3

Linguistic Form and Pragmatic Interpretation

ORIGINAL

3.1 Conventional Implicature

Grice's theory of conversation (Grice 1975) is generally associated with an attempt to maintain an approach to semantics according to which the meanings of all linguistic expressions can be analysed in terms of their contribution to the truth conditions of the utterances that contain them. Indeed, the idea that there are aspects of utterance interpretation that are determined by general pragmatic principles has often led to the conflation of linguistic semantics and propositional (or truth-conditional) semantics so that, on the one hand, it is assumed that linguistic meaning cannot determine non-truth-conditional aspects of utterance interpretation, while on the other, it is assumed that pragmatic principles cannot play a role in determining the propositional content of utterances.

We have already seen that the second of these assumptions cannot be maintained. Wilson and Sperber (1981) have demonstrated that pragmatic principles play a part in disambiguation, reference assignment, the resolution of vagueness, and the recovery of elipsed or unexpressed material. We shall be looking at some more recent proposals about the role of pragmatic principles in the recovery of propositional content in chapter 4. Here, however, my main concern is with the first assumption – that is, the assumption that all linguistic meaning can be defined truth-conditionally. It will be recalled that Grice himself questioned this view when he introduced the notion of conventional implicature. His (tantalizingly brief) comments concerned the use of *therefore* in (1):

(1) He is an Englishman; he is, therefore, brave.

According to Grice's analysis, this use of *therefore* indicates that his being brave is a consequence of his being an Englishman. However, the speaker could not have been accused of speaking falsely should the consequence in question fail to hold.

Karttunen (1974) and Karttunen and Peters (1975) link this notion to the class of phenomena referred to in the presupposition literature as 'pragmatic presuppositions' (cf. Stalnaker 1974, 1975). They recognize that the latter term has been used to cover a heterogeneous class of phenomena, and hence that it is unlikely that everything that has been called a pragmatic presupposition is in fact a case of conventional implicature. Nevertheless they claim that what Grice says about *therefore* in (1) applies equally well to sentences with such words as *manage*, *fail*, *again*, *even*, *yet*, and *too*, all of which have been said to carry pragmatic presuppositions.[1]

Unfortunately, all that Grice actually said about *therefore* was that its meaning does not contribute to truth conditions. He did not go on to say what it did contribute to. Certainly, this property is shared by the lexical items Karttunen and Peters mention. Thus, for example, the speaker of (2) suggests that it wasn't easy for John to find a job, and that his finding a job must have taken some effort:

(2) John managed to find a job.

However, the speaker would not have said anything false were this not to be the case. The truth of (2) depends solely on the truth of the proposition in (3):[2]

(3) John found a job.

Karttunen (1974) points out that some words interact with intonation for their non-truth-conditional effect. For example, according to the way it is pronounced, the sentence in (4) can implicate any of the propositions in (5):

(4) My car starts badly too.
(5)(a) Someone else's – you know whose – car starts badly.
(b) Something else of mine – you know what – starts badly.
(c) My car does something else – you know what – badly.

However, all the various pronunciations express the same proposition, namely, that my car starts badly. *Too* makes no contribution to truth conditions.

Karttunen also points out that conventional implicatures are not always attributable to the meaning of individual words, and that they may be associated with certain grammatical constructions. For instance, whereas the use of the cleft construction in (6) suggests that the proposition in (8)(a) is being taken for granted, the use of the construction in (7) suggests that the proposition in (8)(b) is being taken for granted:

(6) It was Ben who ate the apple.
(7) It was the apple Ben ate.
(8)(a) Someone ate the apple.
(b) Ben ate something.

However, this not a difference of truth conditions: both utterances are true if and only if Ben ate the apple.

We shall be considering focus-related phenomena in more detail later in this chapter. In the meantime I wish simply to make some general remarks about Karttunen's (and Karttunen and Peters') approach to all these non-truth-conditional phenomena – lexical and non-lexical.

Since Karttunen accepts the existence of linguistically specified non-truth-conditional elements of meaning, he cannot identify linguistic meaning with truth conditions (or with what he calls 'logical form'): "Words like *too* have no place in logical form" (1974: 12). However, he does assume that the truth-conditional (or semantic) aspect of the meaning of an utterance is fully determined by its linguistic properties – an assumption which we have seen cannot be maintained:

> Let us assume that the truth conditional aspect of the meaning of a natural language sentence is captured by mapping each syntactic derivation of the sentence onto a corresponding logical form. . . . The logical form of the sentence together with the meaning postulates for the language in question determine what proposition the sentence expresses, that is, what class of worlds the sentence corresponds to.
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> (1974: 1–2)

Basically, for him there is only one distinction that matters: the distinction between the semantic (that is, the truth-conditional) and the pragmatic (that is, the non-truth-conditional). The role of pragmatic principles (general Gricean principles governing the use of language) is restricted to the non-truth-conditional, but linguistic meaning straddles both the truth-conditional and the non-truth-conditional – or, in other words, the semantic and the pragmatic.

The fact that linguistic meaning can play both a truth-conditional role and a non-truth-conditional one is the central concern of this study. However, I do not share Karttunen's view that truth-conditional meaning is determined exclusively by linguistic meaning. Moreover, as I hope to show in this chapter, a proper understanding of the non-truth-conditional role of linguistic meaning hinges on an appreciation of the distinction between the roles of linguistic knowledge and of non-linguistic knowledge in utterance interpretation, or, more particularly, on the understanding of the general psychological constraints on the use of non-linguistic information.

The need for a proper account of context in a theory of conventional implicature is, in fact, implicit in Karttunen's own suggestion about the role of words such as *too* in the interpretation of the utterances that contain them. *Too*, he says, is a "rhetorical device" whose presence or absence does not have any bearing on what proposition the sentence containing it expresses, but rather relates the sentence "to a particular kind of conversational context" (1974: 12). In other words, such expressions impose constraints on the context in which the utterances containing them must be interpreted. If the appropriate context is not available, then the utterance (that is, the use of the word in question) is inappropriate or infelicitous. Karttunen owes much of this idea to Stalnaker's (1974) proposals about the relationship between pragmatic presuppositions and 'common ground'. The basic claim is that at each point in a conversation there is a set of propositions that all participants are rationally justified in taking for granted, either by virtue of what has been said in the conversation, what they are in a position to perceive as true, or by virtue of whatever else they mutually know or assume. In the course of the conversation these presumptions may change. However, it cannot be changed by uttering just any sentence. For a sentence may conventionally implicate a proposition that is not already part of the common ground, and in this event conversation would be disrupted.

We have seen that the identification of the context for the interpretation of an utterance with the knowledge or beliefs shared by the speaker and hearer cannot be justified. Conversation is not always disrupted when a speaker produces an utterance whose interpretation requires the hearer to supply contextual assumptions that were not already part of her overall representation of the world. Indeed, in many cases the hearer comes to have these contextual assumptions only as a result of interpreting the utterance. Nevertheless it does seem to be the case that by producing an utterance of a particular form a speaker may give a guarantee not just that the information she is offering is relevant, but that it is relevant in a specific context – or, in other words, that it is relevant in a particular way. Moreover, a speaker who indicates that she expects her utterance to be interpreted against a particular set of background assumptions signals her commitment to their truth. This means that if, as in the example given by Karttunen and Peters, a speaker indicates that the following discourse is to be interpreted as relevant against a set of contextual assumptions whose truth is controversial, conversation will be disrupted. Each of the two most relevant responses to (9) would signal the acceptance of the proposition in (10):

(9) Did you forget to ring Harry?
(10) I (the hearer of (9)) intended to ring Harry.

As Karttunen and Peters say, in order to disassociate herself from (10) the hearer must digress from answering the question.

The proposal, then, is that conventional implicatures should be analysed as linguistically specified constraints on contexts. But why should there be such devices? And how do we reconcile their existence with the claim outlined in chapter 2 that all utterance interpretation is constrained by a single general principle? In fact, it is this general principle that provides an explanation for the notion of conventional implicature. Recall that according to the Principle of Relevance the hearer is entitled to interpret every utterance in the smallest and most accessible context that manifestly yields adequate contextual effects. This means that if the speaker wishes to constrain the interpretation that the hearer recovers, then she must constrain her choice of context by making the necessary assumptions immediately accessible, thus ensuring their selection at minimal processing cost. That is, she must direct the hearer to a particular set of assumptions.

Given this, the cases of implicature considered in the final section of chapter 2 might seem rather paradoxical. For there is a sense in which in producing an indirect answer, a speaker constrains the hearer's interpretation by increasing her processing costs. For instance, the indirect answer given by Tom in (11) entails more processing than the direct one would have. Yet Tom may exploit the hearer's assumption that his reply is consistent with the Principle of Relevance in order to convey the information in (12):

(11) Pen: is Susan rich?
Tom: ALL lawyers are rich.
(12) Susan is rich.

In order to preserve her assumption that Tom was aiming at optimal relevance the hearer must supply the contextual premise in (13):

(13) Susan is a lawyer.

The fact that Tom has forced the hearer to access this assumption and to derive (12) as a contextual implication may be explained if the extra processing effort these steps require is offset by the recovery of contextual implications that would not have been derivable from the direct answer. In other words, the extra information he gives must have some relevance of its own.

In contrast, since conventional implicatures do not contribute to the propositional content of the utterances that contain them, their use could not be said to add any extra information. Their sole function is to guide the interpretation process by specifying certain properties of context and contextual effects. In a relevance-based framework, where the aim is to minimize processing costs, the use of such expressions is to be expected.

In this chapter I shall show how this approach can be applied to a number of non-truth-conditional phenomena, including some of the ones discussed by Karttunen. However, for the most part I shall be pursuing the line of enquiry suggested by Grice's example in (1), by considering the role of those expressions that are used to express inferential connections between propositions in discourse.

3.2 Premises and Conclusions: Evidence and Justification

As we have seen, Grice suggested that the use of *therefore* in (1) (repeated below) indicates that the fact of his being brave is a consequence of his being an Englishman:

(1) He is an Englishman; he is, therefore, brave.

The problem with this account is that the term *consequence* can refer either to a causal effect or to a logical conclusion. Did Grice mean that *therefore* indicates that his bravery was caused by his being an Englishman, or did he mean that it indicates that the fact that he is an Englishman is evidence for the belief that he is brave? In other words, does *therefore* indicate a causal relation between states of affairs or an inferential relation between propositions?

The distinction I have in mind here is reflected in the ambiguity of utterances containing the subordinating conjunction *because*. In (14) the clause introduced by *because* can be interpreted either as stating the cause of Tom's departure or as providing evidence for the belief that Tom has left:

(14) Tom has left because his wife isn't here.

Notice that it is only in the former interpretation that the meaning of *because* contributes towards the truth conditions of the utterance. In the second (non-causal) interpretation the speaker could have spoken truly even if the fact in the first clause is not proven by the fact in the second. Moreover, it is only in this first interpretation that *because* can fall under the scope of logical operators such as negation. For example, (15) can be interpreted either as stating the cause of Tom's failure to leave or as denying that the absence of Tom's wife caused his departure – that is, either as (16) or (17). However, when the *because* is interpreted as introducing the evidence for a belief (15) can only receive the reading in (18):

(15) Tom hasn't left because his wife isn't here.
(16) It is because Tom's wife isn't here that he (Tom) hasn't left.
(17) It isn't because Tom's wife isn't here that he (Tom) left.
(18) It is because his wife isn't here that I believe that Tom hasn't left.

It will be recognized that when a *because*-clause introduces evidence for the belief expressed in the first clause, the two clauses are generally separated by tone-group boundary. That is, the *because*-clause is bracketed off intonationally. The suggestion is that this tone-group boundary serves as an intonational clue as to the scope of logical operators.[3]

Returning now to Grice's example in (1), it will be noticed that *therefore* is bracketed off intonationally from the rest of the utterance – that is, it is parenthetical. Given this, we should not expect to find it falling under the scope of sentential operators. And, indeed, Kempson's (1975) argument that Grice's non-truth-conditional analysis of *therefore* is mistaken does not appeal to the parenthetical use of *therefore* exemplified in (1), but involves the use of *therefore* in a co-ordinate structure where it can receive focal stress. Thus she argues (p. 214) that in (19) the suggestion that Mary's bruises were caused by Bill's hitting her can be embedded within the scope of the conditional so that the truth value of the sentence depends on whether the connection actually holds:

(19) If Bill hit Mary and therefore she was covered in bruises, she will have won her suit for damages.

Kempson claims that if it is true that Bill hit Mary and that Mary was covered in bruises, but false that Mary's bruises were caused by Bill's hitting her, then even if it is false that Mary won her suit for damages, (19) will be true.

It is difficult to assess this argument. As it stands, it rests on the (rather dubious) assumption that the natural-language connective *if . . . then* has the meaning of the material-implication sign in formal logic. It seems that Kempson should have made the different, and much stronger, point that if the two conjuncts of the antecedent are true, but the causal connection expressed by *therefore* does not hold, then even if it is true that Mary won her suit for damages, (19) will be false.

No matter how we interpret the conditional, it is clear that Kempson takes *therefore* to be expressing a causal connection between two states of affairs (Bill's hitting Mary and her being covered in bruises), and not a deductive connection between two propositions (cf. Kempson 1975: 145). In other words, she takes it to mean 'as a result of that' or 'because of that'. On this

interpretation, it seems, *therefore* can contribute to the truth conditions of the utterance that contains it. However, equally, in this use it must be distinguished from Grice's (parenthetical) *therefore*. This suggests that we could accommodate Kempson's example by saying that *therefore* is ambiguous between a truth-conditional causal sense and a non-truth-conditional inferential sense.

At this point it might be observed that everything I have said about *therefore* could be said about *so*. Like *therefore*, *so* expresses a relation of consequence, and can be embedded within the scope of logical operators when used in a conjoined utterance. However, even if we do allow a causal sense of *so* in addition to its purely inferential sense – a possibility which will be questioned in section 3.3 – there are cases in which *so* is evidently not expressing a relation of causal consequence and yet still falls under the scope of a logical operator. I shall postpone the discussion of these cases until chapter 4, when we examine the interpretation of conjoined utterances in more detail. Meanwhile I shall simply note that the possibility of *so* and *therefore* falling under the scope of logical operators arises only when they are used in a conjoined utterance, a use which, as we shall see, cannot be analysed in terms of the way in which these words constrain the relevance of the proposition they introduce.

Let us, then, restrict our attention to the non-conjoined cases such as the one discussed by Grice. The point is that, as it is used in Grice's example, *therefore* expresses not a causal connection, but an inferential one. (1) does not mean (20). Nor does (21) mean (22).[4]

(20) He is an Englishman. Because of that he is brave.
(21) Tom's wife is not here. Therefore he has left.
(22) Tom's wife is not here. Because of that he has left.

This conclusion receives additional support from the fact that *therefore* is not always used to introduce a proposition that is a factual description of the world:

(23) She's your teacher. Therefore, respect her.
(24) She's your teacher. Therefore, you must respect her.

In (23) the first proposition is being asserted not as evidence for a belief, but as a reason for carrying out a command. In (24) *therefore* does not preface a command; however, the modal auxiliary can be given a deontic interpretation in which it signals that the speaker is recommending that the hearer respect her. In both cases, then, *therefore* is being used where the speaker wishes to provide evidence for the desirability of a certain state of affairs. This suggests that deduction may play a role in assessing the extent to which a new item of information affects the strength of a non-factual assumption.[5] However, the point here is that in neither example could *therefore* be construed as expressing a causal connection between the states of affairs represented by the propositions expressed.

Notice that the question we are discussing here, of whether *therefore* expresses a relation of logical consequence or of causal effect, simply does not arise in the case of *after all*, as it is used in the following:

(25) He is brave. He is, after all, an Englishman.
(26) Tom has left. After all, his wife is not here.

The proposition introduced by *after all* can only be interpreted as providing evidence for the truth of the first proposition. That is, (26) would never receive the interpretation in (27):

(27) It is because Tom's wife is not here that he has left.

It will, of course, be recognized that although both *therefore* and *after all* are used to express a logical or deductive relationship, they are not used to express the same logical relationship: whereas *therefore* introduces a conclusion (the consequence), *after all* introduces a premise (the evidence). In other words, *after all* expresses the same logical relation as *because* in the use discussed above. However, this is not the only difference between *therefore* and *after all*. *After all* is not simply used to indicate that the proposition it introduces is meant to be interpreted as evidence for the proposition in the previous clause. In contrast with *because*, it also suggests that the speaker has grounds for thinking that the proposition it introduces is already accessible to the hearer.

How can a proposition that is already contained in the hearer's belief set be relevant? Notice that although the information that Tom's wife is not here may be contained in some part of the hearer's memory, it may not necessarily be contained in the most

immediately accessible context. In particular, it may not be contained in the context made accessible by the speaker's use of *after all* – that is, the context in which the logical relation between the two propositions in the sequence can be established. But this is the context in which the proposition that Tom's wife is not here is relevant: the hearer has been instructed to establish its relevance by establishing the connection. In general, a hearer who is presented with a proposition which is neither contained in, nor logically implied by, the most immediately accessible (or initial) context, but is contained in some larger accessible context, will understand the utterance as a reminder. A reminder is relevant only in the contexts that do not contain the information it expresses.[6] However, as we have seen, the proposition introduced by *after all* in (26) is more than a reminder – or, at least it is a very special type of reminder. For the hearer is given a specific instruction as to the way in which it is to be interpreted as relevant.

It will be recognized that the smallest context in which the proposition introduced by *after all* in (26) can be interpreted as a premise for the deduction of the proposition in the first clause is the one in (28):

(28) If Tom's wife is not here, then he (Tom) has left.

Similarly, it will be recognized that in order to establish the connection expressed by *therefore* in Grice's example in (1), the hearer will supply the additional contextual premise in (29):

(29) All Englishmen are brave.

Indeed, in all the cases mentioned so far it is impossible for the hearer to establish the required connection unless he supplies further premises from the context.

Now, it will be recalled that inference rules are either analytic, taking only one proposition as input, or synthetic, taking more than one proposition as input. On the basis of the observation just made, we might want to say that in general *therefore* is used to introduce a proposition that is derived as output to a synthetic inference rule, and that *after all* is used to introduce a proposition that is part of the input to a synthetic inference rule. However, there seems to be a subtle difference in the extent to which this generalization holds. For instance, it seems that the use of *therefore* in (30) is more acceptable than the use of *after all* in (31):

(30) Tom is a bachelor. Therefore he's not married.
(31) Tom is not married. After all he's a bachelor.

Admittedly, the utterance in (30) is the sort of utterance one would only make in classes in semantics or logic. Nevertheless, it is difficult to imagine a (serious) speaker producing (31) in these situations.

The explanation of this discrepancy follows from the point made earlier: a speaker's use of *after all* indicates that she has grounds for thinking that although the proposition it introduces is contained in some part of the hearer's accessible memory, it is not contained in, or implied by, the initial context. But in this case the initial context – that is, the propositions most recently processed – does imply the proposition in question, which means that it cannot be interpreted as relevant in the specified context.

At this point, it may be objected that *after all* can in fact be used to introduce a proposition which is a premise in an analytic inference. Consider, for example, the utterance in (32):

(32) You can't divide 997 by anything other than itself. After all it's a prime number.

The idea here is that once you have the concept of a prime number, you have its logical entry and hence the proposition in the first clause. However, recall that the distinction between logical and encyclopedic entries is based not on the claim that there is a fundamental difference between two types of truth, but rather on the claim that information must be representable in two different forms if successful communication is to take place. According to this view, information represented at one time in the logical entry for a concept could at some other time be represented propositionally. This means that a proposition that is an analytic implication from a purely logical point of view could in practice be derived by the application of a synthetic inference rule. Given this view, one might speculate that the difference between (31) and (32) is due to the fact that a hearer is more likely to represent the logical entry for prime number propositionally than she is the logical entry for *bachelor*.

But surely we need to explain not just why (31) is odd, but also why (30) is not odd. How could a speaker who presents the conclusion to an analytic inference, having just presented the premise, be aiming at optimal relevance? The point here is that while it may

be the case that Tom's being not married logically implies his being a bachelor, it is not necessarily the case that the hearer will know this is the conclusion she is meant to draw on this occasion. There are all sorts of conclusions she might have derived, including the analytic implication that Tom is male. This suggests that, in contrast with *after all*, the effect of *therefore* is to constrain the relevance of the proposition in the preceding clause (by indicating that it is relevant as a premise for the deduction of the proposition *therefore* introduces).

It remains to explain, then, how a proposition marked as a premise in an inference is relevant. What is the purpose of getting the hearer to establish an inferential connection between two propositions? In section 3.1 we saw that a logical-deduction system provides hearers with a means for automatically computing the effects of adding a new proposition to an existing set of assumptions. In particular, we saw that an inference system is not just used for deriving new information which is added to the hearer's existing representation of the world, but also for establishing the extent to which new information provides further evidence for an existing assumption. The point was that assumptions about the world come with varying degrees of strength, and that logical computations assign strength to conclusions on the basis of the strength of the premises from which they are derived. Thus if the hearer has immediate access to a context in which a newly presented proposition licenses the deduction of the proposition that has just been processed, then she would have grounds for thinking that it was offered as evidence or proof. Equally, a hearer who has immediate access to a context in which a newly presented proposition licenses the deduction of a proposition which the speaker subsequently presents will have grounds for thinking it is relevant as evidence for that second proposition. Notice that the extent to which a hearer regards a proposition as proven will, in both cases, depend not just on the strength of the premise actually offered, but also on the strength of any additional premises supplied from the context. For, as we have seen, the strength of a conclusion can only be as great as the strength of the weakest premise. This means, for example, that while the hearer of (1) might accept the hearer's word that he is an Englishman, she might not accept this as conclusive proof that he is brave: it all depends on the degree to which

she accepts the proposition in (29) as a factual description of the world.

The suggestion, then, is that a speaker indicates that the hearer is expected to establish an inferential connection between two propositions for the purpose of showing that the proposition marked as premise is relevant as evidence or justification for the other. However, as we shall see in the following section, this is not the only purpose that may be served by this inferential connection.

3.3 Premises and Conclusions: Implication and Explanation

The discussion so far has been restricted to examples in which a word expresses an inferential connection between two propositions presented by a single speaker. There is, of course, no reason why two speakers may not share responsibility for presenting an argument or proof so that one presents a premise and the other the conclusion. However, in such cases the second speaker will be understood to be continuing the first speaker's utterance rather than responding to it. In contrast, consider now the dialogue in (33):

(33) A: You take the first turning on the left.
B: So I don't go past the hospital.

Although B's use of *so* indicates that the proposition it introduces is a conclusion derived from the proposition expressed by A's utterance, neither speaker will be understood to be participating in the presentation of an argument or proof. Rather B's utterance is relevant as confirmation of (or as a request for confirmation of) the relevance of A's utterance. That is, she is confirming that the proposition her utterance expresses is indeed a contextual implication of A's utterance.

Sometimes, of course, a hearer may not be able to see the relevance of a remark at all. The typical response in such cases is simply 'So?' or 'so what?', but not, I believe, 'Therefore?'. The relative unacceptability of *therefore* in such situations may be attributable to stylistic considerations rather than to a difference in meaning between *so* and *therefore*. Nevertheless, the fact remains that a speaker's use of a word that indicates that the proposition it

introduces is a conclusion is not always associated with proof or justification. In some cases, as in (33), it may be used in the course of checking the relevance of a remark. In others, for example (34), it may be used to draw attention to an implication of a previous utterance.

(34) A: Tom's car isn't here.
B: So he decided not to come after all.

There are all sorts of reasons for drawing the hearer's attention to a specific contextual implication of a remark. It may be that the speaker has grounds for thinking that the hearer does not have the contextual resources to derive the implication on her own initiative. Or it may be that the speaker believes that the hearer has derived the implication, but has not attached sufficient importance to it. Whatever the reason, however, it is clear that a speaker will only draw attention to a particular implication if she believes that this will itself yield some contextual effect. In (34) the use of sentence-final *after all* (which is to be distinguished from the *after all* discussed in section 3.2) indicates what this effect is. Thus B may be taken to be drawing attention to the implication of the absence of Tom's car for some previous conversation in which the likelihood of Tom's presence has been discussed.

It is not necessarily the case, of course, that a speaker may only draw attention to, or confirm, the effect of another speaker's remark. In (35), for instance, the speaker may be understood to be musing on the implications of her first remark:

(35) There's $5 in my wallet. So I didn't spend all the money then.

Nor is it the case that a speaker may only draw attention to the implications of a proposition that has been deliberately communicated. For example, a speaker who has just seen someone arrive home laden with parcels might produce the utterance in (36):

(36) So you've spent all your money.

Clearly, *so* is not being used here to indicate that the proposition it introduces is proven by what has just been said. More generally, a proposition may provide proof only if it itself comes with a

guarantee of factuality, and, as we have seen, only communicated propositions come with any sort of guarantee of relevance. Here, then, the speaker is simply drawing attention to a proposition which she has derived from her observation of a given state of affairs or event.

This is not to say that the use of *so* is never associated with proof. Thus in (37) *so* might be regarded as a more informal means of conveying the inferential connection expressed by *therefore*:

(37) This suggestion can be cancelled without contradiction. So it is an implicature.

On the other hand, the fact that *so* may be used either in the course of an argument or in the course of specifying the relevance of some previous utterance does not necessarily mean that it is ambiguous between a justificatory meaning and a non-justificatory one. Its meaning in both uses is the same: an instruction to interpret the proposition it introduces as a logical consequence. The fact that this instruction may serve either a justificatory or a non-justificatory purpose follows from the fact that a logical deduction system may be used either for establishing the extent to which newly presented information provides evidence for an existing assumption or for deriving new information which is added to the hearer's existing representation of the world. The purpose served by the inferential connection expressed by *so* on a given occasion will be determined by the context and the Principle of Relevance.

At this point it might be objected that if *so* is not ambiguous between a justificatory and a non-justificatory sense, it is ambiguous between an inferential and a non-inferential or causal sense.[7] That is, it may be claimed that although in the examples already discussed *so* introduces a logical consequence, in examples such as (38) and (39) it introduces a causal effect.

(38) Tom ate the condemned meat. So he fell ill.
(39) I was bored. So I left.

One may attempt to accommodate such examples by conflating the notions of causal effect and deductive consequence so that relationships perceived to hold between states of affairs are explained in the same terms as relationships established between representations of states of affairs. However, this seems to

undermine the very distinction that allows us to talk of propositions as representations of the external world. On the other hand, saying that *so* has a causal meaning in addition to the inferential meaning just discussed seems to be contrary to the Gricean spirit of the pragmatic framework I have adopted in this study.

If *so* does express a causal connection, then we should be able to substitute it for expressions like *because of that* or *as a result* without change of meaning or acceptability. However, it seems that there are utterances where the substitution of *so* for these expressions yields an unacceptable or different result. Compare, for example, the sequence in (40) with the one in (41):

(40) Tom ate the condemned meat. Because of that/As a result he fell ill thirteen hours later.

(41) Tom ate the condemned meat. So he fell ill thirteen hours later.

Whereas (41) would be acceptable only to a hearer who assumed that anyone who ate the condemned meat would fall ill thirteen hours later, the acceptability of (40) does not depend on such a context. This suggests that whereas expressions like *as a result* are used to assert a causal connection, the use of *so* assumes it, or, in other words, that whereas the causal connection is part of the propositional content of (40), in (41) it is a contextual assumption that the hearer is expected to supply in order to establish the inferential connection expressed by *so*. More generally, it seems that the causal flavour of utterances like (38) and (39) is due to the fact that the inferential connection the hearer is expected to establish depends on a contextual premise expressing a generalization about a causal link between events of the type represented in the first proposition and those of the type represented in the second.

Causal connections also figure in explanations. Thus, for example, the proposition introduced by the expression *you see* in (42) is an explanation for the event described in the first proposition, only given the assumption that there is a causal connection between ice and slipping:

(42) She slipped. You see, the road was icy.

Clearly, not all explanations appeal to such causal connections. One would not want to say, for example, that the speaker of (43) is assuming a causal connection between Mondays and going out:

(43) She's not here. You see, it's Monday.

Rather, the hearer is expected to supply an assumption such as the one in (44):

(44) She goes out every Monday.

Notice that this assumption together with the proposition introduced by *you see* licenses the deduction of the first proposition of the sequence. The suggestion, then, is that a proposition introduced by *you see* is relevant as an explanation for an event/state of affairs in virtue of the fact that it is a premise for the deduction of the proposition describing that event/state of affairs. It will be recognized that in this respect *you see* plays a role identical to that played by (sentence-initial) *after all*. Both expressions introduce a premise. However, whereas the premise introduced by *after all* is suggested to be an assumption already held by the hearer, *you see* introduces entirely 'new' information. As we saw in section 3.2, a proposition already assumed by the hearer may be relevant as a reminder. In the case of utterances with *after all* the speaker reminds the hearer of an assumption in order to justify a proposition she has just presented, or, in other words to raise its factuality. In contrast, a speaker uses *you see* to indicate that the proposition it introduces is relevant as an explanation for the proposition she has just presented.There is no suggestion that the hearer does not believe this proposition or does not believe it with sufficient certainty. The presentation of this proposition has simply raised the question 'Why?' or perhaps 'How?'.

The point here is that if I come upon an event, for example the event of someone slipping, then it is possible that I can see other things that enable me to derive the reason for its occurrence. I may, on the other hand, need to be told, in which case the presentation of the second proposition of the sequence of (43) will be relevant as an answer 'Why did she slip?' If I am simply told that someone slipped, then it is much less likely that I shall be able to supply the explanation for myself and the speaker will have stronger grounds for presenting me with it. That is, she will have

good reason for thinking that the second proposition of (43) is relevant as an answer to a question raised by the presentation of the first.

According to this account, it is the presentation of the first proposition of a sequence like (43) that provides the speaker with grounds for thinking that the second proposition is relevant. The need for an explanation is created by the presentation of the first proposition. Similarly, one might say that the relevance of a proposition introduced by *after all* is created by the presentation of the preceding proposition. In this case the speaker presents the proposition only because she has already presented a proposition which requires justification. Obviously, the need to provide either explanation or justification may not be anticipated in advance, and in this respect utterances prefaced by *you see* and *after all* may be regarded as afterthoughts or repairs.

It might be thought that the same point could be made about utterances involving *so*. And, indeed, in some cases it seems that a speaker will present a proposition as a conclusion simply in order to specify the relevance of a previously presented proposition, or, in other words, simply to meet the need created by the hearer's apparent inability to establish the relevance of the previous remark. Since this need may not be anticipated in advance, utterances prefaced by *so* may also be regarded as afterthoughts. More importantly, in such cases the fact that the speaker has presented a proposition Q in a sequence *P. So Q* need not indicate anything more than a belief that the hearer wants a specification of the relevance of P.

In other cases, however, the fact that a speaker has drawn attention to a particular contextual implication of an earlier remark is evidence for her belief that this contextual implication has its own relevance – that is, relevance over and above the fact that it is a contextual implication of a proposition that has just been expressed. In these cases, the sequence *P. So Q* is to be taken as an indication of the speaker's belief that both the original proposition (P) and its implication (Q) are relevant to the hearer and that the hearer is not expected to derive Q from P on her own initiative. It is difficult to see how this may not be anticipated in advance, and hence, in these cases, utterances prefaced by *so* cannot be thought of as afterthoughts.

In chapter 4 I shall show that the distinction that is emerging here may help to account for the fact that *so*, but not *after all* or *you see*, may express an inferential connection within a conjoined utterance. However, before we consider the interpretation of conjoined utterances let us continue with our survey of inferential connections in discourse by turning to the analysis of *moreover*, *furthermore*, and *also*.

3.4 Additional Premises

In this section we shall consider the role of an expression which, although it does not connect propositions as input and output to an inference rule, must nevertheless be analysed in terms of logical consequence. In (45) the proposition in the second sentence is neither derived from the proposition in the first sentence nor a premise for the deduction of the proposition:

(45) He is an Englishman; he is, moreover, brave.

Nevertheless, it is evident that these propositions must be understood as being connected through inference and that the fact they must be understood in this way is due to the meaning of *moreover*. More specifically, *moreover* indicates that these propositions are related as premises.

Now, to say that two propositions, P and Q, are connected as premises is to say that they are premises for the same conclusion, C. However, this is compatible with two different types of relationship: First, one could be saying that P and Q are combined as premises in the same argument. In this case, the effect of *moreover* is to indicate that C cannot be obtained from P alone. Alternatively, one could be saying that P and Q are premises in different arguments, both of which have C as conclusion, in which case the effect of *moreover* is to indicate that there is a conclusion which can be derived from P which can also be derived from Q. Whereas in the first case P and Q are jointly necessary for the deduction of C, in the second case Q will be understood as additional support for a proposition which is assumed to have been derived from P.

In fact, it seems that *moreover* can be used in both cases. Consider first (46):

(46) Susan has bought a tracksuit. Moreover, she had a salad for lunch.

If we assume that the second proposition in (46) is being presented as additional evidence or support for whatever the first proposition is evidence for, then we must assume that the hearer is expected to construct an argument of the form (47)(a) and then construct an argument of the form (47)(b):

(47)(a)
P
. . . additional
. . . premises
C

(47)(b)
Q
. . .
. . .
C

Now, there are all sorts of conclusions that the hearer might have derived from the first proposition of (46) (that is, *P*) which she could not have been expected to derive from the second proposition (i.e. *Q*). For example, the hearer might have accessed the contextual assumption in (48)(a) and derived the conclusion (48)(b):

(48)(a) If Susan has bought a tracksuit, she probably intends to go jogging.

(b) Susan probably intends to go jogging.

Clearly, no speaker aiming at optimal relevance could have expected the hearer to derive (48)(b) from the second proposition of (46).

This suggests that *moreover* indicates that the hearer is expected either to process the first proposition in a different context or to process it further. In either case the context that she accesses for the first proposition and the context she accesses for the second proposition must yield the same conclusion. The hearer could meet this requirement by accessing (49)(a) for the interpretation of the first proposition and (49)(b) for the interpretation of the second:

(49)(a) If Susan has bought a tracksuit, then she intends to lose weight.

(b) If Susan ate salad for lunch, then she intends to lose weight.

Combined with the first proposition of (46), (49)(a) yields the conclusion in (49)(c):

(49)(c) Susan intends to lose weight.

But this conclusion is also obtained when (49)(b) is combined with the second proposition of (46). In this way *moreover* constrains the hearer's choice of context not only for the interpretation of the proposition it introduces, but also for the interpretation of the proposition in the preceding sentence.

What is the point of providing the premise for an argument whose conclusion can be obtained from a proposition which has already been presented? Recall that in processing information a hearer aims to acquire not just more beliefs about the world, but also better-evidenced beliefs. As we saw in chapter 2, logical deduction plays a central role in assessing the extent to which a newly presented proposition confirms an existing assumption by virtue of the fact that a proposition derived in an inference inherits its strength from the premises used to derive it. When a conclusion is derived from two separate sets of premises {*P*} and {*Q*}, then it will inherit a degree of strength from the union of {*P*} and {*Q*} greater than the one it inherits from either {*P*} or {*Q*} alone. In other words, by presenting a proposition that is a premise for the deduction of a conclusion that she had already conveyed, the speaker is able to increase the strength of her guarantee of its factuality.

Let us now consider an utterance which consists of just the first sentence of (46). (We shall call this utterance (46)(a)):

(46)(a) Susan has bought a tracksuit.

While the speaker of (46)(a) can be regarded as having guaranteed the factuality of the proposition that she has expressed, she has not guaranteed the factuality of any proposition that the hearer might derive from it, for example, the proposition in (48)(b) or even (49)(c). In Sperber and Wilson's terminology this proposition is either recovered entirely on the hearer's initiative or only weakly implicated. However, in uttering the second sentence of (46)

(repeated below as (46)(b)), the speaker indicates explicitly that she is offering the proposition it expresses as evidence for the factuality of some proposition *C* and hence that she is offering a guarantee of the factuality of *C*:

(46)(b) Moreover, she had salad for lunch.

As we have seen, this proposition *C* must be one that can be derived from the proposition in the preceding sentence (that is, from (46)(a)). But this means that the effect of (46)(b) is to constrain the interpretation of (46)(a) so that it must be interpreted as evidence for *C*. Thus, whether the hearer had derived (49)(c) from (46)(a) on her own initiative or not, its strength is increased by the fact that (46)(b) is offered as additional evidence for its factuality.

In this case *moreover* is being used to indicate that the utterance it prefaces carries a guarantee of factuality which would not have been carried by the utterance of the preceding sentence alone. The hearer may have recovered the proposition in (49)(c) on her own initiative. What the proposition introduced by *moreover* adds is a licence to assign it a value that would not have been licensed by the utterance of the first sentence. However, it seems that *moreover* may also be used to indicate that the proposition it introduces entitles the hearer to derive a conclusion that she could not have derived at all on the basis of the proposition in the first sentence alone. Consider, for example, the utterance in (50):

(50) Abdul bought a pork chop. Moreover, it was for himself.

The conclusions that the hearer derives from the first proposition will depend on what contextual assumptions she brings to bear. For example, in a context which included (51) the hearer might conclude that Abdul spent a substantial amount of money:

(51) Pork is expensive.

However, the speaker's use of *moreover* indicates that she expects the hearer to process the first proposition of (51) in a context which includes the second proposition. Such a context might be the one in (52):

(52)(a) Muslim dietary law forbids the eating of pork.

(b) Abdul is a Muslim.
(c) Abdul bought the pork for himself.
(= proposition introduced by *moreover*)

This context allows the hearer to derive the proposition in (52)(d):

(52)(d) Abdul has broken the Muslim dietary law.

The suggestion seems to be that whereas the hearer might have been expected to supply the contextual premises in (52)(a) and (b), she was not expected to supply the premise in (52)(c). However, without this premise the derivation of (52)(d) would have been impossible. In other words, in uttering the second sentence of (50) the speaker has licensed the hearer to derive a conclusion which she assumes would have been otherwise unobtainable.
Consider a further example:

(53) Tom's here. Moreover, he's bought his guitar.

Once again the speaker has used *moreover* to indicate that the proposition it introduces is a premise which is to be combined with the proposition in the first sentence and hence that she is licensing the derivation of a conclusion that would have otherwise been unobtainable. This means that the hearer is expected to perform an inference whose premises include the proposition in the first sentence of (53) and the proposition in the second sentence, together with some other contextual assumptions which can be easily accessed. Now, a hearer could derive a conclusion from the premises in (53) at relatively little cost by accessing a conditional premise of the kind in (54):

(54) If Tom is here and he has brought his guitar, then we can have some music.

In many accounts of inferencing it would be claimed that given a premise of the kind in (54) and the premises in (53), the hearer will derive the conclusion (55) in the following way:

(i) If Tom is here and he has brought his guitar, then we can have some music. (Contextual premise)
(ii) Tom is here. (First proposition of (53))
(iii) Tom has brought his guitar. (Second proposition of (53))

(iv) Tom is here and he has brought his guitar. (*and*-introduction)

---

(55) We can have some music. (*Modus ponendo ponens*)

However, this inference involves the rule of *and*-introduction which according to the arguments outlined in chapter 2, is not part of the deduction system used by hearers in utterance interpretation.

Sperber and Wilson (1986) have shown that, contrary to the views in much of the psychological literature, the rules of *and*-introduction and *or*-introduction are not necessary to account for such examples, since there are psychologically motivated derivations that do not use them. In particular, they point out that any standard logic permits the use of the derived rule in (56):

(56) *conjunctive modus ponens*
Input: If (P and Q) then R
P
Output: If Q then R

Sperber and Wilson argue that in a relevance-based framework the use of this rule is not just possible, but also highly expected, for it allows inferences to be drawn on the basis of a single conjunct rather than requiring the whole conjunctive antecedent to be supplied. In this way it increases the chance of newly presented information interacting with the hearer's existing representation of the world to enable new conclusions to be drawn.

On the basis of this, I shall assume that the conclusion in (55) will be derived in the following way:

(i) If Tom is here and he has brought his guitar, then we can have some music.
(ii) Tom is here.
(iii) If Tom has brought his guitar, we can have some music. (*Conjunctive modus ponens*)
(iv) Tom has brought his guitar.

---

(55) We can have some music. (*Modus ponendo ponens*)

The main point here, however, is that the proposition introduced by *moreover* is presented as a premise without which the derivation of (55) would not have been possible, or, in other words, that it is the addition of this proposition that entitles the hearer to deduce (55) as a contextual implication.

I have presented (46) and (53) as examples of two different uses of *moreover*. Whereas in (53) *moreover* indicates that the propositions it connects are combined as premises in the same argument, in (46) it indicates that the two propositions are connected by the fact that they are premises for the same conclusion. However, it is clear that there is a common thread running through the accounts of both examples: in both types of case *moreover* indicates that it is the addition of the proposition it introduces that entitles the hearer to process the proposition in the first clause in the way she does. That is, in both cases *moreover* constrains the hearer's choice of context so that the proposition in the first sentence is interpreted as evidence for a specific conclusion.

It will have been recognized that this discussion has been restricted to only one of the expressions of English used to introduce additional evidence. It should be clear that the analyses I have presented for utterances containing *moreover* apply equally to the interpretation of utterances containing *furthermore*. More interestingly, however, all the examples of *moreover* considered here could be replaced by *also*:

(57)(a) Susan has bought a tracksuit. Also she had salad for lunch.
(b) Tom's here. Also he's brought his guitar.

Also is not, of course, always used in this sentence-initial (and parenthetical) position. However, when it is moved from this position, as in (58) and (59) an extra element may be added to the interpretation process:

(58) Susan bought a chicken and also a chop.
(59) Susan bought a chicken. Ben also bought one.

As we shall see in section 3.5, this element derives from the possibility of *also* interacting with focus.

3.5 Interaction with Focus: 'also'

I concluded section 3.4 by mentioning that although *also* could be used with the equivalent meaning as *moreover*, it has another use,

illustrated in (58) and (59) (repeated below), in which an extra element is added to the interpretation process.

(58) Susan bought a chicken and also a chop.
(59) Susan bought a chicken. Ben also bought one.

The difference between these two uses of *also* is reflected in the fact that (60) (b), but not (60) (a) or (c), implies that Ben bought a chicken. (Let the capitalized constituent be the unique focus.)

(60)(a) Susan bought a chicken. Ben bought a CHOP.
(b) Susan bought a chicken. Ben also bought a CHOP.
Susan bought a chicken. Moreover/Also, Ben bought a CHOP.

As we shall see, this can be explained by the fact that in contrast with *moreover* and parenthetical/utterance initial *also*, the effect of *also* as it is used in (58) and (59) varies according to which constituent is interpreted as focus. In other words, an account of the role of *also* in these examples must be linked to an account of the way that focal structure affects interpretation.

Before we consider the details of such an account it should be noted that what I have to say about *also* in this use should apply to certain other expressions – notably *too* and *either*. However, my aim here is not so much to give an exhaustive account of these types of expressions as to show how the effect of an inferential constraint on relevance may be amplified through its interaction with focus. This section could, then, be regarded as a suggestion for further research.[8]

It might be thought that in this focal use *also* simply means 'and'. For it would seem that in an utterance such as (58) nothing is implied beyond the assertion that each of the conjuncts is true. On the other hand, if *also* simply indicates that both conjuncts of a conjoined utterance are true, then we ought to be able to insert it in any conjoined utterance without change of acceptability or meaning. The oddity of (61)(a) and (b) suggests that this is not the case:

(61)(a) Ben put his pen to paper and also wrote.
(b) She dropped the glass and it also broke.

We might explain the oddity of these examples by saying that the effect of *also* is to cancel their temporal and causal connotations.

Similarly, the addition of *also* in (62) (b) seems to cancel the contrastive connotations of (62)(a):[9]

(62)(a) She lives on a farm and he lives in a skyscraper.
(b) She lives on a farm and he also lives in a skyscraper.

These examples show that *also* makes explicit a relation which cannot be defined in terms of the truth-functional meaning of *and*. As I have said above, we might use the term *addition* to refer to this relation. The problem is that whereas to say that one event took place after another or that one event caused another is clearly to say something other than that both these events took place, it is difficult to see what more is meant by saying that one event took place in addition to another.

The difficulty, then, is that the truth conditions of a conjoined utterance with *also* (for example (58)) are identical to those of a conjoined utterance without *also*. Whatever *also* contributes to the interpretation of these utterances is not truth-conditional, and the relation of addition is not an aspect of their truth-conditional content. This is, of course, consistent with the characterization of *also* as a semantic constraint on relevance.

However, as I have warned, in order to understand the sense in which *also* constrains the relevance of the utterances that contain it, we need to go beyond the roles of such expressions as *after all*, *so*, etc., and consider a different aspect of the way in which the pragmatic interpretation of utterances may be linguistically determined.

A considerable amount of attention has been given in the linguistic and pragmatic literature to the fact that utterances may convey the same information in different ways. For example, while both (63) and (64) entail the propositions in (65), the speaker of (63) will be felt to have taken (65)(b) rather than (65)(a) for granted, while the speaker of (64) will be understood as having taken (65)(a), but not (65)(b) for granted:

(63) It was Susan who bought the chicken.
(64) It was the chicken that Susan bought.
(65)(a) Susan bought something.
(b) Someone bought the chicken.

This type of phenomenon has been variously described in terms of the distinction between given and new information, topic and comment, theme and rheme, and presupposition and focus. The difficulties associated with these distinctions have been discussed

fully by Sperber and Wilson (1986).[10] Here it suffices to say that there are two main problems. First, it is difficult to give adequate criteria for identifying information as, for example, old or as topic. Second, none of the distinctions is accompanied by an adequate account of the role that each type of information plays in utterance interpretation.

Sperber and Wilson analyse the difference between utterances like (63) and (64) in terms of the way they are interpreted as relevant. (For the present purposes it will be sufficient to refer to the version of their account given in Wilson and Sperber, 1979.) Intuitively, whereas in (63) the point of the utterance lies in the identity of the person who bought the chicken, in (64) it lies in the identity of the object Susan bought. Now, it will be recalled that the relevance of a newly presented piece of information depends on the contextual assumptions the hearer supplies as premises for the deduction of its consequences. This means that since each of (63) and (64) expresses exactly the same proposition – (they are true under the same conditions) – the difference in their impact must be due to the fact that this proposition is processed in a different context in each case. The question is, why should this be so?

Wilson and Sperber draw our attention to a particular subset of the entailments of a given proposition, namely, its grammatically specified entailments, or, in other words, the entailments obtained by substituting a logical variable for a syntactic constituent. If we represent these variables by the English proforms *someone*, *something*, *do something*, etc., then we can say that the grammatically specified entailments of (66) include the ones in (67):

(66) Susan bought a chicken.
(67)(a) Someone bought a chicken.
(b) Susan bought something.
(c) Susan did something to a chicken.
(d) Susan did something.

Wilson and Sperber's first main point is that although the speaker of (66) will have committed herself to the truth of all of the entailments in (67), she will not expect all of them to play the same role in establishing the relevance of the utterance. In their terms,

the contextual effects of the utterance will depend on which of these propositions is taken as background. The background does not itself contain the point of the utterance, but rather determines the context in which the relevance of the utterance is established. Thus, for example, to take (67)(a) as background of (66) is to say that the hearer is expected to process the utterance in a context in which it is relevant to know the identity of the person who bought a chicken, while to take (67)(b) as background is to say that the utterance is to be processed in a context in which it is relevant to know what Susan bought. The point of the utterance is the information that has to be added to the background to obtain the proposition as a whole.

The second point made by Wilson and Sperber is that a speaker may use linguistic devices to indicate the pragmatically most important entailments of her utterance. We have already seen in (63) and (64) how clefting serves to highlight a constituent so that it is regarded as containing the point of the utterance. In contrast, a speaker who presents information in an appositive relative clause, as in (68), will indicate that it is not part of the main point of utterance:

(68) Susan, who is having a dinner party, bought a chicken.

However, as they suggest, such devices affect pragmatic interpretation not directly, but through their interaction with stress assignment. It is well known that contrastive stress can affect the pragmatic interpretation of utterances. For example, the heavy stress on bought in (69) indicates that the background is the entailment in (67)(c) and hence that the point of the utterance lies in what Susan did with the chicken:

(69) Susan BOUGHT a chicken.

On the other hand, it is equally well known that normal stress is ambivalent in its contribution to utterance interpretation since it does not determine a unique interpretation. Thus, while one can say that the background of an utterance is that entailment obtained by substituting a variable for the constituent stress is used to highlight or focus, a speaker who puts focal stress on *chicken* in (66) may be using it to focus any of the constituents that contain it – that is, the NP *a chicken*, the VP *bought a chicken*, or the S

Susan bought a chicken. Clearly, some account has to be given of how the actual focus is chosen from a range of possible foci. However, the concern of this section is not with stress itself, but with a particular linguistic device which interacts with stress to produce a specific contextual effect.

We have seen that in (69) the contrastive stress on *bought* draws our attention to the fact that the proposition in (67)(c) is being taken for granted and hence that the point of the utterance lies in what Susan did with a chicken. Compare this utterance with the one in (70):

(70) Susan also BOUGHT a chicken.

The speaker of (70) will be understood as having taken for granted not just the proposition in (67)(c), but also the one in (71);

(71) Susan did something else with a chicken.

However, although (71) is clearly assumed by the speaker of (70), it is not a background entailment in the same way that (67)(c) is the background of (69). The hearer is not expected to process (70) in a context in which it is relevant to know what, in addition to buying one, Susan did with a chicken. On the other hand, it is not clear that she is expected to process it simply in a context in which it is relevant to know what Susan did with a chicken on this occasion.

To underline this point further let us compare (72) and (73):

(72) SUSAN bought a chicken.
(73) SUSAN also bought a chicken.

Whereas the speaker of (72) will be felt to have taken just (67)(a) for granted, the speaker of (73) will be understood as having assumed this proposition together with the one in (74):

(74) Someone else bought a chicken.

However, it does not seem we can say that (73) has as its background the conjunction of (67)(a) and (74): the speaker does not think it relevant to know who else bought a chicken and to know who bought one on this occasion. On the other hand, it is clear that the relevance of the utterance does not lie simply in the fact that it was Susan who bought a chicken.

The point is, of course, that no speaker ever produces an utterance like (70) without already having produced – or at least without someone having already produced – an utterance that can be interpreted as providing the value for the variable in (71). That is, (70) is appropriate only in the context of an utterance such as the one in (75):

(75) Susan stole a chicken.

This means that the background of the utterance is the conjunction of (67)(c) and (71), but that the value of the variable in (71) is already in the context. In other words, the hearer is expected to process (70), not in a context in which it is relevant to know what Susan did with a chicken, but rather in one in which it is relevant to know what Susan did with a chicken in addition to whatever she was asserted to have done with a chicken in the previous utterance.

Similarly, (73) is appropriate only in the context of an utterance that supplies the value for the variable in (74) – for example, the one in (76):

(76) Tom bought a chicken.

In this situation the relevance of (73) will be understood to lie in who, in addition to Tom, bought a chicken.

The difference between (70) and (73) is parallel to the difference between (69) and (72): in each case the difference in stress between the two utterances is an indication that they should be interpreted as having a different background, or, in other words, that they are relevant in different contexts. However, whereas (69) and (72) have as their background the grammatically specified entailment obtained by substituting a variable for the focused constituent and are processed in contexts in which it is relevant to know the value of that variable, (70) and (73) are processed in contexts in which it is relevant to know the value of the variable substituted for the focused constituent in addition to the value given to it in the preceding clause.[11]

Why should a speaker indicate that it is relevant to know that one event occurred in addition to another? What, for example, would we gain from the utterance in (77)?

(77) Tom's bought a chicken. Ben has also bought chicken.

in (78):

(78) We won't be short of chicken tonight.

However, notice that the strength of this conclusion derives from the fact that each of the propositions in (77) provides independent evidence for it. The proposition in (78) may have been derived from the first proposition of (77) alone, but at a strength lower than the strength it receives when given independent confirmation by the presentation of the second proposition. That is, it is relevant to know that chicken was bought by Ben in addition to someone else (Tom) because Ben's purchase provides additional (and hence stronger) confirmation for any conclusion that the hearer might have derived from the fact of Tom's purchase alone. In other words, the function of *also* in this example is the same as that of *moreover*. What the parallelism in focus adds is a more specific indication of the parallelism in the inferential processes involved.

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4 Relevance and Coherence: Discourse Connectives

4.1 Coherence in Discourse

Chapter 3 ended with the discussion of an expression whose role as a semantic constraint on relevance is explained in terms of its interaction with such focusing devices as stress. In this chapter I wish to return to the expressions that constrain the interpretation of the utterances that contain them by virtue of the inferential connections they express – *therefore, so, after all, moreover* – and to consider their role as connectives more carefully. In particular, I shall compare the connections they express with the connections recovered from certain utterances with *and*. In this way I hope to be able to characterize the exact sense in which expressions like *after all* and *moreover* may be regarded as discourse connectives.

Much recent work on the interpretation of discourse has adopted the view that the way hearers recover messages from utterances is governed by their assumption that in discourse, contiguous linguistic strings are meant to be interpreted as being connected, or, in other words, that discourse is coherent. These connections are not always made explicit: the hearer is expected to fill them in on the basis of her background or contextual assumptions. Indeed, unless she can recognize that the segments of the discourse cohere in some way, she will not be able to recover any kind of message and the discourse will be ill-formed.

The idea that the elements of a well-formed discourse are bound together by principles of connectivity or textual unity is fundamental to the work of a number of authors – for example, van Dijk (1972), Halliday and Hasan (1976), and Hobbs (1978; 1979).