting a time, *where* Clauses, antecedents denoting a place, etc.
ie. that *if* is a speech-act marker.\(^{17}\)

Besides *whether*, *if*, *when* and *where* we shall study the behaviour of *although*, *so that* and *because* structures. These structures are interesting because they show different degrees of nominalisation: *because* and *so that* Clauses are not as appropriate as *when* and *where* Clauses, but they are more so than *although* ones. In fact, they exemplify the fact that there is a movement from Coordination to Subordination. Semantically, this means that certain connexion markers become axis markers. *So that* and *because* are halfway through that movement; *although* is an example of an almost pure Coordinator.\(^{18}\)

### 2.3.1 ‘(Al)though’, ‘because’ and ‘so that’

Traditionally, *because* Clauses are adverbial Subordinate Clauses of reason or, in short, causal Clauses. *Because* is, then, a cause marker. *Because* is inappropriate in preposition Complement and Subject environments. As with *if*, there is another marker, semantically close to it, inappropriate as an adjunct header, that plays its role in those environments, viz. *why*. Examples are:

(32) She started painting *[because / *why] he returned to London;*

(33) *[*Because he returned to London / Why she started painting] was a top secret;*

(34) It all depended on *[because he returned to London / why she started painting].*

Unlike *if*, *because* is also inappropriate in Direct Object environments:

\(^{17}\)It can be claimed that the syntactic irregularities exhibited by *if* (i.e. the fact that *if* Subject-s, adjective and prepositional Complements are mostly inappropriate) are semantically irrelevant. Thus, the fact that *when*, *where*, *whether* Clauses are appropriate in those environments shows that syntax has caught up with semantics. But still, they can argue, *if* Clauses describe peculiar kinds of entities, syntax lagging behind in this case. Maybe! But notice that the main semantic problem concerning *if* Clauses is not that they are syntactically inappropriate in certain cases, but that they play two, apparently different, semantic roles. They are either interrogative or 'conditional'. In fact, what the results in the last section show is that it is the interrogative value that seems to be spreading over to new syntactic environments. The 'conditional' *if* would be restricted to *if* adjunct-s. Embedding 'conditional' structures as noun Complements answers this argument. 'Conditional' protases do not always describe 'conditions'. Moreover, 'conditions', like cases or possibilities, are speech-act (nonassertive) antecedents, not axial ones. At the end of the day, the only difference between interrogative *if* and 'conditional' *if* is that the former has moved from being dubitative to being interrogative. But in both cases, *if* is a speech-act, nonassertive marker. The schizophrenia is over. *If*, like *when* and *where*, has a single root semantic value. Unlike in the case of *when* and *where*, this semantic value does not make reference to any peculiar kind of entity.

\(^{18}\)If we have chosen *although* instead of *and*, *or*, etc. is because sometimes it is seen as a 'concessive' adverbial Subordinator, in a similar way to how *if* is seen as a 'conditional' adverbial Subordinator. The differences between *if* structures on the one hand, and *and* and *or* structures on the other, are more obvious (cf., e.g., [Lyc84]).
(35) I know *because he returned to London / why she started painting].

So that Clauses are adverbial Subordinate Clauses of aim or, in short, final Clauses. So that is, then, a final marker. Like because Clauses, so that Subjects and preposition Complements are inappropriate. In these syntactic environments so that is replaced by what... for:

(36) He returned to London [so that she started painting / *what she started painting for];

(37) [*So that she started painting / What he returned to London for] was a top secret;

(38) It all depended on [*so that she started painting / what he returned to London for].

Like because, so that is also inappropriate in Direct Object environments:

(39) I know [*so that she started painting / what he returned to London for].

(Al)though Clauses are adverbial ('concessive') Subordinate Clauses. What 'concessive' means is rather obscure. In due course, we shall show that they are adversative, i.e. that they describe an opposition. Like because and so that Clauses, although Subjects and prepositional Complements are inappropriate. Moreover, unlike so that and because, although does not have an alter ego to replace it in these environments.¹⁹

(43) Although he returned to London she started painting;

(44) *Although he returned to London was a top secret;

(45) *It all depended on (al)though he returned to London.

Like because, so that is also inappropriate in Direct Object environments:

(46) *I know although he returned to London.

¹⁹ Unless you accept Strings like these:

(40) *What she started painting in spite of was a top secret;

(41) *It all depended on what she started painting in spite of;

(42) *I know what she started painting in spite of.
2.3.2 Noun Complements

Take a Sentence containing an 'adverbial Subordinate' although, because, so that, if, when or where Clause. There are two sorts of structures we shall be looking at. The first structure results from embedding the marked Clause as a noun Complement; the second, by embedding the whole Sentence as a noun Complement. In each of those two cases, we shall try to perform the embedding using the original marker and, if inappropriate, using a different marker. Examples are:

(47) Her reason, that she had started painting because he returned to London, was wholly unconvincing;

(48) Her studio, where she started painting twenty years ago, is to be auctioned next week.

Let us distinguish between three kinds of antecedents. An axis antecedent is a noun Phrase which refers to an entity. A connexion antecedent is one which refers to a relation. A speech-act antecedent is one which refers to a speech-act. E.g., antecedents referring to places (like the studio, the place, etc.) or to times (like the time, all those years, etc.) are axis antecedents; antecedents referring to relations of opposition (like her strong opposition, her resolve, etc.) or to causal relations (like her reason, that causal link, etc.) are connexion antecedents; and antecedents referring to nonassertion (like question, case, etc.) or to assertion (like answer, fact, etc.) are speech-act antecedents.

2.3.2.1 Only Clauses of Time and Space are treated as Nominal Phrases

The first thing we want to show is that antecedents like time and place co-refer with when and where Clauses (and not with when and where Sentences) respectively. In other words, a when Clause refers to a time. Likewise, a where Clause refers to a place. On the other hand, antecedents like reason, condition, aim and determination co-refer with because, if, so that and although Sentences (and not with the respective Clauses) respectively. That is, they describe peculiar kinds of relations, not of entities.

E.g., an although Sentence describes an opposition between two entities.

Let us see some examples. First, we shall see what results from embedding Sentences in an environment where neither the antecedent nor the predicate refer to any peculiar kind of entity or relation:

(49) That fact, that she started painting when he returned to London, was certainly irrelevant;

(50) That fact, that she started painting where he lived, was certainly irrelevant;
(51) That fact, that she would have started painting if he had returned to London, was certainly irrelevant;

(52) That fact, that she had started painting because he returned to London, was certainly irrelevant;

(53) That fact, that he had returned to London so that she started painting, was certainly irrelevant;

(54) That fact, that she had started painting although he returned to London, was certainly irrelevant.

In all these examples the noun Complement refers to a fact. What is crucial, however, is that the identity of the fact varies. In the two first Strings, the fact in question is the fact described by the unmarked Clause of the noun Complement. For instance, in the first example that fact co-refers with that she started painting (when he returned to London). That this is so can be seen as follows. We can comment on materials contained in the unmarked Clause without shifting the topic; we cannot comment on the when Clause without shifting the topic:

(55) *That fact, that she started painting when he returned to London, was certainly irrelevant. He was going to return anyway;

(56) That fact, that she started painting when he returned to London, was certainly irrelevant. She was going to start painting anyway.

In the other examples, the fact is the whole noun Complement. E.g. in (52) the fact is not that she had started painting for some reason or other, but that she started painting because he returned to London. What is irrelevant is not that she started painting but that there is a connexion between her starting painting and his returning to London.

If this is true, we should expect some differences in appropriateness when the predicate refers to a peculiar kind of entity or relation. In particular, we should expect that when and where Strings are completely inappropriate, whereas the rest of the Strings should be, at least, mildly so. This seems to be the case in view of these examples:

(57) *The fact that she had started painting when he returned to London is also the time the UK was at war;

(58) *The fact that she had started painting where he lived was the place where he died the following year at;
( 59 ) ?The fact that she would start painting if he returned to London was suggested as a hard condition for her father to accept;

( 60 ) ?The fact that she had started painting because he returned to London was the reason she gave to her father;

( 61 ) ?The fact that he had returned to London so that she started painting, was one of his most urgent targets at the time;

( 62 ) The fact that she had started painting although he returned to London shows her strong determination to work in Spring.

The reason for the difference is that fact in the when and where Strings refers primarily to the unmarked Clause of the noun Complement, whereas the axis predicate refers to the wh-Clause of the noun Complement. Therefore, there is a referential mismatch between the Subject (antecedent) and the predicate. On the other hand, fact in the other examples refers to the whole noun Complement, and, moreover, (as we shall see soon) items normally associated with those Strings refer to the whole Sentence and not just to the marked Clause. So, there is no referential mismatch. They are awkward. But this is probably caused by the artificiality of the examples. We insist, what matters is the relative appropriateness of the last five examples.

The awkwardness disappears when, instead of having a speech-act antecedent, we have a connexion or an axis specific antecedent. Everything else remains the same. When and where Sentences do not co-refer with axis antecedents, but the rest of the Sentences do with appropriate antecedents. Therefore, because, if, etc. Sentences, and not the correspondingClauses, describe causal connexions, final connexions, etc. whereas when and where Sentences do not, as required:

( 63 ) *That time, that she had started painting when he returned to London, was certainly irrelevant;

( 64 ) *That place, that she had started painting where he lived, was certainly irrelevant;

( 65 ) Her condition, that she would start painting if he returned to London, was unacceptable to her father;

( 66 ) Her reason, that she had started painting because he returned to London, was unacceptable to her father.

Examples with so that and although are not too good:

( 67 ) *His intention, that he would return to London so that she started painting, was much praised by his mother;
(68) *Her de. ermination, that she started painting although he returned to London, was highly regarded by his mother.

But this is irrelevant for us, since the alternative constructions:

(69) His intention to return to London so that she started painting was much praised by his mother;

(70) Her determination to start painting although he returned to London was highly regarded by his mother

are appropriate, and the the whole noun Complement still co-refers with the connexion antecedent, as required.

We have shown how when and where Sentences do not co-refer with axial antecedents, but the rest of the Sentences do. Now we must show the reverse, viz. that when and where Clauses do co-refer with axis specific antecedents, but the rest of the Clauses do not. To that end, we embed only the marked Clauses in the above examples, and use a specific antecedent:

(71) The time when he returned to London is certainly irrelevant;

(72) The place where he lived (at) is certainly irrelevant;

(73) *Her condition, if he returned to London, was unacceptable to her parents;

(74) *Her reason, because returned to London, was unacceptable to her father;

(75) *His target, so that she started painting, was about to be achieved;

(76) *Her determination, although he returned to London, was admirable.

Time and place Strings are appropriate. The rest of the Strings are not, as expected. But this is not the end of it. As we shall see in the next section, there are subtle differences between causal and finals, on the one hand, and ‘conditional’ and ‘concessive’ examples on the other.

2.3.2.2 Causal and Final Strings: two Cases in between

Perhaps the fact that if, because, so that and although-headed Clauses cannot be embedded is semantically irrelevant. That is, perhaps we can embed those Clauses but headed by a different marker and keeping the axial antecedents. If we take the last set of examples and replace the header by that or zero, we obtain the following Strings:

(77) The time he returned to London is certainly irrelevant;

35
The place he lived (at) is certainly irrelevant;

Her condition, that he returned to London, was unacceptable to her parents;

?Her reason, that he returned to London, was unacceptable to her father;

?His target, that she started painting, was about to be achieved;

*Her determination, that he returned to London, was admirable.

The basic picture is the same. Time and place Strings are appropriate, the rest are not. However, there is a sense in which that he started painting is his target, and that he returned to London, her reason or condition. This is not the case with her resolution. Prima facie this may suggest that causal, final and 'conditional' Clauses are to be analysed in a similar way. Thus, the defender of the thesis that if Clauses describe 'conditions' may claim that causes, aims and 'conditions' can be more easily conceived as the entities described by the respective marked Clauses alone, whereas although Clauses do not describe any entity whatsoever.

2.3.2.3 ‘Conditions’ are Speech-Acts

We have seen how there are some results that point out to when and where as Subordinators (axis markers) and to although as a Coordinator (connexion marker). Because, so that show mixed features, what suggests that they are in between.

Now, it is tempting to think of ‘conditionals’ on the pattern of causals and finals. We saw how, like causals and finals, ‘conditional’ Sentences could be embedded as noun Complements. Then, we saw how ‘conditional’ protases could be embedded too, as long as if is replaced by that (in the same ways as because and so that need to be replaced by that).

This is deceptive. First of all, the fact that if Clauses can be embedded wrongly suggests that if is an axial marker. Second, the fact that if Sentences can be embedded wrongly suggests that it is if that marks the connexion.

We want to show now that if Clauses are embedded like commands, promises and, in general, structures which express speech-acts, and not like causal and final Clauses. Second, that only a small group of if Clauses can be embedded having condition as an appropriate antecedent, whereas because and so that Clauses can generally be embedded in structures such that the antecedent refers to causes and aims respectively. In the next section we shall show that if Sentences are embedded in a different way to how although Sentences are embedded. Moreover, we shall show that only a handful of if Sentences can be embedded with condition as a lawful antecedent.

To start with, (79) is deceptively appropriate. Let us modify it a little bit. First of all, embedding the whole Sentence is possible, as noted:
(83) She says that she will start painting if he returns to London. This condition, that she will start painting if her father returns to London, is not going to move him. He’s always considered his daughter whimsical and pampered.

Now, embedding only the marked Clause produces an apparent appropriate String:

(84) She says that she will start painting if he returns to London. This condition, that her father returns to London, is not going to move him. He’s always considered his daughter whimsical and pampered.

On closer inspection, however, the String turns out to be inappropriate. To be sure, a slightly different String is indeed appropriate, viz.

(85) She says that she will start painting if he returns to London. This condition, that her father (should) return to London, is not going to move him. He’s always considered his daughter whimsical and pampered,

where returns has been replaced by (should) return. The noun Complement does not express a ‘condition’, but a command. There are some ‘conditionals’ whose protasis entails or presupposes a command. But then, again, condition does not refer to a special entity, but to a garden-variety entity, namely, an event. The specificity of condition is, in this case, marking the speech-act associated to the event described by the protasis, i.e. marking the command. Actually, it can also be construed as embodying a wish, so that any of the two Strings below can, in slightly different situations, paraphrase (84):

(86) She says that she will start painting if he returns to London. This imposition on her part, that her father (should) return to London, is not going to move him. He’s always considered his daughter whimsical and pampered;

(87) She says that she will start painting if he returns to London. This wish of hers, that her father (should) return to London, is not going to move him. He’s always considered his daughter whimsical and pampered.

As we shall see, not all if Sentences are ‘conditional’. This precludes many if Sentences from being lawfully embedded. Besides, it precludes the if Clause from being embedded having condition as an antecedent. An example is this:

(88) Yes, she says that if the Nationals win the next election, she’ll return to Qld. But this condition, that she’ll return to Qld. if the Nationals win the election, is a red herring. As a matter of fact, she doesn’t intend to come back anyway;

20 See chapter 4
Yes, she says that if the Nationals win the next election, she'll return to Qld. But this condition, that the Nationals (should) win the election, is a red herring. As a matter of fact, she doesn't intend to come back anyway.

In a context where her decision is independent of the outcome of the election, this condition, that the Nationals (should) win the election is hardly meaningful.\footnote{To produce really inappropriate examples, try 'conditionals' where the apodosis describes a natural phenomenon.}

To sum up, \textit{Her condition that he returns to London} looks appropriate but it is not. Replacing \textit{returns} by \textit{(should return) makes the noun Complement co-referential with a nominal Phrase expressing a speech-act (a wish or a command). And therefore, condition is not an axis but a speech-act antecedent. Finally, this move is only available when the \textit{if} Sentence really expresses a condition. In general, then, \textit{if} Clauses cannot be embedded having \textit{condition} as an antecedent. Moreover, \textit{condition} seems to be a speech-act, not an axis antecedent, since we can replace it by \textit{wish, command}, etc., which are unmistakably speech-act antecedents.}

\textbf{2.3.2.4 ‘If’ ‘s which are not ‘Conditional’}

It is our aim in this section to show that there are many examples of \textit{if} Sentences that cannot be embedded as noun Complements when \textit{condition} is the antecedent. Examples are:\footnote{With due respect to [Ada70], [Aus70, 210] and [Str52, 89].}

\begin{enumerate}
\item[(90)] [a] If Oswald didn’t kill Kennedy someone else did;
\item[(91)] [b] \textit{*That condition, that if Oswald didn’t kill Kennedy someone else did, was unacceptable to the people of the U.S.}\end{enumerate}

\begin{enumerate}
\item[(92)] [a] There are some cookies on the table if he wants some;
\item[(93)] [b] \textit{*Her condition, that there were some cookies on the table if he wanted some,\ldots}\end{enumerate}

\begin{enumerate}
\item[(94)] [a] If Mary is a vegetarian, so is John;
\item[(95)] [b] \textit{*Her condition, that if Mary is a vegetarian so is John,\ldots}\end{enumerate}

\begin{enumerate}
\item[(96)] [a] If Rushdie is a bad writer, I’m the Ayatollah;
\item[(97)] [b] \textit{*That condition, that if Rushdie is a bad writer, I’m the Ayatollah,\ldots}\end{enumerate}
If he is poor at least he is honest;

That condition, that if he is poor at least he is honest,...

and so on. Condition seems to require a very peculiar kind of entities, viz. actions performed by agents capable of having wishes and making promises. A condition involves a person promising or declaring her intentions to do something if somebody else does something, or, perhaps, if something just happens. To see this, let us just go back to the paradigmatic example of a 'conditional' and let us see what happens if we replace if by on condition that (on the standard, logical, interpretation of this String):

If Oswald didn't kill Kennedy someone else did;

Someone else killed Kennedy on condition that Oswald didn't.

So, condition is not going to do as a general antecedent of if Sentences. Therefore, there is a disanalogy between although and if, viz. although Sentences generally describe a relation of opposition, whereas if Sentences do not generally describe a relation of 'conditionality'.

Moreover, we have found that conditions are rather peculiar objects, which require at least that there is an agent capable of having desires and making promises. This points to the fact that speech-act is an important ingredient of 'conditions'. So, perhaps we can find a speech-act antecedent which is more general than condition and that allows all kinds of if Sentences to be embedded. E.g., what if we take case to be the antecedent of if Sentences? Well, we should be able to embed a greater number of if Sentences as noun Complements, given that in the case that is semantically like on condition that except that it does not have the restrictions the latter has (animacy, intentionality, etc.):

That case, that someone else killed Kennedy if Oswald didn't, was the most plausible one;

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23 One is tempted to say 'rational agents'.

24 Compare with:

If Oswald doesn't kill Kennedy someone else will;

Someone else will kill Kennedy on condition that Oswald doesn't.

This latter String is appropriate. It expresses the commitment on somebody else's part to kill the man if Oswald does not. Making the speech-act explicit otherwise turns (104) into an appropriate Sentence:

Someone else promised to kill Kennedy on condition that Oswald didn't.
But this case, that she'll return to Queensland if the Nationals win the election, is a red herring. She doesn't intend to come back anyway.

Notice that case refers here to the whole Sentence. That is, what is plausible in the first example is not that someone else killed Kennedy, or that Oswald didn't, but that someone else did if he didn't. In the second example, the 'red herring' is not that the Nationals will win the elections, but that she'll come back if they do.

Nonetheless, case can also be the antecedent of just the 'protasis' or just the 'apodosis':

That case, [that someone else killed Kennedy / that Oswald didn't kill Kennedy], was the most plausible one;

That case, [that she'll return to Queensland / that the Nationals will win the election], is a red herring.

2.3.2.5 Looking for a more general Antecedent for 'if' Structures

In view of those results, case can hardly be classified as either an axis or a connexion antecedent. Like fact,25 case allows any of our Sentences as its Complement. Moreover, it allows various Clauses to be embedded as Complements. Among others, both Clauses of an if Sentence. Fact and case are speech-act antecedents. The difference between them is precisely one of speech-act, viz. fact is an assertive antecedent, case, a nonassertive one.

Let us start with the first of those claims, viz. that case allows any of our Sentences as its Complement. Consider the following set of examples:

That case, that she started painting when he returned to London, was rather unlikely;

That case, that she started painting where he lived, was rather unlikely;

That case, that she would have started painting [if / because / although] he had returned to London, was rather unlikely;

That case, that he would have returned to London so that she had started painting, was rather unlikely;

Secondly, what is the difference between case and fact? The difference is that fact describes an actual event, case, a possible one.26

25See section 2.3.2.1.
26Actually is not stressed (focus :d) in these examples.
(113) [a] *The fact that he would have returned to London made possible for her to visit Picadilly Circus;

(114) [b] The fact that he actually returned to London made possible for her to visit Picadilly Circus;

(115) [a] That case, that he would have returned to London, is not relevant any more;

(116) [b] *That case, that he has actually returned to London, is certainly not out of the question.

We are getting close now to finding an antecedent for if Clauses, which is sufficiently general as to be an antecedent of all kinds of if Clauses, and specific enough so that if Clauses co-refer with that antecedent and other marked Clauses do not. Case is certainly close to the mark. Neither when or where nor because or so that Clauses admit case as an antecedent but, as we have just seen,27 if Clauses do. But perhaps case is not sufficiently explicit a speech-act marker. In that case, perhaps possibility is more convincing:

(117) The possibility that Oswald didn't kill Kennedy is rather remote;

(118) The possibility that he wants some cookies is rather remote;

(119) The possibility that Mary is a vegetarian is rather remote;

(120) The possibility that Rushdie is a bad writer is rather remote;

(121) The possibility that he is poor is rather remote.

In sum, condition is a speech-act antecedent but not general enough to co-refer with many sorts of if Clauses. Case and possibility are better fitted for the job. If is, then, a possibility marker. Now, we shall not make a distinction between objective and subjective (root and epistemic) modalities. For us, speech-act gathers both kinds of modality. In particular, there will be no difference between possibility and nonassertion, actuality and assertion. Therefore, if Clauses are nonassertive.

An indication of the fact that the distinction between root and epistemic modalities is irrelevant in this context is that we can also embed if Clauses in structures having question instead of possibility as an antecedent, but not answer, in the same way as we could not have fact as an antecedent.28

27See (107) and (108).

28The original Sentence is: If he returned to London, she'd start painting.
That possibility, that he'd return to London, came to her as a surprise;

His question, [*if / whether*] he'd return to London, came to her as a surprise;

*That fact, that she would return to London, caused a stir;

*Her answer, that he would return to London, came to him as a surprise;

(124) and (125) are inappropriate because the semantic value of the *if* Clause has not been preserved. The *if* Sentence describes his returning to London as a possibility; (124) and (125), as a fact.

At this point it is worth looking a bit backwards, to our original criticism of the way *if* structures are treated from a semantic point of view. If you recall, the main problem was that *if* had a schizophrenic semantics. Sometimes it was a nonassertive marker, notably in indirect questions; sometimes it was a ‘conditional’ marker. We have shown that *if* is not a ‘conditional’ marker in the sense that *if* Clauses describe ‘conditions’. Then, we have shown that *if* is not a ‘conditional’ marker either in the sense that *if* Sentences describe a ‘conditional’ relation between two events. Finally, we have concluded that *if* is a possibility, a nonassertive marker. There is no schizophrenia any more. In section 2.4 we shall see how *if* Clauses can describe any kind of entity. In section 3.2 we shall see that the connexion between an *if* Clause and the unmarked Clause can be of many different types, thus confirming our findings so far.

### 2.3.2.6 Further Topics: ‘if’ and ‘whether’

In the next two sections we want to deal with two side issues, which, however, are important to appreciate the position of *if* in relation to the other markers we have seen.

So far we have left *whether* aside. But it is our intention to argue that *whether* is nonassertive as *if* is. The difference between *whether* and *if* is that the former is not singular, the latter is singular, i.e. there is a difference of scope between them. If this is the case, we should expect possibility or case to be appropriate antecedents of *whether* Clauses. Instead of *that possibility*, though, (where *that* is a singular marker) we need something like *either case, any case*, etc.:

- Either possibility, *whether* Oswald killed Kennedy or not, is still open;
- Either possibility, *whether* he wants some cookies or not, is still open;
- Either possibility, *whether* Mary is a vegetarian or not, is still open;
- Either possibility, *whether* Rushdie is a bad writer or not, is still open;
- Either possibility, *whether* he is poor or not, is still open.
2.3.2.7 Further Topics: ‘why’ and ‘what... for’

Consider these examples:

(131) She started painting when he returned to London;
(132) She started painting where he had lived for the last month.

We can embed those two Clauses in a structure containing either an assertive or a nonassertive antecedent:

(133) His question, when she started painting, came to her as a surprise;
(134) His answer, [that when / ?when] he had returned to London, came to her as a surprise;
(135) His question, where she had started painting, came to her as a surprise.
(136) His answer, [that where / ?where] he had lived for the last month, came to her as a surprise.

This shows that when and where are axis markers (of time and place respectively) but not speech-act specific: they can be either assertive or nonassertive.

Because and so that can only be embedded in structures containing assertive antecedents. However, they have replacement markers (why and what... for) respectively:

(139) His question, [*that because he returned to London / why she had started painting], came to her as a surprise;
(140) His question, [*that so that she started painting / what he had returned to London for], came to her as a surprise;
(141) Her answer, [*that why she started painting / that because he returned to London], came to him as a surprise;
(142) Her answer, [*that what she started painting for / ?that so that she started painting], came to him as a surprise.

The possibility of describing times, places, causes and aims both assertively and nonassertively does not extend to ‘conditions’:

[30] Notice that we are not discussing whether if Clauses in general are appropriate in this environment (they are no., anyway) but whether if Clauses describing conditions are appropriate.
(143) [a] Her question, *if he returned to London / she started painting*, came to him as a surprise.

Suppose that we want to stretch English and try to figure out how to embed a Clause describing a ‘condition’ in a similar fashion to the way why and what..for do. The result may well be:

(144) [b] *Her question, what she would start painting if, came to him as a surprise.*

My claim is that we would need something like *what...if* to put ‘conditionals’ in the same box as time, place, cause and aim Sentences.

Notice that in these examples the embedded Clauses are not the original marked Clauses, but the unmarked Clauses. *Prima facie, why Clauses do not describe causes in the same way because Clauses do. Nor do what...for Clauses describe aims in the same way so that Clauses do. A possible analysis is that a because Clause describes a cause, and a why Clause describes the consequence of that cause. Likewise, a so that Clause describes an aim, and a what...for Clause describes the action leading to that aim.*

But there is a better analysis. *Because and so that are assertive markers; why and what...for are nonassertive ones. Now, why and what...for refer to a cause and an aim respectively. The rest of the Clause refers to the fact the cause is cause for and the fact leading to the aim. In this respect, why and what...for are descriptions on a par with because and so that Clauses respectively. The difference between the two is only that the former are nonassertive descriptions and the latter are assertive ones.*

In other words, the structure of *why she started painting* is the same as that of *she started painting because he returned to London.* Why describes the cause for her to start painting nonassertively. *Because he returned to London describes the cause for her to start painting assertively.*

*When and where Clauses can be analysed both ways. The only difference is one of intonation. If the antecedent is nonassertive (e.g., question) we analyse the noun Complement as follows. Take, e.g., (133) - (136). When and where are nonassertive descriptions of a time and a place respectively; when describes one of a set of possible times, say, <1980, 1981, 1982>; and where describes one of, say, <Paris, London, Rome, Madrid>. On the other hand, he had returned to London and he had lived for the last month are descriptions of the events we want to date and locate respectively. If the antecedent is assertive (e.g., answer) we analyse the noun Complement as follows. When he had returned to London is a description of the time when something happened; where he had lived for the last month is a description of the place where something happened.*

31 The parallelism between the two structures is transparent in informal (nonfrontalised) questions like: *she started painting why?*
2.3.3 A Hypothesis

Let us summarise once more the results we have obtained so far. One, when and where Clauses can be embedded as noun Complements of nominal Phrases referring to times and places, respectively. Where and when Sentences cannot. On the other hand, (al)though, so that, if and because Sentences, but not the corresponding Clauses, can be embedded as noun Complements of nominal Phrases denoting determination, aim, condition and cause, respectively. This means that when and where Clauses describe times and places respectively, i.e., that when and where are axis markers. It also shows that although, so that, because and if Sentences describe connexions between events, but that the Clauses they contain do not describe peculiar kinds of entities.

Secondly, it is possible, however, to embed because and so that Clauses after replacing because and so that by that as the Clause header. On the other hand, it is difficult, if possible at all, to embed (al)though Clauses by doing that. The reason is that causal and final Clauses can describe causes and aims respectively, whereas it is difficult to find a reasonable antecedent for 'concessive' Clauses. This means that Clauses describing causes and aims (as entities) are possible, though because and so that Clauses are inappropriate as noun Complements. It means, on the other hand, that there are no Clauses describing 'concessions'. Because and so that show features of both Subordinators and Coordinators. Although is a full-fledged Coordinator.

Thirdly, there are some examples that suggest that if Sentences can be embedded in a similar way to how although Sentences can, the antecedent being 'condition'. This apparently means that 'conditional' Sentences are coordinate, and if is a connexion marker. On the other hand, there are examples that suggest that if Clauses, with if replaced by that, can be embedded, being 'condition' the antecedent. This apparently means that 'conditions' are entities like causes and aims, and that if is an axis marker. In fact, it seems that if behaves very similarly to the way because and so that work.

However, there are disanalogies. Many if Clauses / Sentences cannot be embedded in structures containing condition as an antecedent. Moreover, the way if Clauses are embedded is similar to the way commands and wishes are embedded. This suggests that perhaps condition is a lawful antecedent of some if Clauses / Sentences in so far as it is a speech-act (nonassertive) marker while, at the same time, being too specific to serve as an antecedent of all if Clauses / Sentences. Case and possibility are also speech-act (nonassertive) antecedents, but less specific than condition. These are, in fact, appropriate antecedents of a whole gamut of if Clauses / Sentences. Therefore, the specificity of if Clauses is along speech-act (nonassertion) lines.

These are the results. To conclude this section we want to advance a hypothesis that accommodates these results within a broader perspective. This section is not essential to the thesis and, therefore, can be skipped safely.
The basic underlying idea is that a marked Clause becomes a description of a peculiar kind of entity by at least two different ways. The first way involves a reanalysis of a nonassertive, axis marker as a Clause header, where the whole Clause assertively describes an entity. The second way involves a reanalysis of a connexion marker as a Clause header, where, likewise, the whole Clause describes a peculiar kind of entity. *Why* and *what...for* would be examples of the first way; *when* and *where* are examples of the second way.\(^{32}\)

Both ways seem to somehow converge. A first step would involve the existence of an assertive, connexion marker alongside a nonassertive axis marker. Take, e.g. English. On the one hand, in English there are markers like *when*, *where*, *why* and *what...for* which were originally nonassertive axis markers. On the other hand, there are connexion markers like *when*, *where*, *because* and *so that* which were originally connexion markers. Now, there is no structure like *what...if*, which allows the speakers to ask specifically about 'conditions'. On the other hand, many *if* Sentences do not describe a 'condition'. Therefore, *if* structures have not even attained this first step.

A second step would involve the connexion marker becoming an axis marker (a Subordinator) and the nonassertive, axis marker becoming assertive. At the end of the process, the Clauses headed by those markers would be assertive descriptions of peculiar entities. For example, *why* and *what...for* became Clause headers. The Clauses they head seem to function as assertive for many speakers. On the other hand, *because* and *so that* show clear signs of being Subordinators. A slightly different case is that of *where* and *when*. *Where* and *when* replaced prior spatial and temporal (connexion) markers in English. The single forms became full-fledged Subordinators, and the Clauses they head became assertive descriptions of places and times respectively.

The whole process could be called process of Clause nominalisation. Full nominalisation would involve not only the full Subordination of the Clause in question and the possibility of analysing the Clause as an assertive description of a particular kind of entities, but also the ability of the Clause to occupy any syntactic position that can be occupied by the nominal Phrases describing that kind of entities. This condition is not met by causal or final Clauses. It is not even met by *where* Clauses, and even *when* Subjects are sometimes a bit funny.

What we have done before is to focus on a segment of this process of nominalisation. We have taken noun Complements as a sensitive tool to detect various degrees of Subordination. We were interested in *if*. We have shown that *if* is neither a connexion nor an axis marker. Given the wider perspective presented here we can

\(^{32}\)It is tempting to say that these processes mean the consolidation of specific kinds of objects as entities in a particular language. But this claim is beyond the limits of the present study.
see that 'conditionals' have not even attained the stage where speakers can ask about entities called 'conditions' in any specific way. On the other hand, a 'conditional' connexion is not expressed in any specific way, since if Sentences do not always express 'conditionality'.

2.4 'If' is an Axial Neutral Marker

If if is not an axis marker, what is the axis of an if Clause? In other words, what kind of entities do if Clauses describe? The answer is that they describe all sorts of entities. If Clauses are axis neutral. But let us first say something more about what axis is.

2.4.1 The Axis Feature: what Entities do we want?

Axis is the first of our (semantic) features. Axis is about what kinds of entities are used in discourse. Here we are not interested in either a complete or definitive classification of entities but rather in a provisional working list which allows us to assign an axis value to some of the structures we are after. In particular, since if is not an axis marker, we are interested in finding out what if Clauses describe.

In chapter 1 we introduced the concept of focus. Now it is the moment to start using it. The idea is that we assign an axis value to a structure on the basis of what entity is described by the focus of the structure. For example, the referent of doggy! is a dog. The focus is (obviously) doggy!. Depending on what axis values we want to consider as relevant, the String is, say an object, animate, animal, etc. String. We shall not be too fine-grained. For us, this is just an object String. A more interesting example is this:

(145) He started painting last year.

Suppose that last year is the focus of the String. The rest are nonfocal elements. Last year describes a time instant. Therefore, we assign the axis value time to the String. The same analysis applies to:

(146) He started painting when he returned to London.

33In section 3.2 we shall show that if Clauses are connexion neutral, i.e. that they can describe all sorts of connexions between the entities they describe.

34We could just say that an if Clause has the same semantic marking a zero structure has. But logicians could argue that if Clauses always describe events or propositions or the like, and we happen to disagree: if Clauses describe different kinds of entities.
Suppose that *when he returned to London* is the focus of the String. As before, the rest are nonfocal elements. *When he returned to London* also describes a time instant. Again, the String is a time String.\(^{35}\)

Well, what kinds of entities shall we deem relevant here? We pointed out to a useful criterion in chapter 1, viz. to accept entities described by *wh-* items. Thus, we shall have events, propositions and objects corresponding to *what*;\(^{36}\) also, we shall have persons (*who*), causes (*why*), aims (*what for*), times (*when*) and places (*where*). These will do to show that *if* can describe several different entities, and to compare *if* to some of the other marked Clauses we discussed in previous sections, like *when*, *where*, *because* and *so that* Clauses.

The results of this section can be summarised by saying that *that*, *if*, *whether* and zero (unmarked) Strings form a single class of structures in relation to axis, i.e. all of them are axis-neutral. Their axis value depends on which is the focus of the String. The main differences between *that*, *if*, *whether* and zero structures are that they are used in different syntactic roles or that they have different speech-act values.

So far we have tiptoed around those syntactic roles where *if* is traditionally recognised as a marker, viz. Direct Objects and adjuncts. The latter will be left for the future. Direct Objects are our main source of examples in this section. However, as an introduction to Direct Objects, we shall start by considering axis marking in the context of independent Clauses. The question is: what kinds of entities do independent Clauses describe?

### 2.4.2 Fixing the Axis of Independent Clauses

We said before that we accept entities on the basis of available *wh-* markers. Thus,

| PERSON | who returned? |
| OBJECT | what did he give up? |
| EVENT | what did he do? |
| TIME | when did he return? |
| PLACE | where did he live? |
| CAUSE | why did she start painting? |
| AIM | what did he return to London for? |
| PROPOSITION | what did you say? |

\(^{35}\)Although 'time' sounds a bit unnatural – we should rather say that the String is temporal – it allows us to distinguish between temporal Strings (Strings describing a temporal connexion between two events) and time Strings (Strings describing an entity, viz. a time).

\(^{36}\)Properties, states-of-affairs, actions, events, etc. are all treated as events. However, propositions will be distinguished from events and objects because it will be a useful distinction when talking about 'conditionals'. We describe about objects when we ask: *what is that?*. Events are described by *what* in questions like *what happened?*. Propositions are described by *what* in questions like *what did you say?* or *what do you think?*. Propositions are linguistic or mental entities.
are nonassertive independent Clauses (wh- questions) which describe the corresponding entities. This much, we hope, is generally accepted. Answers to those questions can be the following:

PERSON Bronwyn (returned)
OBJECT (He gave up) his job
EVENT He returned to London
TIME (He returned) in Spring
PLACE (He lived) in London
CAUSE (She started painting) because of him
AIM (He returned to London) for her
PROPOSITION (I said) 'Paris'

These are assertive independent Clauses. Now, we want to say that in the same way as the above questions describe the corresponding entities, answers to those questions also describe the corresponding entities. Thus, Bronwyn returned describes a person because the speaker is selecting one person. In fact, the answer can be short (e.g., Bronwyn), in which case it is hardly arguable that the String is describing a person.

But the above answers are not necessarily answers to those wh- questions. They can also be answers to the following yes-no questions:

PERSON Did he return?
OBJECT Did he give up his job?
EVENT Did he return?
TIME Did he return in Spring?
PLACE Did he return to London?
CAUSE Did she start painting because of him?
AIM Did she return for her?
PROPOSITION Did you say 'Paris'?

It seems to us that if the assertive independent Clauses (the answers) described the entities they did, the corresponding nonassertive Clauses should also be said to describe the corresponding entities. Again, it is the focus of the String that matters.37

37 Alternative questions like:

(150) [PERSON] Who returned, Maria or Bronwyn?

or:

(151) [PERSON] Did Maria return, or was it Maria who did?

should also be said to describe the corresponding entities. Alternative questions are disjunctive Strings. The corresponding assertive Strings do also describe the corresponding entities:

(152) [PERSON] Maria or Bronwyn returned.

Direct questions are, in our terminology, nonassertive independent Clauses. The difference between yes-no, alternative and wh- questions is of scope. In chapter 1 we gave a first approximation to what we understand by scope. We said there that a structure has a focus, and the existence of a focus
Let us call a String zero or unmarked if the focus of the String is not marked by one of the markers seen so far (wh-, if, etc.) Many yes-no and alternative questions as well as many assertive independent Clauses are unmarked. Now, wh- Strings describe the entity the wh- structure describes (since it is usually the focus of the String). In zero Strings the focus is variable. Therefore, they describe a different kind of entity depending on what the focus of the String is. As such, zero Strings are axis neutral.

2.4.3 Fixing the Axis of Direct Objects

After that preliminary section on independent Clauses, let us go to Direct Objects, where we find if in action. If a wh- direct question describes a given entity, this is not going to change when we report it, i.e. when we have an indirect wh- question. So, if

(153) When did he return to London?

describes (asks for) a time,

(154) He asked when he returned to London

or:

(155) He doesn't know when he returned to London

do also describe a time. The same argument can be used to the effect that:

(156) I [know / remember] when he returned to London

describes a time. Going now to zero Strings, we have that reporting a yes-no or an alternative question takes this form:

(157) He [asked / doesn't] know [whether / if] he returned to London in Spring;

(158) He [asked / doesn't] know [whether / if] he returned to London in Spring or in Summer.

presupposed the existence of at least two (contextual) possibilities that could fill (or have filled) the role of focus. Yes-no questions are Strings that presuppose the existence of at least two possibilities that could fill the role of focus. They are nonassertive. So, the speaker does not select any of those possibilities as actual – though there may be a bias towards one of them. For the time being, the most important thing is that yes-no questions can describe different entities, depending on what is the focus of their foci.

38 Sometimes those questions are marked by Auxiliary Inversion or intonationally.
These nonassertive Direct Objects and, indeed, the Strings they figure in, talk about times. The following Strings are just their assertive counterparts and, therefore, describe times as well:

(159) *I know that he returned to London in Spring;*

(160) *I know whether he returned to London in Spring or in Summer.*

These examples show that, in the same way as *wh-* indirect questions are the counterpart of *wh-* direct questions, *if* and *whether* indirect questions are the counterpart of yes-no questions. Both *if* and *whether,* and yes-no questions are nonassertive Strings. Both exhibit a variable focus. They describe different entities according to what the focus is. Likewise, *whether... or* Strings are the Direct Object counterpart of alternative questions. Their axis is also variable. Finally, *that* Strings are the Direct Object counterpart of assertive independent Clauses. Their axis is variable as well.

The axis of *wh-* Strings is fixed by the axis of the *wh-* marker. If the axis of an *if, whether* or *that* String is variable, this surely means that *if, whether* and *that* are not axis markers. And this is what we wanted to show.

2.4.4 ‘If’ and ‘that’ are not Proposition or Event Markers

In this section we want to examine two possible alternatives to the claim that *that* and *if* are axis neutral markers. The first alternative is to consider *that* and *if* Clauses as descriptions of propositions. The second alternative is to classify them as descriptions of events. Let me examine them in order.

*Prima facie,* *that* and *if* show strong quotational features. To start with, they cannot show up in environments where the entity described is treated as a ‘concrete thing’. Thus, whereas:

(161) *I [know / lost] what you gave me*

are both appropriate,

(162) *I [know / *lost] [if / that] you gave me a ring*
are not.\textsuperscript{39} However, there are some facts to the contrary. First, that noun Complements can describe any kind of entities:\textsuperscript{40}

\begin{tabular}{ll}
  PERSON & I killed the guy that returned to London.  \\
  OBJECT & I lost the ring that he gave me.  \\
  EVENT & I did the same thing that he did.  \\
  TIME & I was there at the time that he told me.  \\
  PLACE & I cleaned the flat that he lived in.  \\
  PROPOSITION & I understood the Sentence that he uttered.  
\end{tabular}

Secondly, \textit{wh-} Clauses are not appropriate in environments where the entity is treated as a 'concrete thing'.\textsuperscript{41}

\begin{enumerate}
  \item[(165)] I cleaned where he lived;
  \item[(166)] I killed who was in the corner.
\end{enumerate}

We believe that the inappropriateness of \textit{that}, \textit{if} and \textit{wh-} Clauses in examples like the ones above must be explained on the basis of the hypothesis we advanced in section 2.3.3. These Clauses are not fully nominal(ised). We do not have time to explore the issue in detail, but there are two facts at least supporting our hypothesis. One is the fact that inserting an antecedent before the marked Clause turns \textit{that} and \textit{wh-} Strings alike into appropriate ones. The other is that \textit{where} and especially \textit{when} Strings are (almost) appropriate and we saw how there was independent evidence to think that these are examples of well developed nominal structures.

In any case, it seems that the inappropriateness of the above examples is syntactic. Semantically, \textit{that} and \textit{if} Clauses describe various kinds of entities and, therefore, are axis neutral.

\textsuperscript{39} The \textit{that} String has a semantic equivalent in:

\begin{enumerate}
  \item[(163)] I lost the ring you gave me.
\end{enumerate}

The \textit{if} String has a semantic equivalent in:

\begin{enumerate}
  \item[(164)] I lost the ring you gave me, if it was a ring.
\end{enumerate}

\textsuperscript{40} In section 3.2 we shall see how, semantically, \textit{if} Clauses can be noun Complements. Therefore, the argument given for \textit{that} works for \textit{if}, since we are discussing a semantic problem. The fact that, syntactically, \textit{if} structures exhibit a coordinate structure is irrelevant.

\textsuperscript{41} Semantically equivalent paraphrases are:

\begin{enumerate}
  \item[(166)] I cleaned the place where he lived;
  \item[(167)] I killed the man who was in the corner.
\end{enumerate}
The second alternative is to classify if and that Strings as event Strings, i.e. as descriptions of events. This seems to be suggested by examples such as:

(170) That he returned to London in May was taken as a token of friendship towards her,

where, it is claimed, the Subject stands for a fact and facts are peculiar entities, viz. events:

(171) The fact that he returned to London in May was taken as a token of friendship towards her;

(172) *The person that he returned to London in May was taken as a token of friendship towards her;

(173) *The time that he returned to London in May was taken as a token of friendship towards her.

Despite the apparent inappropriateness of these Strings, it is not clear to us that That he returned to London in May has to be always a description of an event. What was taken as a token of friendship towards her? That it was him who returned? That he returned? That it was to London that he returned? That it was in May? Our claim is that what was taken as a token of friendship can actually vary. Consider the following situations, where the focus has been boldfaced for convenience's sake:

(174) [PERSON] That he returned to London in May was taken as a token of friendship towards her. The President rarely engages in social activities;

(175) [EVENT] That he returned to London in May was taken as a token of friendship towards her. Actually, he was planning to stay for the IJCAI Conference;

(176) [TIME] That he returned to London in May was taken as a token of friendship towards her. He never travels in Spring because of the hassles of hay-fever;

(177) [PLACE] That he returned to London in May was taken as a token of friendship towards her. Actually he was planning a trip to China.

In the first situation, it is the fact that it was him who returned to London that was taken as a token of friendship. In the second situation, it is the fact that he returned. In the third, the fact that it was in May that he returned, etc. Fact, as we pointed out in section 2.3.2.5, is not a description of an event. Fact is not axis specific, but speech-act specific. It marks assertion as opposed to case, which marks nonassertion.

42 Again, if Strings will be left aside (see section 3.2 for examples of if Subjects). But the argument carries over them as long as we can show that if Subjects are semantically possible.
So, it is true that *that* and *if* Clauses describe facts and cases respectively. But these are not labels of specific entities but labels of specific speech-acts.

However, it is true that *fact* and *case* do not refer to entities *qua* entities, but *qua* entities selected from among the set of possible ones. Thus, not even (175) describes an event as such, but the fact that such an event occurred. That is, it is not his returning to London that was taken as token of friendship. It is the fact that he returned to London. *That he returned to London in May* is not a description of an event in the same way as *His return to London* is a description of an event.43

To sum up, there is no conclusive evidence to classify *if* and *that* Clauses as axis specific, that is, as either proposition or event Clauses. However, it is true that *that* and *if* Clauses describe entities by selecting among the (contextually) possible ones, instead of describing them by giving a characterisation of the given entity. Another way of saying this is that *that* Clauses do not describe entities *qua* things, but *qua* actual things (and *if* Clauses do not describe entities *qua* things, but *qua* possible things).44

This would explain that *that* and *if* Clauses are inappropriate in environments where the entity in question is treated as a 'concrete thing', but appropriate in environments where the entity is treated as opposed to other entities which are also contextually possible.

It is time to give some support to our conjecture, viz. that *if* is a nonassertive, singular marker. It is also time to talk about the differences between *wh-* , *whether,* *if* and *that* descriptions. A *when* structure describes a time. Ok, but so does an *if,* *whether* or *that* structure where the focus is a time description. Are they equivalent? On the other hand, is an *if* structure equivalent to a *that* structure?

Two new semantic features, viz. speech-act and scope will enable us to answer those questions and, thus, to make more precise the semantics of *wh-* , *that,* *if* and *whether.*

42Thus, we can say:

(178) *His return to London was vividly described by all newspapers in the country*

but not:

(179) *That he returned to London was vividly described by all newspapers in the country;*

(180) *The fact that he returned to London was vividly described by all newspapers in the country.*

44A third way of saying it is that *that* and *if* Clauses describe entities as topics (cf. [Hai78]).
2.5 ‘If’ is a Nonassertive Singular Marker

2.5.1 The Speech-act Feature

Speech-acts are broadly conceived in this study. They comprise what linguists usually call speech-acts (promises, desires, commands, questions, etc.), modalities (counterfactual, noncounterfactual) and polarities (affirmation, negation).

For us, there are two main speech-acts, assertion and nonassertion. Strings are correspondingly classified as assertive and nonassertive. Nonassertion will be chopped down into several speech-acts, grouped in three categories: epistemic, desiderative and imperative speech-acts. Epistemic speech-acts will be opinions and questions; desiderative speech-acts will be expressions of need, desire and indifference; and imperative speech-acts will be commands, advices and expressions of nonobligation:

<table>
<thead>
<tr>
<th>EPISTEMIC</th>
<th>IMPERATIVE</th>
<th>DESIDERATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>assertion</td>
<td>command</td>
<td>need</td>
</tr>
<tr>
<td>nonassertion</td>
<td>opinion</td>
<td>advice  desire</td>
</tr>
<tr>
<td>question</td>
<td>nonobligation</td>
<td>indifference</td>
</tr>
</tbody>
</table>

Each of those speech-acts can be affirmative or negative, noncounterfactual and counterfactual.45

In the same way as axis is about what kinds of entities our structures describe, speech-act is about the 'modal' status of those entities for someone, according to the speaker. Thus, an assertive structure describes an entity as actual (for someone, according to the speaker, in a particular situation), a nonassertive structure describes an entity as possible. A dubitative (opinion marked) structure describes an entity as likely; a question, as merely possible. If the structure is imperatively or desideratively valued, the entity is described as 'obliging' or 'compelling'.46

Negation just reverses the modal status of the entity in question. Thus, a negative, dubitative structure describes the entity as unlikely; an assertive, negative structure,  

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45 For the time being we are only interested in the distinction between assertion and nonassertion and, within nonassertion, in the distinction between opinions and questions. Counterfactuality will be discussed in section 3.3. Desiderative and imperative speech-acts, as well as finer-grained distinctions within the epistemic scale will be discussed in chapter 4. This classification of speech-acts is, of course, not exhaustive. But as in the case of axes, it has a rationale behind it, viz. it has been set up on the basis of the behaviour of certain markers as regards Negation Raising and complement Negation (see section 4.2.1).

46 See section 4.5.1. We could also say that speech-acts are about the status of someone, according to the speaker, in relation to the entities described. In this case, we can talk of knowledge and ignorance, etc.
as nonactual. Counterfactuality changes the situation at which the entity is evaluated. Thus, a counterfactual, assertive structure describes an entity as actual in a nonactual situation; a counterfactual, dubitative structure, as likely in a nonactual situation.

But more than definitions we need to get clear about what markers mark what. Restricting our attention to the cases that interest us right now, we want to say that:

(181) She'll start painting next year

is an affirmative, noncounterfactual, assertive String;

(182) She won't start painting next year

is its negative counterpart; and:

(183) She'd start painting next year

its counterfactual counterpart. On the other hand,

(184) She may start painting next year

is an affirmative, noncounterfactual, nonassertive String; and:

(185) She won't start painting next year;

(186) She might start painting next year

are, respectively, its negative and counterfactual counterparts. Finally,

(187) Will she start painting next year or not?

will be an affirmative, noncounterfactual question.

2.5.2 The Scope Feature: how many Entities are there?

In the next section we shall go back to if. We advertised it as a nonassertive, singular marker. To appreciate what being a singular marker amounts to, we must first see what we mean by scope.

Scope has to do with the number of entities described by the (focus of the) structure. But, as before, this number is fixed by the situation. A String has a focus. The existence of this focus presupposes the existence of a set of contextual possibilities from which the speaker has selected one or several. It is these possibilities, as taken by the speaker in a given situation, that count to fix the scope of the structure.

Scope has two ingredients. One is the number of possibilities described by the speaker when producing a given structure. The second ingredient is the number of entities contained in each possibility. The latter is particularly relevant when only
one possibility is described. Let us call the first ingredient number and the second quantification.

If a single possibility is described, the structure will be singular; if two, dual; if more than two, plural. This seems justified both on grounds of efficiency and traditional grammatical practice.

Suppose we describe one possibility. If the speaker describes some or all of the relevant entities contained in it, the structure is collective. If only one entity is described, it is individual.\(^\text{47}\) Let us give some examples:

(188) *He scratched the match.*

Suppose the focus of (188) is the *match*. Suppose further that the possibilities are: "the match, the piece of wood, the piece of paper". The focus selects one out of the three possibilities. Therefore the String is singular. On the other hand, "the match" is an individual object. Therefore, the String is individual. Now, take the following example:

(189) *He scratched a match.*

The focus is as before, except that *the* has been replaced by *a*. If the possibilities are: "a match, a piece of wood, a piece of paper" the focus still selects one out of the three possibilities but "a match" is not a description of an individual object. It is a description of any object from a collection of objects. Therefore, the String is collective. On the other hand, if the possibilities are: "the blue match, the yellow match, the red match", a match does not pick one or two possibilities, but the three of them. Therefore the String is plural. Our third example is this:

(190) *He scratched both the match and the piece of wood.*

Given the same contextual possibilities, this String is dual. If the possibilities are: "both the match and the piece of wood, the match only, the piece of wood only, the piece of paper...", the String is singular. But then, "both of them" contains two individuals. Therefore, it is collective. A last example is:

(191) *He scratched something.*

\(^{47}\) We are not interested in further distinctions. This does not mean that they do not exist. The reason is that we just want to distinguish between 'conditionals' which describe an individual connexion and 'conditionals' which describe a regular connexion, whether particular or universal. Finding out what is the scope of a structure is often as hard as finding what entity is described, since to do that we need to know what the focus of the structure is and moreover, what the possibilities the speaker is considering in a given situation are. We are here mainly concerned with number. In section 3.3 we shall just touch on quantification. By the way, the distinction between individual and collective Strings is very close to [Bar86]'s distinction between specific and general statements.
Being the possibilities <a match, a piece of wood, a piece of paper>, *something* does not pick any of them in particular, but describes all of them. Therefore, the String is plural. Besides, each of the possibilities is a collection of individuals. So, the String is collective.

2.5.3 Independent Clauses

In section 2.4 we showed that *whether*, *if*, *that* and zero structures are axis neutral whereas *wh*-structures are axis specific. Besides, we pointed out that *that* structures and zero structures without Auxiliary Inversion are usually assertive whereas *whether* structures, *if* structures and zero structures with Auxiliary Inversion are nonassertive. *Wh*-structures seem to be either.

That posed the following problem: do *whether*, *if*, *that* and zero structures just double up the various *wh*-structures? Is, say, a time *if* structure semantically identical to a *when* nonassertive one? Or, is a time *that* structure semantically identical to a *when* assertive one? The answer is no. In this section we shall see what the differences between *if*, *whether*, *that* and *wh*-structures are.48

As before, we start with independent Clauses, where things are more transparent. Then we shall go to other syntactic environments, in particular to those where *if* is traditionally recognised as a marker.

Let us forget for the time being about negative and counterfactual structures. Let us also forget about desiderative and imperative structures. Finally, let us ignore quantification altogether. In other words, let us restrict our attention to assertion and nonassertion, singularity, duality and plurality. Examples of assertive and nonassertive independent Clauses have been:

(192) *She'll start painting next year;*

(193) *She may start painting next year.*

Assuming the focus is *start painting*, we can say that (192) describes her starting painting as an actual (if future) event, whereas (193) describes this event as a possibility. Suppose the possibilities against which these two Strings were produced are <her starting painting, her not starting painting>. Both (192) and (193) describe one of those two possibilities. Therefore, they are singular. On the other hand, (192), as

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48 We do not intend to give a definitive and complete answer to the question about the differences between *if*, *that*, *whether* and *wh-* zero structures. In particular, we shall not say much about the differences between *that* and assertive *wh*-structures. The problem is a very delicate one that involves, among other things, discriminating between different *wh*-structures. Something was said in section 2.4.4: *if*, *that* and *whether* describe entities as possibilities, zero and fully nominal *wh*-structures describe entities as things.
assertive, picks one of those two possibilities as actual whereas (193) does not. That is why the latter is nonassertive. Take now:

(194) *Will she start painting next year or not?*

This String describes the event in question as a possibility. In fact, alternative questions allow us to say confidently that the only two possibilities assumed by the speaker when he asked that question are *<her starting painting>* and *<her not starting painting>*. Of these two possibilities, the String describes both. Therefore, the String is dual. The String does not pick any as actual. That makes it nonassertive.

Notice that (193) is a dubitative String, whereas (194) is an interrogative one. This suggests that there is a strong connexion between nonassertion plus duality and questions on the one hand, and nonassertion plus singularity and opinion on the other. But before going into that, let us give examples of other kinds of Strings. The following (where the possibilities are: *<her job, her marriage, her money>*) is a dual but assertive String:

(195) *She gave up (both) her job and her marriage.*

The reason is that two of the three possibilities are described and picked as actual. One may wonder whether:

(196) *She gave up (either) her job or her marriage.*

is also assertive and dual. The answer is that it is dual, since two possibilities have been described but it is not assertive, because none of them is picked as actual. So, (196) is nonassertive. Yes, there is a strong connexion between nonassertion and disjunction on the one hand, and between assertion and conjunction on the other. But, again, before getting into that, let us continue with the rest of the cases. So far we have not seen any examples of plural Strings. Here are two, one assertive and the other nonassertive. The possibilities are as before:

(197) *She'll give up all of them.*

(198) *What did she give up?*

*All of them* in (197) describes all the possibilities. Moreover, *all of them* describes each of them as actual. On the other hand, *what* in (198) describes all the possibilities

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49 We want to emphasize once again that 'possible' and 'possibility', as the rest of the terms and machinery used in this study, are discourse-bound. Something is possible if it is taken as a possibility by someone, according to the speaker, in a given situation, etc. No ontological commitment is intended.

50 Without mentioning them. The following String is also assertive and plural. In context, these two Strings are equivalent: *She gave up her job, her marriage and her money.*
too. That is why it is also plural. However, none of the possibilities have been selected as actual. That is why the String is nonassertive.\footnote{The following String is semantically equivalent to (198) in context: \textit{She gave up her job, her marriage or her money.}} Another example of a nonassertive, plural String is:

\begin{equation}
(199) \text{She'll give up any of them.}
\end{equation}

\textit{Any of them} describes again the three possibilities we are considering here. But, none of them is picked as actual.

Notice that we can say that \textit{all of them} is a definite description, whereas \textit{any of them} is indefinite. This points out to a third kind of interesting connexion, this time between nonassertion and indefiniteness on the one hand, and assertion and definiteness on the other. Admittedly, there is a difference between (198) and (199). In (198) the speaker does not know which possibilities are actual or even how many of those possibilities are actual. In (199), on the other hand, the speaker doesn't know which are actual but knows that all of them may actually be so. But in neither of the two cases particular possibilities are actually picked.

It is possible that a \textit{wh-} question is dual, viz. when there are only two possibilities. It is also possible that an alternative question is plural, viz. when it comprises more than two disjuncts. However, \textit{wh-} questions are typically plural, whereas alternative questions usually contain two disjuncts and, therefore, are dual. Secondly, we have seen how structures containing a possibility marker like \textit{may} or \textit{perhaps}, certain tag-questions, etc. are also nonassertive but singular. But, what about yes-no questions? Are they singular or dual? Take this example:

\begin{equation}
(200) \text{Will she start painting next year?}
\end{equation}

We think they are scope ambiguous. We can envisage situations where (200) can be paraphrased by:

\begin{equation}
(201) \text{She'll start painting next year, won't she?}
\end{equation}

and situations where it can be paraphrased by:

\begin{equation}
(202) \text{Will she start painting next year or not?}
\end{equation}

In the first situation, (200) is a singular String; in the second, it is a dual one. The fact that yes-no questions are scope ambiguous is important, because this is precisely the difference existing between \textit{if} as an 'indirect question' marker, and \textit{if} as a 'conditional' marker. But before going into this, let us give some examples of Direct Objects.
2.5.4 Direct Objects

Our discussion in section 2.4.3 helps us look for Direct Object counterparts of the independent Clauses given in the last section. Thus, it is fairly obvious that:

(203) Sean told me that he returned to London

is assertive and singular, since this is just a report of he returned to London, which, as we have seen, is assertive and singular in the situation described. A nonassertive counterpart of this String is:

(204) Sean told me that he may have returned to London.

It is also fairly clear that:

(205) Sean asked me whether he returned to London (or not)

is nonassertive and dual, whether or not is used or not. Likewise, in a situation where the possibilities are: <returning to London, starting painting, committing suicide>, the following Strings are assertive and, respectively, dual and plural:

(206) Sean told me that he returned to London and started painting;

(207) Sean told me that he got through all his plans,

where the three possible events are things that he intended to do. A standard nonassertive counterpart of the latter, viz. a nonassertive and plural String, is:

(208) Sean asked me what he did,

where what he did is a description of the three aforementioned possibilities, which does not commit the speaker to that any of them in particular was realised. But where is if? Take this String:

(209) Sean asked me if he returned to London.

This String is nonassertive. But is it singular as (204) or dual as (205)? We think the answer is the same as in the case of yes-no questions, viz. it depends upon the situation.53

52 Possibilities, again, are <his returning, his not returning>.

53 To be sure, if seems to be dual most of the time and, thus, a synonym of whether. But we still have cases like Let me know if you are coming (see section 2.2). We said before that this may be read as an 'indirect question' or as a 'conditional'. Now we can make that more precise. The example can be construed as a singular or as a dual String. The only difference between 'conditional' and 'indirect question' is of scope. Another example of a singular if Direct Object is:
So, let us examine the three issues mentioned above in order. First, we shall talk about disjunction and nonassertion, a fine case of semantic equivalence between connexion and speech-act markers. Then, we shall go into the interference between scope and speech-act, focusing on dubitative Strings. Finally, we shall examine the question about indefinite descriptions and nonassertion, with special reference to marked structures.

2.5.5 Disjunctive Structures are Nonassertive

We have noticed how Strings like:

(213) *She gave up (either) her job or her marriage,

despite its appearance, are not assertive. The reason is that they do not pick up any single possibility as actual. Technically, it is possible to say that <her job or her marriage> is a single possibility. We shall argue that this is not how these Strings are normally interpreted. But before doing that, let us give an example of a that Direct Object:

(214) ??I believe (either) that he returned to London or (that he) started painting.

This String in not really appropriate. In dual situations the structure is even less appropriate:

(215) *I believe (either) that he returned to London or [that he didn't / not].

Being <his returning to London, his not returning to London> the only possibilities, the speaker’s belief amounts in fact to sheer ignorance. As before, we can say that <his returning to London or his not returning to London> is just one possibility; so the String is singular.\(^{54}\) Unfortunately, English speakers do not seem to take this way out, i.e. they do not seem to think that the disjunction is often a single possibility.\(^{55}\)

\(^{54}\) And appropriate. It expresses the belief in a logical truth indeed.

\(^{55}\) Thus, e.g., It's in the cupboard or on the kitchen's board. I don't know seems more appropriate than: ??Of course I know where it is. It's in the cupboard or on the kitchen's board.
So, there seems to be some ground to connect disjunction with nonassertion. Can we be more specific? Yes, we can. In the same way as conjunction can be symmetric (the usual one) and asymmetric, disjunction can be symmetric (the usual one) and asymmetric:

(216) *It is in the cupboard, or else, on the kitchen’s board.*

The two disjuncts do not have the same status in an *else* disjunction. What (216) means is that there is a higher likelihood (according to the speaker) for it to be in the cupboard than on the kitchen’s board. None of the two possibilities are described as actual, but one of them is more prominent.

Symmetric disjunctions are speech-act and scopewise equivalent to questions. Asymmetric disjunctions, to dubitative structures.

2.5.6 ‘If’ versus ‘whether’: Dubitative Strings are Nonassertive and Singular

Ever since the beginning of this study we have equated ‘dubitative’ with ‘nonassertive singular’. Thus, our main conjecture has sometimes been stated as saying that if is a dubitative marker, sometimes as saying that it is a nonassertive, singular marker.

A nonassertive structure describes an entity as not being actual, as being possible. A singular structure describes a single entity. Thus, a nonassertive, singular structure describes a single entity as being possible. Now, suppose we have several possibilities in a given situation and we select one and point to it as a possible one. This is not informative, since all the possibilities are possible. What the speaker does by selecting just one is to declare it more likely than the others, to bet on it, even if mildly so. Thus, suppose the police are tracking down an international criminal and one of their informers gives them a call and says:

(217) *He may return to London tomorrow*

can be analysed as being nonassertive (his returning is possible) and singular (only one possibility has been described). Notice that (217) is not equivalent to:

(218) *He may return to London or somewhere else tomorrow*

That he will return to London is assigned a higher likelihood. Consequently, the police will check planes for London in a special way (without of course, discarding planes

56 Cf. [Lak71], [Sch75], [Sch86] and [Tra86]. An example is: *He ate too much and fell asleep.*

57 Cf. [Lak71, 1 3–4].

58 (216), e.g., is equivalent (in the relevant respects) to *It’s in the cupboard, isn’t it? It’s in the cupboard or on the kitchen’s board is equivalent to: Is it in the cupboard or on the kitchen’s board?*
to other destinations). Therefore, the String is also dubitative, since a dubitative structure describes an entity as likely (for someone according to the speaker, in a particular situation).

We have pointed out that yes-no questions and *if* Direct Objects are ambiguous as to scope, viz. they are either dual or singular. Given the equation just seen, this translates as: yes-no questions and *if* Direct Objects can be dubitative or interrogative. The difference is just between describing an object as likely and describing it as merely possible.59

The fact that there is just a subtle difference between the two values explains that markers fluctuate between one and the other. In the case of yes-no questions it is plausible to think that they are primarily dual structures, but that something like the principle of Information Optimisation (see section 4.4.2) makes them usable to express subtle preferences of the speaker. It is also plausible to think that *whether* undergoes a similar process since, originally, it was a dual marker. However, the reverse is also possible. So, we want to argue that *if* is primarily a singular marker, used as a dual marker on occasion (equivalent to *whether* in certain syntactic environments).

Apart from historical considerations (see chapter 5), notice that *if* is not completely appropriate when each alternative is described by a different Clause:

( 219 ) ??Sean asked me if she'd returned to London or if she'd started painting;

whereas *whether* is:

( 220 ) Sean asked me whether she'd returned to London or whether she'd started painting.

The situation gets worse when we are in a dual situation:60

( 221 ) *Sean asked me if she'd returned to London or if she hadn't;

whereas *whether* is, again, appropriate:

( 222 ) Sean asked me whether she'd returned to London or whether she hadn't.

In fact, it seems that the *whether*... or structure describes two possible answers to a single question, whereas the *if*... or structure describes two questions. If the latter is true, (221) could be paraphrased as:

( 223 ) ??Sean asked me if she'd returned to London or he asked me if she'd started painting.

59 Traditional labels for dubitative structures in the context of questions are 'confirmatory questions' and 'rhetorical questions'.

60 Cf. also: *Sean asked me [whether / *if] or not she'd returned to London.*
The inappropriateness of (221) would arise from the fact that:

(224) *Sean asked me if she'd returned to London or he asked me if she hadn't

describes the same question (did she return to London?) but uses or, which usually
precludes identical disjuncts being in its scope. Secondly, as pointed out in section 2.2,
examples like:

(225) Let me know if you are coming

are often construed as singular structures, i.e. the speaker expects that the listener
lets her/him know whether (s)he is coming only if (s)he is coming, not if (s)he is not
coming. Thirdly, as mentioned in section 2.5.4, structures like:

(226) Sean knows if he doesn't eat his soup

are often construed as singular structures, i.e., the speaker means that Sean knows
that he doesn't eat his soup when he doesn't. This String is not semantically equiva­
 lent to the dual: Sean knows whether he eats his soup. (226), like (225), is typically
seen more as a 'conditional' than as an 'indirect question'. These 'irregularities'
seem to point out to if as being primarily a nonassertive, singular (i.e. a dubitative)
marker.62

2.5.7 The Great 'wh-' Shift

Compare these two Strings:63

(227) I took [all of them / the red and the green ones / the red one];

(228) I took [any / two / one] of them.

The possibilities are lollies of different colours. All of them describes all the possibil­
 ities and picks as actual all of them. The String is assertive and plural. The red one
describes and picks one of them. The String is assertive and singular. The red and
the green ones describes and picks two possibilities. The String is dual and assertive.

On the other hand, any of them describes all the possibilities but picks none. The
String is plural but nonassertive. Two of them describes two but does not pick any

61 As [SQG72, 737] point out, negative whether Direct Objects are inappropriate: I don't care
[*whether / if] it doesn't rain.

62 Notice that, given what we said in section 2.5.5, if structures are semantically equivalent (in
the relevant respects) to asymmetric disjunctive structures, whereas whether structures are so to
symmetric disjunctions.

63 In dual situations (i.e. where there are only two possibilities), plurality is out of the question.
Both of them is here dual and assertive; either of them is also dual but nonassertive.
in particular. The String is dual but nonassertive. Finally, one of them is singular and nonassertive for similar reasons.

Another way of saying this is that the markers in (227) are definite descriptions; the markers in (228) are indefinite descriptions. We are not interested in the general issue about definite and indefinite descriptions. However, it is worth noting that there is a close connexion between nonassertion and indefiniteness, to the point that they are equivalent (in the relevant respects). It is well known that, historically, \textit{wh}-structures, originally nonassertive, became indefinite and then assertive. We want to show that the differences between nonassertive (indefinite) structures, and assertive (definite) structures are often very subtle. The following (where the possibilities are: \textit{<orange juice, a cocktail, a whisky>}) is an example of a plural, nonassertive String:

(229) Sean asked what Don drank at the bar.

\textit{What Don drank} describes all the possibilities but does not pick any in particular, or tells us how many should be picked.

(230) Sean described for us what(ever) Don drank at the bar

can be read as plural but assertive. The cases are as before. \textit{What Don drank} describes all the possibilities and, moreover, picks each of them.

But (230) can also be an example of a nonassertive, singular String. In this case, \textit{what Don drank} describes one of the cases, in an indefinite way. Finally, the String can be singular but assertive if the possibilities are \textit{<what Don drank, what Don ate, what Don said>}. \textit{What Don drank} describes and picks one single possibility.

Thus, what it is the exact value of \textit{what Don drank} is to be contextually fixed in most cases. i.e., whether a description is definite or not depends on whether, in a particular situation, the entity in question needs to be further identified. There are certainly limits to what can be taken as definite or not. In particular, \textit{wh}-descriptions seem to be on the verge of indefiniteness most of the time.

But what concerns us most here is not the extreme versatility of \textit{wh}-structures but the fact that they may be a threat to \textit{that} and if, in the case where they function

\begin{itemize}
\item[64] Notice that \textit{described} takes as its Object a `concrete thing'. If we are right, this shows that \textit{what} Clauses are fully nominalised (in the Direct Object environment anyway). Other \textit{wh}-Clauses would not be appropriate (see section 2.4.4).
\item[65] Thus, \textit{the orange juice} is often seen as a definite description. The following exchange is, then, usually inappropriate:
\end{itemize}

(231) [A]: Sean described for us the orange juice Don had at the bar; *[B]: What was that?

in a way that the following one is not:

(232) [A]: Sean described for us what Don had at the bar; [B]: What was that?
as singular descriptions. For instance, what is the difference, if any, between these two Strings:

(233) Sean knows what Don drank at the bar;

(234) Sean knows if Don drank a whisky at the bar,

when the possibilities are: <orange juice, a cocktail, a whisky>? The answer was pointed out in section 2.4.4: the if Clause describes the whisky as a possibility; the \textit{wh-} Clause, as a thing.

2.5.8 A Break on our Way

Our aim was to show that if is a nonassertive, singular marker. We started by showing that \textit{wh-} questions were nonassertive and plural, alternative questions containing two disjuncts were nonassertive and dual, and yes-no questions were ambiguous, sometimes dual, sometimes singular.

Then, we went into Direct Objects and showed that \textit{wh-} Direct Objects could be anything, from nonassertive plural to assertive singular. \textit{Whether} Strings were typically nonassertive dual, and \textit{that} Strings, assertive and singular (unless otherwise marked). Finally, \textit{if} Strings, as yes-no questions, were either dual or singular. After that, we argued that, in fact, \textit{if} structures were primarily singular and, therefore, \textit{if} was primarily a singular marker (though it often functions as a dual marker, equivalent to \textit{whether}).

The rest of the section was devoted to showing some interesting connexions, viz. the connexion between disjunction and nonassertion, between singularity and opinion in the context of nonassertion, and between indefiniteness and nonassertion. The net outcome of all of this for our purposes is that \textit{if} is a dubitative marker, that \textit{if} structures are equivalent (in the relevant respects examined here) to asymmetric disjunctions, and that \textit{wh-} structures can be singular nonassertive as well, the difference between these and \textit{if} structures being that the former describe entities as things; the latter, as possibilities.

Our next step is to show that this characterisation of \textit{if} (and, secondarily, of \textit{whether} and \textit{wh-}) also applies to \textit{if} adjuncts. If we are able to do that, \textit{if} will be cured of its traditional semantic schizophrenia.

2.5.9 ‘If’ ‘Adverbial Subordinate’ Clauses

‘Adverbial subordinate’ structures\textsuperscript{66} have been ignored so far. We must show now that the semantic values of \textit{if}, \textit{whether} and \textit{wh-} markers in this environment are the

\textsuperscript{66}Unless otherwise noticed, ‘Sentence’ in this section refers to Sentences where the marked Clause functions as an ‘adverbial subordinate’ Clause (an adjunct, conjunct or disjunct) like:
same as in the Direct Object environment. In other words, we must show that *if* is an axis neutral, singular, nonassertive marker, *whether* is an axis neutral, dual, nonassertive marker, and the *wh-* markers are axis specific and speech-act neutral (or almost).

Let us start by an easy case. *When* Clauses describe times, as they did when they functioned as Direct Objects:

(238) *She started painting when he returned to London.*

The problem here is to know what speech-act and scope values should be assigned to the Clause. The answer is that *when* adjuncts are speech-act and scope neutral as Direct Objects were. When he returned to London may describe in a definite way a single occasion (when he returned to London), or it may do that in an indirect way. In this case, *when he returned to London* refers to 12 April 1932, which is the date when he returned to London. But it may also describe a whole bunch of occasions, since, in a possible situation, she started painting *every time* he returned to London. Finally, the Sentence may describe a known connexion (viz. that her starting painting occurred when he returned to London), while the speaker is ignorant about when he returned to London. In this case, the Clause is plural and nonassertive.

We have shown in section 2.3 that *when* and *where* are axis markers, *although* is a connexion marker, *so that* and *because* are somewhere in between, and *if* and *whether* are speech-act and scope markers. If this is correct,

(241) *She started painting because he returned to London;* 

(235) *She started painting when he returned to London;*

(236) *When he said that, he jumped over her and ate her;*

(237) *You must be pretty sure when you tell me that. You know I don't like stuffing around.*

---

67 See section 2.5.7. To be sure, *when* Clauses seem to be seen usually as singular and assertive.

68 A very interesting feature of *wh-* Sentences is that they can be read as 'every' or as 'any'. Likewise, *whether* Sentences, in dual situations, can be read as 'both' or as 'either'. Thus, e.g.,

(239) *If whether he returns to London or not, she'll start painting*

says that she'll start painting in both cases, but also that she will in either case. An example with *when(ever)* is this:

(240) *When(ever) he returns to London, she'll start painting.*

This can mean either that she'll start painting every time he returns to London, but also that she'll start painting no matter when he returns to London. This is interesting, because it turns *wh-* markers into something which we could call 'nonconditional' markers. By connecting every possibility to the unmarked Clause, we lose the connexion.
(242) *He returned to London so that she started painting* can be analysed either as describing two events causally and finally connected respectively, or as describing an action and its cause or aim respectively. On the other hand,

(243) *Although he didn’t return to London she started painting* should be analysed as describing two events (his returning to London and her starting painting) as somehow at odds.

Finally,

(245) *If he returned to London in Spring she started painting*;

(246) *Whether he returned to London (or not) she started painting* should be analysed as describing two events, one of which at least (viz. his returning to London) is not actual. All this sounds alright.

Then, in section 2.5.6 we showed that *if* is a singular marker, whereas *whether* is a dual one. This also seems to be a correct analysis of (245) and (246). *If he returned to London* (assuming the focus is, e.g., *returned*) describes one event, his returning to London, whereas *whether he returned to London (or not)* describes two.

So, our conjecture seems to be confirmed. *If* is nonassertive and singular. Now, can *if* and *whether* Clauses describe different kinds of entities? Sure they can. We have assumed that the *if* Clause in (245) describes an event. But shifts in focus cause shifts in axis:

(248) *[PERSON]If he returned to London in Spring she started painting*;

(249) *[PLACE]If he returned to London in Spring she started painting*;

(250) *[TIME]If he returned to London in Spring she started painting*.

69 Although Strings often entail that the two events, e.g., his returning to London and her starting painting, are supposed (by the speaker) to hold together. This is due to the fact that an adversative connexion is a negative kind of connexion. The same kind of entailment is triggered by negative Strings. Thus, very often, Strings like:

(244) *I didn’t go to the pictures* carry the information that the speaker was supposed to go to the pictures. But, we contend, this is not the core of the information they supply.

70 In fact, it describes the only possible two in a dual situation, i.e. when *<his returning, his not returning>* are the only possibilities. *Whether* Clauses are primarily dual, though, as *whether* Direct Objects they can be plural on occasion. *If* can be used as dual sometimes, as if *Direct Objects can*:

(247) *[If / Wh ther] he returns to London or marries her, she’ll start painting*.

But what is most interesting is that, in dual situations, *if* cannot be dual (whereas in Direct Object environments, under certain conditions, it can).
2.5.10 Some Interesting Connexions. Searching for an Assertive, Singular, Axis Neutral and Connexion Neutral Marker

In this section we want to answer some side questions that, though interesting, are not essential to the main line of this thesis. The reader may go straight to chapter 3 without missing anything crucial. These are the questions. First, that was an axis-neutral assertive singular marker in Direct Object environments, corresponding to zero in the independent Clause environment. Now, is there a marker with the same semantic value in the adjunct environment? Second, if and whether are nonassertive, when and where are speech-act neutral. What are because, so that and although speech-actwise?

There are a number of structures which can be used as adjuncts and are assertive, singular and axis neutral. All kinds of coordinate structures are of this kind. Thus,

\[(251) \text{[PERSON]}\text{He returned to London in Spring [and / or / but] she started painting}\]

(as (248)) describes a single person. The only semantically relevant difference for our purposes is that (251) with and is assertive, whereas (248) is nonassertive.

But there is more to come. We have argued that because, so that and although are Coordinate structures, at least part of the time. So,

\[(252) \text{[PERSON]}\text{She started painting [although / because] he returned to London in Spring;}\]
\[(253) \text{[PERSON]}\text{He returned to London in Spring so that she started painting}\]

are also assertive descriptions of one single person. The interesting thing here is that all these structures are assertive and singular, and that if structures are nonassertive and singular. So, the only difference between a because and a causal if String is that the former is assertive, the latter, nonassertive; the only difference between a so that String and a final if String is that the former is assertive, the latter, nonassertive; and so on. All this depends, of course, on the possibility of if Strings to be causal, final, etc., something we shall show in section 3.2.

This certainly explains the close connexion between 'conditional' and causal Sentences. Once we know that 'conditional' means nonassertive, singular, we know that there is no problem in having causal 'conditionals', final 'conditionals', adversative 'conditionals'.

\[71\text{Thus, She started painting because he returned to London in Spring is the assertive counterpart of She started painting if he returned to London in Spring; Although he didn't return to London in}\]
Mystery also vanishes in relation to if, and when and where. If Clauses can
describe times and places (when the focus is a time and place description). When
and where Clauses are, originally, nonassertive and plural. The difference between if
Clauses on the one hand, and when and where Clauses on the other, is then that,
originally, the former are singular, the latter are plural. Take this example:

(254) If he returned to London in Spring she started painting;

(255) When he returned to London she started painting.

These two Strings describe a connexion between a time and an event. If the possibili-
ties are <in Spring, in Summer, in Autumn>, and the speaker doesn’t know when
he returned to London, these two Strings are nonassertive. The if one describes one
possible time; the when one describes all.72

The connexion becomes semantic equivalence, when the if String is collective and
the when String is plural:73

(258) If he returns to London (at a given time) she starts painting;

(259) When(ever) he returns to London she starts painting.

No wonder temporal markers are a source of ‘conditional’ markers!74 But, is there
any marker in English, that, apart from being assertive, singular and axis neutral is
also connexion neutral? Because, although and so that are connexion markers, and
therefore, out of the question. General Coordinators like and, or, but, etc. are more
connexion neutral but, since they are connexion markers after all, they still restrict

72 We have chosen when he returned to London she started painting instead of she started painting
when he returned to London on purpose. The latter String is more purely temporal; the former one
has causal connotations, which make it easier to see it as a counterpart of a causal if Sentence. This
does not mean that there are no temporal if Sentences which could be the counterpart of the latter
String. But the issue is a delicate one, and for that reason, postponed up to section 3.2.

73 A paradigmatic example is:

(256) If you light a match (at any given time) it lights;

(257) When(ever) you light a match it lights.

The question is here whether (256) is not assertive as (257) seems to be. Our answer is that it is not
(see section 4.2.4).

74 Where(ever) is also possible in some cases:

(260) Wherever he finds gold he pitches his tent;

(261) If he finds gold (in a place) he pitches his tent.
the kind of connexion described by the String. Better candidates are as and since,\textsuperscript{75} some free adjunct constructions, fossilized verbal markers like given that,\textsuperscript{76} and even when, where and because (when they do not function as time, place and causal markers respectively). Consider these examples:

(265) Kennedy must have been shot yesterday, when the New York Times says so;

(266) He returned to London, because she saw him;

(267) Where \( x=2, y=2 \).

It is rather clear that when, because and where do not have their usual semantic values here. The when Clause does not describe a time, the because Clause does not describe a cause or a causal relation, and the where Clause does not describe a place. What they all do is to describe facts, i.e. actualised possibilities.\textsuperscript{77} The reasons for this generalisation of where, when and because are not to be discussed here.

\subsection*{2.6 The End}

We have shown that if is neither an axis nor a connexion marker. We have shown that if is axis neutral and that it is indeed a nonassertive singular marker (with a restricted use as a dual marker in non-adjunct environments). Thus, we have conjured up the semantic schizophrenia that affected if.

In the next chapter we shall see how if Sentences can describe a whole gamut of connexions, i.e. how if is connexion neutral. Getting clear about connexion

\textsuperscript{75}Notice that these markers are sometimes temporal, sometimes causal, sometimes logical, as required.

(262) \([\text{Since} / \text{As}] \) he was in Spain, she was trying to get a ticket to India;

(263) \([\text{As} / \text{Since}] \) you have given me five pounds already, you owe me only three;

(264) He returned to London, [since / as] she saw him.

\textsuperscript{76}Which have a nonassertive counterpart in synonyms of if like: assumed that, supposed that, etc. (cf. [Hai78, 581ff]).

\textsuperscript{77}The only difference between the three last examples and these three is that the latter are nonassertive, whereas the when, because and where ones are assertive:

(268) Kennedy must have been \textit{hot} yesterday, if the New York Times says so;

(269) He returned to London, if she saw him;

(270) If \( x=2, y=2 \).
will help dissolve the false impression that if can only be an ‘indirect question’ or a ‘conditional’ marker. At the same time, it will allow us to characterise what linguists and logicians mean when they use the word ‘conditional’.

Chapter 3

Classifying ‘if’ Strings

3.1 Introduction

We have seen in chapter 2 that if is neither an end nor a conditional marker. We have also seen that if can express all kinds of relations. If can also express antecedent relations. Now we must show that if can be used as a conditional marker. That is the first part of this chapter.

Our second goal is to understand what linguists and philosophers mean when they use the word 'conditional'. In our previous work, we have seen that conditional sentences are of the form if A then B. We now turn to what constitutes a conditional sentence in a particular context or situation.

Once we have determined what constitutes a conditional sentence, we will then be able to see how different structures in context make sentences valid. We will then be able to determine what kind of sentences can be classified as conditional sentences.

3.2 The Conditional Feature

3.2.1 A Broad Classification of Conditionals

Conditionals refer to the way in which one can express relationships between sentences. More in particular, as the way that sentences are related.
Chapter 3

Classifying ‘if’ Strings

3.1 Introduction

We have seen in chapter 2 that *if* is neither an axis nor a connexion marker. We have also seen that *if* Clauses can describe all kinds of entities. *If* is therefore an axis neutral marker. Now we must show that *if* Sentences can describe all kinds of connexions, i.e. that *if* is connexion neutral. That is the first goal of this chapter.1

Our second goal is to characterise what logicians and philosophers call ‘conditional’ Sentences. To that end, we shall classify *if* Sentences according to the connexion they describe. It will turn out that ‘conditional’ Sentences are *if* Sentences with particular connexion values, viz. causal and logical *if* Sentences.

Once we have characterised what ‘conditionals’ are, we follow the philosopher in her/his attempt to classify ‘conditionals’ based on tense correlation. We show that tense correlation must be handled with care. On the one hand, not only time and modality are tense-marked in English. On the other hand, tense correlations are ambiguous, particularly the more usual ones.

3.2 The Connexion Feature

3.2.1 A Broad Classification of Connexions

Connexion refers to the way (the entities described by) any two structures describing two entities are related. More in particular, to the way (the entities described by) the structures can function as Direct Objects or as ‘concessive’ Clauses.

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1This is important. *And* is a general-purpose, copulative marker (cf. [Sch86], where this ‘minimalist’ view is supported). *If* is not a general-purpose connexion marker as *and* is. It is not a connexion marker at all. The connexion marker present in *if* Sentences is juxtaposition (zero). Juxtaposition is even more minimal than *and*. It allows, among others, that *if* structures can function as Direct Objects or as ‘concessive’ Clauses.
Clauses of a Sentence are related.\textsuperscript{2} As with entities, to decide, in a general fashion, what kinds of connexions are to be accepted to describe English in an adequate manner is inseparable from the question about what kinds of connexions English speakers themselves accept. But as before, we are not interested in that general problem and, therefore, we do not aim at completeness. We are not interested in being too fine-grained either. Thus, as in the case of entities, we shall offer a very broad classification of connexion values, sufficient for our purposes.\textsuperscript{3}

So, let us first define a number of types of connexion with the help of speech-acts. To start with, we consider two very broad kinds of connexion: conjunctive and disjunctive connexions. Take two structures. They are disjunctively connected if at least one of them is interrogative or both are nonassertive. Else, they are conjunctively connected.

Secondly, we define copulative and adversative connexions as follows. Two structures are copulatively connected if both are affirmative or both are negative. Otherwise, they are adversatively connected.

Thirdly, we define necessary and possible connexions as follows. Two structures are necessarily connected if they have the same speech-act value. Else, they are possibly connected.\textsuperscript{4}

But this is obviously insufficient. English uses kinds of connexions that can only be described by other means. The first of this means is by inducing various kinds of asymmetries between the (entities described by) two structures. The second is by specifying the particular kind of asymmetry induced.

Thus, we shall talk about symmetric and asymmetric connexions. A connexion is symmetric if the status of the (entities described by the) two structures is the same and the connexion holds in both directions. Else, it is asymmetric.

Inclusion and order connexions are asymmetric. Inclusion is the connexion between (the referents of) a Modifier and its Complement. For instance, the connexion between (the referents of) a noun and a noun Complement, an adjective and an adjective.

\textsuperscript{2}There is a very important remark to make here. The connexion feature is about the relation holding between two entities as described by a structure. It is not about the relation between the information supplied by the structure and the information available in context with respect to a given entity. Any structure describing two or more entities can be assigned a connexion value. But we are primarily interested in the connexion between (the entities described by) the Clauses making up a Sentence.

\textsuperscript{3}Logicians have surveyed some of the kinds of connexion extensively. Thus, we have a wealth of technical definitions for, e. g., conjunction, disjunction and 'conditionality'. Those definitions, alas, are often incompatible with each other. To avoid fruitless argument, we shall define connexions informally, often by way of examples. However, they can be defined in a technically exact manner. In fact, they were in a previous version of this thesis.

\textsuperscript{4}Polarity is irrelevant here.
an adjective Complement, a verb form and its Subject, a verb form and its Complements, or a Clause and a Clause Modifier are examples of inclusion connexions. Needless to say, these labels are semantic and not merely syntactic. Thus, e. g., a particular instance of a Subject - verb form connexion is the connexion between an agent and an action.

Order connexions are those that induce an order between (the entities described by) the two structures. Examples of order connexions are temporal, final, causal and logical connexions.

In view of our results in chapter 2, *when* and *where* are axis markers in English. They are not connexion markers, i. e. *when* and *where* do not stand for a temporal and a spatial connexion respectively. This does not mean that temporal or spatial connexions are not expressed in English at all, but that they are marked otherwise. In fact, if ever *when* and *where* described connexions in English, they described specific kinds of temporal and spatial connexions, viz. when both events were at the same time or place respectively. Other spatial and temporal connexions are marked, e. g., by prepositions or by tense correlation.

In the second place, *because* and *so that* are two connexion (causal and final respectively) markers. More even so is *(a)though*, which will go into the adversative connexion box, as we shall see.

Finally, neither *if* nor *whether* are connexion markers according to our conjecture. In fact, there will be nothing called a conditional connexion in our scheme.

### 3.2.2 Some Examples

Examples of Strings exhibiting various (relatively uncontroversial) connexion values are given below

(271) *She started painting when he returned to London*

is assumed to have *when he returned to London* as its focus. The connexion between this and *she started painting*, or rather, the connexion between the time he returned to London and her starting painting is one of inclusion. Events like her starting painting are supposed to occur at times like the time he returned to London. Syntactically, the connexion is between a verb form and its Complement. The connexion is exactly the same holding between *she started painting* and *last year* in:

(272) *She started painting last year.*

Going now to a different kind of inclusion connexion,

(273) *I know when he returned to London*
will be assigned a verb form - Object connexion value,\(^5\) since the time when he returned to London is the object of my knowing.

\((274)\) I remember the time when he returned to London

will also be assigned a verb form - Object value (if the focus is assumed to be the time when he returned to London). However, if we are only interested in establishing the connexion value of:

\((275)\) the time when he returned to London.

the connexion value is noun - noun Complement.\(^6\) Going now to order relations,

\((276)\) He returned to London [and /, ] then she started painting

exhibits a temporal connexion, whereas:

\((277)\) He returned to London [and /, ] therefore she started painting

exhibits a causal connexion. Finally:

\((278)\) He'd return to London [and /, ] thus she would start painting

describes a final connexion. A plausible example of a copulative, symmetric String is provided by:

\((279)\) He returned to London [and /, ] she stayed in Paris.

Adversative relations are exemplified by Strings like:

\((280)\) He returned to London but she stayed in Paris.

Finally, an instance of a disjunctive String is:

\((281)\) He returned to London or stayed in Paris.

So, let us get into business. We want to show that if Sentences describe many different kinds of connexions. Our first task is not an easy one. We want to show that if structures can be Subjects, noun Complements, etc. from a semantic point of view. In other words, we want to show that the connexion between (the entities described by) the two Clauses is one of inclusion (Subject - verb form, noun - noun Complement, etc.). If they do not appear to be so is because, syntactically, the

\(^5\)Verb form - Object is a generic kind of connexion. Depending on how we set up things, the connexion can be specified as being of 'action - object of the action' or something similar. We must insist that we are talking about semantic (not syntactic) connexions.

\(^6\)Or 'object - specificator of the object', or something similar.
Sentences exhibit a correlative (Coordinate) structure, with an anaphoric pronoun referring to the *if* structure occupying the corresponding syntactic slot.\(^7\)

Then, we shall review Strings where an *if* structure (usually a Phrase) is used to modify the speech-act of one of the other elements of the String. It is difficult to speak here of a connexion holding between the (entity described by the) *if* structure and the (entity described by the) other element, since they describe the same entity. Thus, what these Sentences show is that *if* cannot be a connexion marker since there is not even a reasonable connexion at stake.

After that, we shall give examples of symmetric Sentences, certainly one of the most elusive types of *if* Sentences.

In a third moment, we shall go into order connexions (causal, final and logical in particular). We shall discuss the differences between causal and logical Sentences, and conjecture that 'conditional' Sentences are either causal or logical Sentences.

Finally, adversative Sentences will be dealt with. This group constitutes one of the most popular in the recent philosophical literature. We hope to cast some light into this issue.

### 3.2.3 ‘*If*’ Subjects, ‘*if*’ Noun Complements and ‘*if*’ Verb Complements

This section aims at separating true Coordinate-type *if* Sentences (structures describing non-inclusion kinds of connexions) from *if* Sentences which appear to be so, but semantically describe a connexion of inclusion. In other words, we want to argue that there are *if* Clauses that are, from a semantic point of view, Subjects, noun Complements and verb Complements.

We have pointed out before that *if* Subjects and *if* noun Complements are semantically possible.\(^8\) Let us give some examples:

(282) *It’d be great if he returned to London in May;*

That the *if* structure is the Subject is perhaps more obvious in Coordinate form:

(283) *If he returned to London in May, that would be great;*

Compare these Strings with the following which contain an *if* Direct Object:

(284) *Sean asked her if he returned to London.*

We give it also in Coordinate form to make the comparison easier:

(285) *Sean asked her that, if he returned to London.*

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\(^7\) The are (left) dislocated constituents’ ([Hal78, 576ff]).

\(^8\) See section 2.2 and 2.4.4.
This, we claim, is an example of an if String which is semantically a Direct Object (like (284)), though syntactically a noun Complement. An example of an if Clause which is semantically a noun Complement is this:

(286) *If she told him to kill the man, he’d kill him;*

In Coordinate form:

(287) *He’d kill the man if she told him to (kill him);*

There are many Sentences where the if Clause is the Subject, a noun Complement and even the Direct Object, that are analysed as ‘conditionals’. But if we compare some of the above examples to the corresponding that (assertive) ones, we see that there are no semantically relevant differences between the if and the that Clauses as regards connexion. For instance, in (282) ((283)) it is his returning to London that is described as being great. Semantically the only difference between that String and:

(289) *It’s great that he’s returned to London in May;*

Or in Coordinate form:

(290) *That he’s returned to London in May, (that) is great*

is that (282) ((283)) describes his returning to London (and, therefore, its being great) as a possibility, whereas (289) ((290)) describes those events as actual, as facts. And this is a speech-act (modality) difference, not a difference in the connexion between being great and him returning to London. The connexion is, in both cases, one of predication.

In (285), another syntactic version of the nonassertive String is the following:

(291) *Sean told her that he returned to London, if he did (at all).*

*Another syntactic version of the nonassertive String is the following:*

(291) *Sean told her that he returned to London, if he did (at all).*
Again the only difference is that in (285) his returning to London is described as a possibility, whereas in (292) it is described as a fact. That is why, in the former, his returning to London is an object of asking, whereas in the latter it is an object of telling.

Finally, in (286) ((287)) if she told him to (kill him) may be seen as a description of the man who is the object of his killing. The only difference between this String and:

(294) He killed the man (that) she told him to (*kill him)

is that, in (286) ((287)), the description is a description of a possible man. It only becomes a description of an actual man if and when she tells the killer to kill him. In (294), the man is described as the one she told the killer to kill.

These examples show that if Clauses can play different functional roles like Subject and noun Complement, though syntactically they show a Coordinate structure. The difference between true Coordinate structures and these is that, in the latter, there is either an anaphoric or a cataphoric pronoun referring to the if Clause. In any case, the point is that if Sentences can be assigned various inclusion values, q. e. d.

The next step is to show that if Clauses can also function as verb Complements. Consider these examples:

12 A third syntactic variation of the nonassertive String is this:

(293) He killed the man she told him to kill, if it was him that she told him to kill.

13 The structure is similar to the one exhibited by focalised wh- Strings without deletion. E. g.

(295) When you come, then we'll go;

(296) Where you go, there we'll follow.

There is a relatively plausible hypothesis which says that correlative structures, in English, become Subordinate through an intermediate stage, where the correlative is actually an anaphoric for the whole marked Clause. Subordination is completed when the anaphoric is deleted, and the marked Clause plugs directly into the required slot. If this applies to the evolution of if Sentences at all, these would be at that intermediate stage, a confirmation that if Clauses are not Subordinate. For more details, see Appendix 5.

14 The following Strings are syntactic variations on the nonassertive Strings above. They exhibit a structure closer to (303) - (306), while being nonassertive:

(297) Given that he returned to London in May (if it was in May), she started painting then.

(298) *Given that he lived in London (if he actually lived in London), she painted there.

(299) Given that he finished baking the sponge (if that was a sponge at all), she put cream on top.
If he returned to London in May, she'd start painting then;

If he lived in London, she'd paint there;

If he finished baking the sponge, she'd put cream on top of it.

As before, these Sentences are not 'conditional'. The semantic role of the if Clause is one of verb Complement. Thus, e.g., (300) says that she'll start painting when he returns to London, ... May, if that is when he will return. Assertive Strings corresponding to our three examples above are the following:

Given that he returned to London in May, she started painting then;

Given that he lived in London, she painted there;

Given that he finished baking the sponge, she put cream on top of it.

Both (300) and (303), e.g., say that she'll start painting when he returns to London. The difference between the two is just that the latter presents his returning to London as a fait accompli, whereas the former gives it as a(n unlikely) possibility. Therefore, if he returned to London in May is a Complement of time of start painting. Likewise, if he lived in London in (301) is a Complement of place of paint, and if he finished the sponge is a Complement of place of put in (305). In sum, if Clauses can also play the role of verb Complements. We shall see now how if structures can have an even more limited role connexionwise.

3.2.4 Back to Independent Clauses

Examples where an if structure modifies the modality of an element of an independent Clause are important because it is particularly hard to see how if could be analysed as a connexion marker, as the defenders of the 'conditionality' thesis want.15

These constructions are ingenious in that the focus is unambiguously marked, an uncommon feature of if Strings. The following examples are 'extracted' as it were from (297) - (299):

He returned to London in May, if then;

He lived in London, if (he lived) there;

He finished baking the sponge, if that was a sponge at all.

15Not all examples in this section are of independent Clause, i.e. of if Phrases. But, typically, they are. So, we thought that the title of the section was justified.
These three Strings are dubitative. (306), e.g., says that he returned to London in May, or perhaps he did not then. That is, it says that perhaps he returned to London in May. The if Phrase simply modifies the speech-act status of in May, the focus of the String. The other two examples can be analysed in a similar fashion.

But does (306) entail that perhaps he returned later, or that perhaps he returned before May? This has been the subject of some concern in the linguistic literature. Our hypothesis is that in the cases where the focus can be taken as a scalar item, the if Clause tends to be construed as a minimizer when the item is near the bottom of the scale, but as a maximizer when the item is close to the top of the scale. Thus:

(309) *The fire is smoldering, if that ([Wil70])*  

says that perhaps the fire was completely out. An example of a maximizing if Clause is this:

(310) *He's an excellent writer, if (he is) a writer at all. Most people say he's a poet.*

Whether the if structure should be construed as a minimizer or as a maximizer can always be made explicit, of course:

(311) *He returned to London in May, if not [before / later];*

(312) *The fire is going, [if not just smoldering / if not blazing].*

To be sure, the String can be ambiguous. This is the case when it is not obvious which is the place of the item in a scale. For example:

(313) *He finished the sponge, if that was a sponge at all.*

Does this mean that the thing was not a sponge but something more delicate, or that it was a disaster? Both are possible. The only information the String unambiguously supplies is that perhaps it was not exactly a sponge. In fact, a third interpretation is also possible: perhaps it was not a sponge, but something else, neither better nor worse. In this case, the String does not say that perhaps we should consider a higher or lower degree, but that perhaps the entity is not as described at all, or even that entities like the one described cannot perhaps be described like that at all:

(314) *Somehow the death was fitting, if death ever is; ([Fro84, 155])*

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16For a good supply of examples see [Wil70]. See also [Lak73, 447] who is very much on the right track: “The *if*-clause in (17) ([(17) (only) three girls left, if (even) that (many) (girls left)] is not an ordinary *if*-clause. It does not have an if-then meaning, and it cannot be preposed. (17) is also somewhat odd semantically, since the *if*-clause seems to ‘qualify’ the main clause”.

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He's a good writer, if anybody is;

He's a bad writer, if anybody is.

(314) says that perhaps death is never fitting. (315) says that perhaps nobody is a good writer.\(^{17}\) Finally (316) says that perhaps nobody is a bad writer.\(^{18}\) Whatever the particular entailments those Sentences generate, in all the cases what the if structure does is to make the focus of the Sentence nonassertive, q. e. d.

There is a very interesting construction that has strong similarities with the one we have just seen. In fact, we want to claim that the structure is the same. Take the following Sentence, where the focus is a proposition (a word in this example):

... and I saw his grave, if grave you could call it. (\cite{Fro84, 262})

Grave is treated here as a name, warranting the use of quotation marks if we want to be Quineanly exact. The role of the if Clause is the same as in previous examples. (317) says that perhaps the object could not be called ‘grave’.\(^{19}\) But (317) is only a link to the more interesting (and by far more common) examples like:

... and If I may say so, that dress doesn't suit you. (\cite{SQG72, 509})

Examples like these are sometimes classified as ‘style disjuncts’.\(^{20}\) Other times they are just labelled ‘polite comments’ or the like, a plain recognition that they do not fit well into any of the groups made on the basis of connexion, let alone into the ‘conditional’ group.

As for us, so refers anaphorically to ‘that dress doesn't suit you’. The String paraphrases as: ‘that dress doesn't suit you’ or perhaps I may not say that that dress doesn't suit you, i. e. as: perhaps I cannot say that that dress doesn't suit you.\(^{21}\) if, as usual, just signals doubt.

\(^{17}\) Notice that the Sentence entails that, given that there are good writers, he’s a prime example.

\(^{18}\) Notice that the Sentence entails that, since there are bad writers, he is a prime example.\(^{18}\)

\(^{19}\) Notice that, out of context, we do not know, as in (313), whether it was in such a poor state that it does not deserve to be called ‘grave’, or rather, it was so magnificent that ‘mausoleum’ is a more appropriate name for it.

\(^{20}\) (SQG72, 746).

\(^{21}\) The politeness of the remark comes from the use of items as may, wish, will, etc. Compare:

\(319\) He only said (if he really said it /so) that that dress didn't suit you,

and:

\(320\) I only say (if I may say so) that that dress doesn't suit you.
Let us backtrack a bit. All the above Strings have been analysed as independent Clauses where an *if* structure (often a Phrase) is used to mark nonassertively one of the other elements of the String. Being this the case, there is no room to assign a connexion value to the pair formed by the *if* structure and the element it modifies, since both have the same referent, i. e. there is only one entity described.\(^{22}\)

By now it should be fairly clear that *if* Strings can fill more slots than grammarians and logicians want us to believe. We have seen examples of *if* Subjects, *if* noun Complements and *if* verb Complements. We have even seen examples of independent Clauses where one of the members of the Clause is qualified by an *if* String. In each of these cases the *if* String bears a different kind of connexion to some other member of the structure. We are not here discussing subtle differences between 'conditionality'

\(^{22}\)There is a trick though, viz. to assign a connexion value to these Strings. Remember that nonassertion and disjunction are interdefinable. This means that the examples in this section can be paraphrased disjunctively. Take, e. g., (309). This String can be paraphrased as:

\[(321) \text{The fire was smoldering, or [else / perhaps] it was completely out.}\]

Thus, we could say that these Strings are disjunctive, that there is a disjunctive connexion between the *if* structure and the focus of the String. But are all the *if* Strings not disjunctive? Well, there is a sense in which the Strings seen so far are disjunctive, but the following ones are not so:

\[(322) \text{I think that is outrageous, if [only that / if not plain stupid];}\]

\[(323) \text{He visited London in May, [if only then / if not all along the Spring];}\]

\[(324) \text{The experience of aborigines in jail is quite different to that of non-aborigines if only because they're treated differently to non-aborigines. (Four Corners, 20.3.89)}\]

Unlike (309) (and the rest of the examples) (322) plausibly paraphrases as:

\[(325) \text{I think that is outrageous, and perhaps even stupid.}\]

The information supplied by unmarked Clause is not doubted upon, i. e. the *if* structure does not make nonassertive the rest of the String. What the *if* structure does is to suggest that more possibilities within the same range may also hold. In the third example for instance ((324)), the speaker gives one reason of why in fact aborigines' situation in jail is different, while suggesting that there may be other reasons. Based on these paraphrases, the examples describe a copulative connexion. However, a different paraphrase is also possible:

\[(326) \text{I think that is outrageous and even stupid, or perhaps not that much;}\]

\[(327) \text{The experience of aborigines in jail is quite different to that of non-aborigines because they're treated differently to non-aborigines, or perhaps because of something else as well.}\]

In view of these paraphrases, whether Strings like (322) - (324) are disjunctive or conjunctive is probably a Byzantine question. After all, what *if* is really doing in (324) is to qualify the only *because. Only because* signals that the reason given is the only reason. *If* places some doubt on the fact that the reason is the only one. As in all the other examples in this section, an *if* structure makes one of the elements of the String nonassertive.

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and other kinds of connexion. These Strings are not 'conditional' in any acceptable sense of the word, as far as I can tell.

In the next section we shall deal with symmetric Strings. Notice that symmetry is another very 'unconditional' feature for if Sentences to have. Then, we shall go into the more familiar ground of order connexions, to sort out what 'conditionality' amounts to.

3.2.5 Symmetric Sentences

If we restrict our attention to copulative Sentences, the paradigm of symmetry are and Sentences:

(328) He is a vegetarian and she's (also) a vegetarian.

But there are other symmetric constructions, like 'comparative' Sentences:

(330) As he's a vegetarian, so is she.

The question is: does (330) have a nonassertive counterpart? Before trying to answer this question it would be perhaps better to see some more examples:

(332) He's a painter as well as a musician;

(333) He used to go to London on Tuesdays as well as on Wednesdays.

Now, are the following Sentences not nonassertive counterparts of (330) - (333)?

(334) As he's a vegetarian, so is she probably;

(335) He's probably a painter, as well as a musician;

Proof of its symmetry is that inverting the order of the two Clauses produces a semantically equivalent Sentence:

(329) As she's a vegetarian, so is he.

Notice that when the focus is the Subject, this 'reduced' as well as construction is not appropriate:

(331) *She as well as he [are vegetarians] / is a vegetarian.

To be sure, the following are also nonassertive counterparts of (330) - (333). In these examples, both Clauses are nonassertive. In (337) - (339), on the other hand, only the if Clause is nonassertive. We can make both Clauses nonassertive but then they can be read as 'conditionals', something we want to avoid.
(336) He probably used to go to London on Tuesdays as well as on Wednesdays.

(337) If she's (perhaps) a vegetarian, he is certainly one;

(338) If he's (perhaps) a painter, he's certainly a musician;

(339) If (perhaps) he used to go to London on Wednesdays, he certainly went on Tuesdays.

It seems they are. (330) says that both are vegetarians; (337) says that he is a vegetarian, and perhaps (s)he is also one. The rest of the examples are similar. Now, there is the question whether there is a causal or similar connexion between the two Clauses in each of the examples. This seems to be the case with (330), where his being a vegetarian seems to depend on her being so. But in general there is no such ambiguity. (337), e.g., is unambiguously 'comparative'. There is no causal or 'conditional' connexion between her being perhaps a vegetarian and his being one for sure.26

There is a special class of 'comparative' Sentences which are traditionally called 'of manner'. For us, Clauses of manner will include all 'comparative' constructions where the focus is a description of a manner or way of doing things. For example:

(343) He ate quickly as well as uncouthly.

For comparative purposes the following version is probably more transparent:

(344) He ate as quickly as he did uncouthly.

The structure is the same as in the obsolete:

(345) *He ate as quickly as he had not eaten in a month,

which, however, has an heir in:

(346) He ate as he had not eaten in a month,

that is, very quickly. These Sentences have their nonassertive counterpart in as if constructions:27

26 Notice that the above Sentences are symmetric in the required sense:

(340) If he's certainly a vegetarian, she is perhaps one as well;

(341) If he's certainly a painter, he's perhaps a musician too;

(342) If he certainly used to go to London on Wednesdays, he perhaps went on Tuesdays as well.

A further question is whether the if Clause in each of these examples is nonassertive. If they are, they are exceptions to our main conjecture. The problem is dealt with in section 4.2.4.

27 Examples of if Phrases of manner are common:
He ate as if he had not eaten in a month.

Again, what is a ‘conditional’ marker doing here? To sum up, there are if Strings that can be called ‘comparative’. These are symmetric, conjunctive structures. Therefore, the connexion between the two Clauses is not ‘conditional’ in any meaningful sense of the word.

A subclass of ‘comparative’ Sentences we have dealt with are Clauses of manner. As if Clauses have been shown to be nonassertive Clauses of manner.

The next section deals with asymmetric, order Strings. Here, we enter the world of ‘conditionals’.

### 3.2.6 Temporal, Causal, Logical and Final Sentences

We leave behind weird structures, forgotten if Sentences, and enter the world of asymmetric, order Sentences, in one word, the world of ‘conditionals’. Or almost. In fact, even within the limited domain of order Strings, there are still funny Sentences that can hardly be called ‘conditionals’. ‘Conditionals’ are but a subgroup among these Strings, viz. causal and logical Sentences.

As usual, our Sentences will contain two foci. The connexion between the (entities described by the) two foci will be either temporal, causal, logical or final. Most often the foci will describe events.

Since our claim will be that if Strings can be nonassertive counterparts of assertive causal, logical, final or temporal Sentences, let us recall some of the examples of assertive temporal, causal, logical and final Sentences:28

- (352) [TEMPORAL] He returned to London [and / , ] then she started painting;
- (353) [CAUSAL] He returned to London [and / , ] therefore she started painting;
- (354) [LOGICAL] He returned to London, [therefore / that is,] he left Paris;
- (347) Without answering straight away, I gazed at the ceiling, crossed my legs, chewed my pen as if in thought, glanced at Mr Fairburn, then hissed the answer across the aisle. ([CL79, 15])

28 When has been shown to be an axial marker. Therefore, when Sentences do not describe a temporal connexion. However, because and so that Sentences are (partially) examples of causal / logical and final Sentences respectively:

- (349) [CAUSAL] She started painting because he returned to London;
- (350) [LOGICAL] He left Paris because he returned to London;
- (351) [FINAL] He’ll return to London so that she starts painting.
These are examples of Coordinate Strings exhibiting the relevant kinds of connexion. In the case of final, causal and temporal Sentences, the foci are return and start painting. Therefore, the two events, his returning to London and her starting painting, are connected final, causal or just temporally. In the example of a logical Sentence, the foci are return and left. What is, then, logically connected is the propositions 'he returned to London' and 'he left Paris'.

In section 2.5.8.1 we claimed that as, among others, was an assertive axis-neutral marker. For instance (352) can be paraphrased as follows:

(356) [TEMPORAL] As he returned to London in May, then she started painting.

And we can proceed with the other examples in a similar fashion. In the same section, we claimed that the following Sentences are the nonassertive counterpart of (352) - (355):

(357) [TEMPORAL] If he returned to London in May, then she started painting;

(358) [CAUSAL] If he returned to London, (then) she started painting;

(359) [LOGICAL] If he returned to London, (then) he left Paris;

(360) [FINAL] If she will start painting he'll return to London.

It can perhaps be argued that (357) is a causal Sentence, that if marks 'conditionality', and that, therefore, her starting painting in May depends on his returning to London in May. But if that was the case, the String would not be appropriate in the following situation, as, in fact, is:

(361) They were both working frantically at the time. In March he was in Paris while she was making a film in Chile. The following month, as she was flying for China, he went to Rome for a conference. Then, if he returns to London in May, she'll still be in Wales, painting for her Summer exhibition. So, I suppose they don't have much of a life in common.

His returning to London and her painting are causally unconnected, as the rest of the events described are. The only connexion between the events is that they happened at

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29 Théns has been stressed to mark that it is here a temporal adverb. Then as an unmarked Clause header is ambiguous: it can mark either a temporal, a logical or a causal connexion. The default (in Present Day English) seems to be that it marks a logical and perhaps also a causal connexion, whereas emphatic then marks a temporal one. Temporal then as a header is focal; causal / logical then is a (non-focal) correlative.
the same time. Thus, our claim that this if Sentence describes a temporal connexion stands.\textsuperscript{30}

We leave temporal Sentences and go into final ones. If final Sentences are very special in that they are usually marked by special tenses,\textsuperscript{31} e.g., if...will. Not all if...will Sentences are final, but it seems relatively clear that some of them are. An example of an if...will String which can be plausibly construed as final is (360). Another example is the following:

(362) [FINAL] If it will rain, I’ll take an umbrella. ([Com82, 143])

[Com82] notes that this String is inappropriate except if the speaker holds the belief that by taking an umbrella, it will rain, i.e. the rain will be caused by her/his taking the umbrella.\textsuperscript{32} The String is definitely different from:

(365) [CAUSAL] If it rains, I’ll take an umbrella,

where all the speaker says is that (s)he’ll take the umbrella after knowing that, in fact, it is raining. Unlike (365), (362) can be paraphrased as:

(366) I’ll take an umbrella so that it rains, if that’s going to cause it.

The following Sentence is also final. However, it is not affirmative. It expresses something to avoid:

(367) [FINAL] If the lava will reach the town, the citizens will work intensively.

\textsuperscript{30}Notice that temporal Sentences which describe two simultaneous events (like (357)) are symmetric. In fact, they can be grouped with the Sentences in the last section. However, since not all temporal Sentences are simultaneous, we have preferred to deal with them separately. On the other hand, the if Clause in (357) could be analysed as a verb Complement. Which is the best analysis – if there is a best one for all Sentences – will depend on the weight given to the syntactic structure of these Sentences. Syntactically, they are Coordinate-type structures. Semantically, the if Clause describes a time at which something happens.

\textsuperscript{31}For further details on if...will Sentences see section 3.3.3.2.

\textsuperscript{32}We disagree. As we have noted, not all examples of if...will can be construed finally. In fact (362) need not be construed as a final Sentence. It can also be construed as:

(363) If I believe that it is going to rain in the future, I’ll take an umbrella.

Or as [Clo80] would put it,

(364) If I can predict that in fact it is going to rain, I’ll take an umbrella.

This is a non final interpretation of (362).
(367) can be paraphrased as:

(370) [FINAL] The citizens will work intensively in case the lava reaches the town.

The meaning in both cases is the same: if it is predictable that the lava reaches the town, people will try to prevent it (or some of its consequences).

Not all final Sentences are marked by if...will. There is a second group of Sentences that, we claim, are to be classified as involving a final connexion, viz. 'nonconditionals':

(371) [FINAL] There are some cookies on the table if he wants (to eat) some.

Several philosophers have complained that there is no 'conditional' connexion between his need or desire to eat cookies and the fact that they are on the table. And rightly so! What there is is a final connexion between the fact that there are some cookies on the table (an event) or 'there are some cookies on the table' (a proposition) and his eating them. The if Clause just expresses doubt on his desire to eat them. This construction is similar to the ones seen in section 3.2.4. The String can be paraphrased as:

(372) [FINAL] There are some cookies on the table [so that he eats some / for him to eat some], if he wants (to eat some).

The only difference between Strings like these and:

(373) You look awful, if I may say so

is that, in the latter, the if Clause modifies the speaker's saying that you look awful, whereas, in the former, it modifies his eating some. These Strings can also be readily paraphrased by if...will ones, without change of meaning:

33There are few negative connexion markers in English, the same effect being achieved by negating one of the two Clauses. However, there are at least two that interest us for the present study, viz. lest and unless. The latter will be dealt with in section 3.2.7.2. The former is a negative final marker. So, (367) can also be paraphrased as:

(368) [FINAL] The citizens will work intensively lest the lava reaches the town, if that's predictably going to happen.

A more appropriate version is, of course:

(369) [FINAL] The citizens will work intensively so that the lava does not reach the town, if that's predictably going to happen.

34With apologies to [Aus70, 210]. Cf. also [Oas65], and [Jam86, 463-4].
There are some cookies on the table if he'll eat some.

In fact, will plays a modal role just like want in many situations. What (374) says is that the cookies are on the table for him to eat them, if he feels like eating them. The use of there is is also deceptive. It looks as if the cookies being there is totally independent of the speaker. But this is not essential to the structure of the String:

I've made sure that there are some cookies on the table if he will / wants to eat some.

As in the case of if... will Sentences, nonconditionals can also describe a negative aim, a fact that, again, links them. Whether the Sentence is affirmative or negative depends on the situation. For example, does this String say that I've locked the pantry so that he can't eat the cookies, or rather that I've locked the pantry, so that, if he wants to eat cookies, he should tell me so and I'll open it for him?

I've locked the pantry / The pantry is locked if he wants to eat some cookies.

Final Sentences have been our last step before getting into true 'conditionals', i.e. causal and logical Sentences. We are not going to give examples of these Sentences by way of introduction, since they are commonplace. What we are going to do is discuss the delicate problem of how to distinguish between causal and logical Sentences. On our way, we shall see some examples of 'conditionals'.

A promising criterion to distinguish between causal and logical Sentences is tense marking. Logical Strings describe propositions. The connexion between two propositions is atemporal in that there is no time gap between the two propositions described, viz. the antecedent and the consequent. Causal Strings, on the other hand, describe events. The connexion between the two events is eminently temporal because there is usually a time gap between the cause and the effect. Tenses should mark this difference.

The fact of the matter is that they do not. We find examples of logical Strings where tenses mark a time gap, and examples of causal Strings where such time gap is not marked.

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35 Although the kind of connexion called here logical could be subsumed as a kind of causal connexion, both can be distinguished on the basis of the kind of entities they link. A causal connexion links primarily events, whereas a logical one links propositions. We could go even further and say that what deductive logicians are after necessary logical Sentences, whereas conditional theorists are interested both in causal and logical Strings, either possible or necessary.

36 The idea that 'conditionals' are but causal Sentences with one of the Clauses nonassertively marked is not new. Cf. [Ram31].
The reason is that tenses tend to mark a time gap when the String is an individual one, and they tend not to when the String is collective. The distinction between collective and individual Strings is not based on connexion, but on scope. In fact, it cuts across the classification of Strings into causal and logical. Thus, individual Strings, whether causal or logical, show a time gap; collective Strings, do not. Tense correlation proves fruitless as a criterion to tell causal and logical Sentences apart. Take, e. g., the following String:\(^{37}\)

(377) *If you scratch a match it lights.*

(377) is primarily causal.\(^{38}\) It involves a causal regularity, if of a general nature. Both, tenses are, however, in present indicative, a collective marker.\(^{39}\) On the other hand,

(378) *Jan goes every Tuesday to see her gramma. She goes only once on any individual Thursday. She cannot go during the day because she is working. So, either she goes in the morning or she goes in the evening, after work. So, if (today) she doesn’t go in the morning, she will after work* is a logical String. There is no clear sense in which her not going in the morning causes her going after work. Rather, the knowledge that she does not go in the morning leads us to the knowledge that she will after work. However, the tense correlation indicates a time shift.\(^{40}\) This is because the Sentence describes an individual case, as opposed to describing a collection of cases.\(^{41}\)

In any case, tenses are not going to help us an awful lot to decide whether a String is causal or logical. A second criterion is this. Remember that causal Strings describe

\(^{37}\) With due respect to [Goo83].

\(^{38}\) Notice that, in principle, any causal Sentence can be read as logical, since causal regularities allow us to reason through. Still, examples of plain causal Sentences like (377) sound weird when interpreted as logical (see (381)).

\(^{39}\) See section 3.3.

\(^{40}\) Notice that, though there is no time gap between the antecedent and the consequent, there can be a time gap between the entities pointed to by the antecedent and the consequent. For example, in (378) above, there is no time gap between the propositions ‘she does not go in the morning’ and ‘she goes after work’. The time gap is between the events going in the morning and going after work. A logical String describes propositions and, sometimes, points to events. A causal String, on the other hand, describes directly events.

\(^{41}\) Causal, individual Sentences, and logical, collective Sentences are, of course, possible:

(379) *[CAUSAL; INDIVIDUAL]If you scratch a match it’ll light;*

(380) *[LOGICAL; COLLECTIVE]If she doesn’t go in the morning, she does after work.*
events, whereas logical ones describe propositions. Now, an *if* Sentence will be logical if inserting *that means (that)* between the two Clauses produces a semantically equivalent String. Else, (if the result is a Sentence which is either inappropriate or not semantically equivalent to the original one) the Sentence is causal. Why *that means (that)*? *That means (that)* takes a proposition as its Subject and another one as its predicate, and this is the feature we are after.\(^{42}\)

Let us see what happens when we apply this criterion to our examples:

(381) *If you scratch a match that means that it lights;*

(382) *If you scratch a match that means that it will light*

are hopeless. Thus, we classify them as causal. On the other hand:

(383) *If she doesn’t go in the morning that means that she does after work;*

(384) *If she doesn’t go in the morning that means that she will after work*

are ok. Therefore, we classify them as logical. So it seems to work. A good way of checking our criterion is against backtracking Sentences. If you remember, backtracking occurs when the time reference of the *if* Clause is posterior to the time reference of the other Clause. Backward causation is usually not admitted. Therefore, all backtracking Sentences are logical. For example:\(^{43}\)

(386) *If a match lights you scratch it*

(if appropriate) is a logical String, since the scratching is prior to the lighting. Our knowledge that a match lights leads us to the knowledge that it had been scratched, but the lighting does not cause the scratching. Now, if backtracking Sentences like (386) are logical, we should expect our criterion to apply to them. And it does indeed:

(387) *If a match lights that means that you scratched it.*

The criterion seems to work. ‘Conditional’ causal and ‘conditional’ logical Sentences can be distinguished.

As advertised, *if* Sentences can be temporal, final, causal and logical, against the standard view that they are always ‘conditional’. Actually, the so-called ‘conditional’

\(^{42}\)Notice that, after the insertion, the *if* Clause is the (logical) Subject of the Sentence. [Bar86, 42] hints at such a criterion, but he does not seem to make the distinction between causal and logical Strings. For him, all ‘conditional’ Strings seem to be logical.

\(^{43}\)A better version of this Sentence is:

(385) *If a match lights you scratched it.*
Sentences are *if* Sentences which describe a causal or a logical connexion. In the next section we shall deal with Sentences that describe adversative ('concessive') connexions. To be sure, *if* plays here a minor role, compared to compounds like *even if* and *only if*.

### 3.2.7 Adversative Sentences

#### 3.2.7.1 Plain Adversatives

Most of the Sentences in the past have been copulative. A typical example of Coor­dinate adversative Sentence is:

(388) *He returned to London but she didn't.*

(388), however, is symmetric,⁴⁴ and we are primarily interested in asymmetric Sen­tences. So, let us give another example:

(390) *[Although / Even though] he returned to London, she didn't start painting.*

Notice that *although* and *even though* are assertive adversative markers. His returning to London is described as a fact that actually took place. It is not a mere possibility. Now, where does *if* fit into this scheme? In other words, are there really adversative *if* Sentences? Yes, there are. Our first example is:

(391) *(Even) if he returns to London, she won't start painting.*

Unlike in (390), his returning to London is described here as a possibility, not as a fact. But the connexion between the two events, viz. his returning to London and her starting painting, is adversative ('concessive') all the same.⁴⁵ In sum, *although* and *even though* are standard adversative (asymmetric) assertive markers. *Even if* is

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⁴⁴Like *and*, not all *but* Sentences are symmetric. The following one – particularly after all we have said about it – is plausibly asymmetric:

(389) *He returned to London but she didn't start painting.*

⁴⁵Confirmation of the fact that *although* and *even though* are assertive, but *(even) if* are nonassertive are the following two examples:

(392) *The operation is dangerous. But do not worry. At the end of the day, he'll be famous, *[even) if / *(even) though]* dead;*

(393) *He'll visit London in May, *[even) if / *(even) though]* (only) for a short time. He doesn't know how long he can be away from China.*
the corresponding standard nonassertive marker, and if alone is occasionally used in this latter role.\footnote{For instance: I wouldn't marry you if you were the last man on earth. ([Hai86, 221])} One of those occasions is in constructions like:\footnote{Adversative Phrases pose again the question of whether if Strings are not sometimes assertive. The problem was discussed in section 4.2.4. The answer given was that they are almost assertive but still, there are grounds to analyse them as nonassertive.}

(394) *She is intelligent, [(even) if / (even) though] a bit talkative;*

(395) *He visited London in May, [(even) if / (even) though] (only) for a short time.*

The adversative Sentences we have seen so far are plain in that the marked Clause opposes only the other Clause, i.e. the marked Clause says that there is not a connexion between two entities. In the next section we shall see that an adversative Clause can express that a whole range of connexions do not hold.

### 3.2.7.2 Emphatic ‘Conditionals’

*Even if* can be a plain, adversative marker, as we have seen in the last section. But sometimes it is an emphatic marker (primarily when the focus of the String is a scalar item).\footnote{Only if, even if and unless have generated a fair bit of literature in the last two decades. Cf., e.g., [Gei73], [HS80], [Lyc84], [Jam86], [Hai86], [Köns86], [Rot86], etc.} To see the difference, consider these two situations:

(396) *A: If he returns to London in May, she'll start painting; B: So she says. But I reckon that even if he returns to London in May she won't start painting.*

(397) *A: Only if he returns to London in May, she'll start painting; B: No, not even then, I mean, even if he returns to London in May she won't start painting.*

In the first of those situations, B is denying that there is a connexion between his returning to London in May, and her starting painting, as claimed by A. A has not made explicit whether May is the only possibility for which the connexion holds.\footnote{Unless we are in a dual situation, in which case, only if and if collapse. This is because in dual situations the negation of the possibility described by the if Clause cannot be connected to the possibility described by the unmarked Clause. Actually, in these situations the negation of the if possibility is connected to the negation of the unmarked Clause possibility, as we shall see in section 4.4.2. In dual situations, then, the copulative even if and whether are synonymous. For example, imagine the situation is such that A has said that if he returns to London she'll start painting. The only cases are <his returning, his not returning> and <her starting painting, her not starting painting>:

(398) *Even if he returns to London she'll start painting;*

(399) *Whether he returns to London she'll start painting.*

Both Sentences declare that in both cases, if he returns to London and if he doesn't, she will start painting.
Likewise, B is not denying more than that. In particular, (s)he is not denying that if he returns to London before or after May the connexion will not hold either, as the following follow-up makes clear.\(^{50}\)

(401) \(B: \text{No, not even then, I mean, even if he returns to London in May she won't start painting. What she really wants is him to be there for her wedding, in March.}\)

In the second of the situations, on the contrary, A is saying that only in one case the connexion will hold. B's reply must here be construed as agreeing that the rest of the cases (up to a given one) should be discarded, but also as denying that May is in. All the possibilities are out for B. In this situation, the only if Sentence specifies exactly one possibility; the even if one excludes all (up to a given one). Let us call only if a copulative nonassertive marker and even if an adversative nonassertive marker. Only if is always copulative in the sense described. It marks that the possibility described is connected, and the rest are not. But even if can be copulative as well as adversative:

(402) \(A: \text{If he returns to London in May, she'll start painting; B: In May? I reckon that even if he returns to London tomorrow she will start painting. She wants to start as soon as possible.}\)

In this situation, what B says is that, yes, she'll start painting if he returns in May, but also if he returns earlier than that. In (397) the connexion was denied (and that other possibilities were connected was also denied). In (402) the connexion is affirmed (and that other possibilities are connected is also affirmed).\(^{51}\)

So, if is usually a plain copulative (nonassertive) marker, although and even though are plain adversative (assertive) markers, only if is an emphatic copulative (nonassertive) marker, and even if is either a plain adversative marker, or an emphatic, copulative as well as adversative, (nonassertive) marker.\(^{52}\)

\(^{50}\) Though (s)he can:

(400) \(B: \text{No, even if he returns to London tomorrow she won't start painting. She won't, full stop.}\)

\(^{51}\) This behaviour is similar to the behaviour of the if Phrases we saw in section 3.2.4.

\(^{52}\) We cannot stop any longer on these matters. So let me just mention that as, when, given that, etc. were classified as copulative assertive markers. Most of them do not have an emphatic version. But (non-temporal) when does, viz. even when. An example is this:

(403) \(\text{Even when he returns home on time she scolds him.}\)
But this section could not be complete without a mention to unless, a rather peculiar negative, copulative marker, with strong links to only if.

*Only if* Sentences describe one possibility and declare that that is the only one connected to the entity described by the unmarked Clause.\(^{53}\) *Unless* Sentences describe one possibility and declare that that is the only one not so connected. Compare, e.g., the following String to (397):

(404) A: She’ll start painting unless he returns to London in May.

(397) says that only in one case, viz. if he returns to London, she will start painting. (404), on the other hand, says that only in that case she won’t. Therefore, negating the unmarked Clause we obtain a semantically equivalent Sentence:

(405) A: She won’t start painting unless he returns to London in May.

*Unless* is thus a copulative, emphatic (nonassertive) marker.\(^{54}\) In fact, it could be said that it is just the negative counterpart of *only if* (as [Gei73] does). But, though we agree with [Gei73]’s position,\(^{55}\) we think that the terminology is misleading. *A unless B* is equivalent to *A only if not B* not to *A not only if B*, which could also be called a negative counterpart of *only if*. The point is important because *A not only if B* is semantically equivalent to *even if* in cases like (402). So, *even if* has also some right to be called the negative counterpart of *unless*.\(^{56}\)

The following table summarises our results:

<table>
<thead>
<tr>
<th></th>
<th>PLAIN COPULATIVE</th>
<th>ADVERSATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSERTIVE</strong></td>
<td>as since</td>
<td>(al)though</td>
</tr>
<tr>
<td></td>
<td>given that, when, etc.</td>
<td>even though</td>
</tr>
<tr>
<td><strong>NONASSERTIVE</strong></td>
<td>if</td>
<td>even if</td>
</tr>
</tbody>
</table>

\(^{53}\) We are excluding the specialised *only if* used in logic, a very different marker indeed (cf. [Lyc84, footnote 14] and [McC74]).

\(^{54}\) Except *if* and *but if* are also dialectally appropriate or obsolete.

\(^{55}\) To wit, that *unless* is the negative counterpart of *only if*, not of *if*. Cf. also [Lyc84].

\(^{56}\) In section 5.2.4.5 we shall use this fact to support the conjecture that OE *nefne* is the negation of OE *efne*, thus establishing a new etymology for the latter.
3.2.8 Necessary and Possible Strings

The last of the items in our agenda is the classification of Strings according to the modal status of the connexion holding between the entities those Strings describe. We want to emphasize that it is not the modality of the entities what is at stake here but the modality of the connexion between those entities. If Clauses are nonassertive, as we have shown. Therefore, they describe possible entities. However, they can be either necessary or possible connexionwise. The distinction is common in theories of conditionals. It is often spelt out as the distinction between would and might 'counterfactuals'. The labels are quite appropriate, since would and might are typical necessary and possible counterfactual markers respectively. For example:

(406) [NECESSARY]If he returned to London she would start painting;
(407) [POSSIBLE]If he returned to London she might start painting.

Obviously the distinction extends to noncounterfactuals:

(408) [NECESSARY]If he returns to London she'll start painting;
(409) [POSSIBLE]If he returns to London she may start painting.

In fact, it extends to all sorts of Sentences:

(410) [NECESSARY]She started painting because he returned to London;
(411) [POSSIBLE]She may have started painting because he returned to London.

In (411) – under a normal interpretation – what is probable is not that she started painting but the fact that her starting painting was caused by his returning to London, as required. A similar point can be made in relation to:

(412) [NECESSARY]She started painting when he returned to London;
(413) [POSSIBLE]She may have started painting when he returned to London.

The most important point of this section is to remember that there are two different modalities to account for. One, the modality of the entities the String refers to; the other, the modality of the connexion. And we should not mix them up.
3.2.9 Summing up

We have classified a wide range of *if* Strings in terms of the connexion. This, in itself, shows that *if* Strings do not describe any particular kind of connexion, i.e. that they are connexion neutral.

Once the idea that *if* is a connexion marker is abandoned, all sorts of Sentences that have not received a decent analysis so far are analysed in a natural way. This is the case with *if... will* Strings, 'concessive' *if* Strings, 'polite remarks', 'nonconditionals', etc. Also, we have mapped *if* in relation to *(al)though, unless, even if* and *only if* in a simple and, we hope, convincing manner.

Despite all our work, the classification is neither complete nor fine-grained enough. But our aim, viz. to give further evidence that *if* is not a connexion marker, has been accomplished.

The second big target of this chapter was to see if there was a subset of *if* Sentences that corresponded to what has been traditionally called 'conditional' Sentences. The answer has been that these are a relatively small subset of *if* Sentences, viz. the set of causal and logical Sentences.

The next section is about tenses, and especially tense correlation. Therefore, it is basically about time. But not only about time. Tense correlation often marks speech-act (modality), scope (quantification) and connexion (mainly modality). So, the section is not only about past and nonpast Sentences, but also about noncounterfactual and counterfactual, individual and collective, necessary and possible, backtracking and nonbacktracking Sentences.

3.3 Classifying ‘Conditionals’ by looking at Tense Correlation

3.3.1 Introduction

The aim of this section is twofold. Firstly, we want to propose a preliminary classification of ‘conditional’ Sentences. Therefore, only ‘conditional’, i.e. causal and logical Sentences will be considered.

Second, many standard classifications of ‘conditionals’ take time and modality as the only relevant parameters. So ‘conditionals’ are indicative and subjunctive (or counterfactual), past or future. On the basis of such distinctions, the logical properties of ‘conditionals’ are discussed. This section is a warning against such classifications. To start with, there are other parameters relevant to classify conditionals which are also marked by tense correlation. Besides, many tense correlations are ambiguous as regards time reference, modality, quantification, etc. In particular, the most popular
ones are highly ambiguous. These facts have been paid little attention in the literature, as far as we know. As a consequence, there have been logical misunderstandings, false counterexamples, etc. It is our intention to point out where those problems lie and how they can be fixed to a certain extent.

We shall see how, despite the ambiguities, there are certain emerging tense-marking patterns. What we shall do is propose 'canonical' tense correlations which are both plausible developments of the English tense-marking system and relatively unambiguous. These canonical forms will allow us to discuss particular classes of 'conditionals' in section 4.3 in a transparent way.

Three final warnings. One, we have tried to include many tense correlations but without aiming at completeness. Two, we have not examined the problems caused by other classifications. Ours is just a preliminary survey. Three, readers who are not interested in details concerning tense correlation can safely skim through this section, keeping in mind that the main thrust of the section is that tense correlation can help us to classify 'conditionals' but only if we are aware of its many ambiguities\(^{57}\) and of the fact that not only time and modality are tense-marked in English.

### 3.3.2 Some Terminological Remarks

We shall distinguish between tenses and times. Tenses are markers attached to verb forms. Times are coordinates of the scenario described by the structure. Time is a relatively well studied semantic feature, from a grammatical, a logical and an information representation point of view.

Let us distinguish between past and nonpast time values only.\(^{58}\) Thus, e.g.

\[(414) \textit{He returned to London}\]

is a past String, since his returning to Paris is located in the past with respect to the speaker. Since 'conditionals' are Coordinate-type Sentences each Sentence describes two entities, possibly located at two different points. To distinguish them we shall

\(^{57}\)And, of course, if we do something about it.

\(^{58}\)Our target are 'conditionals', and the basic marking system is binary, i.e., between past and nonpast. Future does not seem to receive a separate treatment. \textit{Will} is used in the if Clause sometimes, but here it does not seem to be a time but a speech-act marker (see section 4.3 for more details). In a former version of this chapter we used a version of Reichenbach's time representation model (cf. [Rei66]). The main advantage of this model is that we can distinguish three points called speech, event and reference points (in improved versions of the model the labels vary (cf., e.g., [Rig86]). Thus, reference time gets called focal point, and event point is generalised to account for actions, states-of-affairs, etc.). However, the inclusion of a reference time soon blew up the number of possible time combinations. As a result, the chapter was too long and complicated for our purposes. So, we decided to consider only the times of the two events described by the 'conditional' as well as the speaker's time. Thus pruned, we need only two values to characterise a 'conditional' timewise, and Reichenbach's model loses its main appeal. Therefore, we gave it up completely.
assign each Clause a time value and shall tag an "if" to the time value of the if Clause. Moreover, the relative temporal order of (the entities described by) the two Clauses will be indicated by specifying whether the String is a case of backtracking or not.59 Thus,

(415) *If he returns to London tomorrow she'll start painting the day after,*

will be assigned a time value if NONPAST - NONPAST; NONBACKTRACK since both his returning to London and her starting painting are future in relation to the speaker, and the former is prior to the latter.

Apart from time, we shall be concerned with modalities, quantification and connexion modalities. Noncounterfactual will be abbreviated to NC and counterfactual to C. Likewise we shall abbreviate collective to NI and individual to I. Finally NEC will stand for necessary and POS for possible. Thus, (415) is (in a standard situation) a noncounterfactual, individual, necessary Sentence (NC; I; NEC).

Tense correlations themselves will be abbreviated as follows. Capitalised third person singular of each of the traditional grammatical tenses of the verb *to do* stand for any non-auxiliary verb form of the analogous tense. Thus, DOES stands for any simple present, indicative, non-auxiliary verb form. DID stands for any simple past, indicative, non-auxiliary verb form, and so on. Second, auxiliaries are given separately. For example, MUST stands for all forms of *must*, HAVE for all forms of *have*, DO for all forms of *do*, etc. Imperatives have been left out. "if" will be used as a prefix to indicate that we are referring to the tense of the if Clause. Thus, (415)'s tense structure is: if DOES - WILL DO.

### 3.3.3 A Menagerie of Tenses for 'Conditionals'

'Conditionals' admit of numerous tense correlations. Tense correlation marks time structure, modalities, scope quantification and certain aspects in relation to the connexion between the two Clauses, viz. whether the connexion is necessary or possible, and partially, whether the connexion is backtracking or not.

There are some tense correlation patterns that are very common. These have received more attention on the part of philosophers.60 However, lots of other tense correlations are possible.

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59 Backtracking has been defined in section 3.2.6.

60 Thus, authors in the logic of conditionals' tradition speak of indicative and subjunctive, past and future conditionals, thus accepting four standard forms of time-modality correlation for conditionals. V. H. Dudman has studied quite thoroughly some of these patterns from a more linguistic point of view. Cf. [Dud83], [Dud84a], [Dud84b], etc. We basically agree with Dudman in that there are logical and causal 'conditionals' ('hypotheticals' and 'conditionals' in his terminology). We further agree that there are individual and collective 'conditionals' (our collective 'conditionals' are similar to his 'iterative conditionals'). But we claim that tense correlation does not mark the distinction
Timewise, almost any kind of relationship between the two Clauses is possible, though some of them are more usual than others. The same is not true for modalities and quantification. It is almost impossible to find examples of 'conditionals' where the unmarked Clause and the if Clause have different modalities.61

Likewise, it is difficult to find 'conditionals' where the if Clause is individual and the unmarked Clause is collective, or the other way round. Finally, each 'conditional' Sentence has, of course, one set of connexion values only (in relation to the connexion between the two Clauses).

All in all, the number of combinations is enormous. So, let us go only through some of the more interesting cases. First, we shall look into cases where the time reference of the if Clause is in the speaker's past. Then, we shall deal with cases where the time reference of the if Clause is nonpast with respect to the speaker. Within each section we shall discuss the more standard tense correlations, show that they are ambiguous and in what ways they are so, and propose a plausible way of disambiguating them on the basis of tendencies present in the English marking system, if available. Finally, we shall add some remarks on other, less frequent, time combinations.

3.3.3.1 Past Strings

In this section we shall review two of the more common time correlations in English, viz. when both events are in the past with respect to the speaker, in both noncounterfactual and counterfactual modes. We shall see how the tense combinations used to mark those are ambiguous. Thus, we shall propose ways of disambiguating them. Finally, we shall go through variants of those basic time patterns.

Philosophers usually oppose if DID - DID to if HAD DONE - WOULD HAVE DONE. They tell us that the former is an indicative (noncounterfactual) past marker; the latter, the corresponding subjunctive (counterfactual) past marker. Infamous examples are:62

(416) If Oswald didn't shoot Kennedy (yesterday), somebody else did (it yesterday);

(417) If Oswald hadn't shoot Kennedy (yesterday), somebody else would have (done it yesterday).

between logical and causal Strings (see section 3.2.6) but rather the distinction between individual and collective Strings. And not always. Dudman's analysis points to the existence of several kinds of 'conditionals'. We have blown this idea up. For us, if Clauses can stand in many different relations.

61 By the way, if Clauses – unlike when and where Clauses can be negative. If this can be used as a criterion to check the relative nominalisation of a Clause, we have here another argument against the thesis that if Clauses describe a particular kind of entity.

62 With due respect to [Lew73].
if DID - DID is always noncounterfactual. Moreover, if DID - DID always signals past - past with respect to the speaker. But beyond that, this tense combination is hopeless as to time and modality marking.

Let us begin by showing that if DID - DID is time ambiguous, i.e. that it allows any relative order of the events. (416) is an example of a past-past, nonbacktracking String. But backtracking is also possible:

\begin{itemize}
  \item [(418)] [NC; PAST - PAST; BACKTRACK] If Oswald didn't shoot Kennedy (yesterday), somebody else did (it the day before yesterday). That would be the only thing that'd stop Oswald from doing it: that somebody had already done it.
\end{itemize}

The same ambiguity pervades if HAD DONE - WOULD HAVE DONE. The first example is one of backtracking. The context is as in (418):

\begin{itemize}
  \item [(419)] [C; if PAST - PAST; BACKTRACK] If Oswald hadn't shot Kennedy (yesterday), somebody else would (have done it the day before yesterday).
\end{itemize}

\begin{itemize}
  \item [(420)] [C; if PAST - PAST; NONBACKTRACK] If Oswald hadn't shot Kennedy (yesterday morning), somebody else would (have done it in the afternoon).
\end{itemize}

But counterfactuals are again worse off. if HAD DONE - WOULD HAVE DONE is not even assured to refer to the speaker's past. It can also refer to the speaker's future in cases of backtracking:

\begin{itemize}
  \item [(421)] [C; if NONPAST - NONPAST; BACKTRACK] If Oswald hadn't shot Kennedy (by tomorrow evening), somebody else would (have already done it by tomorrow morning).
\end{itemize}

Modalitywise, if DID - DID is also better off than if HAD DONE - WOULD HAVE DONE, since, as we have mentioned, the former is always noncounterfactual, whereas the latter can be noncounterfactual in cases where if HAD DONE simply refers to a reference point's past.\footnote{This is the only point at which we shall invoke the use of a reference time.}

\begin{itemize}
  \item [(422)] [NC; if PAST - PAST; BACKTRACK] If Oswald hadn't shot Kennedy (yesterday), somebody else would have (done it already).
\end{itemize}

Connexionwise, if HAD DONE - WOULD HAVE DONE can be either possible or necessary, despite a tendency towards being the latter:

\begin{itemize}
  \item [(423)] [NEC] If Oswald hadn't shot Kennedy (yesterday), somebody else would (have done it yesterday).
\end{itemize}
(424) [POS] If Oswald hadn't shot Kennedy (yesterday), somebody else [would / might] (have done it yesterday). I don't know.

If DID - DID is better off than its counterfactual counterpart on this count. if DID - DID marks a necessary connexion. Otherwise, explicit markers are used:

(425) [NEC] If Oswald didn't shoot Kennedy (yesterday), somebody else did (it yesterday);

(426) [POS] If Oswald didn't shoot Kennedy (yesterday), somebody else [will (have done it) / may (have done it) / probably did] (yesterday).

Finally, as to quantification, the situation is as follows: if DID - DID shows a slight tendency towards being a collective marker. Laws – causal or logical alike – tend to be stated with if DOES - DOES when they are fully collective (as we shall see soon) and with if DID - DID when they are discourse-restricted to a past time period. If this tendency persists, and if DID - DID becomes exclusively a past collective marker, which would be the corresponding individual tense sequence? The answer is not easy.

If DID - WILL HAVE DONE is sometimes used:

(427) [I] If Oswald didn't shoot Kennedy (yesterday), somebody else will have done (it yesterday).

But the usability of such a marker depends on its being freed up from its modal (possible) value. Moreover, if DID seems to be (increasingly) reserved for counterfactuality, the noncounterfactual role being transferred over to if HAS DONE.

The situation of if HAD DONE - WOULD HAVE DONE as regards quantification is as follows. Unlike in the noncounterfactual case, where if DOES - DOES is a collective nonpast marker and if DID - DID is a collective past one, if DID - WOULD DO covers all times in counterfactual mode. If HAD DONE - WOULD HAVE DONE may be used for collective, counterfactual Strings limited to a reference point's past. But this is a remote situation to be considered an immediate ambiguity threat. Thus, if HAD DONE - WOULD HAVE DONE is basically an individual marker and, therefore, past counterfactuals are better off than past noncounterfactual ones in relation to quantification.

Let us make a resumée of the foregoing discussion. We have seen how if DID - DID is a noncounterfactual, necessary, past marker. It is ambiguous as to the relative order of the events, and only slightly so as to quantification (it is usually collective).

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64 See example (126).

65 See example (47).
If HAD DONE - WOULD HAVE DONE is, on average, on a worse off position. Generally a counterfactual, past marker, it can occasionally be used as a noncounterfactual marker in cases where if HAD DONE simply refers to a reference point's past. Also, it can be used as a nonpast marker in cases of backtracking. It is certainly ambiguous as to modality of the connexion. The only place it is better off than if DID - DID is at quantification, since it is (almost) never a collective marker.

We have also made some comments about how to disambiguate the system based on certain tendencies which seem to be latent in English. In our picture, there would be a binary distinction between past and nonpast Strings. If DID would be only an individual nonpast or a collective marker, but always counterfactual. Past noncounterfactuals would be based on if HAS DONE. if HAS DONE - WOULD HAVE DONE would do the backtracking job, whereas if HAS DONE - WILL HAVE DONE would do the rest. Collective Strings, if we admit time distinctions for them at all, could get if HAS DONE - HAS DONE. Possible ones, if HAS DONE - MAY HAVE DONE.

As to counterfactuals, if HAD DONE - WOULD HAVE DONE seems hopelessly ambiguous as to the order of the events. Counterfactual, past, collective Strings should get if DID - DID. But this is science-fiction. More plausible is that if DID - WOULD DO covers all counterfactuals, nonpast as well as past, since time is often not relevant for collective statements, particularly if counterfactual. Possibility would be marked by if HAD DONE - MIGHT HAVE DONE.

So far we have reviewed time combinations where both events are in the speaker's past. However, the unmarked Clause event may not be in the speaker's past. These

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66 E.g.

(428) [I]If Oswald hasn't shot Kennedy (yesterday), somebody else would have done (it the day before yesterday).

67 Thus,

(429) [I]If Oswald hasn't shot Kennedy (yesterday), somebody else will have (done it yesterday), (if the tendency persists) should be generally accepted as an appropriate Sentence. At present it is only accepted in some dialects. Cf. [Low79] for a defence of (429) (and not (416)) as the noncounterfactual counterpart of (417). The same point is made by [Bar86, 29]. It is also at the base of [Dud84b]'s distinction between hypotheticals and conditionals.

68 If HAS DONE - HAS DONE, with the same tense in both Clauses, would be a collective marker.

(430) [NI]If Oswald hasn't shot Kennedy (yesterday), somebody else has (done it yesterday) would, therefore, mean that the (farfetched) situation in which Kennedy is under constant shooting would be on.
cases are rather nonambiguously represented by noncounterfactual if DID - WILL DO and counterfactual if HAD DONE - WOULD DO. As to possibility markers, if DID - MAY DO and if HAD DONE - MIGHT DO as well as if DID - WILL DO and if HAD DONE - WOULD DO are attested. Examples of these Strings are:

(431) *If Oswald didn't shoot Kennedy yesterday, somebody else will (shoot him tomorrow)*;

(432) *If Oswald hadn't shot Kennedy yesterday, somebody else would (shoot him tomorrow)*.

In our ideal tense system, if HAS DONE - WILL DO would mark noncounterfactuality and if HAD DONE - WOULD DO, counterfactuality. Possibility would get if HAS DONE - MAY DO and if HAD DONE - MIGHT DO respectively.

3.3.3.2 Nonpast Strings

This section deals with Strings whose *if* Clause entities are located in the speaker's present or future. We shall start with *if* DOES - WILL DO and *if* DID - WOULD DO, since they are the paradigms of noncounterfactual and counterfactual nonpast Strings respectively.

As well as being paradigmatic, these Strings also count among the most ambiguous tense correlations. We have often included a time adverb in the String to make more clear the time reference:

(433) *{NC; if NON PAST - NON PAST; NONBACKTRACK} If Oswald doesn't shoot Kennedy (now / tomorrow), somebody else will (do it tomorrow)*;

(434) *{NC; if NONPAST - NONPAST; BACKTRACK} ?If Oswald doesn't shoot Kennedy (tomorrow), somebody else will (do it before then).*

The examples show that if DOES - WILL DO doesn't specify the relative order of the two events (to be sure, the example of backtracking is a bit funny). Moreover, the *if* Clause event is usually seen as referring to the speaker's future. In any case, it is marked as nonpast.

As to the relative order of the events, it depends on whether the connexion is logical or causal. In Oswald's example, if the String means that Oswald's failure will trigger somebody else's taking over on the job, we have a causal String, with a time gap between the two events involved. If, however, the String is uttered on the basis of information to the effect that somebody will kill Kennedy, no causal connexion between Oswald's failure and somebody else's attempt is involved. It is just a piece
of deduction. There is no temporal gap between the two events. But as such, the tense correlation is ambiguous.

Happily enough, if DOES - WILL DO is always noncounterfactual. But soon the ambiguity problem crops up again. Will can mean either will certainly, definitely, necessarily or will probably, possibly. In other words, we do not know the modal status of the connexion. As an example, observe the difference between:

(435) [POS]If Oswald doesn’t shoot Kennedy tomorrow, somebody else [will (probably) = may] (shoot him tomorrow);

(436) [NEC]If Oswald doesn’t shoot Kennedy tomorrow, somebody else will (certainly) (shoot him tomorrow)

Again, there seems to be a tendency to read will as a necessary marker. But this is far from safe. Finally, we find again quantification ambiguity. Oswald’s example is not very good to see this, but we shall give it a try:

(439) If Oswald doesn’t shoot Kennedy tomorrow, somebody else will (shoot him tomorrow).

In a context where the speaker knows that there is a certain plan to assassinate the President the String is individual. In the (admittedly farfetched) context where the speaker knows that, every time the president speaks in public, somebody – usually Oswald – tries to kill him, the String is collective. The following follow-up makes it clear:

(440) [NI]If Oswald doesn’t shoot Kennedy tomorrow, somebody else will, as always.

69 As it is the case in the way the standard Oswald’s example is construed.

70 A better example is:

(437) If you scratch a match it will light

(437) is a plausible collective String, uttered on the basis that (all) scratched matches light. Notice that the tense sequence is the same. It is the background knowledge about matches plus the use of you, and especially a, that lead us to the conclusion that it is a collective String. Thus, despite the strong contextual component to interpreting this String as collective, replacing either marker makes it individual:

(438) If you scratch that match it will light.

This String says that an individual match will light, as opposed to other matches that are, say, wet and won’t light when struck. The String is individual.
As in the case of time and connexion, there appears to be a tendency towards if DOES - WILL DO being individual. But again, this is far from being the rule. There is a corresponding strong tendency to reserve if DOES - DOES for collective Strings. This in itself should be welcomed. However, it causes serious problems in relation to logical Strings.\footnote{If you recall, we distinguished between logical and causal kinds of connexions, and thus, of Strings. Now, in collective Strings, tenses tend to mark just that, that the String is collective, at the expense of time. if DOES - DOES, our canonical collective, noncounterfactual marker proves this. Tenses are identical. The relative order of the entities goes unmarked. In causal environments there is no problem, since backward causality (backtracking) is not accepted and therefore the order is iconically constrained. But it poses problems for logical Strings which point to temporally ordered entities, since the temporal order between the entities is lost. Logical Sentences describe propositions which point to nonlinguistic entities, usually events. The if Clause always describes the antecedent (proposition). Therefore, the proposition described by the if Clause is always prior to the proposition described by the unmarked Clause. But a logical Clause also points to an event. And we have no guarantee that the event pointed to by the if Clause is always prior to the event pointed to by the unmarked Clause. For more details see section 3.2.6. For a discussion of the logical consequences it causes see section 4.4.1.}

To sum up, if DOES - WILL DO Strings are always noncounterfactual, but ambiguous on three counts. Firstly, they can backtrack or not. Secondly, they can be either possible or necessary. Thirdly, they can be either collective or individual. These ambiguities notwithstanding, the default seems to be that they are nonbacktracking, individual and necessary. In other words, the entity described by the if Clause event is prior to the unmarked Clause event, the connexion is necessary in the sense that both entities get assigned the same modality, and finally, those entities are individual entities.

Let us turn now to if DID - WOULD DO Strings. These Strings are, roughly speaking, the counterfactual equivalent of if DOES - WILL DO Strings. The time reference of the if Clause can be present or future relative to the speaker. The time reference of the unmarked Clause can be present or future relative to the if Clause. But, anyway, they are always nonpast:

\begin{align*}
\text{(441) [NC; if NONPAST - NONPAST; NONBACKTRACK]} & \text{If Oswald didn’t shoot Kennedy (now / tomorrow), somebody else would (do it tomorrow / the day after tomorrow).}
\end{align*}

The problem is that this marker can signal backtracking:

\begin{align*}
\text{(442) [NC; if NONPAST - NONPAST; BACKTRACK]} & \text{If Oswald didn’t shoot Kennedy (tomorrow), somebody else would (do it before then).}
\end{align*}
The tense correlation can yield either possible or necessary Strings:

(443) [POS]If Oswald didn’t shoot Kennedy (tomorrow), somebody else [would / might] (shoot him tomorrow);

(444) [NEC]If Oswald didn’t shoot Kennedy tomorrow, somebody else would (shoot him tomorrow).

The Strings so marked can also be either individual or collective:

(445) [I]If Oswald didn’t shoot Kennedy tomorrow, somebody else would. I know their plans;

(446) [NI]If Oswald didn’t shoot Kennedy tomorrow, somebody else would, as usual.

Again, the default seems to be for these Strings to be nonbacktracking and necessary. However would seems to lag behind will in the ‘demodalisation’ process. That means that the tendency of if DID - WOULD DO Strings to describe a necessary connexion is less pronounced than the corresponding tendency in the case of if DOES - WILL DO Strings. On the other hand, there is a strong tendency to see if DOES - DOES as a collective, noncounterfactual marker. The same is not true of if DID - WOULD DO. If DID - WOULD DO is equally a collective and an individual marker.

[72] Or at least if DOES - DOES playing the role of collective, nonpast, noncounterfactual marker and if DID - DID as its past counterpart.

[73] For a more convincing example:

(447) [NI]You had to time it perfectly. If you waited too long you were a tight-arsed prickteaser. If you let him too early, you were a slack-arsed moll. So, after a few weeks, he’d ask you for a root, and if you wanted to keep him, you’d do it. ([CL79, 24])

The situation described is not limited to an individual girl / boy in the gang. It is the rule. The String is counterfactual because the speaker is describing a possible, collective, past situation (he’d ask you for a root) in which the if String is embedded. The noncounterfactual collective version of the String would be:

(448) So, after a few weeks, he asked you for a root, and if you wanted to keep him, you did it.

Admittedly, the difference between counterfactuality and noncounterfactuality is minimal in collective past contexts. If we take the action to the future the difference is more transparent:

(449) [NC]So, things work as follows in this gang. After a few weeks, he’ll ask you for a root, and if you want to keep him, you (’ll) do it;

(450) [C]So, things would be as follows if we were in the gang. After a few weeks, he’d ask you for a root, and if you wanted to keep him, you’d do it.
So, despite the tendency (greater in the case of if DOES - WILL DO than in the case of if DID - WOULD DO Strings) to being individual, necessary Strings, the fact of the matter is that these markers are ambiguous as regards quantification and connexion modality.

Let us attempt, as before, a plausible way of disambiguating tense marking based on tendencies which seem to be present in English. First, the tendency seems to be towards a binary classification of time reference: past / nonpast. In this respect, nonpast markers are better off than past ones. if DOES is indeed the noncounterfactual nonpast marker and if DID, the counterfactual nonpast one. Neither of them allow backtracking. So, if DOES - WILL HAVE DONE and if DID - WOULD HAVE DONE are free to do this job.

Secondly, quantification is definitely marked in the noncounterfactual case, with if DOES - DOES emerging as a collective marker. Counterfactually there are signs of disambiguation. We have suggested that, ideally, if DID - DID would be a collective counterfactual marker, leaving if DID - WOULD DO as an individual marker. But this would require two things. One, that if DID was seen as a counterfactual marker always (if HAS DONE filling its nonpast, noncounterfactual role). Two, that collective Strings were completely time-insensitive, so that there would be only one marker for noncounterfactual collective Strings, and another one for counterfactual collective Strings, viz. if DOES - DOES and if DID - DID respectively.

Thirdly, if DOES - WILL DO, with if DID - WOULD DO lagging behind, show a tendency towards being exclusively necessary markers. if DOES - MAY DO and if DID - MIGHT DO are the obvious choices for the corresponding possibility slots.

As in the previous section, we shall briefly consider other markers. So far we have reviewed time combinations where both events are in the speaker's nonpast. We must consider now cases (of backtracking) when the unmarked Clause event is past. Examples are:

( 451 ) [NC; if NONPAST - PAST]If Oswald doesn't shoot Kennedy tomorrow, somebody else has (done it yesterday).

This marker is nonambiguous. However, if DOES - WILL HAVE DONE seems to be gaining ground in this role:

( 452 ) [NC; if NONPAST - PAST]If Oswald doesn't shoot Kennedy tomorrow, somebody else will have (done it yesterday).

Counterfactually, only if DID - WOULD HAVE DONE is possible. And, as observed, would have done is still basically a possibility marker.
(453) [C; if NONPAST - PAST] If Oswald didn’t shoot Kennedy tomorrow, somebody else would have (done it yesterday).

But our problems do not stop here. Consider these examples:74

(454) [NC; BACKTRACK; if NONPAST - NONPAST] If Oswald won’t shoot Kennedy tomorrow, somebody else will (do it before then);

(455) [NC; BACKTRACK; if NONPAST - NONPAST] If Oswald won’t shoot Kennedy tomorrow, somebody else is (doing it now);

(456) [NC; BACKTRACK; if NONPAST - PAST] If Oswald won’t shoot Kennedy tomorrow, somebody else has (done it already).

If WILL DO is a nonpast backtracking marker. But if DOES is also a nonpast backtracking marker. Are they perhaps interchangeable? No, they are not. if WILL DO signals that the event is predictable, almost certain, whereas if DOES only gives it as likely. In other words, there is a speech-act difference between them. Therefore, they do not clash.75

Let us study, then, a bit more carefully if WILL DO markers. The situation does not look too bad timewise. if WILL DO always marks backtracking. Moreover, the time reference of the unmarked Clause event is usually unambiguously marked as in the above examples.

However, if WILL DO Sentences are ambiguous on another count, viz. they are connexion ambiguous. We introduced some examples of if... will when talking about final Sentences.76 But if you recall, not all instances of if... will were final. Some of them are logical, i.e. ‘conditional’.77

In if WILL DO Sentences the if Clause event is seen as predictably being the case. The unmarked Clause describes either something that can be inferred from that one, or an action that should be performed to bring that one about or to stop it (or some of its consequences) from occurring. In the former case the String is logical. In the latter, it is final (affirmative or negative).

Using Oswald’s example:

74 Many if... will sequences are not ‘conditional’. For that reason, tense correlation does not fit the usual patterns found in ‘conditionals’. In effect, Strings which are not ‘conditional’ have different tense correlations available. Thus, we find indirect questions like: I wonder if you’d have left, and more intriguingly, if you had needed some money, there was some in the bank, which according to [JL86, 70] mixes up counterfactuality and noncounterfactuality. We are not dealing with these cases, but only with ‘conditionals’.

75 For more details see section 4.3.

76 See section 3.2.6.

77 See, e.g., example (362) and its footnote to it.
(457) If Oswald will shoot Kennedy, the nation is about to lose her president;

(458) If Oswald will shoot Kennedy, the police should be ready;

(459) If Oswald will shoot Kennedy, other members of the gang should give him five grand.

(457) calls for a logical interpretation. That the nation will lose her president is a consequence that can be deduced from the (almost certain) fact that Oswald will shoot Kennedy and this one will die.78 (458), on the other hand, suggests that the police should be alert to protect the President. Finally, (459) says that Oswald's mates should give him money to make him kill the President.

This with respect to noncounterfactuals. It should be expected that the behaviour exhibited by if ... will was replicated by if ... would in counterfactual mode. However, I have not seen too many examples of if ... would strings, except for the modal would ones like:

(462) If you would like more information about this product, write us now.

As in previous cases, will shows a more developed (nonmodal) semantics than would.

Ideally, if if WILL DO gets established in English and if WOULD follows the same pattern in counterfactual mode, we would have if WILL DO and if WOULD DO marking nonpast backtracking sequences. The difference between these and if DOES and if DID respectively would be one of speech-act, not of time.79 As to the connexion ambiguity, if we are right and examples of 'nonconditionals' can be construed as final,80 the ambiguity would not be exclusive to if WILL DO, but would affect all backtracking sequences. This does not make things better, but shows that final interpretations of 'conditionals' are more common than we would have expected, adding problems to the defender of the 'conditional' thesis.

78 Another example of a logical if WILL DO sentence is (456). On a standard interpretation, (456) expresses a reason why Oswald (most probably) won't kill the man, viz. because somebody else has done it already. And that was the only thing that could stop him from shooting at the president. (454) can also be construed as a logical sentence. More credible examples are perhaps these:

(460) If Oswald will shoot Kennedy, all these newshunters are in their lucky day;

(461) If Oswald will shoot Kennedy, all the police's efforts have been in vain.

79 Whether if WILL DO and if WOULD DO spread to nonbacktracking situations is, as far as we can tell, unpredictable.

80 See section 3.2.6.
3.3.3.3 Recapitulating

We have introduced a new semantic feature, viz. time. We have also reintroduced bits of other semantic features, viz. speech-act (entity modality), connexion (especially modality) and scope (quantification). We have shown that English tenses mark, on occasion, one or some of these. With their help, we have set up a preliminary classification of ‘conditional’ Sentences.

Tenses mark distinctions between past and nonpast Strings, backtracking and nonbacktracking Strings, noncounterfactual and counterfactual Strings. But they also mark distinctions between collective and individual Strings, and necessary and possible Strings. And this is often overlooked when classifying ‘conditionals’ with the help of tenses.

On the other hand, after reviewing several of the most frequently used tense markers, we have concluded that most of them are ambiguous with respect to one or several of those parameters. The morale is that we must be extremely cautious when interpreting individual Strings, especially if isolated.

On the positive side, we have shown several more or less well-defined tendencies in the tense system. Based on these tendencies, we have proposed an ideal tense system, that palliates some of the aforementioned ambiguities. Incidentally, these ideal markers provide canonical forms to be used in chapter 4 to formulate a conjecture on the role of time and modality in relation to the information contained in ‘conditional’ Sentences. The following table summarises our previous discussion on canonical forms. Parenthesis indicate very long-term projections. Collective Sentences are supposed to be time-insensitive; backtracking is ignored. So, the only collective markers we need are:

<table>
<thead>
<tr>
<th>NONCOUNTERFACTUAL</th>
<th>COUNTERFACTUAL</th>
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<tbody>
<tr>
<td>NEG</td>
<td>if DOES - DOES</td>
</tr>
<tr>
<td>POS</td>
<td>if DOES - MAY DO</td>
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</tbody>
</table>

Individual, possible, nonbacktracking markers are these:

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<thead>
<tr>
<th>NONCOUNTERFACTUAL</th>
<th>COUNTERFACTUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-P if HAS DONE - MAY HAVE DONE</td>
<td>if HAD DONE - MIGHT HAVE DONE</td>
</tr>
<tr>
<td>P-NP if HAS DONE - MAY DO</td>
<td>if HAD DONE - MIGHT DO</td>
</tr>
<tr>
<td>NP-P if HAS DONE - MAY HAVE DONE</td>
<td>if DID - MIGHT HAVE DONE</td>
</tr>
<tr>
<td>NP-NP if HAS DONE - MAY DO</td>
<td>if DID - MIGHT DO</td>
</tr>
</tbody>
</table>

\[81\] P=PAST; NP=NONPAST.
Individual, necessary, nonbacktracking markers are these:

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<tr>
<th></th>
<th>NONCOUNTERFACTUAL</th>
<th>COUNTERFACTUAL</th>
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<tbody>
<tr>
<td>P-P</td>
<td>if HAS DONE - WILL HAVE DONE</td>
<td>if HAD DONE - WOULD HAVE DONE</td>
</tr>
<tr>
<td>P-NP</td>
<td>if HAS DONE - WILL DO</td>
<td>if HAD DONE - WOULD DO</td>
</tr>
<tr>
<td>NP-P</td>
<td>if DOES - WILL HAVE DONE</td>
<td>if DID - WOULD HAVE DONE</td>
</tr>
<tr>
<td>NP-NP</td>
<td>if DOES - WILL DO</td>
<td>if DID - WOULD DO</td>
</tr>
</tbody>
</table>

Backtracking causes some ambiguity problems:

<table>
<thead>
<tr>
<th></th>
<th>NONCOUNTERFACTUAL</th>
<th>COUNTERFACTUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEC,P-P</td>
<td>if HAS DONE - WOULD HAVE DONE</td>
<td>if HAD DONE - WOULD HAVE DONE</td>
</tr>
<tr>
<td>NEC,NP-NP</td>
<td>if DOES - WILL HAVE DONE</td>
<td>if DID - WOULD HAVE DONE</td>
</tr>
<tr>
<td>POS,P-P</td>
<td>if HAS DONE - MIGHT HAVE DONE</td>
<td>if HAD DONE - MIGHT HAVE DONE</td>
</tr>
<tr>
<td>POS,NP-NP</td>
<td>if DOES - MAY HAVE DONE</td>
<td>if DID - MIGHT HAVE DONE</td>
</tr>
</tbody>
</table>

Finally, if WILL and if WOULD forms are these:

<table>
<thead>
<tr>
<th></th>
<th>NONCOUNTERFACTUAL</th>
<th>COUNTERFACTUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAST</td>
<td>(if WILL HAVE DONE)</td>
<td>(if WOULD HAVE DONE)</td>
</tr>
<tr>
<td>NONPAST</td>
<td>if WILL DO</td>
<td>(if WOULD DO)</td>
</tr>
</tbody>
</table>

There are still some ambiguities here. But the basic individual, necessary, backtracking slots are certainly well-defined. In addition, collective Strings are clearly distinguished from individual ones and possible ones from necessary ones. The position of if WILL DO in this overall picture will be clarified in section 4.3.

3.3.4 The End

The section on time has been the last of this chapter. We have first shown that *if* Strings are connexion neutral, in other words, that *if* is not a ‘conditional’ marker in the sense that it signals a special kind of connexion (‘conditional’) between entities.

Secondly, we have defined ‘conditionals’ as a rather small subset of *if* Sentences, viz. the set of (symmetric, order) causal and logical Strings.

Finally, ‘conditionals’ themselves have been classified on the basis of tense correlation. We have shown that tenses mark not only time and modality but also quantification and connexion modality. Also, we have pointed out to some of the
ambiguities of the marking system in relation to those semantic features.

In chapter 4, we draw some of the consequences of our analysis of if Strings in
genral, of ‘conditionals’ in particular, in the context of a theory of information. The
chapter closes with a couple of examples on the relevance of our conjecture for logic.
Chapter 4

An Information Analysis of ‘Conditional’ Strings

4.1 Introduction

In chapters 2 and 3 we have argued that *if* is a dubitative marker in English. Moreover, in chapter 3 we have defined what ‘conditionals’ are and we have attempted a preliminary classification of ‘conditional’ Sentences based on tense marking. Now it is time to take up ‘conditionals’ again, and see some of the consequences our conjecture has for an information analysis of ‘conditionals’.

The structure of this chapter is as follows. In the introduction we return to the main conjecture and explain its relevance for the present chapter. Then, we explain some of the methodological peculiarities of the chapter. We conclude with an explanation of the key concept in this chapter, viz. entailment, and with a discussion of some criteria useful to classify entailments.

In section 4.2 we recall what we said on speech-acts in chapter 2, before presenting a basic information model for ‘conditionals’. Next, we recall what we said in chapter 3 on time and modality, and develop a finer-grained classification of speech-acts. Then, we explain how time and modality introduce a certain amount of speech-act variation within that basic model.

Finally, in section 4.4 we discuss two (logical) properties of ‘conditionals’, viz. Contraposition and Negation of the Antecedent, and their status as rules to generate derived entailments.

4.1.1 The Main Conjecture Recast

This chapter tries to support from yet a third perspective the conjecture that *if* is a nonassertive, single (i.e. dubitative) marker.
We shall move in an ill-defined field bordering logic, pragmatics and knowledge representation. Basically, what we shall try to do is to squeeze information out of 'conditionals' or, in the terminology we shall use, to generate entailments from 'conditional' Sentences. Recasting our conjecture, we can say that if Clauses always generate an entailment of the form: the speaker thinks that X, where X is the description contained in the if Clause and think is a dubitative marker.

If Sentences supply us with information about different kinds of connexions. If Clauses supply us with information about different kinds of entities. Thus, much of the information traditionally associated with 'conditional' Sentences (relative to connexion or entities) has little to do with if. It has rather to do with the information supplied by causal or logical Strings or, more in general, with the information supplied by asymmetric conjunctive Sentences.

Our conjecture leads to a new (logical) analysis of English 'conditional' Sentences. Syntactically, 'conditional' Sentences incorporate two operators: a one-place operator corresponding to if and a connective corresponding to the relation existing between the two Clauses that, as we have shown, is either a causal or a logical relation. Semantically, the order relation is preserved. Moreover, we shall be assuming that typical 'conditional' Sentences are dual and that, therefore, something we shall call Information Optimisation holds for them.

We shall not propose either a new syntactic symbolism or a new formal modelling for 'conditionals'. We shall not elaborate on the consequences of such changes on our logical analysis of 'conditionals'. However, we thought fit to give an example of what those consequences could be. So, we discuss two logical properties of 'conditionals', viz. Contraposition and Negation of the Antecedent. The former is a rule that needs to be fixed up. The latter is a fallacy that our analysis (partially) rescues.

4.1.2 Pragmatics and Knowledge Representation

There is an old box inherited from positivism, viz. pragmatics. Fortunately, things are changing and there is a new box, viz. knowledge representation. One of the main differences is that the pragmatics box contains the leftovers of the semantics (and syntax) box, whereas knowledge representation ignores the distinction, its goal being to model all the information contained in a set of Strings.

Another difference is that the positivistic distinction is made in relation to something extrinsic to the linguistic setting, viz. the 'World', whereas the new enterprise does not care about the 'objective' status of the referents of the linguistic Strings which are the object of analysis.

The present chapter is about knowledge representation. Within the positivistic framework, one could say that it is a hodge-podge of semantics and pragmatics, or perhaps that it is plain pragmatics. In particular, we have not talked (and we shall
not talk) of the truth of a String,¹ as it is common practice among many followers of the older analysis. Instead, we have used the concept of appropriateness, which is relative to a group of speakers, a particular situation and a point in discourse. In sum, what is usually called a pragmatic concept. We shall introduce in this chapter the concept of entailment, that, as we shall be warning, is to be understood in a 'pragmatic' sense too, i.e. as relative to a group of speakers, a particular situation and a point in discourse.²

There are certain distinctions people make to explain 'pragmatic' phenomena. Among them, suppositions, presuppositions, implications, implicatures, entailments, etc. are distinguished on occasion. Although they are perhaps useful (we do not deny that there are different kinds of information), they are irrelevant in connexion with the present discussion and, therefore, we shall ignore them.

4.1.3 Preconditions and Entailments: towards a working Definition of Entailment

The methodological framework we shall use is very simple. The subject are 'conditional' Sentences. The goal is to make explicit as much information as possible and obtain the common denominator of that information. We shall use the term entailment in a loose way to refer to:

1. Strings that make explicit bits of information contained in a 'conditional' Sentence and Strings that derive from those plus properties associated to the semantic values of the String;
2. the operation which generates those Strings; and
3. the set composed of the 'conditional' Sentence, the entailed Strings and the entailment operation.

There are certain general properties associated with many linguistic situations. These properties are not specific to any given set of Sentences, but rather define what a normal String (or utterance) is. These properties, or general discourse preconditions, will not be called entailments. Let us just list four, that we consider relevant to what we should say later on about if Strings:³

¹Or Sentence, or proposition, or statement.
²From the standpoint of knowledge representation, the old distinction between semantics and pragmatics looks as follows. There is a certain theory of how a fragment of a language should work. The set of linguistic phenomena that comply with the theory are normal and go to the syntax-semantics box. The rest, the ones that do not comply with the theory, are nonnormal, and go to the pragmatics box. Furthermore, the theory in question is the only rationally acceptable theory. Therefore, the (users of the) fragment in question should comply with the theory. Instances of noncompliance are to be explained on the basis of the nonrational behaviour of the speakers.
³Believes is a canonical marker. It stands for KNOWS, THINKS (see section 4.2.1). 'U' is the
(Minimal rationality) U believes that L is minimally rational.

Minimal rationality is relative to the information contained in a String. E.g., in the case of 'conditionals', minimal rationality requires that:

- U believes that L pursues her/his goals (desirable states-of-affairs) and avoids anti-goals (undesirable states-of-affairs);
- U believes that L avoids actions which lead to anti-goals but plans actions leading to goals.

(Minimal Competence) U believes that L is minimally competent in English.

Minimal competence is relative to a String. It involves two aspects:

- U believes that L will grasp the information contained in the String (that is, L will generate all the relevant primitive entailments);
- U believes that L will derive the relevant information from it (that is, L will generate all the relevant derived entailments).

(Minimal Directionality) U believes that L doesn’t x,

where x is one or some of: know about X, feel obliged in relation to X, feel compelled in relation to X, and X is a piece of information or an action. 4

Any normal piece of discourse contains a speech-act component. On the basis of the very elementary speech-act scheme we are using in this study, that component translates into one of the following things:

- U believes that there is at least one bit of information in the String which L doesn’t know about;
- U believes that there is at least one action described by the String which L doesn’t feel obliged in relation to;
- U believes that there is at least one action described by the String which L doesn’t feel compelled in relation to.

(Minimal Commitment) U wants L to x / U feels obliged to that L x. 5

speaker, ‘L’ is the listener. For a more comprehensive list of preconditions, cf. [Gri75].

4Know about, feel obliged in relation to and feel compelled in relation to are canonical markers. Know about stands for KNOWS, THINKS, DOESN’T KNOW; feel obliged in relation to stands for HAS TO, SHOULD, DOESN’T HAVE TO; and feel compelled in relation to stands for NEEDS, WANTS, DOESN’T NEED. See section 4.2.1.

5Wants is a canonical marker which stands for NEEDS, WANTS. Feels obliged stands for HAS TO, SHOULD.
where x and X are as before. Any (normal) piece of discourse is somewhat imperatively or desideratively valued. This amounts here to one of the following things:

- U wants L to know about what is described by the String;
- U wants L to feel obliged in relation to the action described by the String;
- U wants L to feel compelled in relation to the action described by the String.

Obviously, this is not a complete list of general preconditions but an example of what we mean by that. As we said earlier, these will not be called entailments here. So, what is an entailment? The following should be taken just as a working definition:

An appropriate String is said to entail another String, relative to a situation and a linguistic community, when the latter is also appropriate, and, for most speakers in the community, the information contained in it is either a subset of the information contained in the original String or derived from a subset of the information contained in the original String plus properties of the values of the original String.

The entailment operation is here conceived as a pragmatic, heuristic, tool rather than a formal concept. For each semantic value assigned to a String there is an entailment that has also that value. Let us give an example. Suppose the speaker says:

(463) Pete ate the mushrooms.

Speech-actwise this String is assertive. Therefore the String entails:

(464) U KNOWS that Pete ate the mushrooms,

which is, likewise, an assertive String. The entailment makes clear the value of the original String. This is attained by the use of canonical forms, univocally associated with each semantic value. Thus, in the example, KNOWS is the canonical form corresponding to assertion, as we shall see.\footnote{As opposed to U just believing, thinking or wondering that he did. And also as opposed to believing or thinking that he didn't. The String is not nonepistemically marked, unlike: Pete, alas, ate the mushrooms, which is desideratively marked (i.e. it entails: \textit{U doesn't want Pete to eat the mushrooms}), or \textit{Finally Pete ate the mushrooms!}, which can be taken – in a plausible enough situation – to be imperatively marked (i.e. as entailing: \textit{U wants Pete to eat the mushrooms}).}

\footnote{Some of these canonical forms have already been used. In chapter 3 we provided a list of canonical time markers. In this chapter, we shall introduce some canonical speech-act markers.}

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4.1.4 Partitioning the Set of Entailments

The set of entailments generated by a given String is probably quite large, if not infinite. But, in most situations, the audience is interested only in a subset of that set. It would be helpful if we delimit such a subset. To that end, we must first establish some kind of classification of entailments and, if possible, an order between the classes. An appealing ordering criterion is, it seems to us, frequency with which a group of speakers of a given language are, on average, interested in such class of entailments. The resulting order would constitute the default, rather than the norm, let alone the only possible order.\(^8\)

But here we are not going to tackle such grand problems. Our only interest is to delimit, on methodological grounds, our subject of study. So, let us just touch on five criteria that may prove useful in partitioning the set of entailments.

The first criterion is suggested by the definition of entailment itself. We said that entailments are relative to particular (semantic) features. Therefore, we can specify each subset as comprising Strings instantiating the same feature. Thus, we can talk of axis entailments, speech-act entailments, scope entailments, etc.

A second way of partitioning the set of entailments is by specifying levels of analysis of the String. At the bottom level we have minimal semantic units; at the top, the whole String. Thus, we can talk of Phrase entailments, Clause entailments, Sentence entailments, etc.

A third criterion to classify entailments is by order of generation. Thus, we can divide entailments into primitive and derived. Primitive entailments are those that make explicit a subset of the information given by the original String. Derived entailments are those that are generated from the primitive ones using properties of the values assigned to the String in question.\(^9\)

The fourth and last criterion takes into consideration indexical parameters for the entailment, viz. who, where, when and at which world the entailments are generated. The same String may yield different entailments in relation to who is the subject that generates them, whether it is the speaker, or the listener, or a third party. In this study we shall be mainly concerned with the entailments a third party (us) generates for the speaker. Moreover, a String generates different entailments depending on the time, place and world of reference (according to the speaker). Further, we can talk of antecedent and consequent entailments, Antecedent entailments are those generated in a relevant period of time prior to the production of the String, and consequent ones, those generated in a relevant period of time after the production of the String.

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\(^8\)The basic idea has been taken from [WS79].

\(^9\)A more complicated ranking, relative to a database and a set of entailment rules can be set up, of course.
In this thesis, we have kept these parameters fixed to the time, place and world the speaker is at, unless otherwise stated. Finally, we are concerned only with antecedent entailments.

Let us give an example of how all this works. First, we shall see how to classify entailments with respect to particular features, at different levels of analysis. Then, we shall proceed to exemplify primitive and derived entailments. Finally, we shall see how indexicals can be handled.

We can classify entailments according to which feature we are interested in and how much of the String we consider. Take, e. g., (463) again. Each of {Pete, ate, mushrooms} is a unit of (463). Suppose that we are interested in the axis feature. (463) generates, among others, entailments like:\[\text{(465)}\]
\[U\text{ describes Pete;}\]
\[\text{(466)}\]
\[U\text{ describes an instance of eating;}\]
\[\text{(467)}\]
\[U\text{ describes mushrooms.}\]

Still at this level of analysis, some of the units generate other entailments but relative to other features. For example, relative to the time feature, \textit{ate} entails:

\[\text{(468)}\]
\[U\text{ describes the eating as past.}\]

Other entailments, this time relative to scope are:

\[\text{(469)}\]
\[U\text{ selects a particular man;}\]
\[\text{(470)}\]
\[U\text{ selects a particular set of mushrooms.}\]

Which of these entailments are relevant in a particular situation depends on which the focus of the String is. The speaker may be focusing on the fact that Pete did eat the mushrooms, i.e. on the fact that he already did, on the fact that he did eat them instead of putting them in the fridge, etc. Or perhaps he is focusing on the fact that he ate the mushrooms, not just any mushrooms, but the ones Maria bought, etc. or, again, on the fact that it was Pete – and not someone else – who ate them.

Moving a step up, we can consider the units \textit{Pete ate} and \textit{ate the mushrooms}. Probably the most relevant feature here is connexion. The connexion between Pete and eating is of the Subject-verb (agent-action) kind. The connexion between eating

\[\text{10} \text{Notice that we have avoided phrasing the entailments as: there is an entity or Pete exists. There is no particular problem in doing that though, since there is, x exists, etc. carry no ontological commitment in the habitual sense, given that our analysis is discourse-relative.}\]
and the mushrooms is of the verb-Object (action-object of the action) kind. The entailments generated are:

(473) \( U \) describes Pete and eating as being eater - eating connected;

(474) \( U \) describes eating and the mushrooms as eating - eaten connected.

The third criterion to classify entailments divides them into primitive and derived. All the examples of entailments seen so far are primitive. They do not depend on information not supplied by the String itself. We can also generate entailments that rely on the properties of the values associated to the String in question. These have been called derived entailments.

There is quite a bit of work done in this area in the knowledge representation field. Using a standard approach we can think of a database as a set of sets linked by relations. Some of these relations are described by the String in question. E.g. Pete and eating are sets linked by an eater - eating connexion, or perhaps we prefer to say that \(<\text{Pete}>\) and \(<\text{the mushrooms}>\) are sets linked by an eating relation. Others are supplied by our knowledge about the objects involved. For instance, take Pete (a set). He is not only linked to the mushrooms, but (since he is a man) to the set of men, to the set of all human beings, etc. This relation is sometimes called subsumption, and it is really set or relation inclusion. For us, the fact that Pete is subsumed under men is a property of Pete, one which the context, and not the String, supplies.

The picture can be enlarged to include not only sets (entities) and relations (connexions), but speech-acts, times, and the rest of the semantic features we have been talking about in this thesis. Each feature comprises several values. Each of those values has a bunch of properties associated to it. Thus, assertion has a bunch of properties that allow us to derive entailments. The properties, of course, vary depending on the epistemic logic we choose. Another example is connexion. Thus, e.g., a ‘conditional’ connexion has a bunch of properties associated to it. This is what logicians have been trying to agree about (unsuccessfully it seems).

Let us stick for the moment to the basic model, and see how derived entailments come about. \(<\text{Pete}>\) is a set (entity) subsumed under \(<\text{male}>\), subsumed in turn

\[11\] The general form of the connexion entailments is:

(471) \( U \) describes \( X \) and \( Y \) as being \( Z \)-connected

Or, less grammatically:

(472) \( U \) \( Z \)-connects \( X \) with \( Y \),

where \( X \) and \( Y \) stand for a pair of entities of those described above and \( Z \) is a connexion value. More natural perhaps would be phrasing the entailments There is a \( Z \) connexion between \( X \) and \( Y \). This, again, does not pose any ontological problems within our framework.

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under <man>, subsumed under <animate>, subsumed under <object>, etc. On the other hand, <eating> is a relation (connexion) subsumed under <acting>, subsumed under <being part of an event>, etc. Now, given the primitive axis entailment *U describes Pete* and the fact that <Pete> is subsumed by <man> we have that: *U describes a man*, and so on. From: *U describes an instance of eating* and the piece of knowledge that <eating> is subsumed by <acting> we have that: *U describes an action*, and so forth.

If we know of more properties of <Pete> (apart from his being a man), say, that he is Mary's brother (i.e. Pete is connected to <Mary> through the relation <being brother of>) we can generate: *Mary's brother ate the mushrooms.*

If we know of more properties of <eating>, we can generate more entailments. For example, if we know that eating is in general beneficial for human health, the following entailment results: *Pete did something beneficial for human health.* And so on.

Once we have seen a couple of examples using the basic model, consider the bigger picture, where all the semantic features are represented. Take, e.g., speech-act entailments. Suppose that a (logical) property of assertion is that it 'replicates' itself. Thus, from: *U KNOWS that Pete ate the mushrooms* we can derive that: *U KNOWS that U KNOWS that Pete ate the mushrooms* with the help of that property. Another example, this time of derived connexion entailments, is the following. Consider this 'conditional' Sentence:\[475\]

\[(475) \text{If Pete ate the mushrooms he died.}\]

Suppose now that Contraposition is indeed a property of 'conditional' connexions. If this is the case, we can generate:

\[(476) \text{If Pete didn't die, he didn't eat the mushrooms.}\]

Or suppose that Negation of the Antecedent is indeed a property of 'conditional' connexions. If this is the case, we can generate:

\[(477) \text{If Pete didn't eat the mushrooms, he didn't die.}\]

\[12\text{Notice that there are entailments which prima facie look like derived ones, but are not (because there is no plausible property they can help themselves to). Thus, U KNOWS that L DOESN'T KNOW that Pete ate the mushrooms does not derive from L DOESN'T KNOW that Pete ate the mushrooms or something like that. In fact it is not an entailment at all, but an instance of a strong form of minimal directionality: the speaker knows that the listener does not possess the information supplied by the String.}\]

\[13\text{With due respect to [Ada86].}\]
This concludes our examples of derived entailments. We shall talk about derived entailments only in section 4.4, in connexion with some of the (logical) properties of 'conditionals'.

The last way of classifying entailments focuses on indexicals. Let us just give two examples. The first example illustrates how the subject of the entailment can vary. All the examples given so far are of the form: \( U . . . \), where \( U \) is the speaker. We have said that we would be focusing on precisely those entailments, viz. the ones a third party generates relative to the speaker. But sometimes it is useful to consider, say, the set of entailments a third party generates relative to the listener.

Let us give an example. (463) entails (464) in a situation where, say, the speaker has seen Pete eating the mushies. However, it entails:

\[(478) \text{L KNOWS that Pete ate the mushrooms,}\]

(where \( L \) is the listener) in a situation where the speaker relies on the listener's knowledge:

\[(479) \text{Ok, Pete ate the mushrooms. Now, where does that lead us?}\]

On the other hand, (463) entails:

\[(480) \text{A KNOWS that Pete ate the mushrooms,}\]

(where \( A \) is a third party) in a situation where the speaker relies on a third party's knowledge:

\[(481) \text{Pete ate the mushroms. Or so he claims.}\]

Unless otherwise noticed, we shall assume that the situation is such that the subject of the entailments is the speaker.

The second example illustrates how time is also a relevant parameter to classify entailments.

\[(482) \text{Pete ate the mushrooms yesterday}\]

entails:

\[(483) \text{U KNOWS that Pete ate the mushrooms}\]

at the time of the utterance, and:

\[(484) \text{U WILL KNOW tha. Pete ate the mushroms}\]

at any future time (in normal situations). However, it does not entail:
for every past time. Even within the 'now', there is a distinction we want to make, viz. that between antecedent and consequent entailments. Antecedent entailments are those generated at the antecedent state, i.e. in a relevant period of time before the String in question is produced. Consequent entailments are those generated at the consequent state, i.e. in a relevant period of time after the String in question is produced.

Now, the set of entailments at the antecedent and consequent states may be different. To take just an example, directionality requires that the listener, in an epistemic situation, does not know about X (at the antecedent state). Moreover, minimal competence requires that the speaker expects (at the antecedent state) the listener to understand the String. Therefore, the speaker should expect, at the consequent state, that the listener knows about X, thus fulfilling the speaker's goal.

These four criteria constitute a very basic framework to classify entailments. Basic as it is, we can appreciate the enormous work to be done and, consequently, the little area we shall cover in this study.

We are primarily interested in uncovering the basic entailment structure of 'conditional' Sentences. So, we shall move at the Clause and Sentence level.

At the Clause level we shall be concerned with speech-act and time information. Therefore, our analysis will have little to do with propositional logic, since propositional logicians, hooked onto the idea that *if* is a connexion marker, have been primarily concerned with the connexion between the (events described by the) *if* Clause and the unmarked Clause. In fact, they have been mostly concerned with the notion of entailment at the level of sets of 'conditionals'. In other words, their goal seems to be to ascertain whether, given a set of 'conditionals', we can generate new Strings by combining the originalClauses in a different way.

But we had to say something about connexion. So, in a second moment, we shall deal with entailments at the Sentence level. The purpose of the exercise is merely to give an example of how our analysis of *if* Strings leads to new (logical) results in relation to 'conditionals'.
4.2 A Basic Information Model for 'Conditional' Strings

To analyse the whole set of if Strings is a daunting task. Therefore, for the purposes of the present chapter, we shall consider only a subset of those, viz. the set of dual 'conditional' Sentences.

In this section we shall be assuming that if is a singular, nonassertive marker, and that, therefore, if Strings entail relevant Strings instantiating those values. Thus, we shall aim at proposing a basic model for 'conditionals' where speech-act plays the central role. In section 4.2.4 I discuss some apparent counterexamples to our conjecture. In the next section we shall study some entailment variations related to time and modality.

'Conditionals' are composed of an if Clause and an unmarked Clause. The if Clause is singular and nonassertive, and, therefore, entails the corresponding singular, nonassertive canonical String. The connexion between the two Clauses is copulative, asymmetric, order, either causal or logical. On the other hand, the connexion is, in this simple case, necessary. Consequently, the unmarked Clause is also nonassertive.

This much we knew. Based on this analysis, we shall sketch a general model, i.e. one intended to apply to most, if not all, 'conditional' Sentences.

The section is divided in six subsections. In the first one, we recall what we said in section 2.5.1 and go into a little bit more of detail into canonical forms and how speech-act entailments are generated. In the second one, we deal with the information associated to the unmarked Clause; in the third, with the information associated to the if Clause; in the fourth, with the information peculiar to the whole Sentence. The fifth section is devoted to discussing Strings which are prima facie counterexamples to our conjecture. The sixth subsection is a summary of the results obtained.

4.2.1 Speech-acts back again

Speech-acts are the most complex and perhaps interesting of all the features here considered. In section 2.5.1 we gave a chart of speech-act values. We copy it over for convenience's sake:

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\(^{14}\)Sentences where the set of possibilities includes only events and the corresponding negative events, or propositions and their negations.
Each of these speech-acts can be either affirmative or negative, counterfactual or noncounterfactual. In chapter 2 we were only interested in epistemic speech-acts, and even there, with a broad distinction between assertion and nonassertion. In chapter 3 we dealt with counterfactuality in the context of tense correlation. In this chapter we shall be looking into fine-grained differences between nonassertive speech-acts, including nonepistemic ones. To that end, each of the values in the above table will be associated with one canonical speech-act marker. These canonical markers have been chosen based on their behaviour as regards Negation Raising and Complement Negation. Let us explain how.

One of the features of Negation Raising seems to be that, given a class of speech-act (verb form) markers, ordered in a scale, members at the ends of the scale do not allow Negation Raising (without change of meaning) whereas the rest of the members – excluding the ones in the middle of the scale – do (without any drastic change of meaning). Thus,

(486) I know that you didn't eat the mushrooms

and:

(487) I don't know if you ate the mushrooms

have a very different meaning, i.e. know that does not admit of Negation Raising and, plausibly enough, is a top member in the scale of epistemic verb form markers. On the other hand,

(488) I think that you didn't eat the mushrooms

and:

(489) I don't think that you ate the mushrooms

have a similar, if not identical, meaning.

The second phenomenon is Complement Negation. This refers to the special behaviour showed by members in the middle of the scale, viz. the negation of their if/

15 As we pointed out in section 2.5.1, our concept of speech-act puts together the linguists' notions of polarity, speech-act and modality.

16 Cf. [Hor78].
whether Complements, though weird, does not seem to affect essentially the meaning of the String.\textsuperscript{17}

(490) \textit{I don't know whether you didn't eat the mushrooms}

and:

(491) \textit{I don't know whether you ate the mushrooms}

seem to have a similar meaning. On the other hand, the negation of the speech-act markers, though weird, does affect the meaning of the String. Thus:

(492) \textit{I don't know [whether / if] you ate the mushrooms}

and:

(493) \textit{??I know [whether / if] you ate the mushrooms}

seem to be different in meaning. The negative String is nonassertive with respect to the listener because the String does not provide definite information. All the listener knows is that either he ate the mushrooms or he did not. However, these Strings are assertive with respect to the speaker. And this is the difference with respect to plain nonassertive Strings like (492).\textsuperscript{18}

Whether these two phenomena, Negation Raising and Complement Negation, turn out to be fully regular or not, we shall choose as canonical speech-act markers those items that adjust to this scheme. Here they are:\textsuperscript{19}

\textsuperscript{17}In fact it does. Cf. [Yad86] for a discussion of the phenomenon he calls 'question asymmetry'. But the fact that it does sometimes can be explained by means of the Information Optimisation principle (section 4.4.2). Precisely because mid-scale markers are semantically equivalent, whether they are affirmative or negative, they undergo secondary specialisation to avoid information redundancy.

\textsuperscript{18}See section 4.2.4.

\textsuperscript{19}The canonical forms associated to modality values will be given in conjunction with those for time. Notice that, as required, negating \textit{know}, \textit{have}, \textit{need} yields (in normal situations) a mid-scale marker (\textit{doesn't know, doesn't have to, doesn't need}); negating their Complements yields a bottom-of-the-scale String; and they do not admit of Negation Raising. On the other hand, \textit{thinks, should, wants} admit of Negation Raising, i.e. \textit{thinks that not=doesn't think that (doubts that), should... not=shouldn't and wants that not=doesn't want that}. As for the mid-scale markers, \textit{doesn't know (wonders), doesn't have to (is free to) and doesn't need (doesn't mind if)}, negating their Complements doesn't seem to affect the meaning of the Strings. Finally, negating the markers themselves yields markers which entail a disjunction, like: \textit{knows if, is not free to (has to either or not), (does) mind if X (needs that either or not)}. We have avoided typical markers like \textit{may, can, must}, etc. which are, however, difficult to handle.

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Often, it is difficult to distinguish between desiderative and imperative values. Besides, the distinction is usually irrelevant for our purposes. Thus, we shall normally use only desiderative canonical markers, on the understanding that they stand also for the corresponding imperative markers. Also, when fine-grained distinctions are unknown or irrelevant, lower-case believe and want will stand for non-mid-scale values, viz. KNOWS that, THINKS and NEEDS, WANTS respectively. Other times, only the assertive versus nonassertive distinction will be made. Doesn’t know, doesn’t need will then be used to stand for THINKS, DOESN’T KNOW if and WANTS, DOESN’T NEED respectively. Finally, when the only relevant distinction is between epistemic, imperative and desiderative speech-acts, knows about, feels obliged in relation to, feels compelled in relation to are used.\textsuperscript{20}

Now we are in a position to set up our model for ‘conditional’ Sentences. We shall

\textsuperscript{20}See, e. g., section 4.1.3.
first deal with the information supplied by the unmarked Clause. Then we shall go to the if Clause; and finally, we shall move up to the Sentence level.\textsuperscript{21}

4.2.2 The Speech-act Information supplied by the Unmarked Clause

Let us introduce a new hypothesis. The hypothesis is based on the fact that discourse is normally directional (i.e., used, in part, to inform, elicit obligations or desires) as pointed out in section 4.1.3. This is the hypothesis: the unmarked Clause of a 'conditional' Sentence entails:

\begin{equation}
(U \text{ believes that}) \ L \text{ wants to [do / know]} X,
\end{equation}

where X is an entity described by the unmarked Clause. Let us give an example:\textsuperscript{22}

\begin{equation}
\text{If you eat, I'll take you to the pictures;}
\end{equation}

\begin{equation}
\text{If you don't eat, I won't take you to the pictures.}
\end{equation}

The first Sentence – under standard assumptions – can be classified as a promise or inducement. A reasonable (if incomplete) set of speech-act entailments (at the antecedent state) are:

\begin{equation}
(U \text{ believes that}) \ L \text{ wants to go to the pictures;}
\end{equation}

\begin{equation}
(U \text{ believes that}) \ L \text{ doesn't think that (s)he'll go to the pictures.}
\end{equation}

The speaker also holds some expectations with respect to the situation at the consequent state:

\begin{equation}
(U \text{ believes that}) \ L \text{ will (at the consequent state) want to go to the pictures;}
\end{equation}

\begin{equation}
(U \text{ believes that}) \ L \text{ will (at the consequent state) think that (s)he will go to the pictures.}
\end{equation}

\begin{equation}
(496), \text{ on the other hand, usually expresses a threat or deterrent. The corresponding entailments are:}
\end{equation}

\begin{equation}
(U \text{ believes that}) \ L \text{ wants to go to the pictures;}
\end{equation}

\textsuperscript{21}We want to emphasize that our basic model for 'conditionals' is not intended to generate every single entailment, but only those that relate to if on the one hand, and to the connective on the other. Thus, we shall not discuss, e.g., entailments related to axis (subsumption) or quantification, as [Soa82], [Kar73], [Gaz77], [Gaz71], etc. do. More crucially, we shall not discuss the incidence of nonepistemic values on the epistemic value of if Clauses.

\textsuperscript{22}Promises and threats are probably among the most typical examples. Cf. [Fil86].
The pair (497) and (498) ((501) and (502)) constitute, according to our hypothesis, the basic entailment structure of the unmarked Clause of a 'conditional' Sentence. The speaker detects one of the listener's goals. The speaker believes that the listener expects to achieve that goal (minimal rationality). The 'conditional' provides the listener with a way to realise that goal.

The 'conditional' can take different labels, depending on whether the listener's goal is an epistemic, desiderative or imperative goal. Thus, (495) is a promise and (496) is a threat. In an imperative context, we would rather talk of commands and prohibitions. Finally, in an epistemic situation, by far the most problematic, we could talk of reports of success and failure.

Epistemic situations are special because it seems to be difficult to identify the nonepistemic component of the unmarked Clause. To show that, nonetheless, this component is there, we invite you to consider the criterion we can label 'irrelevance with respect to the listener'. Suppose somebody makes a promise like in (495) or threatens somebody like in (496). If the listener doesn't want to go to the pictures in the first place, the promise will have no effect. In this case, the 'conditional' is irrelevant in relation to the listener. Now, does this criterion apply to epistemic situations? Take the following example. We are in the process of proving a theorem in propositional logic:

(505) If we simplify 'p', then we can use modus ponens (and we're done);

(506) If we don't simplify 'p', then we can't use modus ponens (and we can't then go any further).

(505) is a (prospective) success report. Its entailments, among others, are:

(507) (U believes that) we want to use modus ponens;

(508) (U believes that) we don't think of using modus ponens;

(509) (U believes that) we will (at the consequent state) want to use modus ponens;

(510) (U believes that) we will (at the consequent state) think of using modus ponens.
(506) is a (prospective) failure report. The corresponding entailments are easily generated. Now, it seems that the irrelevance criterion also applies to these situations, since producing (505) or (506) is only appropriate in the situation where we want to be able to use modus ponens (because of an ulterior goal, to be sure, viz. to finish the proof).23

Before leaving this subsection there are two points we want to mention. One is related to the further specification of the nonepistemic value of the Sentence. The other relates to the fact that the nonepistemic value of the unmarked Clause is inherited by the if Clause under certain conditions.

One, the nonepistemic component of the unmarked Clause comes in different degrees. Thus, we could, e.g., distinguish between promises and threats corresponding to the highest point in the desiderative scale; we could distinguish between encouragements and discouragements, etc. Similarly, we could distinguish between commands and prohibitions, between approvals and disapprovals, etc.

Two, the nonepistemic component of the unmarked Clause is inherited by the if Clause, in the same way as the nonassertive component of the if Clause is inherited by the unmarked Clause, except that it is so inherited at the consequent state. This property is grounded on minimal rationality. The listener is supposed to be minimally rational in that (s)he pursues (actions which lead to) her/his goals and avoids (actions which lead to) her/his anti-goals. Now, typical ‘conditional’ Sentences are necessary. Thus, realising the (entity described by) the if Clause realises the goal (or the anti-goal). As a consequence, there is an (inherited) interest in pursuing (or avoiding) what is described by the if Clause once the Sentence has been produced.

To sum up, we have advanced the hypothesis that the unmarked Clause of an if String possesses a nonepistemic value. The idea is that the unmarked Clause describes a goal relevant to the listener and that, otherwise, the String is irrelevant. Depending on whether the goal is epistemic, desiderative or imperative, we can distinguish three pairs of if Strings. The first element of the pair is, so to speak, a positive statement, the second, a negative one. If the goal is epistemic we have talked about success and failure reports. In an imperative situation, we can talk of commands and prohibitions. Finally, in a desiderative situation, we have talked of promises and threats.

We have also pointed out that the nonepistemic value associated to the unmarked Clause comes in different degrees, and that it is inherited by the if Clause under the same conditions the epistemic (nonassertive) component associated to the if Clause

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23 The difference between success and failure reports is admittedly more subtle than the difference between promises and threats. Even so, the example of the proof may still sound too close to imperative examples like (495) and (496). What about scientific statements? Here the difference seems to be even more elusive. But even here, we claim, the unmarked Clause describes a goal or an anti-goal.
is inherited by the unmarked Clause, viz. when the String describes a necessary connexion between (the entities described by) the two Clauses. The only difference is that the nonepistemic value is so inherited at the consequent state.

We have, then, two basic information components of a ‘conditional’ String: the nonepistemic component associated to the unmarked Clause (and inherited by the if Clause at the consequent state), and the epistemic (nonassertive) component associated to the if Clause (and inherited by the unmarked Clause).

The inheriting property depends on the modality of the connexion, not on if. The nonepistemic component of the unmarked Clause has its roots in the fact that a listener is presented with a piece of information stating a connexion between two entities, and this information must be relevant to the goals of the listener. Therefore, it does not depend on if either. So, we are left with the epistemic component of the if Clause. Our conjecture, viz. that if is a nonassertive, singular marker, is confirmed once again.

In the next section we shall see how the if Clause can have a nonepistemic value of its own, that must not be confused with the nonepistemic value inherited from the unmarked Clause.

4.2.3 The Information associated to the ‘if’ Clause

In this section we shall insist on the epistemic component of the if Clause, but we shall primarily focus on its nonepistemic component.

We must begin by emphasizing that this nonepistemic component of the if Clause is not the one inherited from the unmarked Clause. Let us start with an example. Take again (49a) and (49b):

(511) If you eat, I’ll take you to the pictures;

(512) If you don’t eat, I won’t take you to the pictures.

We saw how some of the entailments generated by the former are that the speaker believes that the listener is interested in going to the pictures, and will maintain her/his interest. But nothing was said in the last section about the interests of the speaker herself/himself. This information is contained in the if Clause, and sometimes is marked explicitly.

But let us go back to the example. Apart from the entailments referred to in the last paragraph, (495) also generates:

(513) U wan s L to eat;

The corresponding entailments for (496) are trivial. The situation is a familiar one: mum promises Jimmy to take him to the pictures if he, for goodness’ sake, finishes his tea.
Several observations are in place here. First, \textit{prima facie} these four entailments are a constitutive part of a promise situation. Promises are usually made to encourage people to do things that they would not normally do, and such that the promiser is interested in them doing them. In this respect, they could be taken as dependent on the connexion between the \textit{if} and the unmarked Clause, and therefore, independent of \textit{if} as a marker.

We want to show that this is only partially the case. We must distinguish between the desiderative entailments (513) and (515), and the epistemic entailments (514) and (516). (514) and (516) are indeed associated to the fact that the information relative to the connexion between the two (entities described by the two) Clauses is normally \textit{new} to the listener. But the desiderative entailments (513) and (515) are only associated to the \textit{if} Clause. The evidence is twofold: first, the nonepistemic value is an optional component of the \textit{if} Clause; and second, there are independent Clauses marked by \textit{if} that have a nonepistemic component.

That the nonepistemic component is optional can be shown by the following example, where the situation can be labelled `being-in-a-foreign-city':

\textit{(517) If you turn left, you'll get to Buckingham Road,} 

where neither of the following holds:\footnote{Notice, however, that the other two entailments still hold:}

\textit{(520) *U wants L to turn left;} 

\textit{(521) *U will (at the consequent state) want L to turn left.}

The second bit of evidence concerns Strings like:\footnote{Apart from \textit{please}, there are a number of other markers that signal the desiderative or imperative component of the \textit{if} Clause. Examples are:}

\textit{(518) (U believes) L won't (at the antecedent state) turn left;} 

\textit{(519) (U believes) L will (at the consequent state) turn left.}

\textit{(522) If only he knew about my work!}

\textit{(523) [Sadly, Regrettably, etc.], if he eats the mushrooms, he'll die.}
If you, please, close the door.

In a (normal) situation, where, say, the speaker is getting cold, the following entailments hold:

(525) (U believes) L won't close the door;
(526) U wants L to close the door;
(527) (U believes) L will (at the consequent state) close the door;
(528) U will (at the consequent state) want L to close the door.

In this case there is no promise, threat or the like. There is, to be sure, a marker (please) that makes the if String a request. Thus, (524) has an imperative component. It has, moreover a desiderative component too, expressed by the following two entailments:

(529) U wants the door closed;
(530) U will (at the consequent state) want the door closed.

To sum up, there are two distinct groups of entailments related to the if Clause of a ‘conditional’ String. The first one is the set of epistemic entailments of the type:

(531) U THINKS that x,

where x is the event described by the if String. The second one os the nonepistemic entailments of the type:

(532) U [wants / wants Y to] x,

where x is an event and Y is normally the listener. These entailments are peculiar to some if Strings and, therefore, do not form part of the general model for ‘conditionals’.

4.2.4 ‘Realised Conditionals’: where ‘if’ is almost Assertive

There are a series of examples that are prima facie counterexamples to our conjecture that if Strings are nonassertive, since they seem to entail assertive Strings. Take, e. g. ‘conditionals’ with ‘impossible’ or ‘necessary’ protases:

(533) If Russians whose mother tongue is Russian were native speakers of Japanese, they’d be good informants;
(534) If Japanese whose mother tongue is Japanese are native speakers of Japanese, they’re of course good informants.
(533) seems to entail that Russians of the described kind are not native speakers of Japanese; (534), that Japanese of the described kind are native speakers of Japanese.27 Let us say (for the time being) that the if Clause is assertive because of the particular entity described by it. The next two examples do not describe ‘necessary’ or ‘impossible’ entities, but, in context, we know whether the entities described hold or not:

(535) I know he speaks Japanese, but then, if he speaks Japanese, he must be able to help you;

(536) I know he doesn’t speak Japanese at all, but if he spoke Japanese, he’d be able to help you.

In those four examples, it is our contextual knowledge about the entities described, and not if, that allows us to generate an assertive entailment. On the other hand, we could have used markers other than if in each case. So, why is if used here?

A second set of examples is this:

(537) If Hitler hadn’t invaded Poland, Germany’d have won the war;

(538) If Gorbachev will cut gas supplies to Lithuania, this Baltic state is in a very difficult position.

examples of past counterfactuals and if...will Strings seem to trigger assertive entailments too.28 (537) seems to imply that Hitler invaded Poland, (538), that Gorbachev will in fact cut gas supplies to Lithuania. In this case, it is particular time / modality combinations that seem to account for the entailments, not if.

Sometimes it is the combination of time and polarity that seems to account for assertive entailments:

(539) You must have felt very sick if you didn’t go to the party!

(540) If you are not going, you are very sick;

though perhaps more mildly than in the case of past counterfactuals and if...will noncounterfactuals.29

A third group of examples shows how particular connexion values may sometimes trigger assertive entailments. For instance, consider the case where the if Clause is semantically the Subject of the String, there is an assertive predicate and no other markers are present:

27 The examples may sound ridiculous. More standard examples have round squares and unmarried bachelors as objects. An important bunch of examples has to do with properties of the delictic objects described by the String. E.g. If I was you, If I was in Siberia, If I knew that, etc.

28 But see section 4.3.2 for a more specific reply.

29 Often negative questions behave similarly. Cf. e.g. [Boi57].
(541) If he's writing a thesis it is [because he gets bored of being idle / to prove himself that he can do research on his own / despite his mother's wishes].

Another case is when the String is symmetric, copulative or adversative, and (often) extra markers are used to mark either Clause, like, e.g. 30

(543) But what about Chilean immigrants? If [undoubtedly / certainly] they were worse off than their countrymen in Chile, they now enjoy a more prosperous status than them.

(544) But what about Chilean immigrants? If they were [undoubtedly / certainly] worse off than their countrymen in Chile economically speaking, still / at least they could enjoy more freedom than the rest.

(545) If Thatcher was [undoubtedly / certainly] too tough in terrorist issues, Reagan [on his part / on the other hand / also] went back to an extreme imperialistic attitude in South American affairs which threatened the already unstable economy of those countries.

(546) If he's eaten his soup pretty quickly, he's not going to leave much of the rest either!

Connexion (in this case being the object of a clearly assertive verb form) is also responsible for the seemingly assertive entailments generated by:

(547) If he didn't finish his thesis in 89, it is now that he regrets it;

(548) If he finished his thesis, it is with pride that he tells the world.

A fourth group of examples contains collective Strings, which, as we have seen, 31 are sometimes hard to distinguish from their assumed corresponding assertive counterparts:

(549) If you scratch a match it lights.

This is obviously not a complete typology of counterexamples to our conjecture, but it shows at least that there are certain values for each semantic feature that seem to render the information contained in the if Clause assertive. The question, however,

30 I cannot resist the temptation of quoting this beautiful example:

(542) If the duwager had been angry at the abrupt leave of absence he took, she was mightily pleased at his speedy return. (Thackeray, 1852; taken from [Dud84].)

31 See section 2. .9.
remains: why is if used, when there are other markers that could do the job? This is a difficult question, and one that we shall leave open here. But since we believe that the counterexamples are not really counterexamples, let us just point out to the direction we should like to take to answer it.

The idea is that if Clauses are nonassertive in that somebody (usually the speaker) doesn't know at a given time (usually at the time of utterance), at a given place (usually at the place of utterance), at a given world, if the entity described by the if Clause holds. In short, the speaker takes the if entity as a possibility which is not actual for somebody, somewhere, some time, at some world.32

Thus, e.g., new topics are potentially unknown to the audience (though known to the speaker).33 The difference between:

(550) If he's writing a thesis it is because he gets bored of being idle

and:

(551) He's writing his thesis because he gets bored of being idle

is that (551) can be used in a situation where the speaker KNOWS that the audience knows that he's writing his thesis, where (plausibly enough) his writing a thesis has been a topic before this String has been uttered. On the other hand, (550) is used when the speaker is introducing his writing his thesis as a new topic, i.e. when the speaker THINKS that the audience doesn't know that he's writing a thesis.34

In other cases, it is the speaker, but at a different world, that is the epistemic subject of the entailment. Thus,

(552) If I was an Aussie I'd drink XXXX

entails that I KNOW that I am not an Australian, but also that I THINK that I would be an Australian (in a different situation) or, at any rate, that I THINK that I could be an Australian (in a different situation).

Still in other cases, it is the speaker but not at the time of utterance that is the epistemic subject of the entailment. Thus,

(553) If Hitler hadn't invaded Poland...

32 [Auw83] also supports the view that the protasis is always nonassertive. He calls this the 'anteecedent possibility thesis'. The idea that 'possible' must be understood as discourse-bound is developed in [JL86, 66-7].

33 The thesis that if Clauses often introduce a new topic is maintained, among others, by [Hai78] and [FT86].

34 Notice that If he's writing his thesis it is because... as well as He's writing a thesis because... are mildly inappropriate compared with (550) and (551). For a consideration of if as a topic marker cf. [Hai78].

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may or may not entail that the speaker KNOWS that Hitler invaded Poland but it certainly entails that the speaker THINKS (when he hadn’t invaded Poland yet) that Hitler would invade Poland or, at any rate, that Hitler could do that.

4.2.5 The Information associated to the ‘if’ Sentence

We move now one level up, to considering the if Sentence as a whole. Here the most characteristic semantic feature is connexion. As we pointed out in section 4.1.4, connexion entailments are of the general form:

(554) $U$ describes $X$ and $Y$ as being $Z$-connected.

Depending on what $Z$ is, we obtain different derived entailments. We are only interested in (dual, necessary) ‘conditional’ Sentences, i.e., logical and causal Strings. Therefore, we have:

(555) $U$ describes $X$ and $Y$ as being [causally / logically] connected,

where $X$ and $Y$ are either events or propositions pointing to events respectively. The information we obtain is very limited. Connexion, unlike speech-act, is far more interesting in relation to derived entailments. That is why we shall return to it in section 4.4.

4.2.6 Summing up

Our goal was to set up a basic information model for ‘conditional’ Strings. There are two levels we have looked at, viz. the Clause level and the Sentence level.

The results of our enquiry are the following. At the Clause level we found that the basic information provided is of speech-act. On the one hand, it was our conjecture that the unmarked Clause is always nonepistemically marked, i.e., that it entails: ($U$ believes) $L$ wants [to do $X$ / to know $X$], where $X$ is an event or proposition described by the unmarked Clause. In other words, it is never the case that the unmarked Clause entails: ($U$ believes) $Y$ DOESN’T NEED [to do $X$ / to know $X$], where $Y$ is either her/himself or the listener or a third party. In philosophical jargon, it is not the case that the speaker believes that there is no person such that (s)he is, wants to and should be completely neutral with respect to what is described in the unmarked Clause. If this was the case, there would be no apparent reason for the speaker to supply information about the connexion between two events or Strings. In other words, the String would be inappropriate.

This nonepistemic value is dependent upon the fact that the String is complex, i.e., that it describe two events or propositions and a causal or logical connexion between them respectively. Informationally, both kinds of ‘conditionals’ can be conceived of
on a means/goal model. Thus, the conjecture can be rephrased as follows: For every 'conditional' Sentence, (U believes that) the goal is or should be relevant to somebody (usually the listener).

In the second place, we examined the information provided by the if Clause. We emphasized that its basic value is nonassertion, and that this is signalled by if. Besides, it was shown that if Clauses are nonepistemically marked, but only sometimes. In other words, there are ‘conditional’ Sentences that generate entailments like: U DOESN’T NEED [Y to do / Y to know], where X is an event or proposition described by the if Clause, and Y is usually the listener. Therefore, this feature should not be in a basic model for ‘conditional’ Sentences.

In the third place, we observed that, whenever the connexion described by the String is necessary – which is the only case we have considered in this section –, the nonepistemic value of the unmarked Clause is inherited, at the consequent state, by the if Clause, and the epistemic (nonassertive) value of the if Clause is inherited by the unmarked Clause. Now, the nonepistemic value of the if Clause we described in the last paragraph has nothing to do with the nonepistemic value inherited from the unmarked Clause. In the paradigmatic example of a threat or a promise, the nonepistemic entailment of the unmarked Clause has the listener as its nonepistemic subject ((U believes) L wants [to do X / to know X]) whereas the nonepistemic entailment peculiar to the if Clause has the speaker as its nonassertive subject ((U wants [Y to do X / Y to know X]).

Finally, we paid some attention to the (connexion) information supplied by the Sentence. ‘Conditional’ Strings describe either a causal or a logical connexion. The primitive entailment generated by Strings of this kind is then: (U describes) the events described by the Sentence as being causally connected, or: (U describes) the propositions described by the Sentence as being logically connected.

A summary example is the following warning:

(556) If you eat the mushrooms, you'll be poisoned.

In a normal situation this Sentence generates the following primitive, antecedent entailments in relation to the speaker:

(557) (U believes) L doesn't want to be poisoned;

(558) U THINKS L will eat the mushrooms;

(559) U describes a causal connexion between eating the mushrooms and being poisoned.

35Taken from [Ada86].
By inheritance, the following (derived) entailments are also generated:

(560) *U THINKS* *L will be poisoned;*

(561) *(U believes) L will not want (at the consequent state) to eat the mushrooms.*

This example, in a typical situation, is a warning. Consequently, the *if* Clause is not valued nonepistemically. We shall see how a different situation can make it so. For now, the following entailment is generated by our String:

(562) *U DOESN'T NEED L to eat the mushrooms.*

On the contrary, in a situation where the String was a threat rather than a warning the following would be entailed:

(563) *U doesn't want L to eat the mushrooms.*

This is just a basic model for 'conditionals'. The conclusion in relation to our main conjecture is that the specific entailment associated to *if* is: *U THINKS* *that the [event / proposition] described by the if Clause will be the case.* This amounts to saying that *if* is a speech-act, nonassertive marker. In the next section we shall see how different time and speech-act (modality) values modulate the epistemic value of the *if* Clause. Then, we shall have a further look at (556) to show that things are not as easy as our model suggests.

### 4.3 Time and Modality: Variation in the Epistemic Value of the 'if' Clause

This section shows how the speech-act value of a 'conditional' String is modulated by time and modality. That this is the case is widely accepted. The goal of the section is to propose a model which accounts for the variation in a systematic way.

The section contains five subsections. In the first one, we magnify the dubitative band of our epistemic scale, and review the canonical time and modality markers. In subsection 4.3.2 we study the speech-act differences of the four major tense markers for 'conditionals', viz. *if DOES - WILL DO, if DID - WOULD DO, if HAS DONE - WILL HAVE DONE* and *if HAD DONE - WOULD HAVE DONE*. The next subsection is devoted to *if WILL DO* and *if WOULD DO* Sentences. A Summary closes the section. As an Appendix, we make some further comments on the practical value of our findings.
4.3.1 Speech-acts and Time once again

The main conjecture of this study is that if is a nonassertive, singular, viz., a dubitative, marker. That means that, given our epistemic scale, an if Clause entails neither:36

( 564 ) U KNOWS that X will hold

nor:

( 565 ) U DOESN'T KNOW whether X (or not),

where X stands for an event or proposition. If an if Clause entailed the former, it would not be nonassertive; if it entailed the latter, it would not be singular, since interrogative Strings do not describe just one single event or proposition, but all the events / propositions which are possible in context. In the context of dual Strings this means that they describe both an event and the corresponding negative event, or a proposition and its negation.

Let us have a closer look at the dubitative band of the epistemic scale, which so far has been canonically represented by THINKS. For the purposes of the present section we need a finer-grained scale. Canonical forms are (as noticed before) somewhat arbitrary.37 But they are useful to avoid ambiguity. So, let us just choose the following:38

<table>
<thead>
<tr>
<th>AFFIRMATIVE</th>
<th>U BELIEVES that x</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U THINKS that x</td>
</tr>
<tr>
<td></td>
<td>U SUSPECTS that x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NEGATIVE</th>
<th>U SUSPECTS that not x</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U DOESN'T THINK that x</td>
</tr>
<tr>
<td></td>
<td>U BELIEVES that not x</td>
</tr>
</tbody>
</table>

Depending on the time and modality of the String, x stands for one of the following (where X stands for the event / proposition described by the if Clause):39

---

36 We must emphasize once again that, in this chapter, we are restricting our attention to the simplest situation, where we assume normality, there is only one speaker and it is her/him that is the epistemic subject of the entailments, i.e., it is her/him who does not know if the entity described by the if Clause held/holds/will hold. Moreover, it is at the place, time and 'world' (s)he is at that the entailments are located.

37 But they are nice explications – in Carnap's sense – of the corresponding lexical items in Present Day English.

38 We have kept THINKS as the canonical marker of the middle band, i.e., as being properly stronger than a mere suspicion, but weaker than a belief. U DOESN'T THINK that x is taken to be equivalent to U THINKS that not x in virtue of Negation Raising.

39 These canonical forms have been chosen on the basis of our discussion on tense correlation section 3.3. The main features of this table are our use of a binary time opposition (past / nonpast)
The Four Basic Tenses

Now, is there any particular correlation between time and modality on the one hand, and speech-act on the other? The answer is affirmative. Take the previous example:

(566) If you eat those mushrooms, you'll be poisoned.

The time reference of the if Clause is nonpast. The entailment is:

(567) U THINKS that I WILL eat the mushrooms,

where the epistemic marker is THINKS. Take now the corresponding counterfactual String:

(568) If you ate those mushrooms, you'd be poisoned.

The time reference of the if Clause is also nonpast. The entailment, however, is:

(569) U THINKS that I WON'T eat the mushrooms,

or, at least, those seem to be the intuitions of some speakers. The problem is by no means easy and more empirical research should be done on it. But let us go on. Consider now a time-shift to the past (the subject has been changed to avoid uncommon situations and interpretations):

(570) If he's eaten the mushrooms, he's been poisoned.

The speaker does not BELIEVE that he has eaten the mushrooms. (S)he does not THINK he has either. (S)he just suspects he may have. In fact, some people seem to believe that in this situation the speaker DOESN'T KNOW at all whether he has eaten the mushrooms or not (against our main conjecture). We think this is unlikely. The speaker has a choice between (570) and:

instead of a triad, one (past / present / future), the selection of HAS DONE instead of DID as the noncounterfactual past canonical form and the selection of WILL DO as a nonpast canonical marker (instead of having two: DOES / WILL DO or IS DOING / WILL DO. DOES has been reserved as the canonical noncounterfactual collective marker. On the other hand, most particular 'conditionals' locate the if even in the future. So, IS DOING is rare.
If he’s not eaten the mushrooms, he’s not been poisoned.

Whether (s)he produces one or the other makes a difference informationwise. This is obvious in the context of promises and threats. A possible reply is that (571) has been uttered as a reply, in the following situation: speaker A produces (570); speaker B produces:

But he hasn’t!

and finally speaker A replies with (571), i.e.

Well, if he’s not eaten the mushrooms, he’s not been poisoned. But I think he has anyway.

In this situation, speaker A thinks he has eaten the mushrooms when producing (571). Our reply is that we are considering only so-called normal situations, where it is information relative to the speaker’s epistemic state that matters. Moreover, we have restricted our attention to monological (as opposed to dialogical) situations. The claim is that, within those restrictions, the speaker’s choice between (570) and (571) is made on the basis of the epistemic state the speaker is at. In other words, on the basis of whether the speaker suspects that something holds or the opposite holds. In our example, on the basis of whether the speaker suspects that he’s eaten the mushrooms or not.

Now, if this is the case, and affirmative and negative Strings are epistemically valued in the way described, no entailment of the form: U DOESN’T KNOW whether x (or not) is generated.

To be sure, the degree of epistemic commitment of the speaker in (570) and (571) seems to be rather low. That is why, unlike (566), (570) only generates a suspicion.

Passing now to the corresponding counterfactual, viz.

If he’d eaten the mushrooms, he’d have been poisoned,

the claim is that this Sentence generates the following entailment:

U BELIEVES that he HASN’T eaten the mushrooms.

The problem here is that prima facie it is arguable whether it does not entail something properly stronger, viz. that U KNOWS that he hasn’t eaten the mushrooms. This would undermine our conjecture that if Clauses are nonassertive. If our conjecture is to be kept, something like the following must be meaningful: speaker A produces (574); speaker B replies:

40There is no agreement among the speakers. [Lak70, 177] maintains that past counterfactuals entail the negation of both antecedent and consequent; [Kar71] holds that they only entail the negation of the antecedent; and [R.176] argues that they do not entail either.
(576) Oh, didn't he eat them?

and A answers:

(577) I didn't say he didn't. I suppose he didn't. Everybody says so. I don't know.

The point is that perhaps in most situations the speaker KNOWS that the event described was the case. But that information is not necessarily built into the structure of the if Clause. If it was so built-in, (577) would be inappropriate. And it does not seem to be so.

In view of this behaviour, our conjecture is that the shifts from nonpast to past and from noncounterfactual to counterfactual have an incidence on speech-act values within the dubitative band of the scale. More specifically, the conjecture is that the entailments generated by an if Clause conform with the following table:

<table>
<thead>
<tr>
<th></th>
<th>PAST</th>
<th>NONPAST</th>
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</thead>
<tbody>
<tr>
<td>NC</td>
<td>U SUSPECTS that X HAS DONE</td>
<td>U THINKS that X WILL DO</td>
</tr>
<tr>
<td>C</td>
<td>U BELIEVES that X HASN'T DONE</td>
<td>U THINKS that X WON'T DO</td>
</tr>
</tbody>
</table>

4.3.3 Two Unusual Tenses: if WILL DO and if WOULD DO

This section is about if WILL DO and if WOULD DO. The results in this area must be taken very cautiously, as we have pointed out before. But we thought that it would be interesting to incorporate them into the general picture presented in this chapter. The basic idea is that both if DOES and if WILL DO are noncounterfactual and nonpast. But there is a speech-act difference between them, viz. if WILL DO presents the event or proposition as more likely than if DOES does. In our terminology, if WILL DO Sentences generate BELIEVES entailments, whereas if DOES Sentences, as we have seen, generate THINKS entailments. The examples of if WOULD DO are even scantier. But it seems that if WOULD DO Clauses generate SUSPECTS that NOT entailments. Take these two examples:

(578) Monday a week mum and dad are coming for tea. I know your mum loves mushrooms. If we will eat all the mushrooms in the pantry we should buy some more.

Now compare these three variants of (578):

(579) ...So, if we will eat all the mushrooms in the pantry, as I believe we'll do, we should buy some more. So, we'll have to go shopping;

41Our conjecture is more fine-grained than, but essentially the same as, [Auw83]’s. In his terminology, indicative conditionals express an upperbound possibility; subjunctives, a lowerbound possibility.
(580) ... If we will eat all the mushrooms in the pantry, we should buy some more. But I have no idea if we will. So, what to do?

(581) ... So, if we will eat all the mushrooms in the pantry we should buy some more. But I don't think we will. Don't worry.

Some speakers seem to be reluctant to accept Sentences like (578). Assuming (578) is appropriate, then, which of (579) - (581) are more appropriate? Let us start with (581). This String seems to be inappropriate. If this is confirmed, it means that if WILL DO Strings never entail negative Strings (i.e. U SUSPECTS / THINKS / BELIEVES that NOT X). In fact, it seems that they are incompatible.

Now, consider the rest of the variants. If (579) is more appropriate than (580), if WILL DO should be linked to THINKS or BELIEVES entailments. Else, if (580) is more appropriate, if WILL DO should entail SUSPECTS or even DOESN'T KNOW Strings. At this point, our work is almost one of guessing, and there does not seem to be much of an agreement among speakers. According to [Clo80, 108], "...in if Clauses containing will we are concerned not with assumed future actuality but with assumed predictability...[i.e., they entail] 'If X is predictable, then the consequence is so-and-so'". But it is not clear to us whether the entailment is: It is predictable that X or the weaker: It is predictable whether X. In our example, whether (578) entails: U can predict that they'll eat the mushrooms, or just: U can predict whether they'll eat the mushrooms (or not). If the former, as it seems to be the case, our case stands, since U can predict that X entails U THINKS / BELIEVES that X. In fact, predictability would ensure almost knowledge. Therefore, U BELIEVES that X is the most appropriate entailment for if WILL DO Sentences. Other examples help confirm this:

(582) If he won't arrive before nine, there is no point in ordering for him. (Clo80, 104); originally from [SQG72, 781]

(583) If the slick will come as far as Stavenger, then of course I must take precautions on a massive scale. (Clo80, 103)

(582) is produced in a situation where a group of people are about to order dinner. The result of the utterance is that they won't order for him. This means that he won't arrive before nine is taken to be very likely, among others, by the speaker. The String gives a reason of why they shouldn't order for him. The reason is not however, wholly factual (assertive) as it would be if the String had been:

(584) Since he won't arrive before nine, there is no point in ordering for him.

Likewise, (583), uttered by a Norwegian Minister in 1977, expresses his intention of taking precautions, based on his belief that the slick will most probably come down to Stavenger.

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The situation with respect to if WOULD DO is even messier, since the examples are scantier, and the speakers' intuitions even fuzzier. An example parallel to (578) is:

(585) Monday a week mum and dad are coming for tea. I know your mum loves mushrooms. If we would eat all the mushrooms in the pantry, we should buy some more.

Let us try the same strategy we used before. Compare these three variants of (585):

(586) ... Of course if we would eat all the mushrooms in the pantry, as I believe we'll do, we should buy some more. So, we'll have to go shopping;

(587) ... If we would eat all the mushrooms in the pantry, we should buy some more. But I have no idea if we will. So, what to do?

(588) ... Of course if we would eat all the mushrooms in the pantry we should buy some more. But I don't think we will. Don't worry.

Let us start with (586). It seems that this String is inappropriate in the context of (585). If this is actually the case, if WOULD DO Strings are incompatible with affirmative (U SUSPECTS / THINKS / BELIEVES) entailments.

Going now to (587) and (588). If (587) turned out to be more appropriate than (588) if WOULD DO should be linked to SUSPECTS or even interrogative (DON'T KNOW) entailments. Else, if (586) was more appropriate, if WILL should entail: U THINKS / BELIEVES that not X. Our conjecture is that both are appropriate Strings. However, But I don't think we will. Don't worry in (588) is to be understood as giving further information. In other words, that piece of information, that the speaker believes or thinks that they won't run out of mushrooms, is not contained in (587). What the example shows is that it is not incompatible with it either. This is probably because the if WOULD DO String itself does not commit the speaker to as much as BELIEVING or THINKING that they will run out of mushrooms.

The result is that (585) String entails at most: U SUSPECTS that not X. On the other hand, we saw how there was a certain incompatibility between the affirmative entailment (U SUSPECTS / THINKS / BELIEVES that X) and the if WOULD DO Clause. Therefore, the if WOULD DO Clause is not fully neutral as to speech-act. In other words, (585) does not entail U DOESN'T KNOW that not X but U SUSPECTS that not X. There is a slight suspicion that they won't eat all the mushrooms.

The most controversial point is probably that (588) String actually corrected the information given by the previous String. That is why there was no incompatibility
between I don’t think we will. Don’t worry and ... if we would eat. But we should expect that incompatibility if the former was embedded in the if String as a comment (and not as a correction of the information provided by the if String). Thus, our conjecture predicts that the following String is (mildly) inappropriate:

( 589 ) ?... Of course if we would eat all the mushrooms in the pantry, which I believe we won’t, we should buy some more.

Where does all this leave us? if WILL DO Strings entail U BELIEVES that X and if WOULD DO Strings entail U SUSPECTS that NOT X. If we add these results to our table, it looks as follows:42

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<thead>
<tr>
<th>NONCOUNTERFACTUAL</th>
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<tbody>
<tr>
<td>PAST</td>
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<tr>
<td>U SUSPECTS that X HAS DONE</td>
<td>U BELIEVES that X HASN’T DONE</td>
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<td>U THINKS that X WILL DO</td>
<td>U THINKS that X WON’T DO</td>
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<td>if WILL DO</td>
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<tr>
<td>U BELIEVES that X WOULD DO</td>
<td>U BELIEVES that X WOULD DO</td>
</tr>
</tbody>
</table>

There seems to be a pattern here, viz. there is an increase in epistemic strength on the noncounterfactual side, matching a corresponding decrease in epistemic strength on the counterfactual side. Notice, however, that noncounterfactual Strings entail noncounterfactual affirmative Strings, whereas counterfactual Strings entail noncounterfactual negative ones. These entailments for counterfactual Strings (which are the ones usually discussed in the literature) are derived entailments, which depend on the properties of counterfactuality with respect to negation. The primitive entailments (themselves counterfactual Strings) are:43

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<th>NONCOUNTERFACTUAL</th>
<th>COUNTERFACTUAL</th>
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<td>U SUSPECTS that X HAS DONE</td>
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<td>U BELIEVES that X WOULD DO</td>
<td>U BELIEVES that X WOULD DO</td>
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Now that we have restored the symmetry, we can state a more general conjecture, comprising both noncounterfactual and counterfactual Strings, as follows. The

42 We dare not introduce a label for if ... will / would Strings. Therefore, we use if WILL DO as a convenient label.

43 If the table is correct, we should expect the following entailments to hold: If he’d eaten the mushrooms, he’d have been poisoned ENTAILS U SUSPECTS L would have eaten the mushrooms; if you ate those mushrooms, you’d be poisoned ENTAILS U THINKS L would eat the mushrooms; if we would eat all the mushrooms in the pantry, we should buy some more ENTAILS U BELIEVES they would eat the mushrooms.
epistemic value of an if Clause increases when the time reference shifts from past to nonpast. This, if confirmed, is a remarkable result, in that it seems to be at odds with the behaviour observed in independent Clauses, where the epistemic value decreases when the time reference shifts from past to nonpast.

4.3.4 Summing up

In this section we have shown how shifts in time and modality values cause variations in the speech-act value of a the if clause of a 'conditional'. The variation is restricted to the dubitative band of the epistemic scale. In this band, six values have been distinguished, whose canonical markers are BELIEVES, THINKS and SUSPECTS (on the affirmative side), and BELIEVES that NOT, THINKS that NOT and SUSPECTS that NOT (on the negative side). When modality values are noncounterfactual and counterfactual, and time values are restricted to past and nonpast, the result is that the epistemic value of the if Clause increases when we shift from past to nonpast on the noncounterfactual side, but decreases on the counterfactual side. The model was, then, generalised through the introduction of if... will Strings.

Finally, a correction to the model was introduced when it was realised that the entailments of affirmative counterfactual Strings were themselves neither affirmative nor counterfactual, but negative and noncounterfactual. The latter are, in fact, derived entailments based on the relation between negation and counterfactuality. When counterfactual Strings are used as entailments, both counterfactual and noncounterfactual Strings are shown to increase their epistemic value when we shift from past to nonpast. The behaviour of if Clauses is, therefore, opposite to the behaviour of independent Clauses with respect to time.

4.3.5 Things are not that easy

Before turning our attention to derived connexion entailments generated by if Strings, we want to go through our mushrooms example again, to make clear that things are not as neat and clear-cut as our basic model, or even our improved model (once time and modality are taken into consideration), suggests. The example, remember, was:

(590) If you eat the mushrooms you'll be poisoned.

Let us assume that general discourse preconditions of the sort discussed at the beginning of the chapter apply. Let us also leave out problems relative to units smaller than Clauses.

Now, at the Clause level we saw how the marked Clause is nonepistemically marked, and how its nonepistemic value is inherited by the if Clause at the consequent state when the connexion modality is necessary. On the other hand, we saw
how the if Clause is epistemically marked, and how its epistemic value in inherited by the unmarked Clause when the connexion modality was necessary. Finally, we showed that the if Clause is sometimes nonassertively marked on its own as well.

Thus, (to start with the easy case) if the conjecture developed in the last section is correct, (590) entails: \( X \) THINKS that \( L \) WILL eat the mushrooms. This is marked by if...eat,...will be... as we saw in chapter 3. This epistemic value is inherited by the unmarked Clause, so that \( X \) THINKS that \( L \) WILL be poisoned is also generated.

Now, first problem, who is \( X \)? We have assumed all along that it is the speaker. In fact, we said explicitly that we were only interested in situations were \( X \) was the speaker. But it is easy to imagine alternative situations. For instance, Pete, the speaker, has been told by his mum that Willie, his younger brother is planning to eat the mushrooms. Pete is all but convinced. But after some argument he decides to warn his brother so that mum gives him a break. In this situation, Pete does not think, or even suspect, that the listener will eat the mushrooms. He is just reporting a warning. So, the right instantiation of \( X \) is not, in this case, the speaker but a third party, viz. mum.

A situation in which it is the listener and not the speaker who rightly instantiates \( X \) is the following. Willie tells Pete that he's planning to eat the mushrooms. Pete is all but convinced (he has his reasons) but, just in case, he tells him: C'mon, if you eat those mushrooms you'll be poisoned. You know that. You know you're not going to eat them.

But, even if the subject of \( Y \) THINKS that \( L \) will eat the mushrooms is the speaker, this is not the end of our problems. We have assumed as relatively uncontroversial that the speaker thinks that \( L \) will eat the mushrooms. But this is only the case in situations where, other things being equal, the speaker thinks that the listener doesn't want to be poisoned. Remember that there is a dialectical interplay between the epistemic value of the if Clause and the nonepistemic value of the unmarked Clause. The two most typical situations are: one, when \( U \) thinks that \( L \) doesn't want to get poisoned but also thinks that \( L \) will eat the mushrooms (and in this case the String is a warning); and two, when \( U \) thinks that \( L \) wants to get poisoned but thinks that \( L \) won't eat the mushrooms (and in this case the String is an invitation). The latter may seem farfetched. But this is because usually, we assume that people don't want to get poisoned. This does not depend on the structural markers of the String, though, but on the desiderative value normally associated to poisoned.

We said in the last paragraph that there were two standard situations to account for. They are not the only ones, though. Suppose the speaker thinks that the listener wants to die and plans to eat the mushrooms, or he thinks that the listener doesn't

\[ \text{In particular, in situations where the speaker believes that the listener doesn't know that eating the mushrooms will cause him being poisoned.} \]

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want to die and has no intention of eating the mushrooms. These are possibilities we banned before. Here the basic model breaks down. But that doesn't mean that they are impossible. Actually there are many situations where they would be appropriate. For instance, U thinks that L doesn't want to die, and thinks that he will not eat them. But he wants to make sure that L won't eat them. Such a possibility is based on the fact that the entailment is not \textit{U KNOWS}... but, at most, \textit{U BELIEVES}.... There is always an element of doubt. According to our model, the speaker should have produced, instead of (590), its counterfactual version:

\begin{center}
( 591) \textit{If you ate those mushrooms you'd be poisoned},
\end{center}

but the distinction is not always made by the speakers.

Another possibility is that U himself doesn't want L to be poisoned. So, by uttering (590), he is begging L not to eat them. In this case, U (and not L) is the relevant subject of the desiderative entailment. The speaker can even be begging on behalf of a third party. In this case, he may not care about L's fate at all.

As we can see, the possibilities are endless. We have given only some examples. Actually, our examples already assume a lot. In particular, they respect all sorts of general discourse preconditions. Let us see what happens if we infringe just one of them. Minimal directionality requires in this case that, according to the speaker, the connexion described by the String is unknown to the listener. Now, suppose that the speaker does believe that the listener knows that eating the mushrooms will cause him being poisoned. In other words, the speaker believes that the listener is aware of the deadly connexion. Why should the speaker bother uttering (590)?

Well, possibilities include that the speaker is making a last effort to convince the listener to eat or not to eat them (depending on what (s)he thinks L is up to), or (s)he may be seeking confirmation about L's being really aware of the deadly connexion, etc.

Every single precondition, it seems, can be relaxed. The situation required to preserve the String's appropriateness may be unusual, but that is another problem. Thus, going back to what we said in previous sections of this chapter, what we need is to fix the range of variation the entailments generated by a given \textit{if} String can be subject to, and to order them. As we have pointed out, this is not the topic of this study.

In the next section we shall touch on a last point concerning entailments for dual 'conditional' \textit{Se}ntences, viz. derived connexion entailments. We shall be looking at two of the properties of causal and logical connexions that allow us to generate derived entailments, viz. order and duality.
4.4 Order and Duality: two Key Features of Dual ‘Conditional’ Sentences

Consider these two Sentences:

(592) [CAUSAL] If he returns to London, she’ll start painting;

(593) [LOGICAL] If he returns to London, he’ll live in Paddington.

The former String is uttered in a situation such that his returning to London causes her starting painting. The latter is uttered in a situation such that his returning to London does not cause him to live in Paddington. Rather, the speaker believes that that will be the case (because, say, the <he> described in the String has told him about his intentions).

(592) describes two events: his returning to London and her starting painting. If, as a singular marker, selects one event from the set of contextual possibilities. Since we are dealing only with dual ‘conditionals’, there are only two members in that set. One is his returning to London; the other is his not returning to London. The unmarked Clause describes an event, her starting painting. Possible events are her starting painting and her not starting painting. The connexion between his returning to London and her starting painting is causal. By this we mean that there is a link between the two events such that, that the latter holds depends on that the former holds, and (let us advance what we shall say later on) that the latter doesn’t hold depends on that the former doesn’t hold. This causal connexion is of order, that is, the dependence relation between the events goes only one way. Her starting painting depends on his returning to London, but not the other way round.

(593) describes two propositions, ‘he returns to London’ and ‘he’ll live in Paddington’. Possible propositions are, in this case, those and the negations of those, viz. ‘he doesn’t return to London’ and ‘he won’t live in Paddington’. The connexion between ‘he returns to London’ and ‘he’ll live in Paddington’ is a logical one. By this we mean that there is a link between the two propositions such that, the knowledge that he’ll live in Paddington depends on the knowledge that he returns to London, and (daringly again) the knowledge that he won’t live in Paddington depends on the knowledge that he doesn’t return to London. Again, the dependence relation between the propositions goes only one way. The knowledge that he’ll live in Paddington depends on the knowledge that he’ll return to London, but not the other way round.

Now, these two features, that the dependence is one way and that the dependence maps entities and their complements, are the topic of this section.
4.4.1 Order Relations: refining Contraposition

This subsection is about the order of events described by (dual) 'conditional' Strings. Our main conjecture is that if is a nonassertive, singular marker. This means that it is a Clause marker, which modifies the Clause it heads. It is not, we have argued, a connexion marker. Thus, it has been necessary for us to tell which kind of connexion holds between (the entities described by) the two Clauses of an if String. This connexion has been shown to be variable. In the case of the so-called 'conditional' Strings, it is either causal or logical. Both connexions are order connexions. This means that they induce an order on (the entities described by) the two Clauses.

We have also shown that the dubitative value associated to the if String is inherited by the unmarked Clause when the modality of the connexion is necessary in the sense defined in this study. This creates an asymmetry between the (entities described by the) Clauses, since the dubitative value of one (the unmarked Clause) depends on the dubitative value of the other (the if Clause). It is derived as it were.

Therefore, in the case of 'conditional' Strings – which are the ones we have eventually focused upon – there are two asymmetries (and therefore two orders), viz. the epistemic order imposed by if, and the causal or logical order imposed by the causal or logical connective (respectively) between (the entities described by) the Clauses.

The traditional theory of if as a connexion marker is unable to realise that there are two orders. Thus, they are mixed up. This is particularly the case with logical Strings, where time is not a relevant parameter. But, we contend, this amounts to denying that there is a logical order independent of the epistemic order signalled by if. At any rate, for causal Strings, where time is indeed relevant, the confusion causes inappropriate derived entailments to be generated because the rules used to derive them do not respect the order. This is the case with many rules that allow permutation of the Clauses. As an example we shall examine Contraposition. Consider again:

(594) [CAUSAL] If he returns to London, she'll start painting;

(595) [LOGICAL] If he returns to London, he'll live in Paddington.

We have said that these Strings describe ordered pairs of events / propositions. The causal / logical order is sometimes marked by tense correlation, sometimes by context. The epistemic order, by contrast, is well determined, since the event / proposition described by the unmarked Clause always depends (epistemically) on the event / proposition described by the if Clause.

Now, let us see what happens when we use Contraposition to generate derived entailments from (594) and (595):

(596) If she doesn't start painting, he won't return to London;
If he doesn't get to live in Paddington, he won't return to London.

As they stand, both are inappropriate entailments. The reason is that we have altered the causal/logical order between the events/propositions as described by (594) and (595). So, we have to refine our Contraposition rule so that it yields something like this:

- If she hasn't started painting, he hasn't returned to London;
- If he doesn't get to live in Paddington, he hasn't returned to London.

However, notice that these Strings are derived post facto, i.e., after he has started painting or after he has moved to Paddington. And we are interested in generating entailments at the antecedent state. So, something like this should be better:

- If she doesn't start painting, he hasn't returned to London;
- If he doesn't get to live in Paddington, he hasn't returned to London,

or (using canonical forms):

- If she DOESN'T start painting, he WON'T HAVE returned to London;
- If he DOESN'T get to live in Paddington, he WON'T HAVE returned to London.

First of all, notice that (602) is not causal any more. We have shown in chapter 3 how backtracking Strings cannot be causal. In this example, her not starting painting does not cause (backwards) his not returning to London. This String is logical. (602) derives from the fact that the speaker knows of the causal connexion between his returning to London and her starting painting, and knows that the events are ordered, so that, in the event that (s)he gets to know that the latter did not happen, he gets to know that the former had not happened either.

Second, it is clear that a rough version of Contraposition (yielding Strings like (596) - (597)) is out of the question. Any symbolisation that does not distinguish clearly between the connexion order and the epistemic order is deficient. The reason is that (596) and (602) on the one hand, and (597) and (603) on the other, are indistinguishable. But the former are inappropriate, whereas the latter are appropriate.

In particular, if the Clauses are symbolised just by sentential letters, and the same symbol is to be substituted by the same Clause, Contraposition yields:

- If she won't start painting, he doesn't return to London;

---

45 I.e. when the event / proposition in the unmarked Clause is temporal / logically prior to the event / proposition in the if Clause. See section 3.2.6.
(605) *If he won't live in Paddington, he doesn’t return to London,*

which are not appropriate derived entailments (if the Strings are appropriate at all). This may look as a minor ‘spelling’ problem. It can be argued that we are after rules allowing us to derive new knowledge. In other words, that we are interested only in the epistemic order imposed by *if*, and not in the causal / logical order of the connexion. Therefore, tense correlation is irrelevant, and we can paraphrase our examples using present indicative throughout to overcome the ‘spelling’ problem. Thus:

(606) *If he returns to London, she starts painting;*

(607) *If he returns to London, he lives in Paddington*

would entail by Contraposition:

(608) *If she doesn't start painting, he doesn't return to London;*

(609) *If he doesn't live in Paddington, he doesn't return to London.*

But this simplistic move is not going to do. On the one hand, if we do not specify an arbitrary order between his returning to London and her starting painting, we do not know which depends on which, i.e. whether she started painting and that triggered his returning or the other way round. On the other hand, if we specify an arbitrary order, say, the *if* Clause event is always prior to the unmarked Clause event, then (606) does not entail (608); nor does (607) entail (609).

But there is a third option, viz. to take the above view to its most extreme consequences, and ignore completely the causal / logical order of events. While this is possible, we doubt that it is of much relevance for knowledge representation purposes, since the information relative to the order of the events / propositions has been lost on the way, and this is precisely a most crucial piece of information supplied by ‘conditional’ Strings.

Notice that in the last two paragraphs we have followed the causal, and not the logical example. Is the logical order not identifiable with the epistemic order? In other words, in the case of logical Strings, is it not the case that the (epistemic) order imposed by *if* and the (logical) order imposed by the connexion converge? This is a difficult question, and much the topic of another study. In the case of logical Strings which ultimately describe events in a temporal setting, it is this temporal order that is lost. In the case of logical Strings which ultimately describe non-temporal entities (say, formal entities), the problem amounts to whether there is an objective order in those domains, independent of the subjective order imposed by a particular speaker.

In conclusion, in many (perhaps all) cases, there is a crucial piece of information that is lost, viz. the order of the events ultimately described by the original ‘conditional’. Let us, then, stick to a more sophisticated version of Contraposition, that
accounts both for the causal / logical and for the epistemic orders. That is, let us say that:

(610) If he returns to London, she'll start painting;

(611) If he returns to London, he'll live in Paddington,

entail respectively:

(612) If she DOESN'T start painting, he WON'T HAVE returned to London;

(613) If he DOESN'T get to live in Paddington, he WON'T HAVE returned to London.

4.4.2 Dual Situations: Validating Negation of the Antecedent

In the last subsection we have tried to show that one must be careful when generating derived entailments by Contraposition since connexion information is usually important, a 'conditional' connexion is an order one, and that order must therefore be preserved. Thus, merely attaching a negation marker to each Clause and swapping if around is not going to do. Tense correlation must be adjusted, so that the events' time reference is maintained.

In this section we shall try something more difficult, viz. to explain why invited inferences of the kind traditionally called Negation of the Antecedent are apparently used by English speakers. Negation of the Antecedent is taken to be a gross fallacy, a recurrent one at that. It is commonplace among teachers of first year logic to find that a sizeable number of students, if not all, make this 'mistake'.

The modern literature on the subject throws Negation of the Antecedent to the 'pragmatic wastebasket'. The explanation of the phenomenon runs usually along Gricean lines. The speaker, guided by conversational maxims, tends to perfect 'conditionals' to biconditionals. And, as logicians will tell us, Negation of the Antecedent is a valid rule for biconditionals.

Our explanation is not pragmatic. In fact, as we have observed earlier, the distinction between pragmatics and semantics is not relevant for the present study. This is not just a jeu de mots. Negation of the Antecedent will not be charitably accepted

46 Within our framework, a preliminary observation is in order. If a great number of Present Day English speakers use Negation of the Antecedent as a rule to derive entailments and our goal is to model the behaviour of those speakers (as it is), we must account for Negation of the Antecedent.

47 Cf. e.g., [McC63, 49] and, more seriously, [Leg70]'s results (reported in [JL86, 59]).

48 Cf. [GZ71], [Li72], [BL73] and [Cor83] among others.

49 The expression was coined by [BH71] and, since then, it has gained some currency among linguists.
as a ‘logical mistake’, the explanation for which must be stated in psycholinguistic
terms. Negation of the Antecedent is, in our framework, a semantic feature of dual
‘conditional’ Strings. Moreover, it is informationally desirable, since it optimizes the
amount of information supplied by a String. But let us give an example of how the
rule is applied. Take the above examples:

(614) If he returns to London, she’ll start painting.

Remember that it is crucial that the situation is dual, i. e. such that the set of possible
events is: <his returning to London, his not returning to London> (for the if Clause)
and <her starting painting, her not starting painting> (for the unmarked Clause).
Now, by Negation of the Antecedent, this String entails:

(615) If he doesn’t return to London, she won’t start painting.

Similarly with logical Strings:

(616) If he returns to London, he’ll live in Paddington
entails:

(617) If he doesn’t return to London, he won’t live in Paddington.

This is the phenomenon. Let us see the rationale for it. Dual situations comprise
only two pairs of entities, viz. two events and the two corresponding negative events
(or two propositions and their negations). The epistemic value of the if String is
dubitative in various degrees, as we have shown. Now, under the assumption of
optimisation we shall state below, not only is an epistemic value assigned to an
event / proposition, but also to the corresponding negative event / proposition. This
generates a set of derived entailments, which hang on the properties of negation and
on optimisation. For instance:

(618) Pete ate the mushrooms

entails, as we saw, that the speaker KNOWS that Pete ate the mushrooms. The
focus of the String may be Pete, so that the speaker has effectively chosen Pete from
a number of people. The focus of the String may also be the mushrooms or ate. Now,
the focus of the String stands in a particular relation to the nonfocus of the String,
and the entities they describe are, therefore, connected in a particular way. Thus, in
the example, if the focus is Pete, Pete stands in a eater - eating connexion to the rest,
since he is the person who eats the mushrooms.

50 This is the simplest situation to describe. It is obvious that the original String may describe two
events or two neg.ative events or an event and a negative event, four possibilities in all. Likewise for
logical Strings.
There appears to be an information constraint such that, the entities that are possible in context in relation to a given focus, but not the one selected, do not bear the connexion to the entities described by the rest of the String, unless explicitly marked. We shall call this Information Optimisation.51

This is a conjecture which needs qualification. But we think it is quite plausible for the range of cases we are interested in. Let us give some examples. Take the last String. Suppose Pete is the focus. Suppose further that the possibilities are <Pete, Marie and Julia>. By Information Optimisation, the following entailments are produced:

(619) Marie didn't eat the mushrooms;

(620) Julia didn't eat the mushrooms.

In other words, neither Marie nor Julia are agents in relation to the action of eating the mushrooms. This would not be the case if a explicit marker had been in place. For example, in this String also signals that Pete was not the only eater:

(621) Pete also ate the mushrooms.

Another example is this. For ate the mushrooms the focus and <left, ate the mushrooms, started playing cards> the possibilities relevant in context, derived entailments are:

(622) Pete didn't leave;

(623) Pete didn't start playing cards.

The qualification that we said we should make to Information Optimisation is that it is more likely to apply the smaller the set of possibilities is. In particular, it is strictly observed when the possibilities are two. Thus, if, in the example above, only <Marie, Pete> are possibilities in the context where the String was produced, (619) is indeed a derived entailment.

Now, dual situations are like that. Only two possibilities are considered. And therefore, Information Optimisation is used as a rule to derive entailments. In the above example, if ate the mushrooms is the focus, and the possibilities are <eating the mushrooms, not eating the mushrooms>, the following entailment is produced.52

51 This is an application of [Gri75, 45]'s maxim of quantity. It is interesting to note that our principle amounts to a consistency requirement. At this point, 'pragmatics' meets 'semantics'.

52 Does Information Optimisation not look like a form of consistency? In the case of dual events what Information Optimisation says is that if an event occurs, the corresponding negative event typically does not (unless explicitly stated). Surely this is because, everything else equal, an event and the corresponding negative event cannot both occur. The phenomenon can be called Excluded
(624) *It's not the case that Pete didn't eat the mushrooms.*

The next step is to see what happens when we use Information Optimisation on speech-act entailments. In the example above, which we copy here again:

(625) *Pete ate the mushrooms,*

we generate:

(626) *U KNOWS that Pete HAS eaten the mushrooms,*

and, by Information Optimisation:

(627) *U KNOWS that it is not the case that Pete HASN'T eaten the mushrooms.*

Suppose our String is nonassertive, say:

(628) *Pete HAS probably eaten the mushrooms.*

The entailments are in this case:

(629) *U THINKS Pete HAS eaten the mushrooms;*

(630) *U DOESN'T THINK Pete HASN'T eaten the mushrooms.*

Notice that Information Optimisation also explains why affirmative and negative interrogative Strings usually collapse.53 For example, from either of these Strings:

(631) *I don't know if Pete ate the mushrooms;*

(632) *I don't know if Pete didn't eat the mushrooms,*

we generate both of:

(633) *U DOESN'T know if Pete HAS eaten the mushrooms;*

(634) *U DOESN'T know if Pete HASN'T eaten the mushrooms.*

Middle, which is the same as saying that we are in a dual situation. It can also be called Double Negation, since this can be read as saying that if an event occurs, the corresponding negative event does not, i.e. just as our principle. But, typically, it is meant to signal that, in dual situations, negation is cyclic, i.e. if we start with a String, negate it and then negate it again, we are back to the original String. In other words, the negation of a negative event is identical with the corresponding positive event. Nevertheless, we prefer to refer to the phenomenon as Information Optimisation. This is because we think the reason underlying the phenomenon is not that speakers assume consistency, but that they favor optimal information. Also because consistency is more of a local phenomenon, whereas Information Optimisation can be shown to be rather general.

53 And why, therefore, negative interrogative Strings, redundant, tend to be used in peculiar ways.
Thus, Strings do not only assign an epistemic value to the event / proposition they describe, but also to the corresponding negative event / proposition. In the case of assertive Strings, the speaker knows that the event / proposition holds and, derivately, that the corresponding negative event / proposition does not. In the case of dubitative Strings, the speaker thinks that the event / proposition holds and, derivately, doubts that the corresponding negative event / proposition does. In the case of interrogative Strings, the speaker does not know whether the event holds; nor does (s)he know whether the corresponding negative event does.

We are now prepared to tackle (dual) ‘conditionals’. The if Clause of a (dual) ‘conditional’ is dubitatively marked. Therefore, it describes an event / proposition as likely, and the corresponding negative event / proposition as unlikely, but possible. The unmarked Clause of a necessary ‘conditional’ inherits this dubitative value. Therefore, the unmarked Clause also describes the event / proposition as likely, and the corresponding negative event / proposition as unlikely, but possible. Now, the negative event / proposition described by the if Clause and the unmarked Clause are assigned the same epistemic value. Therefore, they are also conjunctively connected.

Notice that we do not claim that the semantic values of the derived String are identical to those of the original String. On the contrary, we have seen that they usually undergo a shift. Thus, a promise turns into a threat, a command into a prohibition, etc. In this case in particular, we do not claim that the connexion exhibited by the derived String should be causal if the original one was causal. As with Contraposition, the connexion turns logical. For instance:

(635) If he returns to London, she'll start painting

entails:

(636) If he DIDN'T return to London, she WOULDN'T start painting.

The connexion is, plausibly enough, causal in (635). But it does not seem to be the case that a negative event causes anything. His not returning to London does not cause her not starting painting:54

(637) If he returns to London, he'll live in Paddington

entails:

(638) If he DIDN'T return to London, he WOULDN'T live in Paddington.

That is how we arrive at Negation of the Antecedent. Let us recap the main points. One, the unmarked Clause inherits the affirmative dubitative value of the if Clause

54Logical Strings behave similarly in the right situation, i.e. when the situation is dual and the connexion is a necessary one.
if the connexion is necessary. Two, we derive negative dubitative Strings from the if and the unmarked Clauses by Information Optimisation. Third, since the speech-act value assigned to the negative dubitative Strings is the same (both are dubitative) they are conjunctively connected, as required.

There is a less cryptic way of saying this. Dual situations are such that two events or propositions are, respectively, causal or logically connected. Moreover, they are only likely to hold. Suppose the first does not hold. Will the second also hold? If it does, the String does not optimize information, and therefore is inappropriate. If it is unknown whether it does or not, it does not optimize information either, and it is likewise inappropriate. If it does not hold, the information is optimal and Negation of the Antecedent is a property of dual, necessary 'conditionals', as required.

It may seem arguable that speakers should optimize information. But our claim, remember, is not that they do in general, but that they do in dual situations, i.e. where only two possibilities are under consideration. To be sure, there are in English markers to signal, respectively, that the event / proposition described by the unmarked Clause holds in both cases, or that, in the negative case, the speaker doesn't know, or doubts if the event / proposition described by the unmarked Clause holds:

(639) Whether he returns to London (or not), she'll start painting;

(640) Even if he didn't return to London, she might start painting.

In the situations described by these two Strings, using if instead of whether or even if...[MAY / MIGHT] is inappropriate.

Let us recapitulate a bit. Negation of the Antecedent is a rule used by speakers to derive entailments. The standard explanation is that this is because speakers, moved by conversational maxims, perfect the conditional to a biconditional, where Negation of the Antecedent is a valid rule. Our explanation is that, in dual situations, there is an information (optimisation) rule that, by default, links the possibilities left out by the original String. This optimisation rule looks 'pragmatic', but it is not. We have shown that, when the situation is such that only dual events are considered, optimisation amounts to consistency, and consistency is commonly accepted as a 'semantic' property.

Now, we want to show that we are still dealing with 'conditionals', and not with 'biconditionals'. To that end, we shall put together our discussion about Contraposition and Negation of the Antecedent.

4.4.3 Conditionals, not Biconditionals

Given what we have said in the last two sections, it is easy to see why there is no collapse int biconditionality. The idea that there is such a collapse probably
springs from the unsuitable symbolism used to represent 'conditional' Strings, as has been indicated in section 4.4.1. Any symbolism that uses only one operator to represent 'conditional' Strings is bound to mix up two markers: the epistemic (dubitative) marker if, and the connexion (causal / logical) marker. Having done this, Contraposition and Negation of the Antecedent can only be distinguished by the direction of the only operator available. Hence, the two events / propositions become equivalent.

For example, take sentential logic. The 'conditional' String is represented as follows: if A, B. By Contraposition, if NOT B, NOT A. By Negation of the Antecedent, if NOT A, NOT B. By Adjunction, if NOT A, NOT B and if NOT A, NOT B. By Definition of Biconditionality. NOT A is equivalent to NOT B. And this extends to any A, B.

However, this is not the case in general. Richer symbolisms can represent the two markers by different operators. Thus, a 'conditional' String is represented by if A DOES, B WILL DO. By our refined version of Contraposition if B DOESN'T, A WON'T HAVE DONE. By Negation of the Antecedent, if A DIDN'T, B WOULDN'T DO. The derivation of the biconditional is blocked at this point. Let us give an example in English. Take again:

(641) If he returns to London she'll start painting.

By Contraposition:

(642) If she doesn't start painting, he won't have returned to London.

By Negation of the Antecedent:

(643) If he didn't return to London she wouldn't start painting.

By Contraposition on the last String:

(644) If she starts painting, he will have returned to London.

But none of the following are generated:

(645) If she doesn't start painting, he won't return to London;

(646) If she starts painting, he will return to London.

There is a possible reply from the traditional department. The refined version of Contraposition may block the derivation of a biconditional. But this is only a formal trick. The crucial point is that if Negation of the Antecedent is valid, our 'conditional' String describes a necessary and sufficient condition, and not just a sufficient
condition. And the concept of biconditionality is defined as just that: necessary and sufficient 'conditionality'. Therefore, we are dealing with a biconditional after all.

But notice that there is a difference between the way we define utterances ('conditionals' in particular) and the way standard logicians define them. For us, utterances are defined contextually, with respect to a limited set of possibilities. For traditional logicians the context, each time, is the whole universe of possibilities. Thus, we can accept Negation of the Antecedent without, thereby, entailing that in no other case will the event described by the unmarked Clause come about (i.e. that the antecedent is 'necessary' in the logicians' sense). The following exchange is an illustration of the contextual behaviour of 'conditionals':

(647) [A:] If he returns to London she'll start painting.
(648) [B:] And if he didn't?
(649) [A:] If he didn't I'm afraid she wouldn't start painting.
(650) [B:] But what if she found someone else to support her?
(651) [A:] Oh, yes. In that case she would probably start painting.

Speaker B admits that if she found someone else, she'd probably start painting, and also that if he didn't return to London she wouldn't start painting. Is (s)he contradicting her/himself? This does not seem to be the case. At (649) B has changed the context. The possibilities are not his returning to London and his not returning to London any more, but his returning to London and her finding someone else as a substitute. A accepts the change of context and valuates the new setting, eventually producing (651).

Right after B has changed the context, B has several options, depending on the situation. In the above example (s)he accepts – rather neutrally – the change and valuates the event described by the unmarked Clause against the new possibility. But (s)he may also deem it irrelevant:

(652) [A:] Oh, yes. And what about her hitting the jackpot?

or admit explicitly that there has been a change in the context:

(653) [A:] Hey! I hadn't thought of that. Sure, let us find somebody.

One of the consequences of contextualisation is, expressed in logical terms, that Strengthening of the Antecedent is not a valid rule of inference. Adding new premises to a 'conditional' may cause a change in the original context and the connexion will

55 Similar ideas have been defended by [Bar86].
not hold any more. So Negation of the Antecedent is not under threat. If he doesn't return to London she won't start painting is a derived entailment, even though, if he doesn't return to London but finds someone else, she will.

We want to make a last observation concerning Negation of the Antecedent. All the examples given are of nonpast indicative Strings. In this case, the most appropriate version of the rule seems to yield a nonpast counterfactual. This is because, for the speaker, the status of the original String and the derived one are not the same. (S)he THINKS that he WILL return to London (and, therefore, DOESN'T THINK he WON'T). But the rule should apply in general. Thus we should expect the following entailments to be derived:

(654) If he returned to London she'd start painting entails If he DOESN'T return to London she WON'T start painting;

(655) If he has returned to London she'll have started painting entails If he HASN'T returned to London she WON'T HAVE started painting;

(656) If he had returned to London she'd have started painting entails If he HASN'T (almost certainly) returned to London, she WON'T HAVE started painting.

4.4.4 The End

We think we have made our point. Our results concerning 'conditional' Sentences open many interesting questions in logic. But this is not the place to study them. It has been our intention to give but two examples to illustrate the consequences our study has on the representation of information contained in (dual, necessary) 'conditional' Sentences.

Next chapter is a historical reconstruction of English if that is coherent with the main conjecture of this thesis, viz. that if is a dubitative marker in English. It is arguable whether historical analyses are relevant for the analysis of Present Day English structures. It is our belief that they are. In any case, independently of its relevance for Present Day English, our historical analysis is valuable in itself in so far as it casts some light on the not very well understood evolution of if Strings, and 'conditional' structures in general. Or so we hope.
Chapter 5

A Reconstruction of ‘if’ Strings in English

5.1 Introduction

5.1.1 Plan of the Chapter

This chapter is an attempt to add support to our main conjecture, viz. that if is a dubitative marker, from a historical point of view.

The enterprise is divided in two large chunks. The first one concerns etymology (or historical morphosemantics if you prefer). Here we show that if is a dubitative marker in Germanic, as other so-called ‘conditional’ markers are in other languages. The second one falls within the limits of historical syntax. The aim is to reconstruct the evolution of if Strings in Germanic and English.

5.1.2 Some Methodological Remarks

This is not a detailed historical analysis of if Strings throughout history. In fact, it is not a detailed analysis of any given period of the history of English. It is rather an overview of the historical development of if Strings. Therefore, it is not meant to be either complete or definitive. Nor is it meant to be data systematic. What we wanted to offer is a coherent picture of how if Strings may have developed.

We do not review the entire history of ‘conditionals’. Rather, we focus on some aspects of that history. The first focus of interest is etymology. We propose a slightly new etymology for if, given available data about related forms in different Germanic,

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1The task is worth undertaking since if does not have a good etymology ([MBC078, if]).

2Very precariously in the case of Germanic, since we hardly have any detailed syntactic studies on ‘Sentence connectives’ for this period ([Wil88, 65–6]).

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(some) non-Germanic but Indo-European (henceforth IE) dialects, and one non-IE language, viz. Basque (Euzkera), for reasons that will become clear soon. We are not only interested in establishing an etymology for *if*, but also in exploring the broader semantic value of this item. This is done by studying the semantic ramifications of the item when combined with other morphemes. That is, we shall not restrict ourselves to the consideration of 'conditional' markers but shall account for items which are morphosemantically related to 'conditional' markers.

It is possible that some of those items prove to be ultimately unrelated. Our policy here has been to be generous, to explore as many links as possible. However, there has been a limit to this policy, viz. we have listed only items whose etymology is either doubtful or totally unknown, so that their connexion to the 'conditional' marker represents an improvement on our knowledge of those items.

The etymological enterprise is complemented by a morphological reconstruction of *if* from the conjectured original form in IE, through the various Germanic forms to the Old English (henceforth OE) forms.

We shall focus on two periods. The morphosemantic bit digs into the IE period. The morphological reconstruction of *if* is centred on the Germanic period. This is as it should be. The marker is taken to be already established in Germanic from a semantic point of view. Therefore, the semantically interesting period is, in principle, pre-Germanic. On the other hand, the marker is usually taken to be already in its definitive form in OE. So, from a morphological perspective, it is the pre-OE period that is, in principle, interesting. Since we do not have more than 'semantic suspicions' about the pre-Germanic history of the form, going further back than Germanic means walking on very thin ice.

The second part of the enterprise is (morpho)syntactic. We concentrate mainly on *if* (and its Germanic relatives) as an 'indirect question' and as a 'conditional' marker in the Germanic and OE setting. Syntactic studies of Germanic are not numerous. Thus, our conjecture must be taken very cautiously. On the other hand, philologists (and to a lesser extent linguists) have produced many pages on OE 'conditionals'. But the picture that emerges from them is quite messy as regards the evolution of the Clause marking system.3

This being the situation, we shall attempt a syntactic reconstruction of (*g*)if structures in OE. In fact, this is the only case where we have backed up our conjecture with more or less systematic data.4

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3 This is partly due to the use of Latino-Greek grammatical models to study English structures. A direct consequence of this is the assumption that *if* is a 'conditional' marker, and 'conditional' Strings are fully established as such in OE.

4 Our results come out of an analysis of *g*if Clauses in a sample of the Anglo-Saxon Charters.
5.2 Where does ‘if’ come from?

5.2.1 The State of the Art

It was long ago that Ernout-Meillet made the foundational remark for the study of ‘conditional’ markers in IE, viz.

Il n’y a pas de conjonctions conditionelles communes à plusieurs langues indo-européennes; chaque langue et même chaque dialect s’est donné sa conjonction qui s’explique à l’intérieur de chacun. Partout le procédé consiste à annoncer par un petit mot la phrase où est énoncée la condition; mais la nature du petit mot diffère d’une langue à l’autre. ([EM59, sij])

There are two high-level hypotheses to explain this situation. The time-honoured hypothesis has it that it is a universal fact that Coordination is prior to Subordination. And that IE was at the Coordination stage, i.e. lacked Subordinators. At most, there was some form of correlative structures which involved the use of anaphorics. These, in time, became fossilised as Subordinators.

The other big hypothesis is that Subordinators are unstable, i.e. have a strong tendency to be replaced by new forms. Thus, there would be indeed IE Subordinators, but the different IE dialects would have renewed their pool of those. This explains the messy situation we have today.5

Be it as it may, our starting point is somewhat different. Semantically, as [Tra85] among others has shown, there are very definite patterns of formation of ‘conditional’ Strings. In particular, the number of semantic sources ‘conditional’ markers are taken from in the different languages is rather small.

Traditional wisdom in relation to IE ‘conditional’ markers agrees with such a view but performs a further, devastating, reduction. ‘Conditional’ markers, it is claimed, can be morphologically diverse but, as a matter of fact, many of them have as their source the locative-instrumental case of a demonstrative or relative pronoun. Thus, Latin se/‡si is conjectured to come from the IE demonstrative *se/o-, possibly with a locative singular ending.6 Greek ei is conjectured to be a singular, locative of demonstrative *e/–o-.7 Sanskrit yadd-i is taken to be from the IE relative *ie-/o- plus possibly a locative suffix -i.8

Sanskrit, Greek and Latin form the traditional backbone of IE speculation. And, on their pattern, the Germanic form has been analysed as springing from IE *iebbi,

5Cf. (Mei65, 159-74).
6Cf. [EM59, si].
7[Tra85].
8[MW79].
Earlier speculations usually relate the form to a Germanic noun meaning 'doubt' ([O+66, if]). [Par59, if] adds that the 'conditional' marker is possibly an instrumental form of the noun. According to [Leh86, 22] this etymology seems to go back to Uhlbeck. [Leh86] rejects such derivation, and thinks that it is the noun that comes from the particle, and not the other way round.10

We agree that the noun is most probably derived from the particle. However, we think that the fact that the two items are related is already quite interesting. 'Doubt' and 'if' are members of the same semantic family in Germanic, and there are also nice connexions between the two in other IE dialects, as we shall see.

For now, let us go back to the demonstrative etymology. It is important to emphasize that the conjecture is that the demonstrative pronoun is the central component of the etymon. The rest is just a suffix. [Man84, i,e/bhi] believes it to be an instrumental plural marker (*-bhi). However, this suffix is dialectal in IE,11 and Germanic is precisely one of the dialects where *-bhi was not the choice. [Leh86, 210] just says that it is a particle. Elsewhere ([Leh86, 55, 202]) he adds that the particle *bhe - / o - is emphatic.

5.2.2 A Conjecture

We agree with [Leh86] on two counts. Firstly, we think that the Germanic form of the 'conditional' marker should be analysed as IE *i/e-/o- + *bha, where the first part is a demonstrative. Secondly, we agree that the second part is, in IE anyway, an emphatic particle.12

However, there is a bit of a problem with considering *i/e-/o- the radical. As [Leh86, 55] himself points out, Gothic *ba was in itself a 'conditional' and 'concessive' marker. This strongly suggests that the radical is precisely *bha > *ba.

We want to defend that *bha > *ba, not the demonstrative, is the original component of the etymon. *bha > *ba would be an emphatic marker, specialised as nonassertive in Germanic. IE *i/e-/o- > Germanic *ja( )... (ja( )) , when present, would be just an affirmative (correlative) conjunctive marker.

The role of *ja( )... (ja( )) is to be explained (partly) on syntactic grounds. Germanic nonassertive marker *ba, when showing up in a *ja( )... (ja( )) structure, 

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9 Cf. [Man84, i,e/bhi] and [Leh86 ja/bai].

10 A third hypothesis relates the form to the Germanic verb meaning 'to give' ([Par59]). This etymology was proposed by Horne Tooke and refuted by Skeat (cf. [Hai78, 575]).

11 *-m is the principal one. Cf. [Pal81].

12 We do not claim that this is its original role. There is some evidence—which we shall not review here—pointing to *bhe - / o - as an original IE demonstrative. [Leh86, 56] suggests that Germanic *ba could be ultimately explained from demonstrative IE *i/bhe - / o - plus dual endings.
fused with *ja forming a compound marker. This would explain the fact that *ba alone seems to yield a ‘conditional’ marker (Gothic ba).

Let us go on with the syntax of ‘conditional’ Sentences. Patterns of evolution may repeat themselves. Thus, the fusion of a speech-act (nonassertive) Clause marker (*ba) with a connexion (correlative) marker (*ja(x) ... (ja(x))) suggests a plausible hypothesis for a later period, viz. OE.

In OE there is a standing problem with ‘conditionals’: þonne, as a particle appearing in gif constructions, seems to have a random distribution. What is even worse: it appears not only heading the unmarked Clause (as a correlative of gif) but also in different positions within the gif and the unmarked Clauses themselves.

Our hypothesis is that there was a temporal (correlative) structure, viz. þonne... þonne. When one of the þonne-headed Clauses was marked by gif (i.e. nonassertive), the marking structure was þonne gif..., þonne... Later on, there was some reorganisation of this structure, viz. through gif þonne..., þonne... and gif... þonne..., þonne.... Finally, þonne was dropped, and the typical structure of Present Day English ‘conditionals’ – where then is optative (but dying out) as a ‘correlative’ of if – emerged.

The þonne gif..., þonne... to gif..., ... process is structurally parallel to the *ja(x) ba..., (ja(x)) to *jabba..., ... process, except that þonne + gif did not fuse. Rather, þonne was dropped. The hypothesis explains the apparently random behaviour of þonne since we would expect it only in structures that we can call ‘conditional’, i.e. nonassertive counterparts of þonne... þonne... structures. That a reordering of the elements in the gif Clause occurs throughout the OE period can be shown by an analysis of the Anglo-Saxon Charters. Why such a reordering occurred and why the fusion of þonne and gif never took place is the topic of another study. We can only say that it is very likely that a ‘focalisation’ process (which plausibly took place during the OE period) intervened. This is supported by the fact that, very often, the non-focal elements are between gif and þonne.13

In sum, if is in Germanic and even in OE, a speech-act and a scope (dubitative) marker. And this is coherent with the conjecture defended in this thesis, viz. that if is a dubitative marker in Present Day English.

The plan of the sections ahead is as follows. First, we review some ‘conditional’ markers in Germanic. Then we explain some of the problems with the accepted etymologies. Thirdly, we give some support to our own hypothesis from a semantic and a morphological point of view. Finally, we review some of the forms used as ‘conditional’ markers in other IE dialects.

13See section 5.3.2.4.
5.2.3 The Germanic Forms

The forms listed below are all either 'conditional' / 'concessive' or 'interrogative' markers.\(^\text{14}\)

<table>
<thead>
<tr>
<th>Language</th>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON OIC cf</td>
<td>n om</td>
<td>ON OIC nefa</td>
</tr>
<tr>
<td>Old Swedish of</td>
<td>sw om</td>
<td>Old Swedish num</td>
</tr>
<tr>
<td>Old Saxon of, of</td>
<td>ODa um</td>
<td>ODa num</td>
</tr>
<tr>
<td>OE yif, yif, yief &gt; MnE if</td>
<td>OE nefne, nefne</td>
<td></td>
</tr>
<tr>
<td>OFri (j)yif, (j)ef</td>
<td>OE ympe, ympe</td>
<td></td>
</tr>
<tr>
<td>OHG iba, uba &gt; G ob</td>
<td>OHG iba, iba</td>
<td></td>
</tr>
<tr>
<td>Old Saxon of, of &gt; Da o(f)</td>
<td>Old Saxon ne6a, ne6o, ne6u</td>
<td></td>
</tr>
<tr>
<td>Go -ba, iba, jaba</td>
<td>Go niba(i)</td>
<td></td>
</tr>
</tbody>
</table>

The above forms have been classified into two big groups: forms which incorporate an initial (negative) element n- like neba, nebo or niba(i), and forms which do not incorporate a negative marker. Then, forms in each of those groups have been divided into forms exhibiting a -b/-f-consonantism versus those exhibiting an -m-consonantism. Finally, forms used in different dialects have been listed separately.

From the table it is clear that there are two main morphological problems to relate all those forms. One is to explain the differences in consonantism. The other is to explain the amazing initial and final vowel variation (OHG iba, uba, oba, ON ef).

The -f forms are easy to handle since *-bh > *-b > -f is well-attested in Germanic. The process includes a weakening and loss of the final vowel and, then, a fricativisation of the labial. Notice that this process only affects Northwestern forms.\(^\text{15}\)

To explain the -m- forms is not that easy. The received hypothesis is that the OE -m- forms resulted by assimilation ([MBC078] and [FT60]). While this could be true for nemne, nemne it is hardly an explanation for nyme, nyme, nymph. Still more difficult is to explain the Scandinavian -m- forms. No decent etymology has been proposed for them as far as we know. Notice that these -m- forms show an interesting geographic distribution, with affirmative and negative forms in Scandinavian, negative forms in OE – which did not survive – and no attested forms whatsoever in the other dialects.

Finally, there is the vocalism problem. Apart from the forms that can plausibly originate by fusion of Germanic *ja (*ne for negative forms) and *ba, there are at least two other patterns, viz. forms with prefix or suffix i and forms with prefix or

\(^{14}(O)Sw = (O)ld Swedish, ON = Old Norse, N = Norwegian, (O)Ic = (O)ld Icelandic, (O)Da = (O)ld Danish, OFri = Old Frisian, OHG = Old High German, Go = Gothic, MnE = Modern English.

\(^{15}\)German ob derives through MHG ob(e) from OHG oba. Cf. [Loc68, 239].

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Let us tackle these problems in turn.

5.2.4 A Morphological Reconstruction of the Germanic Forms

5.2.4.1 Initial ‘i-’, ‘u-’ And Final ‘-i’, ‘-u’

[Leh86] assumes that *$\text{ba}$ is just an emphatic marker added to the ‘conditional’ marker. If we assume that *$\text{ba}$ is just an emphatic marker in Germanic, we have to explain the genuine variation of the initial vowel. Were there two different demonstratives in Germanic, *(e)y) and *(a)u, which were used as ‘conditional’/interrogative markers and always in emphatic form (i.e. with *$\text{ba}$ as a suffix)? Quite a sophisticated hypothesis! Even if this holds we still need an account of final -i/-u.

Instead, we shall argue that *$\text{ba}$ is the principal constituent of the item. In favour of this idea we have the fact that the bare form is already a ‘conditional’ marker in Gothic. On the other hand, forms originating in IE *$\text{bha}$ are used as emphatic markers in other IE dialects, and emphatic markers seem to be a source of ‘conditional’ markers (when used as focus-sensitive topic markers).

We agree with [Leh86] that *$\text{bha}$ is originally an emphatic marker. However, for us, Germanic *$\text{ba}$ is already a ‘conditional’ marker before it fuses with anything else.

Now, Germanic *$\text{ba}$ (<IE *$\text{bha}$), by itself or reinforced by suffixes *-i, *-u, becomes a nonassertive marker. It is likely that there was originally a semantic difference between *$\text{ba}$, more purely emphatic, *$\text{bai}$, emphatic and perhaps assertive, and *$\text{bau}$, emphatic nonassertive. Those forms (*$\text{ba}$, *$\text{bai}$, *$\text{bau}$) become prefixed by *$i$-, *$u$.

So far so good. But what are these prefixes and suffixes? Final *-i and *-u are, respectively, an adverbial and a nonassertive marker. This much is fairly uncontroversial. We find Gothic $\text{ja}$, $\text{ja}$ and $\text{ne}$, $\text{nau(h)}$. Gothic -u is a nonassertive particle, and -i is a fairly common adverbial suffix in IE.

Finally, we find forms with initial i-. It is difficult to conjecture what this is. It is tempting to suppose that it is the Germanic particle *$\text{ei}$.

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16 Gothic -ba, ‘if’, ‘even though’. And in Basque, a plausible Germanic loan.
17 The phenomenon seems to be dialectal. We find Gothic *$\text{b}$ai, *$\text{b}$ai, and OHG $\text{b}$au, *$\text{b}$au.
18 Again, the phenomenon seems to be dialectal. We find Gothic *$\text{b}$ai and OHG $\text{b}$ai, $\text{b}$ai, $\text{b}$au.
19 As an adverbial suffix we find it in Greek ‘conditional’ e-i, ‘if’ and affirmative adverb na-i, ‘yes’. [EM59, 433] suggests also oukhi, ‘not’ (reinforced form of ouk) but [Cha68, 733] rejects it. Latin has ‘conditional’ marker se>+x, ‘if’ and negative, and then, ‘conditional’ negative marker ne>+x, ‘if...not’. Sanskrit has ‘conditional’ marker yad-i, ‘if’ ([Del68, 584]) and also va-i ([Del68, 482]) and si-i, a quotational marker ([Del68, 329]). It is particularly remarkable that, in the three dialects, the ‘conditional’ marke bear -i as a suffix. Traditionally this has been taken to be a locative suffix, but in view of the other forms, one wonders.
20 Cf. Gothic ei (a multi-purpose conjunction) ‘that, so, whether, in that case, there, so’. Perhaps related to Old Slavonic i, ‘also, and’, Greek ei, thus, if, etc. (more forms in [Leh86, 99]). Particularly
Let us go back again. Parallel to its development as a nonassertive particle, and as focus-sensitive topic marker, \*bā became restricted to two positions, as a verbal prefix and as a Clause header suffix. Finally, it was further restricted to the latter, where it became attached to (and eventually fused with) \*ja and \*ne forming 'conditional' Clause headers.21

So, we propose that there was an emphatic particle in Germanic \*bā, possibly a focus-sensitive marker. On the one hand, this marker generated two speech-act markers, viz. a nonassertive marker (\*bāu, \*u6a), and an assertive one (\*bāi), the latter of which is the only survivor. This dubitative marker was used after \*ei and \*u (\*iba(-u/-i), \*u6a(-u/-i)).

On the other hand, \*bā(-i) was used as a (focus-sensitive) topic marker. It then became restricted to preverbal and post-header position, after \*ja(x), \*ne with a 'conditional' meaning. As we shall see in section 5.3.1, the 'conditional' forms replaced the dubitative ones. In exchange, the 'conditional' marker became dubitatively valued.

A last remark. [Leh86]'s etymology for Gothic \*u is IE *(a)u-,'that, on the other hand'. For \*ibai he proposes (e)i-bai, where (e)i would be an anaphoric. Again I agree that they both could be originally demonstratives.22 However, they became emphatic and later on speech-act specialised in some of the dialects, just as in the case of \*bha.23

5.2.4.2 The 'e-', 'o-' Forms

When Germanic split into its various dialects there was a well developed marker, viz. \*ja. \*ja was both an affirmative particle, and a conjunctive Coordinator (possibly in

interesting is Gothic ei-\*bāu, a kapis legomenon (Luke, 14.32) and ei\*bān, 'therefore'. As [Leh86, ei] points out, the "meanings [are] determined partly by accompanying verb forms".

21 It is possible that \*bai was simply an emphatic form of \*bā. So, sometimes we could find \*u6a, \*ja bai, \*ne bai as alternatives to \*u6a, \*ja bai, \*ne bai.

22The ultimate origin of the IE particles \*u, \*i is irrelevant here. For all we know, they could well derive from IE particles *(e)/o- and *(e)r- (JP79). We think it is plausible to suppose that IE had a clitic *(e)r- similar to *(e)r- as *(e)r-. Such a clitic would generate *(e)r- as well as *(e)r-.

The simple *(e)r- would explain Latin us, 'or' and related forms. The *(e)r- forms are the widespread relative/ interrogative pronouns. The *(e)r- forms show up, among other things, as comparative markers (Germanic *swu), as demonstratives (Old Iranian hava and Sanskrit svāt), as 'conditionals' (Oscum svai and Umbrum suve), as reflexives and possessives (Latin sui, suus), etc. ([EM59, suus]). If we accept that there was an IE particle *(e)r- alongside *(e)r- we can conjecture that they yield our two particles, \*u, \*i.

23 Proof of this is the fact that \*u ak is a nonassertive suffix in Gothic. In Sanskrit, however, \*u is a multi-purpose particle, anaphoric and emphatic in Vedic, mainly emphatic in the Upanisad, expletive later on ([Har66, 25-31], [Dal68, 504-14]). With an assertive value we find Sanskrit *(et-...jus-), Avestan s-ta, and Old Iranian -tā ('both...') and', 'also' ([Har66, 31-4], [Del68, 528]). Emphatic seems to be, again, Greek pán-u, 'very much', Greek ò-u-te, 'just as'.
the correlative form \(*ja(χ)\ldots ja(χ)\).

Such a marker, like \(*ba\), was often reinforced by \(*\text{-}u\) and \(*\text{-}i\), yielding \(*ja-u(h)/-i\). Thus, Gothic has \(jai\), ‘yes, indeed’, and \(jau\), interrogative particle indicating negative answer.\(^{24}\) Both the morphology and the semantics are as expected.

Other Germanic dialects have also this marker (the forms in the first column are affirmative adverbs meaning ‘yes’; the forms in the second column are conjunctive Coordinators meaning ‘(both...)and, also’):\(^{25}\)

<table>
<thead>
<tr>
<th>Runic (Kragehul)</th>
<th>ja(h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHG</td>
<td>(jā, jē(h))</td>
</tr>
<tr>
<td>[Low German]</td>
<td>(jō), ‘indeed’</td>
</tr>
<tr>
<td>[Low German]</td>
<td>(jō \text{ nicht}, ‘not at all’)</td>
</tr>
<tr>
<td>Old Icelandic</td>
<td>(jā)</td>
</tr>
<tr>
<td>[Swedish]</td>
<td>(jo, jo \text{ men, ?ju, ‘yes, indeed’})</td>
</tr>
<tr>
<td>Old Frisian</td>
<td>(jē)</td>
</tr>
<tr>
<td>Old Saxon</td>
<td>(jā, jē(h))</td>
</tr>
<tr>
<td>OE</td>
<td>(ge, ge-se, gē-a&gt;MnE \text{ yes} (ge...)} ge</td>
</tr>
</tbody>
</table>

Unsuffixed forms are the rule. Forms showing final vocalism \(-e\) are surely to be construed as relaxation of the final vowel, as in the case of the ‘conditional’ marker, which, eventually, most dialects, lost. Forms with vocalism \(-o\) seem to be more modern and exclusively Northern both in the case of \(*ja(χ)\) and in the case of the ‘conditional’ marker.\(^{26}\)

Now, according to our conjecture, these forms fused with \(*ba\), forming a ‘conditional’ marker. \(*ba\) was an emphatic (focus-sensitive topic) marker, which had lost its functionality except as Clause second. \(*ja\) was a Clause initial connector, usually exhibiting a correlative structure. Sometimes both occurred together (\(*ja \ 6a...ja\)). Eventually, \(*ja\) and \(*ba\) fused. The fusion was probably dialectal since the morphological changes affecting derivatives of \(*ja\) also appear in \(*ba\) compounds. Thus, Gothic has \(ja / jabra\), OE has \(ge / gesf, gyf, gif\). The \(-o\) forms can result either from \(*ja-u\rightarrow jo + \*ba\) or from \(*ja + \*u-ba\).

\(^{24}\)Cf. [Leh86, 210].

\(^{25}\)The form is not exclusive to Germanic. Breton and Cornish have \(ia\), \(ya\), ‘yes’. Welsh has \(ie\). According to [Leh86, 210] this is from Middle Welsh \(i\)-\(ef\), unrelated to Gothic \(ja\). Armenian, \(a\)-\(jo\), ‘yes’.

\(^{26}\)Old Icelandic \(jā\) but Swedish \(jo\), \(f\)-\(ja\); Old Norse and Old Icelandic \(ef\) but Norwegian \(om\). However, Old Swedish \(of\) and Swedish \(om\). Old Danish has both, \(of\), \(af\) Danish \(om\).
5.2.4.3 The 'n-' Forms

As we have suggested earlier, the process of formation of these markers is parallel to the one suggested for affirmative ones. First of all, parallel to the affirmative adverb *ja, we have Germanic negative adverb *ne<IE *nê.

Secondly, as with *ja, we find -i, -u forms: Gothic ne-i (rare),27 negation in rhetorical questions, ni<ne-i, Sentence negative particle and nih<ni-uh, 'and not, nor', and ni-u, interrogative negative marker (affirmative answer expected).

Other Germanic dialects show the following forms:28

<table>
<thead>
<tr>
<th>Runic</th>
<th>ni</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE</td>
<td>nê</td>
</tr>
<tr>
<td>ON</td>
<td>ni</td>
</tr>
<tr>
<td>OE</td>
<td>nâ, ne</td>
</tr>
<tr>
<td>Old Saxon</td>
<td>ni, ne, ne(k)&lt;*ne-ak</td>
</tr>
<tr>
<td>OHG</td>
<td>ni</td>
</tr>
</tbody>
</table>

Thirdly, we have correlative construction parallel to *ja(x)...ja(x), viz. *ne...ne. Gothic has ni(h)...ni(h), 'neither...nor', ni(h)...niba(i), 'not...unless, not...except if', not...if...not. We also find OE ne...ne, OHG noh...noh, etc.

Therefore, as in the case of the affirmative forms, our conjecture is that *ne and *ba combined and eventually fused. Again, the fusion process was dialectal, since the morphological changes affecting derivatives of *ne also appear in *ba compounds. Thus, Gothic has ni / nibai; OE has nê, ne / nêfnê, nefne; OHG has nêba,29 as well as nê / nêbu, nibo.30 Old Saxon has ne / nêba, nêbo, nêbu31 Old Icelandic has nê / nêfa. Old Norse, however shows ni but nefâ.

In sum, there is a tight parallelism between affirmative and negative 'conditional' markers. Syntactically, both *ja(x)...(ja(x)) and *ne...(ne) are Coordinators. *ja is an affirmative adverb; *ne is a negative one. Affirmative and negative forms developed independently and most likely in dialectal times. That is, it does not seem to be the case that there was an affirmative 'conditional', and then, a negative one was formed by adding a negative marker. Rather, there was a marker, *ba, already

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27 [Leh86, 265].
28 [Hol34], [Vri61] and [Jôh56]. The use of suffixes -i, -u is not restricted to Germanic dialects. Thus, Latin ne->ni, 'not', and, later on, 'if...not' (=min); Oscum nei(p), negative 'conditional' marker; Ombrum neir, 'no, not'; Lithuanian se-i, 'not at all', se, 'nobody' ([EM59, 433]).
29 Possibly an older form in view of the apparent absence of OHG ne.
30 nêba could be <*ne + *u-â.
31 ni is also attested.
‘conditional’ which gave an affirmative ‘conditional’ marker by the addition of an affirmative marker, and a negative ‘conditional’ marker by the addition of a negative one.

Tracking *ba further back is our next task. But before that, we must explain the -m- forms. As an appendix, we shall discuss the etymology of OE efne, emne.

5.2.4.4 The ‘-m-’ Forms

If one is to trust the data available, the obvious conclusion is that -m- forms are a North-Germanic peculiarity. More precisely, only Old Danish has an affirmative form (ODa um), Sw om being late. The rest are negative forms: (ON and Olc nema, Old Swedish num, ODa num, OE nefne, nefne, and OE nyme, nyme, nyme, nyme, nyme). The etymology of these forms is uncertain. [Hol34] proposes Germanic *ni-ma(vesa). [FT60, 791] just say that the affirmative forms come from assimilation to the negative ones. [Vri61, 407] points to the (semantic) relationship to -f forms, but admits he cannot explain the morphology.

We think these forms should be explained on the basis of a new radical, IE *ma, with a semantic role parallel to that of *ba. Morphologically, this is the easiest explanation. The greater incidence of negative forms could be explained by saying that the negative *ba forms were not fully established when the radical *ma was introduced in the role.

If our conjecture is sound, the only forms which need comment are the OE ones. The OE forms can be classified into two groups, viz. those with suffix -ne and those with suffix -pe. Morphologically, these suffixes present no problem. -pe is the uninflected OE relative marker, occasionally used to form or reinforce other Clause markers (peah pe, antilost pe, bon ma pe, etc.).

-Ne, in its turn, is morphologically transparent. -Ne reinforced forms are common in many Germanic dialects. For example, OHG hwanne, hwenne, OE hwanne, hwonne and Old Frisian hwenne against Gothic hwan, OE hwan, hwon and, partially, Old Saxon hwan(na). Again, OHG and Old Saxon thanna, Old Frisian thanna, thenne, dana, OE bonne, bonne against Old Frisian dan and OE bon in bon ma pe, forbon. A third example is OE beana against the more common forms: Gothic bau(h), OHG and Old Saxon thoh, Old Frisian thach, dach, doch, Old Norse and Old

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32 ON Olc nema, Sw om and Old Swedish num, ODa um, num, OE nefne, nefne, and OE nyme, nyme, nyme, nyme, nyme.
33 [FT60, 791].
34 [Joh56, 41].
35 For a list of forms in other IE dialects, see section 5.2.5.1.
Icelandic *bó and OE *beah.

Both the -ne and -be forms have but a common meaning, viz. 'but, except, except if=unless'. Syntactically they are both Phrase markers (prepositions) and Clause markers (conjunctions). If their original role was as prepositions, it is easy to explain why they got their suffixes, viz. to become Clause markers.

All the forms seem to be Anglian, the Saxon equivalent being but(-on, -e, -an).\textsuperscript{36} In any case, OE buton>Middle English (henceforth ME) but replaced completely the other forms, already in OE, both as a preposition and as a conjunction.

We have cleared the morphological problems easily. But there are some semantic and geolinguistic problems as well. Syntactically we have to show that there is an IE item with the required semantics. Moreover, the item must be present either in Germanic or in neighbouring dialects.

The outcome is very favourable. There are items, plausibly derived from IE *ma in IE dialects. Moreover, contact between some of those dialects and North Germanic dialects is plausible. Finally, the semantics of those items could not fit us better.

We shall leave for section 5.2.5 the more remotely related forms, listing here only the ones needed to prove the point. These are: Old Irish ma (Glosses),\textsuperscript{37} then mā, 'if', Middle Irish mai, mad, Modern Irish má. Negative forms are: mani, mini, mane, mana, maine, meni, mine, muni, muna. Also in Modern Irish namá, 'except, unless'. Breton has ma, 'if', and nemét, 'except, unless'; 'perhaps, say (?)', but'. Finally Welsh has nam(ed), 'except, unless'.

If we take a closer look at, say, Irish, we find that, among the heaps of things má can mark, two of those are especially prominent:\textsuperscript{38}:

(a) má is a 'conditional' marker.

(b) masu ed, 'if it is that, if so' is used to express doubt of a foregoing statement. Later, it is used as a 'concessive' marker.

(c) with a nominal Phrase, it introduces a new topic in discourse.

In view of these forms, we can safely conclude that the North Germanic -m-forms can be explained on the basis of a radical IE *ma, with similar semantics (and syntactic use) to Germanic *ba.

\textsuperscript{36}[Mit85, 831]. It is also possible that only the -m- forms are Anglian.

\textsuperscript{37}[OQ64].

\textsuperscript{38}[OQ64].

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5.2.4.5 The Etymology of OE 'efne' and 'emne'

This item appears in numerous forms: \textit{efne, emne, evene, evin, evyn, eeven, ewyn, evon, evun, evene, eyven, hevene, even, e'en, e'en}.\footnote{[MBC078]. As an adjective, [MBC078] also quotes the following OE forms: \textit{efen, efen}.}

\textit{Efne} is not listed in [Hol34]. There is, however, a form, \textit{efen} \textgreater \textit{MnE even}, 'eben, gleich, gerade, wahr, ruhig'. [MBC078, \textit{even}] do include it. Moreover, they seem to be absolutely certain that:

1. \textit{emne} derives from \textit{efne} by assimilation;
2. \textit{efne} \textgreater \textit{MnE even} is related to Old Frisian \textit{efne}, ivin, Old Saxon \textit{efno} \textgreater \textit{Dutch even}, OHG \textit{ebano} \textgreater \textit{MHG eben(e)} \textgreater \textit{German eben};
3. all these forms originate in Germanic *\textit{ebno} < \textit{Germanic} *\textit{ebno-}, the former form being the adverb and the latter, the adjective it derives from. The adjective, originally, means 'even, level, flat', etc.

[MBC078] divide the uses of the adverb into two groups. On the one hand, it is used as an adverbial counterpart of the adjective, meaning 'evenly', 'in exact agreement', 'equally', 'in a just or proper degree', 'directly, straight'. On the other hand, it is used as an intensive or emphatic particle: 'exactly, precisely', 'quite, fully', 'prefixed to a subject, object, or predicate, or to the expression of a qualifying circumstance, to emphasize its identity', and finally, as "intimating that the Sentence expresses an extreme case of a more general proposition implied".

Of these uses, Scandinavian dialects only have those in the first group. Other Germanic dialects (except English), all but the very last one. English (ca. 16th c.) is the only dialect where the item is a 'maximizer' in the last sense.

[Klu63] is somewhat more specific about the distribution of forms. OHG distinguished an adjective form (\textit{eban, epan}) and an adverb form (\textit{ebano}). The same is the case for Old Saxon (adjective \textit{eban}, adverb \textit{efno}); Dutch has \textit{effen} besides \textit{even}. Finally, \textit{even}, \textit{evin} are also attested in Old Frisian.\footnote{Other forms given by [Klu63] are: Old Norse and Old Icelandic \textit{iafn}, \textit{iamn}, Norwegian \textit{jamn}, Swedish \textit{jamn}, Danish \textit{jalvn} and Gothic \textit{ibna}. For other Scandinavian forms, cf. [Jöhs56, 43-4].} According to him, all these forms go back to Germanic *\textit{ebna}, perhaps cognate with *\textit{imno}.\footnote{Cf. also [Jöhs50].}

Our conjecture will be that there are two different forms here, one possibly deriving from Germanic *\textit{ebno}, the other a compound of (g)\textit{ef} + -\textit{ne}. On this hypothesis, \textit{efne} is the affirmative counterpart of \textit{nefne}.\footnote{See section 5.: 4.3.}

Evidence for the existence of two separate forms include OE \textit{efne} and \textit{efen},\footnote{With a third form \textit{efn}, that can be related to either.} Old...
Saxon (adjective) _eðan_ and (adverb) _efno_, and Old Frisian _efne_ and _even_, _evin_, _twin_. This does not seem to be the case in the other dialects.\(^4^4\)

Second, we argued in section 3.2.7.2 that _unless_ (='only if...not') is often the negative counterpart of _even if_ (='not only if...not').\(^4^5\) On the other hand, we also argued that _even if_ was often an emphatic form of _if_.\(^4^6\) Our conjecture is that _efne_ is the affirmative counterpart of _nefne_, and a (possibly emphatic) derivative of _gef_. Therefore, OE _efne_>MnE _even_ should exhibit a 'concessive', maximizing value.

Now, this is precisely the last of the uses of MnE _even_ as quoted by [MBC078], the one that is absent from the other dialects. On the other hand, the rest of the uses given by [MBC078] point towards _even_ as an 'only (if)'. Is this confirmed in OE? Well, OE _efne_ is a bit obscure semantically. But it is used as a Clause marker in 'concessive', 'comparative' and 'consecutive' environments,\(^4^7\) usually in combination: _efne swa þeah_, _efne se þeah_, _efne þa_, _efne to þon...þet_, etc. So, there seems to be some semantic support for our conjecture.

If semantically the hypothesis seems to be sound, morphologically, we are even on a better ground. _Efne_, _emne_ are very naturally analysed as _gef-ne_, _em-ne_, with the latter explained either by assimilation, as [MBC078] want, or appealing to the radical _ma_ used to explain the _m_-forms of the 'conditional'. Given the structures of these particles it is reasonable to think that they are of dialectal formation. Observe that the Northern form of the 'conditional' in OE is _ef_, and that, as we noticed, there is reason to believe that _nefne_, etc. are Anglian forms.

To sum up, OE _efne_, _emne_ (and perhaps Old Saxon _efno_ and Old Frisian _efne_) are to be explained as _gef-ne_, _em-ne_, i.e., as _ne_ reinforced forms of the 'conditional' _gef_. This has been shown to be plausible both on semantic and morphological grounds.

\(^4^4\)If the Old Saxon and Old Frisian forms are to be related to OE _efne_, they should also show the semantic value of OE _efne_, _emne_. We leave this question open.

\(^4^5\)When _even if_ is a 'maximizer'. E.g.

( 657 ) _A_: _She won't start painting unless he returns to London in May_ = _She'll start painting only if he returns to London;

( 658 ) _B_: _She'll start painting even if he doesn't return to London_ = _She'll start painting not only if he returns to London._

\(^4^6\)[MBC078]'s comparison of MnE _even_ with French _méme_ is very attractive. However, we also find 'concessive' markers formed on the basis of 'conditional' ones. Cf., e.g., Latin _et(iam)sē_, 'also thought'.

\(^4^7\)Cf. [Qui54] and [Mit85].
5.2.5 The IE Radicals ‘*bha’ and ‘*ma’

Before we engaged into the discussion of efne and the -m- forms of the ‘conditional’, we promised to offer a more precise picture of the radicals *bha, *ma in IE. We are primarily interested in the semantics of these radicals. As we said in the Introduction, we shall go beyond *bha, *ma as conjunctions, to include derived items of other syntactic categories.48

This section can be safely skipped without, thereby, losing track of the main line of this thesis. This does not mean that it is superfluous. Germanic ha has been conjectured to be an emphatic particle which becomes speech-act specific, i.e. nonassertive. We have offered a possible reconstruction of how this may have happened. However, it would be desirable if we could add independent support to it. In particular, can we show that *bha was emphatic in the dialects? In the second place, can we show that emphatic markers can become speech-act specific in IE? In the third place – assuming that the specialisation is diverse –, can we prove that emphatic markers become speech-act specific in such a way that sometimes they become assertive and sometimes nonassertive, sometimes affirmative, sometimes negative? If we can do that, the strength of our reconstruction will be greatly improved.

Semantic reconstruction is elusive. A way of making it safer is to deal with several (comparable) radicals, so that semantic families can be compared and particular semantic developments in one family can be confirmed in others. That is why, besides *bha, *ma, we shall consider some other radicals along the way.

We shall start with the *ma family, some of which forms have already been given.49 Then, we shall go into the *bha family. On the way, we shall sketch two other semantic families, viz. the *(a)ne and *(a)ra families.

The working hypothesis is that there are certain radicals in IE that are primarily speech-act neutral, emphatic. In time, they specialise along speech-act lines, i.e. they become either assertive or nonassertive, negative or affirmative, and even noncounterfactual or counterfactual. Usually, a single dialect specialises in only one of the semantic branches. However, it is possible that a form is used primarily with a particular semantic value, and secondarily with another one within the same dialect. Or, again, that items containing the radical with a particular semantic value differ from

48 “Finally, in our search for correspondences, we will put greater faith in the diagnostic value of relatively long forms than short, one- or two-segment forms. For given, say, two languages with twenty consonants and five vowels, the chance of two-segment sequences such as ba having a similar meaning is something like one in two hundred. On the other hand, the chance of sequences like basta being similar is something like one in 400,000.” ([Hoc86, 558]) Thanks are due to H. Koch for such fitting warning.

49 Namely, the Germanic -m- forms treated in section 5.2.4.4 and the Celtic forms adduced in the same section as evidence to establishing the etymology of those -m- forms.
other items containing the same radical. The hypothesis, if correct, solves some of the problems faced by traditional etymologists, where 'semantic contradiction' precluded morphological connexion, and even morphological identity.

We introduced before the concept of semantic family. We are interested here in speech-act differences. Therefore, we must group items according to speech-act. On the other hand, we are interested in all sorts of items, and not only in speech-act markers sensu stricto. Therefore, the grouping must be made on the basis of broad semantic labels.

So, we shall set up three semantic families. The first one will be called 'intensity', and will comprise speech-act neutral, emphatic markers, and items that include the idea of intensity. E.g. items expressing the idea of bigness in any sense: size, quantity, etc. The second one will be called 'unity'. Under this label we shall group assertive markers, conjunctive markers, items expressing unity, assertion, etc. Finally, the third family will be called 'duality', and will include nonassertive and disjunctive markers as well as items expressing duality, circularity, etc. In each of the last two groups we shall distinguish between affirmative and negative items. Thus, affirmative and copulative markers will be affirmative, negative and adversative markers will be negative.50

5.2.5.1 The ‘*ma’ Family

The most clear case of *ma as an emphatic marker we have found is Greek má, "particle used in assertions and oaths... in itself neither affirmative nor negative, but made so by prefixing nai or ou." In later Greek it is used mainly in affirmations.51

Far more uncertain is the presence of *ma in Greek ma-kr-, me-ga-, 'big'. In favour of it we have the semantics, and the existence of forms like Greek ágán, 'very, too much' and perhaps ácros, 'high'.52 In Greek we also find mála, 'plenty, very'. Latin has melior, 'better' magis, 'more' and multus, 'many'.53

But the evidence is very thin. So, let us go into the next category, viz. where *ma is an assertive marker. We have already noticed that, in time, Greek má was mainly used in affirmations. Besides it, we have Greek mēn, 'yes, indeed'.54 Other possibly related forms are Lithuanian ma, 'well, all right', Low German man, 'well'

50It goes without saying that 'conditional' markers will not go into any of these groups automatically, to avoid pre-emptying the issue this study is about, viz. what the semantic value of 'conditional' markers is.

51[LS68, má].

52Notice also, Latin crassus, grassus, 'thick, fat' ([EM59] and [Man84, *māj(h)-, *māk(-ŏ), *makros]).

53Notice that Greek has lêōn, 'more agreeable, better' ([LS68]). The -l(a) in mála may be an adverbial marker as in Sanskrit bha-la, 'yes'.

54Homer mız, Doric mız, 'yea, nay, indeed'.
and Ossetic ma, ‘do’ (verb reinforcement).

The nonassertive family is also ill-represented. We have not found any interrogative forms that could be related to this radical except perhaps Hittite mān, ‘if, whether, though, when, as’.55

To be sure, most of the forms found are negative. This may be due to an early specialisation of *ma as a negative marker. The prime example is the already IE modal negation *me.56

This radical yields such paradigmatic forms as:57 Avestan ā, māda, ‘don’t’; Sanskrit mā, mākis, ‘let no-one’; and Old Iranian mā, ‘don’t’. Also, Tokharian A mā and Tokharian B ma(r), ‘not’; Ossetic mā-dār...mā-dār, ‘neither...nor’. Also, Greek mé, ‘not’ (Elean má), mēti, ‘let no-one’, mē de, mē dé, ‘don’t’. Also, Albanian mο(s), ‘don’t’; Armenian mî, ‘don’t’. Also, Old Irish mî- and Old Welsh me-, ‘dis-, un-‘. And many others.

Among the adversative markers we can list numerous forms as well, confirming the fact that the main semantic value of *ma is negative: Hittite -ma, ‘yet, but’; Thessalonian má, ‘but’; Serbian ma, ‘but, even’; Low German man, ‘but’; Greek mēn, ‘but’; Latin tamen, ‘however’.

The radical is well attested with this value in Germanic dialects: Old Frisian mēn, ‘but, as, unless’; Swedish mēn, ‘but’; Dutch mar, ‘but’, etc.

As we pointed out earlier, support for our conjecture, viz. that there is a bunch of emphatic markers in IE that become speech-act specific, will be stronger the greater the number of radicals we can show to follow this pattern of evolution. So, here are two more proposals: IE *(a)nē and IE *(a)ra. However, to keep this section within reasonable bounds, only examples of straight assertive and nonassertive markers will be given.

Traditional reconstruction has it that IE possessed two negative markers: *me and *(a)nē(>*-n-). *Nē would be a Clause marker, *-n- is mainly used in composition.

As [Leh74, 102] points out, “[i]t is not unlikely...that PIE ne of questions is the same particle as that used for the negative”. We go even further and, as before, suppose that there was an IE emphatic particle *nē that became specialised later on along speech-act lines. In particular, we propose to relate forms traceable to *an as related to this radical, perhaps as *(a)n(e).

55 We have excluded the ‘conditional’ forms found in Celtic and Germanic (see section 5.2.4.4) despite the fact that some of them generate interrogative (but apparently modern) forms. Hittite mān has been included in so far as it is an interrogative marker meaning ‘whether’.

56 Does it come from IE *(a)n-r? Cf. Greek ai, ei, ἐ, ‘if’ and αἱ, αἱ, αἱ, ‘yes’ ([Cha68, 733]).

57 [Man84, mē].
Cases where *ne is an emphatic marker are the following: Latin pōne, superne, quandōne, etc. Laconian and Tarentian egō-ne, i-ne. Albanian u-ne, ti-ne, Irish sin-ne, Lithuanian ko-ne, maštne. In Germanic it was very frequent, as we showed in section 5.2.4.4.

Examples of nonassertive *ne are also widespread, and possibly very old. Latin has both -ne and an. Greek has also its problematic forms. Homeric ε is an interrogative and disjunctive marker. Possibly linked to it is Hittite -a, an adversative and interrogative marker, a. In the Slavonic family we find plausible cognates everywhere: Albanian, Russian, Serbian, etc. a, an interrogative marker. Finally, in the Celtic family: Old Breton an, 'whether'; Old Irish an, in, 'whether', Middle Irish an...an, 'whether...or', and Irish a; Old Welsh a, an interrogative marker.

Besides, we find in Greek an, the controversial verbal particle that is used in 'conditional' and other Sentences "to indicate that the action is limited by circumstances or delimited by conditions" ([LS68]). We find this an in two other dialects. One is the (apparently Germanic isolated) Gothic interrogative marker an. The other is Hittite -an, which appears (as in Greek) in the context of 'conditionals'.

We shall not give examples of negative markers derived from IE *ne since this is the universally accepted semantics of the radical. Let us therefore go into examples of assertively marked forms.

On the affirmative side we find Latin ne, affirmative particle. It appears suffixed in older examples, prefixed after Cicero.

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59 Cf. [EM59].
60 As [Leh74, 102] points out, these forms are probably very old, since the particle is postponed, an indication of OV language.
61 Often in shortened form: aις< aις-ne, aυδις< aυδις-ne, vίδις< vίδις-ne, 'do you say, hear, see?' (cf. [EM59]).
62 As [Leh74, 102] notices, scholars (e.g. [EM59]) argue whether this -ne should be related to the negative marker ne or rather to Sentence particles like Sanskrit na, 'as', etc.
63 Cf. [Man84, a].
64 Cf. [SS78].
65 [Leh86, 30] rejects the connexion. He relies on [Cha68, 82], but all Chantraine does is to present the new etymology (Greek ei kān< ei + *kān where *kān is a zero vocalism version of kēn) as "une hypothèse ingénieuse". He then adds that there is a critique of such a hypothesis by [Lee67]. We think Lee's critique is rather convincing.
66 Hittite mān, 'if'.
67 Cf. [Man84, *ne, *nē].
68 It also shows up as nē, apparently under the influence of Greek nē ([EM59, nē]).
Greek has *nai, *né, 'yes'. This form also appears in Tokharian A *ne, B *nai, 'yes, indeed, well'.

An example from the Eastern dialects is Old Iranian *na. The same form also appears in Armenian, Albanian, Sardinian and German. Czech has *no, *a-no. Baltic dialects have also representatives: Lithuanian *nà, *nā, Latvian *na. Lastly, an example from the Celtic group is Welsh *nan. All of them have the same meaning.

The above forms, we hope, will suffice to prove our point. Going now quickly to IE *(a)ra, we soon find plenty of assertive forms in distant dialects like Iranian are, Old Irish ar(a), air>Middle Irish ar and Greek ár(a), ríá, all with the meaning 'indeed, yes, so'. On the nonassertive side, we can list Irish ar, Greek ár, and Lithuanian ar, as interrogative markers.69 Finally, Hittite aru is a particle used with negative verbs.70

This concludes this section. We have attempted to show how there are several IE radicals (*ma, *(a)ne, *(a)ra) that exhibit a varied speech-act distribution in the dialects. As a plausible conjecture we have advanced the idea that the radical was emphatic and then specialised speech-actwise in different ways, often in different dialects.

All this has been said on the way of introduction and support for what we are going to say about IE *bha in the next section. There, we shall show that IE *bha is also one of these emphatic radicals. Unlike in the case of *ma, *(a)ne, *(a)ra, where limitations of time have obliged us to be succinct, we shall explore more in detail the family of items we conjecture to be generated by IE *bha. In fact, we even include a non-IE dialect, Basque, for reasons that will be clear soon.

5.2.5.2 The *bha' Family

5.2.5.2.1 Introduction Unfortunately for our purposes, *bha has been a neglected radical. As with Germanic *ba, IE *bha has been considered an unimportant suffix or, in the best of cases, just a particle. Thus, there is an enormous gathering work to do.

The general, dialectal picture we get by examining the scarce evidence available can be summarised as follows. There are instances of 'conditional' markers based on *bha in the Germanic dialects, the Baltic dialects, Armenian, Ossetic and perhaps Cypriot. But we have no independent grounds to classify them as nonassertive outside Germanic. On the contrary, there is reason to believe that forms deriving from IE

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69 Again, Irania: ar, 'for, if' and ar-na, 'if not' are to be noticed.
70 [Man84, ar].
*bha are assertive in these dialects, or perhaps just emphatic. On the other hand, the radical seems to be rather clearly assertive in Slavonic, Italic, Greek and the Eastern dialects. Finally, there is one, very doubtful, instance of negative *bha in Irish.

Forms in the assertive group include: Vedic bha-la and Iranian ba-li, ‘yes’; Slavonic bo and Czech, Polish and Ukrainian ba, ‘indeed’; Armenian ba, ‘yes’; Latvian and Lithuanian ba, ‘yes’.

In the negative section, as mentioned, the isolated Irish form bae, ba(a), an item “frequent in negative constructions and perhaps originally meaning ‘something, anything’” ([OQ64, bae]).

Nonassertive forms are represented by the various Germanic interrogative markers

We shall leave the case of Irish, start with some of the dialects where the radical clearly generates assertive items (Greek and Latin). Then, we shall go on with some of the dialects where the semantics seems to be a bit messy (Armenian and Baltic dialects). Finally, after a brief summary of our results, we shall go into Basque.

5.2.5.2.2 Greek In all the ‘classical’ IE dialects (Greek, Latin and Sanskrit) *bha seems to be marginal.

[Fra62, 41] criticises the view that Avestan bā, bāda, bāt (Vedic baṭ, badā, baḷā), ‘yes, indeed, of course’ is related to Greek ἐμή, ‘(just / even) as’, since the latter belongs to the same radical as φάναι, ‘to say’. But for us this is a clue rather than a disqualification. Let us see why. It seems to be the case that assertive markers – as *bha in dialects like Greek, Latin and Eastern dialects – generate very often comparative markers. In this respect, there is no semantic clash between the Vedic-Avestan forms and Greek ἐμή. But this is not a rebuttal of [Fra62], since Greek φῆμι, φά-σκό, φά-ναι means not just a neutral ‘to say’ but a more specific ‘to affirm, to assert’.

It is certainly correct to link ἐμή to φῆμι, but it is also plausible to link the Greek and Eastern forms. All of them share a common semantic value, viz. ‘unity’, whether as plain assertion adverbs (as in the Eastern forms) or as assertion verb forms (as in φῆμι, φά-σκό, φά-ναι), or yet, as comparative of similitude (as in ἐμή). As expected, ‘dual’ markers make these items dual.

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71 Greek ἐμή marks general similitude. It has been proposed that ἐ-phil-ra (sometimes correlative to-phil-ra, ke, an with some tense-moods), (final) ‘in order that, (temporal) ‘so long as, while, till’ is to be linked to ἐμή ([Man84, izebhi]).


73 Cf. also OE bæs and Old Russian baju, ‘tell’, básni, ‘tale’ ([EMS9, 245]).

74 di-phantos, ‘ambiguous’, where the prefix di-, ‘twice double’ is obviously a ‘dual’ marker. Notice
strategy in Greek, Latin and Sanskrit. Thus, Greek ἀμφόθε, ‘both’, where it is plausible to suppose <IE *an-bha-; *an- would be a nonassertive item and *bha, perhaps assertive, more likely plain emphatic.

Connected with the idea of ‘duality’ we find the idea of circularity. Greek has ἀμφί, ‘on both sides’, ‘about, around, on both or all sides’, (causal) ‘for the sake of’. Compounds of ἀμφί can be counted in the hundreds. Particularly interesting is ἄμφο, which means ‘on both sides’ but also reflects the idea of ‘duality’ as separation, difference, viz. ‘apart, asunder, far from’. Also interesting is ἀμφώτερος, ‘either (of two)’, (later, of more than two) ‘all together’.

Finally, let us add ἀμφί-βόλεο, originally ‘being attacked on both sides’, then ‘to be in doubt’. Related to this radical are: ἀμφί-βολετίκο, ‘ambiguous’ once again, ἀμφί-βολέα, both ‘ambiguous’ and ‘doubtful’.

We have started with an assertive radical represented by a verb form, φῆμι, φῆ-σκω, φῆ-ναι, ‘to assert, affirm’. We have found one derived semantic value, viz. φῆ, ‘similar’ (same properties). A possible connexion has been suggested with ὁ-φα-ρα, ‘so long as’ (‘at the same time’). We have also shown how *bha could be just emphatic in ἄμφο, ‘both’ and ἀμφώτερος, ‘either’. Derived from ‘duality’ is the idea of ‘circularity’ (ἀμφίς) and ‘difference’ (ἀμφί, ‘apart, far from’). This ‘duality’ marker, viz. ἄμφι-, behaves semantically like other ‘duality’ markers, viz. Greek δί-. For instance, δί-φατος, ἀμφί-βολέα, ‘ambiguous’.

5.2.5.2.3 Latin
In Latin the situation is similar. Corresponding to Greek φῆμι we have Latin for, fāris, fāri, ‘speak’, as well as fātum, ‘fate’, fāma, ‘what is said of someone, (good or bad) fame’, fābula, ‘fable’. Perhaps also fā, ‘permission or command from the gods’, and derived items. Also parallel to Greek δί-φα- we find Latin dubō, dub-it-ā, ‘to doubt’ and dub-ius, ‘doubtful’.

We also find the idea of ‘duality’ as amb-, ambo, ‘push from both sides; put on a scale’s plates; doubt’, ambiguous. [EM59, 26-7] give that δι- is both a ‘dual’ and a ‘unity’, (repetition) marker, i.e. it means either ‘both’ or ‘two’. Thus, whereas the former, ‘duality’, reading is present in di-φατος, in di-fātum=di-logia, ‘repetition’, the prefix indicates linear recurrence, not ‘duality’.

[EM59, 217] suppose IE *dhas here. Therefore fā would not be related to fāri, etc, which would suppose IE *bhas (215). Their main qualm to relate the two radicals is that fā has religious connotations. But this semantic development is also present in Greek φῆμε and φάτα, which are safely related to tri- radical. Corresponding to Greek φῆμι / φάτι we find Latin for / atī<(*sīa), ‘to affirm’ [EM59, 219]. Related to Latin fārī is Oscum fatīum ([EM59, 219]).

< *dù-bh-ā ([I M59, 185]), where du-<IE *du- is a dual radical.

77 < amb-agō and ambagē, circumlocution, detour ([EM59, 17]).
us two important clues to fix the semantics of IE *an-bha. The first is that “le sens de ‘autour’ n’est net et constant que dans les formes comprenant une nasale visible” (p. 26). The second is probably wrong: “got[ique] bai, ‘tous les deux’ ... montre que i[ndo]européenne *bhō désignait par lui-même ‘tous les deux’” (p. 27). Germanic forms without *an- express ‘duality’ because *bha expresses ‘duality’ in Germanic.78 In other dialects they do not express ‘duality’ because *bha is not nonassertive, i.e. does not express ‘duality’, in those dialects.79

5.2.5.2.4 Armenian Let us go now into one of the dialects where it is prima facie unclear what the semantic value of *bha is, viz. Armenian.80 We pointed out before to Armenian ba, ‘yes’. The existence of such a form is no conclusive evidence that the radical is assertive, as we shall see.

[Hüb72, 427] rightly links Armenian forms bam, bas, bai to Greek phēmi, phē, ἐφή, though he is puzzled about the semantic evolution. Among the uses of the particle, he gives the following: 1. emphatic particle, like Latin quidem; 2. ‘to say’, as translating Greek ἐφή; 3. as a reported speech marker, like Armenian t‘ē, ‘that’.

He also gives bay, ‘word, expression’ (to be related, he says, to Greek phātis), and erk-bay, ‘doubtful, uncertain’.

In [Hüb72, 416] there are more old acquaintances. Armenian amb-oļoʃ, (amb-ouloʃ) ‘complete, whole, entire’, ‘neat, perfect, exact’.81 If amb- is to be considered as a ‘dual’ marker, and if an- is already ‘dual’, i.e. nonassertive (as it was in Greek and Latin), then, ba is probably just emphatic.82

So far we have not given the most conspicuous item in Armenian. There is a form ibr(-en, -on), ‘as, like’, ‘when’, ‘nearly, almost’, ‘as if’. If we suppose IE *i-bha-r(a), the -i can explained as related to preposition i, ‘to, of, by, for, in, at, upon’,83 - r< *r(a) could be related to ar, ‘at, near, among’, ‘next to, relative to, towards, for’.

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78 Germanic forms include Gothic ba, bai, bāþa, OHG and MHG beide, kēde>German beide, Old Saxon kēthia, Middle Dutch beide. Old Low German kēide, Old Frisian bē the, Old Norse bāþar, bāþar, bāþe, OE bē, bā(?) ([KGF68]).

79 Notice that nonassertion is also marked by u in some dialects: Vedic u-bhā>Sanskrit abha ([Man84, ambhā]).

80 Unless otherwise noted, Armenian forms can be found in [Bed79].

81 Notice, however, that oļoʃ has already the meaning of ‘complete, whole’ (p.481) and also that aɾ-olɔj has the same meaning. Here, oļoʃ has the meaning of ‘whole’. Aɾɔ, aɾ are emphatic. Aɾ is a preposition with a host of meanings: ‘at, near, among’, ‘next to, relative to, towards, for’, ‘under, before, against’, etc. The common denominator seems to be ‘slight opposition’. Thence, ‘like, similar, parallel, but not identical’.

82 Cf. also Armenian am-ordeʃ, both testicles’ ([Man84, ambhō]).

83 Speech-acts do not seem to be too well defined in the Eastern dialects. Thus, t‘ē(<IE *te-/) is both ‘that’ and ‘whether, if, (questions) or’, and t‘ē... t‘ē is ‘et... et’.

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'under, before, against', etc. Thus, *bha does not seem to be a nonassertive marker here, but rather an assertive, perhaps just an emphatic marker. The 'comparative' and 'comparative-concessive' nuances would be the legacy of ar.

Finally, there is the delicate question of 'condition'. As we have pointed out, t'e is the standard 'that', 'whether' and 'conditional' marker in Armenian. However, t'e is not a part of the noun 'condition', viz. baiman. A suggestion to analyse this form would be *bai-man, with bai, 'word, expression' and man a nonassertive, 'dual' marker. The meaning of baiman would then be 'uncertain (conditional) expression'. We have seen that the former is attested. As to the latter, there is a form that could help, viz. Armenian man, 'spinning, turn, circular motion'.

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5.2.5.2.5 The Baltic dialects The second group of dialects that present difficulties are the Baltic dialects. So far we have cited Latvian and Lithuanian ba, 'yes, indeed', and Lithuanian abû, 'both'. If we accept that the a- of the latter form is nonassertive (<IE *an(e)), we are led to the conjecture that *bha is assertive in the Baltic dialects. Let us see if this is plausible.

Lithuanian has an interrogative (direct and indirect questions) and disjunctive marker, ař (Old Lithuanian er), 'if, whether', 'or'. We find also emphatic forms like Lithuanian arba, arg(-i, -u), erg(-i, -u), abû, agi, 'or'. Also, we find ė, ėgi, ő, őgi, 'and', 'but, however'.

It is plausible that Old Lithuanian er>ař corresponds to Slavonic a, ale. Bo is an emphatic marker in Slavonic and in Lithuanian abû, arba. Therefore, -bû is

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84 Cf. [Kou61, 274] for derived forms.
85 Remember that 'circularity' is associated to 'duality'.
86 Semantically corresponding to Lithuanian ė is Latvian vài (Livian voi), 'whether, if, or', plausibly derived from IE *%e.
87 abû, 'or' seems to be a Slavonic loanword ([Fra62, 1]). The situation in Slavonic is far from clear. We find Serbian, Polish, Czech, Ukrainian, Russian, Bulgarian and Slovene a 'and, but', but also Serbian, Russian and Slovene a as an interrogative marker. Furthermore, plausible compounds are Serbian (abo...) aho, '(either...) or, else', 'probable, accidental' (with cognates in other Slavonic languages). And ál, 'as if', 'so that' (also with clear cognates). Cf. also Serbian, Polish, Czech, Slovakian and Ukrainian ale, 'but' and Serbian and Polish alsó (with other languages having variants thereof), 'or', 'but'. From these forms, it is reasonably safe to conclude that a-, al- are nonassertive markers, and -bo s an emphatic or perhaps assertive marker in Slavonic. In effect, Serbian, Polish, Old Czech and Ukrainian bo, 'then, yes', is mildly assertive. The only problem is to explain a in its assertive role ('and', 'also'). The Slavonic forms are from [SS78].
apparently an emphatic marker, as -gi is.\(^88\)

A second set of forms is Lithuanian ba, bo, Latvian ba, Prussian beggi, 'yes, then'. Again we find correspondences in Slavonic, with the same semantic value. Also, Lithuanian bei, 'and' is assumed \(<^*be, \text{'and'} + ^*i(d)\).

More challenging are Lithuanian bėt, Latvian bet, 'but'. Proposed etymology is \(^*betai, \text{`and indeed, and certainly'}\), \(<^*be, \text{'and'} + ^*tai, \text{`that'}\). Also, Lithuanian bė Livonian beš Prussian bha, bhe, corresponding to Slavonic bezy, 'without, except'. The etymology is supposed to be \(^*bet-jā\).

A third group could be Lithuanian be-jė, 'incidental(ly), by the way'. And Lithuanian be-nė, 'probable', 'in any case', and beint, 'in any case, at least'.

Of all those forms, ba, bo, bei and be-jė can be called affirmative; bėt, bet and bė, bez are adversative and be-nė, beint, nonassertive ('dual').

Now, be-nė, beint show that the first member is affirmative and the second negative. The result is a nonassertive, 'dual' form.

This is confirmed by ba, bo, bei and be-jė, which are also affirmative, and by bėt, bet and bė, bezi, where the adversative character of the forms can be explained on the basis of emphatic assertives \(^*betai, ^*beta\).

We have not found 'conditional' markers so far. It is time to pay some attention to them. Lithuanian has jei, jēi, jēigu, 'if' and (nei...) nei, nei(-gi / -gu), 'neither... nor, and not (=not also').\(^89\) These forms look really similar to Germanic \(^*ja(χ), ^*ne\).\(^90\)

In addition we find jeib, jeibeg, jeibgi, 'in case, so that', Latvian jeib 'or, otherwise, else, if however (=and if)'.\(^91\) On the other hand we find Lithuanian nēbe, nēbė, 'not any more', 'not only' and Latvian neb(a), 'of course not, certainly not'. Are these forms not parallel to Germanic \(^*jaba, ^*neba\) respectively? If this is not a mere coincidence, we would have here \(^*bha\) as an emphatic marker, \(^*ne\) as a negative marker and, again, \(^*ja\) as a 'conditional' marker.

Despite the great similarities, there are some problems here. Descendants of Germanic \(^*ja\) are not attested as 'conditional' markers, but only as assertive markers. On the other hand, descendants of Germanic \(^*ba\) (viz. Gothic -ba-) are 'conditional' markers, but we do not find anything similar in the Baltic dialects. What are we

\(^{88}\) It is also worth noting that there are Slavonic forms that have been related to Lithuanian af. Thus Lithuanian ir, 'and, also' Prussian ir, 'also', Latvian ir, 'and'. Notice that ir is assertive (conjunctive) whereas af is nonassertive (disjunctive).

\(^{89}\) But Lithuanian nei(-gi), 'as, like'.

\(^{90}\) -i, -gi, -gu seem to be just reinforcing, emphatic particles. In fact we find the simple ja as a 'conditional' marker in Latvian.

\(^{91}\) Cf. also Latvian ježu, 'though' ([Man84, Ježki]).
to conclude from these facts? Well, we can safely assume that *bha was emphatic but specialised mainly as an assertive form in Baltic, whereas it specialised mainly as a nonassertive form in Germanic. On the other hand, *ja specialised mainly as a 'conditional' marker in Baltic\(^{92}\), whereas it specialised as an affirmative marker in Germanic.

But, are we not prejudging the issue about 'conditionality'? Perhaps *ja was also assertive, and thus, 'conditional' in Baltic. And perhaps this is also so in Germanic. Maybe. Our conjecture is compatible with such a development. All we have claimed is that, at a certain point, Germanic *ba became nonassertive, and this semantic value was infused into the idea of 'conditionality'. The former process, viz. its development as a nonassertive marker, seems only initiated in the Baltic dialects;\(^{93}\) the latter, the crossbreed between nonassertion and 'conditionality', does not seem to take place here at all.

The last group of forms we shall review is represented by the frequently quoted Lithuanian abū, Latvian abi, Prussian abbai, 'both'; and by their derived forms: Old Lithuanian abeja, Lithuanian abejī, abejōti, Latvian abaj(u), Prussian abbaien, 'to doubt' and Lithuanian abejingas, 'ambiguous'. We have seen cognates in other IE dialects. The derivation of 'to doubt' and 'ambiguous' from 'both' is, on the other hand, transparent.

So, the only problem is initial a-. Does this a- correspond to the o- we find in Slavonic forms (Slavonic oba, 'both' and oboje, 'to doubt'), and, in Latin and Greek forms as am-? This seems probable.\(^{94}\) If this is the case, then the formation would be parallel to that seen for the other dialects, and *ba would be an emphatic, perhaps assertive, marker. This confirms our idea that the development of *bha as a nonassertive form in the Baltic dialects is very limited, whereas this is the main development in Germanic.

To conclude our review of the Baltic dialects, it seems that forms derived from IE *bha are sometimes emphatic but mainly assertive in these dialects. The development of the form along nonassertive lines is very limited. Moreover, it does not seem that nonassertion enters into the idea of 'conditionality' at all.

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\(^{92}\) Lithuanian ja, jo and Latvian jā seem to be loanwords from German ([Fra62, 192]).

\(^{93}\) Lithuanian Latvian kē is used in questions ([Fra62, 28]). This is more clearly the case with Lithuanian bāsū(-gi), 'whether (certainly)', an indirect question marker. [Nes73, 323] even poses ˇai, ˇay as an interrogative marker (direct questions)... though "vielleicht ist es auch nur Druckfehler" ([Fra62, 28]). By the way, Lithuanian jas (Latvian jās), 'already' is decidedly an emphatic and assertive marker. Lithuanian jasī, 'really, actually' is in the same line.

\(^{94}\) At least abejī jas, 'ambiguous' can be safely said to be a loanword from Polish obojętni ([Fra62, 1]. For the loss of the nasal cf. [Adr75, 288]).
5.2.5.2.6 Recapitulating  In all the dialects reviewed (Greek, Latin, Armenian and the Baltic dialects) *bha seems to show some emphatic characteristics but primarily assertive, affirmative developments. This does not seem to be the case in Germanic. Here, the nonassertive element becomes the predominant one.

We saw in section 5.2.5.2.3 how [EM59, 27] presented Gothic bai, ‘both’ as a piece of evidence for IE *bha as originally expressing ‘duality’. As a result of our enquiry into some IE dialects, however, we have conjectured that it is only Germanic *tia(-i, -u) that can be taken to be nonassertive, related forms being compounds of *bha and a nonassertive item *(a)ne-. Semantically, this is plausible if we suppose that *bha is just emphatic since *(a)ne- is certainly a ‘dual’ one already.

Of all the dialects reviewed the Baltic dialects seem to be the ones closer to Germanic. However, the similitude between Baltic forms like abeji, abejoti, etc. and Germanic *i-ba, ‘(to) doubt’ and between Baltic forms like jeib, jeb and Germanic *ja6a seems to be only apparent. *-ba- would be emphatic and often assertive in the Baltic dialects, whereas it would have developed primarily as a nonassertive marker in Germanic.

So, we have shown that *bha was plausibly an emphatic marker in IE, which developed along speech-act lines in the dialects. In support of the idea that such evolution is plausible we have given three examples besides *bha, viz. IE *ma, *(a)ne, *(a)ra. In support of the idea that the item was emphatic and then specialised in the dialects we have shown that this is the case in Greek, Latin, Armenian and the Baltic dialects. The standard specialisation seems to be towards assertion, but the Baltic dialects point towards some nonassertive developments.

But to say that Germanic *6a was nonassertive is too crude a picture. We have suggested that, in fact, it was an emphatic marker, which possibly spread along assertive and nonassertive lines, before becoming restricted to nonassertion. The Baltic dialects show the opposite tendency, viz. both assertive and nonassertive forms are attested, but the nonassertive ones are the exception. We shall see in more detail how Germanic *6a became a nonassertive marker in section 5.3.1. But before that, as an appendix to the present section, and as an introduction to section 5.3.1, let us review some of the forms we find in Basque, a non-IE language where there are two items, ba, bai, the former of which is emphatic, ‘conditional’ and marginally nonassertive, the latter being affirmative. The similarities with (our proposed reconstruction of) Germanic are astounding. As in Germanic, there is an emphatic, focus-sensitive, item which is used as a ‘conditional’ verbal prefix. As in Germanic, it shows affirmative and nonassertive (dubitative) developments. Unlike in Germanic, however, the assertive line prevailed. Whether this is just a coincidence, or shows that Basque ba-i is a Germanic loanword is something we must leave out of this study.

95OHG 6a Old Danish 6ave, eve Old Norse if(i), cf(i) Norwegian (dialectal) eva.
5.2.5.2.7 The Basque Case Basque (Euzkera) is considered not to be an IE dialect. However, it contains loans from several IE languages. Historical contacts are difficult to document in view of the relative modernity of written texts in Basque. We shall not attempt to prove the historical thesis that Basque ba(-i) is a Germanic loan. Rather, this section establishes the remarkable morphosemantic and syntactic parallelism between proposed Germanic *ba(-i) and Basque ba(-i).

If, in fact, this is a loan, we must suppose that Basque borrowed the item when it was still used in a relatively free way from a syntactic point of view, perhaps as an emphatic, focus-sensitive marker, and, thus, as a ‘conditional’ marker. On the other hand, it had developed as an affirmative item, and only marginally as a nonassertive one.

So, let us get started. As a prefix, ba- is used as an emphatic marker, primarily of synthetic verb forms:

\[ (659) \text{Ba-dator aita = Father is coming; \{S^+88, 135\}} \]

\[ (660) \text{Bat-ek ba al daki bada zer egin? = Does one really know what to do anyhow? \{S^+88, 208\}} \]

In this position it is also used as a ‘conditional’ marker. Sometimes the more complex form baldin ba is used:

\[ (661) \text{Aita (baldin) ba-dator ondartzara joango gara = If father comes we’ll go to the beach.} \]

It is also used in (nonassertive) ‘concessives’ in conjunction with ere, be, ‘also’ (cf. Latin etiam-si):

\[ (662) \text{Aita ba-dator ere ondartzara joango gara = Even if father comes we’ll go to the beach.} \]

Ba is also used with verbs of will or desiderative expressions:

\[ (663) \text{In this position it is also used as a ‘conditional’ marker. Sometimes the more complex form baldin ba is used:} \]

96 The hypothesis is, nonetheless, plausible. The Goths occupied Iberia for several centuries. This makes at least possible a linguistic contact.

97 The simplicity of the Gothic ‘conditional’ marker -ba- (compared with the standard Gothic ‘conditional’ marker, jasari) and, as we shall see, the consistent use of Basque ba as an emphatic particle suggest that in Basque as well as in Gothic, this particle is very old, and previous to its specialisation as a nonassertive marker.

98 But also of other items. E.g. it is likely that the emphatic third person personal pronouns, be-r-a(ŋ), contain this particle. Most of the examples are from \[S^+88\]. The analysis of the Strings can be found there.

99 [Mic89, 643].
(663) Naj nuke jin baladi = I’d like him to come;

(664) Ai ene zorigastokoan, konfesau baño leen ilten banas! = Poor me if I die before confessing!

Marginally, it is used in indirect interrogatives:100

(665) Eztakit nik elduko banaz = I don’t know if I’ll arrive,

and in final (so that, in case) constructions.

There is also a compound form, bai, that is certainly the most prolific one as regards generation of items. Semantically it is usually an assertive marker. First of all, it is used as an affirmative adverb. Intensive forms of the simple bai include baietz, baieki, used as an answer to a negative utterance, bai zera, used either ironically to express negation, and baiba, ‘of course’. Ba(i) is also used as a marker in exclamations:101

(666) Bai polita dala = How pretty she is!

Compounds of bai are: baita, ‘also, as well, moreover’, baieta...ere, ‘also, even’, baida, ‘then, therefore’, ba-da-r-ik, ‘at least, however, despite’; bai au...(ta)bai ura, ‘both...and’. An example of the last use is this:102

(667) Bai mendian bai ondartzan euliak daude = There are flies in the mountain as well as at the beach.

But bai-t(a) obviously has a very wide range of uses as witnessed by these examples:103

(668) Nola erosi al zuen ori? Aberatsa bai-ta = How come (s)he bought that? Because (s)he’s rich;

(669) Zuk bai-diozu, egia izango da = When you say it, it’ll be true;

(670) Ikusi bai-tezun kabia nun dago? = Where’s the nest you have seen?

(671) Ain ondo itz-egin du denak zoratuta gelditu bait dira = She’s spoken so well that everyone has been left enchanted.

Also connected to bai is bain-o, -a, -an, whose primary meaning is adversative. It is used as an adversative Coordinator (‘but’), but also in (assertive) ‘concessives’ (‘although’) and in comparatives (‘than’):104

100 This seems to be a modern development ([Mic89, 644]).

101 [S+88, 143].

102 [S+88, 86].

103 All from [Muj81] except the last one, which is from [S+88, 50].

104 Notice the emphatic bai in bai-ba. [S+88, 83], [Muj81, bai-ba] and [S+88, 128] respectively.
(672) Aita ba-doa baina ni emen gelditzen naiz = Father is going but I’m staying here;

(673) Ar zazu, estakigu noren dan baina = Take it although we don’t know whose it is;

(674) Nere etxea zurea aundiagoa da = My house is bigger than yours.

Going now to some nominal and verbal derivatives, we have the bare bai-a, ‘assertion, affirmation, permit, licence, concession’. We also have bai-men-a, bai-etz-a, ‘assertion, assent, permit’, where -men, -etz are common nominalisation suffixes. Basque’s negation is ez. Therefore, we should expect ‘duality’ markers by combining it with bai. In effect, we find bai-ez-a, ‘doubt, wonder, hesitation, perplexity’. Interesting side compounds are bai-baina, ‘excuses’ (literally ‘yes, but...’), and bai-ala-ez, ‘dilemma, alternative’ (literally ‘yes or no’).

The negative ‘conditional’ marker is ez-ba>ezpa, ‘if...not’. A curious compound is bad(a)ezpada-ko/-n, ‘event, something contingent, precarious, unstable, suspicious, arguable, ambiguous, doubtful, uncertain’.

We could go on and on. But the conclusion is clear: bai is an emphatic marker, with ‘conditional’ and (marginally) nonassertive developments.105 bai is basically an assertive marker. When combined to a negation (nonassertive) marker it generates ‘duality’ markers.

5.3 Where did ‘if’ head for?

5.3.1 The Germanic Period

5.3.1.1 Germanic ‘*ba’

Our hypothesis concerning the semantic evolution of Germanic *ba is that *ba is originally an emphatic marker in Germanic. Remnants of this function are found in Gothic -ba-, and perhaps, in the adverbial suffix -ba.106 An example of the former is:

(675) ŕauh ga-ba-daunjip= Even though he dies.

emption is a nonassertive particle which translates Greek ἀν (Lucas 9.46 and John 11.32) and kán (John 11.25). It is also used as a disjunction marker in interrogative environments, as a translation of Greek ἐ (Lucas 5.23, Matthew 11.3, Romans 7.1 and 2Corinthians 13.5). It is adverbial in John 12.43, where it translates ἐπερ, ‘than at

105 Observe that if bai was conceived of as being primarily a nonassertive marker we should probably find forms like *ba, *ba-men, *ba-etz, etc. with a meaning like ‘probable, uncertain, doubtful’, etc. But we have not found anything like this in Basque.

106 Cf. [Jos83] and [Leh86, 55].

107 (John 11.25). [Leh86, 55].
all'. Finally, *pauh-jabai* translates *ei kai*, 'if also' in 1 Corinthians 7.21, 2 Corinthians 4.16 ([Leh86, 356]).

In other words, *pauh* appears mainly in interrogative or 'conditional' environments. However, it is difficult to pinpoint its exact semantic value. In John 11.25 (above) - which is the example that interests us - Lehmann says that *pauh* = *kán* = *even though*. But then -ba- would be just emphatic, if anything. Given the other examples, however, it seems that the secondary particle is rather *pau(h)*, and the principal marker is -uh, jabai, an interrogative pronoun, etc. Thus, -ba- and not *pauh* would be the 'conditional' marker in John 11.25. The primary semantic value of *pauh* seems to be adversative. The cases where it has been translated as 'or' are cases where the options are contraries. So, we suggest that a more literal translation is:

\[(676) \ldots \text{if} (-ba-) \text{he will however} (pauh) \text{die} \ldots\]

Unfortunately, -ba- as a verb form Modifier\(^{108}\) is absent from the other Germanic dialects. Although someone could argue that this is evidence for it to be a specific Wulfila development, we think there are some data on the contrary. Thin as the connexion may look, the use of Basque -ba- points out to a more general use of the particle as a focus-marking device. Moreover, such a usage is coherent with the use of *bha* forms as emphatic markers in other IE dialects, as we have seen. Finally, the formation of compounds based on *bha* in Germanic has a parallel in the formation of compounds based on other items. This is the case with Gothic *-u-*. But before going into compound forms, let us just point out to the delicate prehistory of Germanic *bha*. The particle has been shown to be emphatic in several IE dialects. But we have proposed to consider it as nonassertive in Germanic. How to explain the development? A very tempting hypothesis is based precisely on Basque and Gothic -u- compounds.

First, Germanic *bha* is originally used as an emphatic, focus-sensitive marker, much as it is used in Basque. In this function, it was attached to items of different grammatical categories, as it is in Basque.\(^{109}\) That such focus-sensitive particles existed in Germanic is exemplified by Gothic dubitative marker *-u-*.\(^{110}\)

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\(^{108}\) -ba- as well as -u- and *pauh* are infixed between the verbal radical and the verbal prefix *ga-*, which suggest a common syntactic behaviour for the three particles.

\(^{109}\) Was *bha* ever used to the extent -u- is used in Gothic? If we answer yes, we must accept that the loss of functionality of *bha* as a focus marker in nonassertive environments was earlier than the loss of -u- in the same role; or else, Gothic is not to be trusted at this point. If we answer in the negative, we mean that *bha* was only used to reinforce the already 'conditional' *ja(χ)*, and Gothic -ba- should be analysed otherwise.

\(^{110}\) This is important: -u- as well as *i* is *ikai*, *nikai* are strictly speaking dubitative and not interrogative markers. Proper interrogative markers in Gothic include *wh-* items as zero sequences where the personal pronoun subject has been deleted. By contrast, rhetorical questions are marked in one of these three ways: by -a(h) attaches to the focus of the String; by Inversion; by one of an *nauh*, *nikai*, *niu* or waitci, *ikai*, *jau*. Cf. [Sch68].

196
Now, *ba as a focus-sensitive marker became progressively specialised. First, as a (focus-sensitive) topic marker, and hence, as a ‘conditional’ marker. In time, it was restricted to preverbal position (Gothic -ba- (= Basque -ba-) and then only as a suffix attached to the connective, as it is the case in all ‘conditional’ markers in the Germanic dialects.

On the other hand, *ba(u) became specialised as a nonassertive marker and perhaps *bai (= Basque bai) became used as an assertive marker. In any case, there was soon a nonassertive, dubitative marker. 111

5.3.1.2 ‘Conditional’ and Dubitative Markers

A delicate problem is whether the two developments – *ba as a ‘conditional’ marker and *ba as a dubitative marker – were independent or one derives from the other. Our conjecture is that they were in fact independent.

It seems relatively clear that *ba was already nonassertive in Germanic. Indirect evidence is provided by items meaning ‘both’ in Germanic. If you recall, Germanic ‘both’ lacks the kind of prefixes attested in other IE dialects. 113

In fact, we can go a little bit further. It is plausible that there was a Germanic form, *i-6a, meaning ‘doubt’. 114

The global picture emerging from this indirect evidence is that there was a nonassertive (dubitative) marker in Germanic (*iba(-i, -u), and perhaps also *uba(-i, -u)) comparable to Gothic -u-. That is, it was a verbal prefix and, otherwise, a suffix.

On the other hand, ‘conditional’ *ba clustered with Clause headers *ja(x), *ne (*ja 6a, *ne 6a). These formations are independent of *iba(-i, -u)). 115 This poses one problem, viz. except in OHG and Gothic we only find one form functioning both as a ‘conditional’ and as a dubitative marker.

5.3.1.3 Loss or Innovation?

Gothic and OHG suggest that there were distinct ‘conditional’ and dubitative forms. But the other dialects do not. This poses the following problem: why do we not find i-, u- forms in the other dialects? Another way of putting it is as follows. There is a

111 This reconstruction seems to be supported by 112’s ‘cognitive model’ for ‘conditionals’.
113 Gothic ba, bai, baija, OHG and MHG beide, bide>German beide, OS bithia, Middle Dutch beide. OLG beide, OldFrison bithé, OldNorse bápar, bápar, bája, OE bá, bá. To be sure, they exhibit various suffixes – notably -i and -ja, but these do not seem to affect the meaning of the radical (see sections 5.2.4.1 and 5.2.4.3).
114 OHG i6a OldDanish jæve, eve OldNorse if(i), eff(i) and Norwegian (dialectal) eva. For a conjecture on initial i- see section 5.2.4.1.
115 Otherwise we should have forms *ja-i-6a, *ne-i-6a, and this seems unlikely.
nice morphological parallelism between Gothic ni-bai, ni-u and i-bai, ja-u. So, why is ibai and not jabai, the marker in these environments? Are these OHG and Gothic i-forms dialectal peculiarities, or were they lost in the other dialects in the pre-attested periods?

If we accept that there was a Germanic noun *i-ba meaning 'doubt', possibly deriving from a dubitative marker, the most natural conjecture is that the other dialects lost this form and replaced it with the 'conditional' form (perhaps after becoming semantically interchangeable). But in this case we must explain the *i- on the face of the structural symmetry between ni-bai, ni-u and i-bai, ja-u and the existence of jabai. On the other hand, if we conjecture it to be a Gothic and OHG development, we must explain both phenomena, viz. why other dialects have forms meaning 'doubt' that seem to derive from *i-ba, and where Gothic and OHG i- come from.

So, there seems to be a relative advantage in supposing that the *i-forms were replaced by the 'conditional' marker in the dialects other than OHG and Gothic.

5.3.2 The Old English Period

5.3.2.1 An Overview

We arrive at the historical times of the different dialects with markers which are both dubitative and 'conditional'.

Now, given that our target language is English, the question is: was OE gif treated as a dubitative, Clause-internal marker, or as a 'conditional' Clause header (Coordinator or Subordinator)?

Our conjecture has been that Present Day English if is still basically a dubitative marker. Therefore, if coherence is to be maintained, we must also maintain that OE gif was a dubitative marker. Actually we want to go even further. We want to suggest that, unlike Present Day English if, Pre-English *gif was not always a Clause header, but a Clause-internal marker. To that end, we shall attempt to show that there is reason to believe that Pre-English gif could function as Clause-second, following certain Clause headers.

Prima facie, gif Strings seem to be perfectly established in OE. [Bra78, 104] lists it as one of the few 'genuine Proto-Germanic conjunctions'. Furthermore, if-Strings do not seem to undergo any major alterations in the history of English, i.e. their structure in Present Day English is basically the same as it was in OE.

We shall review both claims. So far we have shown that there was no well-
established 'conditional' marker in Germanic. Now we want to show that OE *gif*

is not a well-established conjunction, and that, therefore, *if* Sentences are not static

structures in the history of English.

Philologists concerned with OE 'conditionals' usually focus on tense correlation.\textsuperscript{118} This seems to be the only place where these structures are subject to evolution. We shall not concern ourselves with such a problem. Let me just quote [Vis66, 885]'s hypothesis, which is shared by [Mit85], and that we also support:

It seems a fair conjecture that... in the existing Old English documents there was a tendency to consider the modality of the 'conditional' Clause already sufficiently expressed by the conjunction – as it was in the numerous cases in which only one form of the verb was available... – and that consequently the additional signalling of this modality by a special form of the verb was felt as redundant.

A more interesting problem for us, and one that has received comparatively little attention from scholars, is the problem of distribution of *ponne* in OE 'conditional' Strings.\textsuperscript{119} The problem is the following.

OE *gif* Strings are marked by *gif* only in some instances, or by a combination of *gif* and one, two or even three *ponne*'s. The distribution of these *ponne*'s is *prima facie* asymmetrical.\textsuperscript{120} The traditional explanation – on the basis of the MnE development of the structure – is that *ponne* is the correlative of *gif*. As in MnE, it seems to be optional. This explains all the Strings with *ponne* as head of the second Clause and all the Strings with no *ponne*. As for the Strings with more than one *ponne*, the classical explanation is again, that *ponne* is here some sort of emphatic device, as in Modern English:

\((677)\) *If, then, you can conceive of an object being round and square, then I will grant that it actually be so.*

The only difference with OE would be a more profuse use of this particle. But this theory faces some problems. First, the explanation that the distribution of *ponne* is arbitrary or near so is, in principle, methodologically unsatisfactory. Besides, there seems to be indeed a pattern of *ponne*-distribution, as we shall try to show.

Second, there is no (semantic at least) explanation for the fact that it is *ponne*, and not *swa* (the equivalent of OHG *so*), that serves as a 'correlative' of *gif*.

Third, if the *ponne*'s in the *gif* Clause are conceived of as only illative markers (or temporal adverbs) without a special syntactic function, either the syntactic rationale

\textsuperscript{118}For instance, Vis66, 882ff] and [Mit85, 787ff].

\textsuperscript{119}By the way, there are other 'conditional' markers in OE: *har, ono, swa* ([Mit85, 843ff]).

\textsuperscript{120}Cf. [Mit85, 866–7].
for the *bonne appearing in the unmarked Clause as a correlative of *gif is undermined (i. e. the OE correlative system), or the distribution of *bonne in *gif Strings is explained twofoldly. One, the *bonne heading the unmarked Clause, when it is there, would be a correlative of *gif, to be explained within a general theory of OE correlatives. Two, the *bonne's in the *gif Clause, would be just illative markers or some such. And this looks also far from satisfactory.

Fourth, if we accept that the unmarked Clause *bonne is a true correlative of *gif, and also that correlative structures belong to an older stage in the formation of compound Sentences in the language,¹²¹ we have to explain why *gif gets a correlative in an apparently modern stage (once the *gif was already well-established as a Subordinator). The easy way out is to say that it was through contamination with other correlative structures. But almost any other explanation, if found, will be better.

Fifth, there are instances where *bonne is non-initial in the unmarked Clause. In these cases, *bonne is hardly a correlative and must be construed as an illative or temporal marker.

As we have seen, Germanic 'conditional' *jaba replaced the dubitative marker *iba(-i, -u)¹²² and became a dubitative marker. As a result, it lost ground as a Clause header and, thus, could show up as Clause-second.

This is the situation we find in Pre-English. *gif is a nonassertive marker. Therefore, *gif appears in nonassertive structures. One of those structures is Pre-English *bonne *gif . . . , *bonne . . . , where *gif is a nonassertive marker featuring within a correlative temporal structure. On time, this structure evolved into *gif . . . *bonne . . . , *bonne . . . and *gif . . . *bonne . . . . . . . . . . . , then *gif . . . , *bonne . . . and eventually *gif . . . , 0 . . . . . . . . . . . . Thus, this structure must be explained within a general theory of OE correlatives.¹²³

Now, unlike in the case of *jaba, *bonne and *gif did not fuse. Very tentatively we should like to advance the conjecture that this occurred for two reasons. One, *bonne moved from Clause-initial to Clause-second (after *gif) when *bonne acquired the status of a temporal Subordinator in OE, and also when the *bonne *gif Strings were seen more as hypothetical than as temporal Strings. Two, *bonne fluctuates both within the *gif and the unmarked Clause due to a restructuring of the elements in the Clause due to focalisation. *bonne moved to Clause-internal position before *bonne + *gif could be consolidated. This is the hypothesis. It has many weaknesses but at least we shall show one of its strengths, viz. that it explains quite neatly the distribution of *bonne in a group of OE texts. But before that, let us say something about correlative

¹²¹ Cf., e. g. [Car76].
¹²² In indirect question contexts at any rate.
¹²³ This hypothesis allows for different dialects to develop different structures featuring derivatives of *jaba. Thence the different 'correlatives'. The hypothesis is simple because it explains both the formation of *gif and the origin of *bonne by the same mechanism.
structures in OE.

5.3.2.2 Correlative Sentences in Old English

The picture of Sentences in the various Germanic dialects that is slowly emerging is that of a system of syntactic units with two basic structures:

(a) Marker 1 + Clause 1, marker 2 + Clause 2.
(b) Clause + (marker + Clause).

An almost centennial discussion is whether these structures are Subordinate (hypotactic) or Coordinate (paratactic). Modern scholars seem to favour the view that they were some sort of correlative (Hale) structures, where:

(a) there is an asymmetry between the two Clauses; i.e. the role of the header and the anaphoric is different: marker 1 is a conjunction, a connexion marker, and marker 2 is an adverb, an anaphoric marker referring back to the whole of marker 1 + Clause.
(b) marker 1 and Clause 1 do not form a unit. Thus, Clause 1 and Clause 2 are syntactic and semantically on a par.

These structures probably originate in sequences where the headers are just (dis-)course deictic markers:

Marker 1 + Clause 1. Marker 2 + Clause 2. Marker 3 + Clause 3...

through an intermediate stage, where there is a grouping in two-member units:

Marker 1 + Clause 1, marker 2 + Clause 2. Marker 3 + Clause 3. marker 4 + Clause 4...

but where the two Clauses and the two headers in each unit still have exactly the same status. There would still be an asymmetry between marker 1 + Clause 1 and marker 2 + Clause 2, but the difference would only be marked by order (iconically).

Hale structures are a step beyond this. The asymmetry between the two Clauses is formally, though marginally, marked. This is actually the situation in OE, viz. there are instances of doubling of the marker, addition of *be* or *hæt*, and perhaps phonological differentiation ([Mit85, 241]). Also, there are instances where marker 2 is omitted.

In the second place, Hale structures in general are such that “in languages which make extensive use of the adjoined relative, when the subordinate Clause precedes

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124 Cf. [Mit85, 693–6], [And68], etc.

125 A Hale structure “is typically marked as subordinate in some way, but its surface position with respect to the main Clause is marginal rather than embedded” ([Hal76, 78]). By the way, Hale himself calls them 'adjoined relative clauses'.
the main Clause, it is terminated with a characteristic falling-rising intonation and followed almost invariably by a pause; but when the main Clause precedes the subordinate Clause, the intonation over both Clauses is more often falling, and the pause between them, if any, is brief" ([Hal76, 78]). The point is that the sequence Subordinate Clause + Matrix Clause is marked, whereas the reverse is not. In OE, as in other languages, marking is essentially by means of an anaphoric heading the 'unmarked' Clause. Now, this is precisely one of the first regularities we find in the OE correlative system, viz. 'OE correlative adverbs occur almost exclusively in main Clauses which follow the subordinate Clause' ([Car76, 52]).

But Hale structures are relative structures, and we are talking about adverbial structures. So, where is the link?

To start from Hale's end, it must be remarked that what he calls relative Clauses are either relative Clauses sensu stricto, used to specify additional information about an argument in the unmarked Clause, or adverbial Clauses, with the exact value sometimes difficult to precise ([Hal76, 79]). Thus, eg., the adjoined relative structure is used for conditions, causes, times, etc.

Working from the other end, [Car76] proposes a plausible conjecture to explain OE correlatives as follows. OE correlative structures should be analysed as:

*preposition + relative marker + Clause 1, marker 2 + Clause 2.

Adverbs are relics of historically earlier copying rules affecting relative Clauses. The mechanism is as follows. An internal relative Clause is a relative Clause which "intervenes between constituents of the main Clause" ([Car76, 44]). "The presence of an internal relative Clause tends to trigger one of a set of optional rules deriving a paraphrase where the Clause no longer separates constituents of the higher Clause" ([Car76, 46]). Among these rules, we find repetition of the 'antecedent'. And this is precisely what is going on in correlative structures where the adverbial Clause is initial. When the adverbial Clause is final, the constituents of the unmarked Clause are not pulled apart, and that is why there is no need for a correlative.

[Car76] admits that his analysis does not apply to gif Strings, since, we suppose, he cannot analyse gif Clauses as originating in preposition + relative Clause structures.

But we do not have to go as far as [Car76]. We do not have to suppose that adverbial structures always originated in relative structures. We can as well suppose that both adverbial and relative structures behave as Hale structures. That is, they show a trace when in marked position. For adverbial Clauses marked position means initial position; for relative Clauses it means right after the antecedent.126

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126 Cf. [Gar71, 74-5]. Relative Clauses are either internal or final. Final position would be the unmarked position.
Our conjecture is only meaningful if the language, OE in this case, is typologically Matrix Clause · Subordinate Clause. That OE is so is pretty plausible, in view of the other typological characteristics it shows (not SXV any more, preposition - noun, noun - noun Complement, etc.) and it is born out by the facts.\(^{127}\)

If our conjecture is right, it would explain that relative and adverbial Clauses in initial position are marked in OE. But both typological and statistical considerations point out to ‘conditional’ Clauses as initial by default, and therefore, we have a problem here. Why do *gif* Clauses exhibit a correlative structure?

Our hypothesis supposed a construction, *ponne gif...*, *ponne*...that on time becomes fossilised as *gif...*, *ponne*. Here *ponne* is not an anaphoric of a ‘conditional’ Clause but the relics of an anaphoric correlative of a temporal (*ponne*) Clause. In sum, the correlative structure *gif...*, *ponne* can be explained within a general theory of correlative structures.

5.3.2.3 When is ‘(g)if’ used and why?

Once we have established a conjecture about the source and evolution of *ponne* in OE we must say something about the mechanism behind the structure and its evolution. As regards the structure itself, we are confronted with two different problems. One, if we are right, *gif* could be Clause-second after Clause headers like *ponne*. What was its exact role? Second, we do not find *gif* combined with Clause headers other than *ponne*. Why did *gif* prefer temporal structures as its home?

Let us examine these two problems in turn. What was the exact role of OE *gif*? We can envisage at least two major possibilities here.

One is that *gif* was a Clause-internal speech-act marker as negation usually is.\(^{128}\)

The second possibility is that *gif* was a speech-act Modifier of Subordinators (a subordinating marker). The existence of subordinating markers in OE (*pæt, þe*) has been defended by a number of people. Perhaps originating in one of the main ways of generating conjunctions in the Germanic dialects,\(^{129}\) it spread to many other cases, to disambiguate or perhaps just to reinforce other conjunctions or pseudo-conjunctions.\(^{130}\) Now, *pæt, þe* would be assertive subordinating markers and *gif*

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\(^{127}\) Cf. [Gar71, 70ff] and [Bea83, 121].

\(^{128}\) OE *ne... ne*, Present Day English *neither... nor* and the like are Clause-external connectors.

\(^{129}\) [Bra78, 107]: “The most illustrative example of conjunction formation is, however, the use of the originally demonstrative pronouns *that* (Swedish *att*, Icelandic *að*, Dutch *dat*, German *dass* [OE *pæt, þe*]) as a conjunction marker co-occurring with other parts-of-speech (predications).”

\(^{130}\) [Mit85, 243–4]: “we can call *þe*... a subordinating particle. This is the general function of *þe*”. Our conjecture is a hybrid of [Gar76]'s and [Mit85]'s. We are sympathetic to the former’s view that *pæt, þe* were relative markers used to generate conjunctions. But we think that there was a point at which *pæt, þe* became just subordinating markers.
would be the corresponding nonassertive subordinating marker.

Notice that the gap between the two possibilities is rather small. In both cases *gif* is a speech-act (dubitative) marker. The difference is that, in the second case, *gif* is restricted to being a Clause header Modifier, whereas in the first case *gif* can modify other elements of a String.

We think there is no clear-cut answer to the question. Syntactically, *gif* > *if* seems to have some functionality as a subordinating marker until ME.\(^{131}\) Then, it seems to become exclusively a Clause header. But semantically, as we have shown in sections 3.2.3 and 3.2.4, an *if* Clause / Phrase can modify any element of a Sentence, including Subordinate Clauses. Syntactically, then, the second possibility seems more accurate a conjecture of the role of *(g)if*. Semantically, the first one looks better. If semantically *(g)if* Strings can modify any element in a Sentence, why do *(g)if* Sentences exhibit a Hale structure? Why is *(g)if* not simply used when required? In particular, why is *(g)if* not used in a general way after Clause headers? This leads us to the second problem we pointed out earlier, viz. why do we not have *(g)if* in other combinations except *ponce* *(g)if*?

We think there are two filters we must incorporate into our conjecture. Firstly, some combinations are semantically unlikely. Thus, the notion of a nonassertive or hypothetical time is frequently used by speakers, whereas the idea of, say, a hypothetical place is not. In fact, the idea of nonpast, especially future, time incorporates the very idea of hypotheticality. Talking about future places is less common.

Actually, we can use this filter even further. There were two main temporal Clause headers in OE: *ponce, pa, ha... "is the equivalent of Modern German als, being used only with the preterite indicative of a completed act in the past or of a series now regarded as a single act, *ponce* is the equivalent of wenn, being used frequentatively in the past, present and future, and of a single act yet to be completed at some indefinite time" ([Mit85, 308], and also [Mit85, 320ff]). Thus, we should expect the combination *ponce gif*, but not *pa gif*, as in fact we do.

In the second place, *(g)if* Sentences already express some kinds of connexion like final, causal and even 'concessive' connexions. In sections 3.2.6 and 3.2.7 we have argued that *if* Sentences are in many cases (nonassertive) causal, final and 'concessive'. Therefore, the combinations of causal or final markers and *(g)if* turn

\(^{131}\) Admittedly, the evidence for *pa*, *he* being subordinating markers is overwhelming compared with parallel evidence for *(g)if*. Combinations with *(g)if* – apart from *ponce gif* and the cases that we can attribute to zero + *gif* like indirect questions – include: *in case* *(if (besides in case that) and if case mainly in ME ([Vis66, 889])); but* *(if (besides but, but and, [Vis66, 897])); and as* *(if from ME onwards ([Vis66, 923-4]) and [Mit85, 701]). Notice that we find some examples of *gif pa* which are difficult to accommodate within the conjecture ([Mit85, 241]).
unlikely. One may argue that (g)if Sentences express these values precisely because they were unable to combine with the corresponding conjunctions, and not the other way round. This is basically correct. We shall argue that (g)if was used only where the corresponding Clause had lost its older, nonassertive marker, viz. subjunctive, as a reliable marker. Let us see how this is supposed to work.

There were two 'epistemic' moods in OE: indicative and subjunctive. The exact semantic difference between them is a subject of debate. But I think it is pretty safe to say that the distinction is between assertion and nonassertion, with nonassertion taking desiderative, imperative, etc. values on occasion. The subjunctive was in OE in recession in many cases.

Our conjecture is that (g)if plus indicative marked nonassertion where and when the subjunctive was previously used and had been lost as a reliable speech-act marker. In other words if the indicative was the rule, the Clause Modifier (conjunction) was assertive and it did not admit of (g)if in its environment. On the other hand, Clauses where the subjunctive was maintained did not need (g)if either.

Thus, time (pa), place and causal Clauses have the indicative as the overwhelmingly prevailing mood. Therefore, we should not expect (g)if in those cases. On the other hand, there are what [Mit85] calls 'Clauses expressing a rejected or denied reason'. These Clauses are marginal, and take regularly the subjunctive. Therefore, there is no need to take a second nonassertive marker.

In final Clauses, both indicative and subjunctive are also consistently used, depending of the speech-act of the Clause.

A well-documented case that seems to confirm our conjecture is as if. "The mood in comparative Clauses involving hypothesis is not unexpectedly the subjunctive" ([Mit85, 699]). At some point, however, OE swa "comes to mean no longer 'in the

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132 There are languages, however, where these combinations exist. Cf. Spanish por si, parallel to porque, Spanish (dialectal) (para) por si, parallel to para que and Spanish (dialectal, archaic) aun si, parallel to aunque.

133 Thus, e.g., mood seems to be stylistic, semantically void in 'conditional' Strings.

134 Cf. [Mit85, 279, 331, 606].

135 The structure is of the type ([Mit85, 610ff]):

( 678 ) He did it not because he wanted to but (because) he had to = He did not do it because he wanted to but (because) he had to.

136 "In Clauses of purpose, which express the aim to which the action of the main Clause is directed, the subjunctive is consistently used... In Clauses of result, the indicative is used when the action of the subordinate Clause is presented as actually taking place or as one event in a series of events following each other directly and dependent on each other... But when the result is presented as something contingent or contingent, as a tendency, as an imaginary action and not as one event in a series of other events dependent on each other, the subjunctive is used." ([Mit85, 497]).
same way as' but 'in the same way as if'.”

This is actually the normal use of ME 

also, (e)alswa, as, where the indicative is rarely used. Progressively, these forms 

are replaced by ME and MnE as if, first with the subjunctive, and then (17th century onwards) with the past ([Vis66, 923]).

So, (g)if replaced the subjunctive as a nonassertive marker when the latter was 

not a reliable marker any more. Now, Clauses of denied reason and purpose do not use the subjunctive any more. Why do we not find if in these cases? I should like to suggest that this is because a new tense marker was available when the subjunctive was not functional any more, viz. would. Thus, in cases where the subjunctive was functional until would came to be used as a nonassertive marker, if did not need to be used.

If this is true, it is in the interlude between these two marking systems that if was used as a subordinating marker. That means a period that goes roughly from Pre-Old English to early MnE. honne gif is probably the first example; as if, perhaps the last one.

To sum up, (g)if is a nonassertive marker. Semantically it can modify any le­

ment of the Sentence, including Subordinate Clauses. Syntactically though, (g)if Sentences usually show a Hale structure, with an anaphoric occupying the slot of the (g)if Clause. In addition, (g)if has been functional as a subordinating marker in cases where: 1. the Clause was nonassertive; 2. the old nonassertive marker (subjunctive) had lost functionality; and 3. the new nonassertive marker (would) was not established.

So, we have established a conjecture to explain the distribution of honne in gif Strings. The conjecture is coherent with our more general view that (g)if was not well-established as a Clause header in OE. Let us go back to honne gif Sentences. We want to say a bit more about the mechanism behind the evolution of these Strings before showing that, in fact, there seems to be such an evolution.

5.3.2.4 The Evolution of ‘honne gif’ Strings

If our conjecture is right, and honne moved from initial position to Clause-internal position, which was the mechanism operating behind this movement?

We have suggested earlier that the mechanism may have been twofold. In the first

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137[Mit85, 701].

138An instance at least already in OE Chronicle, 1049. Present Day English has a relic of such use in as it were. ([Vis66, 921]).

139The other example of an if compound, viz. in case if, if case confirms our conjecture. These Subordinators were used in ME and early MnE and then became obsolete ([Vis66, 889]).
place, a consolidation of *bonne* as a time Subordinator and a greater emphasis in the hypothetical (nonassertive) character of *bonne* gif Clauses caused the shift from *bonne* gif to *gif bonne*. That is, *bonne* became Clause-internal, and *gif* the Clause header. In the second place, the variable distribution of *bonne* in both the *gif* and the unmarked Clause is probably related to a rearrangement of the items of the String on the basis of focalisation.

The shift from *bonne* gif to *gif bonne* turned *bonne* from a prospective Subordinator into something else. Now, what is this something else, i.e. what, if any, is the role of *bonne*?

We do not believe that *bonne* had just a stylistic role. On the contrary, there is reason to believe that *bonne* marked the focus of the Clauses, before it became fossilised as a 'correlative' of *gif*. Let us explain this in a bit more detail.

The problem about the typological shift of English from being an SXV to being an SVX language is complicated and as such need not concern us here. But there is a more particular problem, viz. word-order in OE 'conditional' Clauses, that does interest us. OE is a language in transition “from basic verb final [SXV] to something else. The major difficulty lies in determining what that ‘something else’ is. The difficulty arises because there are no absolutely clear, constant increases or decreases in the use of any single word order type.” ([Bea83, 66 & 70]).

As [Bea83, 83] herself admits, based on the analysis of independent Clauses, “it seems plausible to argue that OE was a TVX [Topic-Verb-Complements] language, at least in its middle period”. Dependent Clauses, however, are basically SVX, “a situation which is somewhat disturbing as dependent Clauses are generally assumed to show changes in order similar to changes in independent Clause order, but lagging behind them chronologically” ([Bea83, 109]). In particular, “since topicalization plays such a small role in the ordering of elements in subordinate Clauses, the path followed by them must be different from that followed by independent Clauses” ([Bea83, 109]).

There is a basic problem with the characterisation of OE as a language where topicalisation was a working rule: the majority of cases where the rule is supposed to be at work are cases where the topic is pronominal. As [Bea83, 121] points, “how is a language which reflects the new information / old information distinction in the word order only for subjects and object pronouns to be characterized?” The issue is messy because the characterisation of focus and topic is basically messy.

In section 1.7 we have proposed a fourfold distinction between focus and nonfocus,
topic and nontopic. Now, our conjecture is not that *ponne* separates topic and focus, but that it separates focus and nonfocus.\(^{141}\) That is why we have called the process ‘focalisation’. Pronominal elements tend to be nonfocal, and therefore, will be usually between *gif* and *ponne*. But not always. On the other hand, focal elements tend to be in a nonpronominal form, even if topical. That would explain the fact that generally *gif* and *ponne* seem to separate pronominal and nonpronominal elements.

Finally, notice that there is some typological evidence that seems to support the view that the Subject is the most common topic and that is how SVX becomes established. In our model, what we want to say is that the Subject (and to a lesser degree the DO) is usually nonfocal.

In the next section we shall show that our conjecture is coherent with the results obtained from the analysis of a sample of the Anglo Saxon Charters. Even if the hypothesis is wrong, the results show that there is an evolution of the distribution of *ponne* in *gif* Strings over time, a fact that, as far as we know, has gone unnoticed.

5.3.2.5 ‘*Gif*’ Strings in The ‘Anglo-Saxon Charters’

We have chosen the Anglo Saxon Charters to show that the distribution of *ponne* in OE follows a certain pattern. In fact, we mean to show that our conjecture relative to the origin and evolution of *ponne* *gif* Sentences is plausible.

Our reasons for choosing the Anglo Saxon Charters are the reasons why these texts are commonly chosen: they span over a fair length of time (8th-11th c.), they are written in prose, and therefore stylistic factors play a lesser role, and they are highly repetitive, i.e. the structure of most Charters is astonishingly similar, so the differences are all the more interesting.

The collection of Charters used is [Rob56].\(^{142}\) Most of them are grants. Each Charter presents a fixed structure. It starts with a statement of the grant, follows with a religious formula that can be a benediction to those who respect the document, a curse to those who do not or both, and ends with the date and place when the document was signed and with a list of witnesses. Most interesting for our purposes is the comparison of the benediction and curse segment.\(^{143}\) The paradigmatic form is as follows:

\[ (679) \text{If anyone respects this, God bless him; if anyone violates it, God punish him, unless he repents.} \]

\(^{141}\) *gif* NONFOCUS *ponne* FOCUS, *ponne*... Or perhaps even *gif* NONFOCUS *ponne* FOCUS, NONFOCUS *ponne* FOCUS.

\(^{142}\) On occasion we shall refer to other Charters from [Bir85]’s collection.

\(^{143}\) Besides these *gif* Strings there are some more outside the aforementioned formula. These will also be taken into consideration.
The formula varies very little throughout the centuries, and thus provides with a very good measure of comparison. Moreover, given the fixed structure of the text, the context where the formula appears is identical every time.

The body of Robertson’s collection includes 120 pre-conquest Charters. Appendix 1 contains 6 post-conquest Charters and Appendix 2, 9 undated ones. There are 67 gif Strings. Chronologically, they are distributed as follows:

<table>
<thead>
<tr>
<th>Century</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-9th c.</td>
<td>12</td>
</tr>
<tr>
<td>10th c.</td>
<td>31 (+ 2 in appendix 2)</td>
</tr>
<tr>
<td>11th c.</td>
<td>21 (+ 2 in appendix 1)</td>
</tr>
</tbody>
</table>

The distribution of Strings featuring ṽonne is as follows:

<table>
<thead>
<tr>
<th>Century</th>
<th>8-9th c.</th>
<th>10th c.</th>
<th>11th c.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8 (67%)</td>
<td>13 (42%)</td>
<td>4 (19%)</td>
</tr>
</tbody>
</table>

The figures present a suspiciously neat picture. The first remark we have to make is that there appears to be a noticeable correlation between presence of and / ac and absence of ṽonne. The figures for cases where and or ac are present are:

<table>
<thead>
<tr>
<th>Century</th>
<th>8-9th c.</th>
<th>10th c.</th>
<th>11th c.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 (17%)</td>
<td>9 (29%)</td>
<td>15 (71%)</td>
</tr>
</tbody>
</table>

Of those, there are only 5 cases where and / ac and ṽonne are both present: 19.1, 25.2, 48, 83.3, 113.2. So, the figures are relevant. What is not clear to us is whether and replaced ṽonne in general, as an illative marker, or whether the decrease of ṽonne-marked gif Strings was compensated by an increase in the use of and.

A second factor we must consider is the embedment of gif Strings in ḷest complement structures. The figures in this case are:

<table>
<thead>
<tr>
<th>Century</th>
<th>8-9th c.</th>
<th>10th c.</th>
<th>11th c.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>144</td>
<td>145</td>
<td></td>
</tr>
</tbody>
</table>

The Charters are (a=initial and, ac; o=gif Object ṽonne; t= ḷest-embedded): 8 at; 30, 33 ot, 49 at; 74 at, 78 at, 83.1, 83.2, 95 at, i2.

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144 These are Charters: 3.3, 8, 16.1; 19.1, 21, 25.1, 25.2, 26.1, 26.2, 32.2, 48, 49, 74, 78, 82.1, 82.2, 83.3, 85, 86, 92, 95, 101.1, 101.2, 111, 113.1, 113.2, 117. 8 is probably a late translation of a Latin original (Birch,xx1).

145 For instance:

680  and he bead... ḷest... ac ḷest... and gif hit huwa awende ḷest... = And he commanded... that... but that... and if it anyone altered that... (Charter 8).

146 The Charters are (a=initial and, ac; o=gif Object ṽonne; t= ḷest-embedded): 8 at; 30, 33 ot, 49 at; 74 at, 78 at, 83.1, 83.2, 95 at, i2.
of which, only 33 has *ponne*, and not as a correlative. The third remark is related to Clause order. Even if we do not agree with [Car76]'s hypothesis, it is a fact that “OE correlative adverbs occur almost entirely in main Clauses that follow the subordinate Clause” ([Car76, 52]). In the Charters analysed the figures are:\[147]

<table>
<thead>
<tr>
<th></th>
<th>initial</th>
<th>final</th>
<th>medial</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-9th c.</td>
<td>11</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10th c.</td>
<td>27</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>11th c.</td>
<td>14</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

The figures are too small to get meaningful percentages and to draw any conclusions. But, if anything, they show an increase in Clause order freedom, confirming [Car76]'s data. For our purposes, they are not really relevant, since of the 12 noninitial Clauses found, 3 contain *and* and 5 are embedded in *æt* structures.

So, if we count only the Strings that are likely to contain *ponne*, i.e. initial Strings that do not contain *and* / *æc* and are not embedded in *æt* structures, the figures look quite different:\[148]

<table>
<thead>
<tr>
<th></th>
<th>8-9th c.</th>
<th>10th c.</th>
<th>11th c.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12-3=9 (89%)</td>
<td>31-9=22 (71%)</td>
<td>21-16=5 (60%)</td>
</tr>
</tbody>
</table>

Again, figures are too low to take percentages too seriously. Still, despite the various factors we have taken into account (that clearly go in favour of later periods), there is still a net decrease in the use of *ponne*. Even more interesting is the fact that there is only one String in the 8-9th c. period which does not contain either *ponne* or *and*, viz. 11.2. The conclusion is that there is a real decrease in the use of *ponne* throughout the Charters.

The second step is to see if there is any evolution in the patterns of distribution of *ponne* in *gif* Strings. Notice that if our hypothesis is correct, we should expect earliest

\[\underline{147}\] 16.1 *fa=*32.1; 26.1 *fa*, 26.2 *fa*, 32.1 *m*, 46.1 *f*; 74 *ft*, 78 *ft*, 83.1 *mt*, 83.2 *ft*, 92 *f*=32.1, 101.1 *f*=32.1, i2 *mt*.

\[\underline{148}\] We substract the number of Strings that are in one of those categories from the total number of Strings. If one String is in more than one category, it counts only as one. If it contains *ponne* despite being in one of those categories, it is not counted. The curse in Charter 120 is identical to, and probably copied over from, the one in Charter 11. So, we have disregarded it. The Charters are: 3.3, 8, 16.1; 21, 25.1, 26.1, 26.2, 30, 32.1, 32.2, 46.1, 49; 74, 78, 82.1, 82.2, 83.1, 83.2, 85, 86, 92, 95, 101.1, 101.2, 111, 113.1, 117, i2
examples of *ponne gif...ponne...*, and then instances of *gif...ponne...ponne...*. Later on, only *gif...ponne*... should show up.

Second, if the movements of *ponne* within the *gif* String are due to focalisation we should find different elements in non-focal position, but primarily Subjects and DO's.

Let us see some data. The first is a negative result: there are no instances of *ponne gif...ponne...* in the corpus. The second is a positive result: *gif ponne...ponne...* appears 3 times in the 8-9th c.\(^{149}\) period, once in the 10th c. period (Charter 24) and none in the 11th c. *Gif...ponne..., ponne...* shows the following distribution:\(^{150}\)

<table>
<thead>
<tr>
<th></th>
<th>8-9th c.</th>
<th>10th c.</th>
<th>11th c.</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>gif Subj ponne</em></td>
<td>2</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td><em>gif Other ponne</em></td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Again, percentages are not reliable. But it is nonetheless curious that, if we ignore the Strings where *ponne* is Clause-second, viz. *gif ponne..., ponne...*, the figures are:\(^{151}\)

<table>
<thead>
<tr>
<th></th>
<th>8-9th c.</th>
<th>10th c.</th>
<th>11th c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>33% (6:2)</td>
<td>27% (30:8)</td>
<td>14% (21:3)</td>
<td></td>
</tr>
</tbody>
</table>

Finally, the distribution of Strings with *ponne* in the unmarked Clause is:\(^{152}\)

<table>
<thead>
<tr>
<th></th>
<th>8-9th c.</th>
<th>10th c.</th>
<th>11th c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (33%-44%)</td>
<td>7 (23%-32%)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

The results show, then, a net decrease in *ponne* second Clauses, a (corrected) decrease in *gif...ponne..., ponne...* Strings and a (corrected) decrease in Strings with correlative *ponne*.

A comparison of the data with our predictions shows two anomalies. One, we have not found any instances of initial *ponne*, and, therefore, our first stage in the reconstruction is missing. Two, there are no instances of correlative *ponne* in the third period, but apparently it is this *ponne* that survived in English.

\(^{149}\)The Charters are: 11.2, 11.3, 12.1.

\(^{150}\)S= *gif Subject ponne*; O= *gif Object ponne*. The Charters are: 3.2 s, 11.1 s, 16.2 s; 120 s; 20.2 s, 25.2 os, 32.3 s, 32.4 s, 33 o, 38 s, 45 s; 83.3 s, 94 s, 113.2 s.

\(^{151}\)Here, the presence of *and*, etc. is irrelevant.

\(^{152}\)The first percentage takes into account all Strings, the second, only those that are not subject to any of the restrictions set up above. The Charters are: 1, 3.1, 3.2, 11.3; 19.1, 20.1, 20.2, 32.3, 48, ii1.1, ii1.2.
The absence of initial *bonne from the data seems to be due to the limited number of texts considered. But we do find examples of initial *gif in early texts.153

The absence of correlative *bonne in the third period is probably due to the abundance of and *gif sequences. As we have shown, initial and often precludes the presence of correlative *bonne. That correlative *bonne was used to the exclusion of any other combination is evidenced by the later history of English anyway.

In any case, these are minor problems that need further attention in the context of a wider sample of texts. What is important is that the selection of Charters chosen indicates that there is a pattern in the evolution of *bonne in *gif Strings. And our conjecture seems to give a neat account of that pattern.

A last question we should ask is whether the use of *bonne is not simply mirroring the use of Latin particles. A quick, preliminary search through [Bir85]'s collection of Latin Charters shows that there is a relatively regular formula (*si quis x . . . , where x = vero, autem, ergo, igitur . . .). Word order varies, though verb seems to be final in the *si Clause, and initial in the unmarked one.

The two most striking features are, however, these. One, there is no correlative corresponding to correlative *bonne. And two, the Latin particle is steadily used throughout the centuries. There are cases of absence of particle and *si + particle, without intervening *quis, but they appear to be a small minority. The picture is prima facie very different from the one shown by the Anglo-Saxon Charters. However, a systematic study of Latin Charters, with special attention to the cases where both versions are available, needs to be done. Such a study, though, is beyond the boundaries of the present thesis.

5.3.3 A Summary

In this chapter we have tried to show that the historic evidence gives support to our main conjecture, viz. that *if is a dubitative marker. We have seen how there was an IE item, *bha, originally emphatic, which became specialised speech-actwise in various ways in different dialects. In Germanic *bha> *ba was an emphatic, possibly focus-sensitive marker. As such, it was used as a topic, and hence as a 'conditional' marker. In time, it was restricted to preverbal and finally to Clause-second position, after *ja(x), *ne. Eventually, the two elements fused (*ja*ba, *neba).

On the other hand, derived forms *ba, *ba (and perhaps *ba itself) became specialised along speech-act lines. The former may have been used assertively, whereas the latter was used nonassertively. At some point, both collapsed semantically into a dubitative marker. Such dubitative marker was reinforced by *i-, *u- at least in some

153 Cf. [Mit85, 866] cites the Homilies of Ælfric, i, 178.21.
dialects. The former has been conjectured to be Germanic *ei; the latter, Germanic nonassertive marker *u.

At some point the 'conditional' marker *jaba replaced the dubitative markers in indirect contexts and became itself dubitative. As a consequence, it lost ground as a Clause header. The item was lost in independent Clauses.

In Pre-Old English *jaba>gif was still primarily a nonassertive marker. Syntactically it was not a Clause header (conjunction) yet. Therefore, it could show up after Clause headers. One of those structures is Pre-English *ponne gif...ponne..., where gif is a nonassertive marker featuring within a correlative temporal structure. Gif survived in indirect questions.

The *ponne gif...ponne... structure evolved through the Old English period. In Middle English it was fixed to gif..., (ponne)..., where ponne is the correlative that has survived till Present Day English.

A cursory look at the evolution of if from Old English on has led us to the conjecture that if has survived as a general nonassertive marker. As such, it is able of marking any element in a String. Syntactically, though, if Sentences exhibit a correlative (Hale) structure. Besides, it has been marginally allowed after Clause headers.
A. Summary

In this chapter we have tried to show that the dialectal evidence gives support to our
theoretical assertion, i.e., that $\phi$ is a substantive marker. We have seen how there was
an 12-thm, "$\phi$ is originally a particle, which became an substantive
mark in different dialects in Modern Greek. This was no mistake, possibly
by chance or accident. As such, it was used as a marker, and later it intransitive
marker. In essence, it was scrutinized perceptually and finally in Chrestological
position after $\phi$. We, essentially, the two elements found. **Type, Syntax**

On the other hand, derived form $\phi$, $\phi$ and particle $\phi$ being
emphasized among scholars and some. The former may have been used mistakenly, whereas
the latter was used nonassertively. At some point, both collapse systematically into a
substantive marker. Such substantive marker was confirmed by $\phi$, the attempt to move

Bibliography


