

## CHAPTER 3

### THE PRAGMATICS OF 'AND' - CONJUNCTION

'... and he saw this big red balloon tied to a lamppost, so and then he climbed up the lamppost and he untied the red balloon, and then he climbed down the lamppost and started walking down the stairs again and so he was walking and walking and walking .... and then [///] I can't remember how the whole thing goes ...'

(Narrative told by child, age 5;9, from Hicks (1990), CHILDES database)

... and men do not think they know a thing till they have grasped the "why" of it ...

(Aristotle, *Physics II*, 3)

#### 3.1 Preserving the truth-functionality of 'and'

The focus of this chapter is the meaning of the word 'and' and the range of relations between states of affairs that can be communicated by conjoining two sentences with 'and'. Our starting point is Grice's (1981) brief but influential remarks about the following two examples of 'and'-conjunction:

- (1) a. He took off his boots and got into bed.
- b. He got into bed and took off his boots.
- c.  $P \ \& \ Q = Q \ \& \ P$

Grice wanted to provide an alternative to the view that, in order to account for the different ways in which the two utterances in (1a) and (1b) would normally be meant and understood, the word 'and' needs to be assigned a sense additional to its logical truth-functional sense. His suggestion was that the understanding of (1a) and (1b) as communicating different sequential orderings of the actions described is to be attributed to his manner maxim of orderliness; in other words, the understanding is arrived at entirely pragmatically and the semantics of the word 'and' does not diverge from that of the logical conjunction operator. At the level of what is said, the two utterances are equivalent, truth-conditionally identical like their logical counterparts shown in (1c). He took the communicated temporal ordering to constitute a conversational implicature (a *generalised* implicature), and most neo-Gricean pragmatists concur with this view.<sup>1</sup>

Given the linguistic underdeterminacy thesis, this is, of course, not the only option available: the pragmatically inferred relation could be a case of an enrichment at the level of the proposition expressed (the truth-conditional content). Consider the following pertinent remarks by Mark Richard, who favours a Gricean implicature account: ‘We do not come equipped with a meter that reliably distinguishes between semantic and pragmatic implications. Examples like that concerning ‘and’ and temporal order help make the point that what seems for all the world like a truth-conditional implication may turn out not to be one’. I shall argue, to the contrary, that this IS an instance of a truth-conditional implication, albeit one that is pragmatically derived. Richard’s first statement, though, is surely right, whether on his own construal of semantics as truth-conditional content, or on the linguistically encoded meaning construal. As language users, we do not have reliable intuitions about which aspects of utterance meaning are linguistically encoded, which are pragmatic contributions to the truth-conditional content of our utterances and which are independent implicated propositions. The lack of any metre to distinguish between truth-conditional implications (whether linguistically encoded or pragmatically derived) and implicatures is what has led to the formulation of various criteria and tests to help make this distinction, as discussed in the previous chapter (section 2.6).

The importance of the Gricean suggestion is that it opens up the way to a pragmatic account. Grice saw himself as countering a suggestion of Strawson (1952) that there is a divergence between the ordinary use or meaning of the word ‘and’ and the conjunction operator, ‘&’, of the propositional calculus, and that the word ‘and’ is in fact ambiguous. It is not clear to me that it is correct to attribute to Strawson a semantic ambiguity position, at least not if what is meant by this is that the lexical form ‘and’ encodes more than a single meaning/sense. As suggested in the previous chapter, it is equally possible that Strawson, along with some of the other ordinary-language philosophers, was putting forward a context-sensitive view of saying. If this is right, then the pragmatic position that I advocate is a working out of that idea, using theoretical tools not available to Strawson. This is how Recanati (1994) has interpreted the pragmatic enrichment account.

The pragmatic story, whether in terms of implicature or pragmatic enrichment of the proposition expressed, needs to encompass a much wider range of conjunctive relations than just that of temporal sequence (see discussions in Carston 1993, 1994a). Here is a representative set of examples:

- (2) a. It’s summer in England and it’s winter in New Zealand.
- b. He handed her the scalpel and she made the incision.
- c. We spent the day in town and went to Harrods.
- d. She shot him in the head and he died instantly.
- e. He left her and she took to the bottle.
- f. He was shortsighted and mistook her for a hatstand.
- g. She went to the yoga class and found it very calming.
- h. I forgot to hide the cake and the children consumed it.

Apart from (2a), these are all cases of so-called asymmetric or directional conjunction (see Schmerling, 1975);<sup>2</sup> that is, their meaning is crucially affected by the order of the conjuncts. For instance, reversing the order of the conjuncts in (2d) would convey the idea that she shot him in the head after he had died, despite the fact that this runs counter to normal assumptions about how events of shooting and dying connect up. The pragmatic account takes the linguistic

semantics of ‘and’ to be identical to that of the truth-functional logical conjunction operator (though this is questioned later in section 3.7.2), so that, as far as their logical forms are concerned, all the examples above are symmetric.

One of the strongest arguments in favour of this very minimal semantics for ‘and’, with the temporal and consequential relations accounted for pragmatically, is that any semantic account would have to allow for the encoding of a huge range of such relations. Let’s look a bit more closely at the examples in (2). (2b) is the standard sort of case of a sequential relation between the two events described in the conjuncts, paraphrasable by ‘and then’, but the temporal relation most readily understood to hold for (2c) is one of containment, the going to Harrods having taken place during the time spent in town. As regards consequence relations, (2d), (2e) and (2h) can all be understood as involving some such connection, though each case is different: the event in the second conjunct of (2d) is directly caused by the one in the first conjunct (her shooting him is sufficient for his dying); in (2e) the event mentioned in the second conjunct is certainly understood as a reaction to the one mentioned first, though the cause-effect relation here is fairly indirect and requires a mesh of further conditions; in (2h) there is no temptation to talk of a causal relation: the leaving out of the cake is a factor enabling the children to get hold of it and devour it, but it is far from a sufficient condition for their doing so. Furthermore, while a relation of consequence between the conjuncts standardly involves a relation of temporal sequence between them, as in (2b) and (2d), it need not always do so: in (2f) his mistaking her for a hatstand is a causal consequence of his shortsightedness but the example cannot be paraphrased by ‘and then’; similarly, in (2g) the release of tension is a result of the yoga class but is achieved as the class progresses not after it. And so on and on; the more examples one considers, the more fine-grained variations among the connections one finds. This suggests that the appropriate explanation is a pragmatic one, according to which communicators are calling on their general knowledge of how states and events in the world connect with each other.

Another argument frequently proffered against a rich semantics for ‘and’ and in favour of the pragmatic account is that the very same temporal and consequence relations arise when the ‘and’ is removed. That is, the non-conjunctive<sup>3</sup> (or asyndetic, in traditional terms) counterparts of these examples are understood as essentially identical to them with regard to the information they convey about the relations between the facts described by the individual sentences. (See Posner 1980, Schiffrin 1986, Carston 1988/91, 1990/95, Wilson & Sperber 1993b/98.)

- (3)     a.       It’s summer in England. It’s winter in New Zealand.  
           b.       He handed her the scalpel. She made the incision.  
           c.       We spent the day in town. We went to Harrods.  
           etc.

So, (3b) communicates that he handed her the scalpel before she made the incision, just as (2b) does. Similar observations can be made regarding all the other asyndetic counterparts of the explicitly conjoined examples, indicating that these relations are not a matter of the meaning of ‘and’ itself.<sup>4</sup>

While these parallels appear to be incontestable, there are other examples, which show that, though it may be the case that all the conjunct relations are equally well captured by non-conjunctive counterparts, the converse is not the case. That is, there are relations that can be communicated by the use of juxtaposed sentences but which do not seem to be communicated

when these same sentences are conjoined by ‘and’. As far as I know, the first person to point this out was Herb Clark (as noted by Gazdar, 1979, 44), using the following example:

- (4)     a.     John broke his leg. He tripped and fell.  
       b.     John broke his leg and he tripped and fell.

The point is that in (4a) the information communicated by the second sentence can be (and most often is) understood as providing an explanation of the event described by the first sentence. So the tripping and falling, though presented second, is understood as having preceded and caused the leg-breaking, presented first. This ‘backward’ relation between the events does not seem to be an accessible interpretation when the two sentences are conjoined as in (4b) (though this assessment will receive qualification in later sections).

In fact, this is just one of the relations or connections between two juxtaposed sentences which are precluded when they are conjoined with ‘and’. Bar-Lev & Palacas (1980) have pointed out the extent of this phenomenon and the variety of its manifestations. They propose a semantic explanation for why ‘and’ appears not to allow certain sorts of connections between its conjuncts, thereby rejecting the bare truth-functional semantics for ‘and’. The data they consider are of central importance in the semantic-pragmatic analysis of conjunction and their analysis, though not right in my view, captures an insight, which, when recast, leads to a satisfying account of the differences between the conjoined and non-conjoined cases given above. I will look at their account in section 3.3.

This issue has already been addressed to some extent within the relevance-theoretic framework, by Diane Blakemore, in the course of her work on discourse connectives (Blakemore 1987, 1992, 1997a). Her analysis explains the non-equivalence entirely in pragmatic terms and, crucially, involves the concept of a pragmatic processing unit, that is, an utterance, or subutterance, which is interpreted as a whole in accordance with the relevance-based comprehension strategy. In attempting to develop an account which embraces a wider array of cases than hers, I am very much building on her work. Essentially, the account involves coupling some simple observations about the linguistic properties of ‘and’-conjunction together with the cognitive and pragmatic insights of relevance theory.

## **3.2 A relevance-based pragmatics of conjunction**

### **3.2.1 Cognitive scripts and accessibility**

One of the most important factors contributing to the effort side of the optimal relevance definition is the accessing of contextual assumptions. They are either retrieved ready-made from memory or constructed from partially articulated assumption schemas in memory together with new information provided by the utterance. Though not a great deal is known about the organisation of memory, it is widely assumed in cognitive studies that frequently experienced actions, events or processes and sequences of these are stored in chunks, as frames or scripts. Some of these may be relatively specific, such as the sequence of walking out of one’s front door and locking it, of going to a restaurant for a meal, or of two people having an argument; these are representations of stereotypical scenarios which are clearly acquired through experience.<sup>5</sup> Others may be of a more skeletal or abstract nature, such as that humans generally perform actions with a purpose in mind, or that events in the world are usually causally connected to other events;

these may have a more fundamental cognitive status, perhaps originating as part of innately given domain-specific capacities (for instance, ‘theory of mind’, ‘naive physics’, etc).

So when we hear (2b), for instance, we are given immediate access to a bundle of stereotypical material of this sort, a surgical operation script, involving scalpels and the making of incisions, and, perhaps, a more general abstract schema about one person handing something to the other for that other to do something with it, etc. On the basis of this readily accessible information, it is instantly assumed that the making of the incision followed the handing over of the scalpel and the scalpel was used for making the incision; that is, the proposition expressed is enriched along the lines of (5a). This is by no means a logical necessity: the enrichment in (5b) is perfectly conceivable and internally consistent. In fact, it would probably lead to a greater array of cognitive effects than (5a), precisely because of its more unusual nature.

- (5)    a.        He handed her the scalpel and a second or two later she made the incision with that scalpel.
- b.        He handed her the scalpel and simultaneously she made the incision with her pocketknife.

The relevance-theoretic comprehension strategy (see section 2.3.4) provides an explanation for why the stereotypical interpretation in (5a) is the one chosen. The hearer constructs the most accessible interpretation (that is, the stereotypical one) and, provided that it satisfies his expectation of relevance, he stops there.<sup>6</sup> Abstracted from any narrative or conversational setting as the example is here, the default assumption is that this highly accessible interpretation does give rise to the expected range of effects, so the hearer doesn’t go on to consider other less accessible interpretive hypotheses. Furthermore, the other logically possible interpretations, such as (5b), are not just less accessible, but massively much less accessible, and no particular one of them is more obviously available than dozens of others, so that even a hearer dissatisfied with (5a) could have no idea which hypothesis to try next. It follows that a speaker who wanted to communicate something other than (5a) would not be able to do so by uttering (5b) and, if functioning rationally, would not attempt to do so.<sup>7</sup>

The relevance-based account of the cause-consequence relations in (2d) and (2e) is essentially the same: we all have fairly frequently encountered and used scripts of shootings and dyings, and of human relationships in which one person leaves the other with a range of unhappy repercussions. In addition, we have more general assumption schemas concerning cause-effect relations in the physical world, cause-effect relations between human mental states, between mental states/events and behaviour, and between events in the world and mental events. The consideration of such connections appears to be a major feature of our cognitive life as we attempt to understand the world, in particular each other, and function adequately within it. So the assumption of a causal relation between the events described by the conjuncts comes readily to mind and, standardly, gives an adequate flow of effects.

### 3.2.2 Enrichment or implicature?

As Richard (1990) says (quoted in the previous section), there are strong pretheoretic intuitions that these conjunct relations are truth-conditional implications, that is, that they contribute to the proposition expressed by utterances of ‘and’-conjuncts. According to Recanati’s Availability Principle, such intuitions should be respected in deciding whether a

pragmatic inference contributes to ‘what is said’ (the proposition expressed) or is an implicature. The functional independence criterion and the operator-scope embedding tests, discussed in section 2.6, converge on the same conclusion. The embedding tests have been put to extensive use in the existing relevance-theoretic literature to support a pragmatic enrichment account of these relations (see Carston 1988/91, 1993; Wilson & Sperber 1993b/98). A few examples should suffice to make the point here; ‘and’-conjunctions differing only in the order of their conjuncts are embedded in the scope of logical operators in the examples in (6): disjunction, a comparative and negation, respectively:

- (6)
- a. Either he left her and she took to the bottle or she took to the bottle and he left her.
  - b. It’s better to do your PhD and get a job than to get a job and do your PhD.
  - c. He didn’t go to a bank and steal some money; he stole some money and went to a bank.

It can be seen that the Gricean treatment of the temporal and consequential connections as implicatures makes the false predictions that the proposition expressed by (6a) is redundantly repetitive, of the form ‘Either P or P’, and that (6b) is a nonsensical comparative, of the form ‘It is better to P than to P’, and that (6c) is self-contradictory, of the form ‘Not P; P’. In fact, the two conjunctions in each example differ from one another in respect of the temporal and causal orderings understood to hold between the events described; that is, these relations make a crucial contribution to the proposition expressed by (hence to the truth conditions of) utterances of these sentences.

The same prediction follows from a relevance-theoretic derivation, only a part of which I give here (see fuller derivations in section 2.3.4). In the following exchange, understanding Bob’s response requires a cause-consequence enrichment of the logical form of his utterance (along with various other pragmatic contributions), in order for the implicated conclusion to be inferentially warranted:

- (8)
- Context: Bob has broken his leg.
- Ann: Are you entitled to accident compensation?
- Bob: Well, a manhole was left uncovered and I fell in.
- a. *Highly accessible contextual assumption:*  
If you fall in a hole because of a manhole cover being left off, you are entitled to accident compensation.
  - b. *Proposition expressed (basic explicature):*  
A manhole was left uncovered and as a result Bob fell in the hole.
  - c. *Implicated conclusion:*  
Bob is entitled to accident compensation.

The explicit content of Bob’s utterance is pragmatically adjusted in the process of recovering an indirect (implicated) answer to Ann’s yes-no question. Treating (8b) as an implicature would simply leave the alleged minimal proposition expressed, of the form ‘P & Q’, with no role to play: it would not function as a premise in the derivation of the implicature in (8c), which together with other implicated conclusions, meets the expectation of relevance, and it would not

enter into any of Ann's subsequent inferential activity, since the logically stronger (8b) subsumes any inferential role it could play. The conclusion is, then, that the relational inferences are pragmatic aspects of explicit content rather than implicatures. The process involved is one of free enrichment rather than saturation; I assume there is no case for a hidden indexical in 'and'-conjunctions linguistically mandating the pragmatic contribution.

In the next section, I'll consider (and reject) several attempts to account for the various interpretations semantically, that is, in terms of the encoded meaning of 'and'. One of these leads into a fairly extensive discussion of why certain 'backwards' relations (temporal, causal and other) cannot arise when the sentences are conjoined with 'and', although they do arise in the interpretation of merely juxtaposed sentences.

### 3.3 The semantic alternatives

Strong semantic accounts include the ambiguity view and the single rich lexical entry idea of Cohen (1971). According to the latter view, the sense of 'and' consists of a set of features, including temporal sequence and cause-consequence. To accommodate the fact that not all these features are understood on every use of a conjunction, he says that features may be selectively pragmatically cancelled in particular contexts. For instance, understanding the statement in (2a) about the seasons in two parts of the world would involve cancellation of both the temporal and causal features. He claims that, unlike the semantic ambiguity position, his is as much in line with Modified Occam's Razor (MOR) as Grice's logical 'and', since it involves a single sense for 'and'.

I have given a range of arguments against both the ambiguity and the complex sense analyses of 'and' in the references cited above, and will mention only a few briefly here. First, Cohen's use of MOR is rather sophisticated; if such a principle is worth observing at all, then it can surely be further modified along the following line: 'Semantic features are not to be multiplied beyond necessity', in which case his rich multi-featured lexical entry falls foul of it as much as a semantic ambiguity analysis does. Second, as with the ambiguity analysis, features proliferate as one looks at more and more cases, like those in (2), which show that quite a number of different temporal and consequence relations can arise. This creates a serious problem for Cohen's idea, which the ambiguity account does not face: some of these features are at odds with each other, for instance, 'temporal sequence', 'temporal overlap' and 'simultaneity'. It follows that his set of features must be internally inconsistent, which surely precludes them from constituting a single lexical sense. Finally, the process of contextual feature cancellation is not explained. Can any feature be cancelled or are some inevitably preserved (the truth-functional ones, for instance)? Is cancellation effected by a communicative maxim or principle of some sort or is it a simple consistency mechanism? If the latter, what prevents cancellation of one of the conjuncts itself when it is at odds with a contextual assumption ('not P' may be contextually salient to the hearer while he is processing an utterance of 'P and Q')? I take it that this idea of a single rich sense for 'and' cannot be maintained, and move on now to another semantic account.

Bar-Lev & Palacas (1980, 139-40) (henceforth B-L & P) consider first a set of data which are essentially variants of the Clark case, given in (4) above:

- (9) a. Max didn't go to school; he got sick.
- b.  $\neq$  Max didn't go to school and he got sick.

- (10) a. Max fell asleep; he was tired.
- b.  $\neq$  Max fell asleep and he was tired.
- (11) a. Max fell; he slipped on a banana peel.
- b.  $\neq$  Max fell and he slipped on a banana peel.

In all these cases, a very natural interpretation of the (a) member of each pair, the non-conjunctive variant, is that the second clause gives a reason for the first, which is, therefore, in some relation of consequence to the second clause. So the clause presented second is understood as temporally prior to the one presented first.<sup>8</sup> Later in the paper they give a further range of examples, which show that there are other restrictions on the set of possible relations between states of affairs presented conjunctively, restrictions that don't affect those presented non-conjunctively. One of their examples is given in (12):

- (12) a. Wars are breaking out all over; Champaign and Urbana have begun having border skirmishes.
- b. Wars are breaking out all over and Champaign and Urbana have begun having border skirmishes.

This extension to the data will be considered later; it raises some quite new issues, I think. For the moment, I'll concentrate on the temporal/consequential examples in (2)-(4) and (9)-(11), which motivate B-L&P's analysis. They briefly point out that pragmatic maxims concerning the order in which we communicate material, such as Grice's manner maxim of orderliness, and Schmerling's principle of pragmatic priority, according to which we lay the groundwork for what we are going to say next (see Schmerling 1975, 229), make the false prediction that the pairs of examples above are equivalent. This is a point that is worth emphasising, as the setting up of maxims or principles of discourse which stipulate that the order of utterance must match the chronology of the events described is widespread. Here are two more manifestations of the tendency:

- A. **Submaxim of Time:** In so far as possible, make the order of saying reflect the order of events.  
(This is seen as just one dimension of a more general conversational maxim which enjoins a speaker to 'make her sayings "mirror" the world'.)  
(Harnish, 1976, 359)
- B. **Temporal Discourse Interpretation Principle:** Given a sequence of sentences  $S_1, \dots, S_n$  to be interpreted as a narrative discourse, the reference time of each sentence  $S_i$  is interpreted to be: (a) a time consistent with the definite time adverbials in  $S_i$ , if any, (b) otherwise, a time which immediately follows the reference time of the previous sentence  $S_{i-1}$ .  
(Dowty, 1986, 45)

These too predict that the temporal interpretation of the pairs of examples in (4) and (9)-(11) should be the same, contrary to fact. It looks pretty clear that attempts in this direction should be abandoned. (See Carston 1990/95 and, especially, Wilson & Sperber 1993b/98, who mount a strong case against such 'special-purpose sequencing rules', as they call them.)



B-L&P go on to say that, whatever the source of the meaning differences is, it cannot be to do with the order of the constituent clauses since this ordering is the same for the two members of each pair: ‘... on the contrary, the change of meaning is uniquely associated with the presence of “and”’. At this point it seems most natural to conclude that the cause of the change lies in the meaning of “and”, rather than in a discourse principle of any sort’ (1980, 140). While this is not an unreasonable conclusion to come to, it is by no means a necessary one. Note that the various discourse principles of information ordering actually get it right for the conjunctions (at least those so far considered). Where they fall down is in accounting for the relations that arise in the non-conjoined cases. So, what these observations most clearly entail is that these maxims should be dropped (assuming we don’t want discourse principles whose domain is restricted to a subset of cases of linguistically encoded conjunction), and some other pragmatic principle brought into play, one which allows for the broader range of relations possible for the juxtaposed sentences, since these patently cannot be explained semantically. The communicative principle of relevance is such a principle. Then, in addition, it is necessary to account for the difference between the conjunctive cases and their non-conjunctive counterparts, which may be explainable in terms of the semantics of the lexical item ‘and’, as B-L&P claim. In fact, nothing in their observations up to this point excludes the possibility of a wholly pragmatic explanation, but it may be instructive to look at their semantic account.

On the basis of the examples (9)-(11), they propose that the semantics of ‘and’ is not the simple truth-functional semantics of the logical conjunction operator, but that it has a crucial feature specifying a relation of ‘semantic command’ between the two conjuncts:

- (13) The first conjunct, S’, semantically commands the second conjunct, S”; that is, S” is not prior to S’ (chronologically or causally).

They claim that there is an analogy here with a syntactic concept of command, familiar from generative grammar, according to which A commands B as long as B is not higher (in a syntactic tree) than A. They don’t develop this analogy, which remains impressionistic at best. In fact, syntactic theory over the past couple of decades has employed various notions of structural command, of which the most durable and useful has proved to be c-command, which bears little, if any, relation to the concept of ‘semantic command’ as given in (13). So I doubt that it’s worth pursuing the possibility of an analogy between these different notions of ‘command’.

Turning to the main point now, which is the proposed semantics for ‘and’, that S” is not chronologically or causally prior to S’. This is an immediately appealing characterisation in that it seems to encompass the whole spectrum of temporal and consequential relationships which the conjunctions in examples (2a)-(2h) and (9b)-(11b) can have and to exclude those that they cannot have. It covers the full range of temporal relations - simultaneity, overlap, containment, forward sequencing - and excludes backward sequencing; similarly, it allows for the full range of relations of consequence which the second clause may be in with the first, and excludes the first from being a consequence of the second. Furthermore, it is clear that this analysis leaves a considerable amount of appropriate work for pragmatics, in determining, for any particular case of a conjunctive utterance, precisely which, if any, temporal and consequential connection is to be taken to pertain. The relevance-based pragmatic analysis given in section 3.2 would go through, without any obvious changes being required, taking as its input the ‘semantic command’ characterisation of conjunction. Finally, this semantics for ‘and’ avoids a range of problems which other attempts to give a semantic account have fallen prey to. As mentioned

above, the semantic ambiguity account and Cohen's univocal multi-featured semantic account wind up having to proliferate a potentially infinite number of senses or features in their bid to account for the full set of subtly different temporal and consequential relations that different examples communicate. Worse still, some of these senses or features contradict others, for instance, simultaneity and sequentiality. So B-L&P's account seems to me to be the most promising of the semantic options on offer.

However, it turns out not to be satisfactory. For one thing, the difference between examples like (12a) and (12b) does not seem to be accounted for; I'll look at this case, together with a further range of data, in section 3.5.2. The account raises some other worries. First, it is not clear what the intended semantics of 'and' is, whether it has, say, three features, one specifying the truth of the first conjunct, another specifying the truth of the second conjunct, and the third stipulating the semantic command relation between the two, or whether it just has the semantic command feature with the truth features somehow derived from or implicit in it. Second, although it allows for the full range of temporal and consequential relations that can occur, what it seems to come down to is a clever way of finding a single descriptive statement which covers the set of examples. That is, there is nothing explanatory about it. Why should the 'backward' relations be excluded by the presence of 'and' but not by the mere juxtaposition of sentences? This might seem to be an unreasonable sort of question to pose. An explanatoriness requirement is a tall order in this realm, akin to asking for an explanation of why the word 'bread' means bread; lexical semantic facts simply aren't explainable, 'l'arbitraire du signe', as Saussure put it. However, in this particular case, I believe, a more explanatory account is possible, though, certainly, the focus won't be semantic. A deeper account will emerge from consideration of the syntactic differences between conjunctions and juxtapositions, and some basic facts about human cognitive processes.

A more substantial worry is that this semantic analysis is riven by counterexamples, cases which should make it apparent that the attempt to account for the restrictions on conjunctive interpretation in semantic terms is doomed to perpetual inadequacy, no matter how artfully done. The sort of counterexample which springs to mind, if one takes B-L&P at face value, is the following:

- (14) a. She lives now in Crouch End and she lived in Muswell Hill three years ago.
- b. The boy is dead and he was shot by the soldiers.

The state of affairs recounted in the second conjunct of (14a) is clearly chronologically prior to that expressed in the first one. The event described by the second conjunct of (14b) is causally implicated in the state of affairs described by the first one. In a charitable spirit, one might allow that semantic indications in the conjuncts themselves overrule the semantic command requirement on 'and', so 'used to live' explicitly places the second mentioned state of affairs before the 'lives now' state of affairs; similarly, for the sequence encoded by 'was shot' and 'is dead'. All the same, if this semantic command requirement really is an intrinsic feature of the *semantics* of 'and' we would expect some sort of oddness or tension in these examples, if not a downright contradiction, between the dictates of semantic command, which preclude the temporal priority of the second conjunct, on the one hand, and the temporal order imposed by the explicitly given linguistic content in the conjuncts, on the other. I assume that intuitions are agreed that there is nothing contradictory or even mildly uneasy about these examples.

B-L&P (1980, 142-43) discuss an example of Gazdar's (1979, 69-71) which raises the same problem in a different form:

- (15) If the old king has died of a heart attack and a republic has been formed, and the latter event has caused the former, then Tom will be content.

Leaving aside the argument between Cohen (1971) and Gazdar (1979) which prompted the example, my point, again, is that on the semantic command analysis, the three conjunct antecedent of this conditional should have a contradictory feel, since we are being told both that a cause-consequence relation between the second conjunct and the first is precluded and, then, that just such a relation holds. In discussing this example, B-L&P say 'The two original conjuncts "float" with respect to each other, no semantic relationship implied, or not implied ... in (15) ['and'] implies logical conjunction alone, with the third conjunct spelling out an otherwise unavailable meaning.' (1980, 143) This seems right, but I don't see how it is compatible with the semantic command feature which, contrary to what this quotation says, does indeed imply (in fact encode) that a particular relationship is excluded. There is a marked inconsistency here which may indicate that B-L&P are working with a notion of semantic command which differs from the one they actually formulate. I am unable to work out what it could be. In trying to find a reformulation that would bring the notion into line with their discussion of the Gazdar example, I was driven back to an ambiguity analysis which involves listing all the possible relations between the conjuncts and which, of course, includes, as one sense, the truth-functional definition, which is the one needed to explain this example. I take it as established that the ambiguity analysis is out of the running and conclude that examples (14) and (15) provide strong support for the pragmatic account.

In fact, the information that imposes the 'backward' temporal and causal relations does not have to be encoded in the conjuncts, as the following examples indicate:

- (16) a. She did her BA in London and she did her A-levels at home in Leeds.  
b. The plant died and it was Mary who forgot to water it.

It is not the semantic content of the conjuncts that dictates the chronology, since the tenses in the conjuncts in each case are the same, but general knowledge about the order in which people usually do A-levels and BAs in our society and about the life and death of houseplants. So what's going on here is that pragmatically derived information is overriding the alleged semantics. This runs counter to everyone's conception of the nature of semantically-decoded versus pragmatically-inferred content. The fundamental characteristic of pragmatically derived meaning is its cancellability or suspendability (see Grice 1967/89b, Horn 1972, among many others), while semantic content is invariant, context-independent and uncancellable.<sup>9</sup>

Even more interesting in this regard, and with much broader implications than these cases, is the following example, due to Larry Horn:

- (17) A: Did John break the vase?  
B: Well, the vase broke and he dropped it.

Here the event of dropping the vase is readily understood as having preceded and caused the breaking of the vase, although this belies the order of the conjuncts. Now, there is certainly

something more going on here than in the cases previously considered. The speaker is avoiding explicitly expressing the proposition that John broke the vase, the utterance of which would be briefer and more direct than the one she has produced. What she communicates explicitly is two of the crucial premises the hearer needs in order to arrive at the conclusion that John did break the vase. She is making the hearer do some extra inferential work in deriving an answer to his question and so, in relevance-theoretic terms, the utterance should convey effects that the more direct utterance would not, which indeed seems to be the case. There is more to be said about how this example works and I'll take it up again later in the chapter. The important point here is that whatever the effects this response has, in the context of the preceding question, they are not effects derived via contradiction, contrary to what the 'semantic command' analysis entails.

As ever, there are two levels at which the inferentially derived relation between the conjuncts of this example could be established: at the level of the proposition explicitly expressed or at the level of implicature. That is, either: (1) the pragmatically enriched proposition expressed (the basic level explicature) is something along the lines of 'The vase broke as a result of John's dropping it', or: (2) the proposition expressed does not include any specification of a cause-consequence relation and, perhaps, not even any temporal ordering; the two events are simply represented as having occurred in the recent past. Then the inferred cause-consequence relation is derived as an implicature, that is, an implicated conclusion, derived deductively from the conjunctive proposition expressed together with the highly accessible general knowledge proposition that dropping a vase is very likely to cause it to break. I would opt for the second of these possibilities, but a commitment need not be made at this stage, because the point here is that, either way, there is a problem for the semantic command analysis of 'and'. Taking the first option, the proposition expressed would directly contradict the semantic content from which it is developed, since this specifies that the second conjunct cannot be causally prior to the first. There is no such contradiction and again B-L&P would have to say that a pragmatic enrichment was somehow cancelling some semantically encoded material.

Taking the second option, we have an implicature which contradicts the proposition explicitly expressed. This sort of situation *can* arise; for instance, in the case of ironical utterances, where a speaker dissociates herself from the proposition expressed and implicates an assumption or set of assumptions which contradict, or are at odds with, the semantic content of the proposition expressed. In such instances, the proposition expressed is not an explicature, in relevance-theoretic terms; that is, it is not part of what is communicated (endorsed by the speaker) but is rather a vehicle for the communication of some other assumptions (and attitudes). In Grice's terms, the speaker 'makes as if to say' something in order to implicate something else. This, however, is surely not the case with B's utterance in (17); B is no less committed to the truth of the proposition expressed than to the implicated cause-consequence relation; indeed the derivation of the latter depends on the assumed truth of the former. So the contradiction predicted by the semantic command analysis must hold between the base-level explicature of the utterance (which precludes the causal priority of the second conjunct) and the implicated conclusion that the dropping event (described in the second conjunct) caused the breaking event (described in the first conjunct). Again, there is no such contradiction and, in fact, there could not be, since this situation would involve a speaker simultaneously communicating (that is, giving her backing to), not merely expressing, two contradictory assumptions. I take this to be a *reductio ad absurdum* of the 'semantic command' analysis of 'and'.

There is nothing unique about Horn's example; with a little thought, one can come up with contextualisations which alter the supposedly fixed (semantically encoded) forward-directed temporal and causal relations of the Clark case in (4):

- (18) A: Bob wants me to get rid of these mats. He says he trips over them all the time.  
Still, I don't suppose he'll break his neck.  
B: Well, I don't know. John broke his leg and HE tripped on a Persian rug.

The same exercise can be performed for examples (9b)-(11b) (with the help of some marked intonation, probably a fall-rise, on the second conjunct). The upshot of all this is that the 'semantic command' analysis of 'and' has to be abandoned.

In the next section, I'll change tack temporarily and consider the non-conjunctive (or juxtaposed) sentence pairs, which, in their turn, have highly preferred interpretations. I'll come back in section 3.5 to the 'and'-conjunctions and give an account of why some interpretations favoured for the juxtaposed sentences are precluded from their 'and'-conjoined counterparts. This will be a wholly pragmatic account, grounded in claims about cognitive processing. Finally, the somewhat marked examples in (17) and (18), in which it seems an 'and'-conjunction does allow a backward temporal and cause-consequence relation, have to be accommodated by this pragmatic account; I return to them briefly in section 3.6.

### 3.4 Cognitive fundamentals: causality and explanation

Let's consider the interpretive possibilities for juxtaposed sentences. The second sentence in each of (4a), (9a), (10a) and (11a) is understood as providing an explanation of some sort for the state of affairs described in the first, as if answering an implicit 'why?' or 'how come?'. Recall that it's this explanatory role that the second conjunct of an 'and'-conjunction seems unable to play:

- (9) a. Max didn't go to school; he got sick.  
b. Max didn't go to school and he got sick.
- (11) a. Max fell over; he slipped on a banana skin.  
b. Max fell over and he slipped on a banana skin.

What is an explanation? What distinguishes an explanation from other types of information, such as (mere) descriptions? The standard answer to this, at least since Aristotle, is that an explanation starts with what is taken to be a correct description of a state of affairs and gives an account of what necessitated, or at least constrained, that state of affairs to be as it is. Scientific explanation aims at causal sufficiency, but more mundane conversational explanation may be satisfied with much less, with citation of possible reasons, or enabling conditions, for instance. Given a relatively broad construal of what might pass as explanatory, it does seem that the second sentence in each of (9a)-(11a) gives an explanation (cites a cause or a reason) for the state of affairs described in the first.

The prevalence of this sort of explanatory interpretation for the juxtaposed cases is made evident by an example that B-L&P mention in passing at the end of their paper:

- (19) a. Max can't read and he's a linguist.  
 b. Max can't read; he's a linguist.

The natural and immediate interpretation of the conjunction in (19a) is that there is some sort of contrast (or adversative relation) between these two facts about Max. Such an interpretation is entirely in line with our existing assumptions about linguists and the ability to read. The interesting case is (19b), where it seems that we take the information that Max is a linguist as an explanation for his inability to read. On the face of it, this is pretty surprising. It runs directly counter to the standard assumption, which would lead us to take these as contrasting properties, highly unlikely to co-occur, and there is no linguistically encoded content which could override the stereotypic assumption and force this interpretation upon us, as in 'This is *because* he is a linguist', for instance.

In section 3.1 above, I noted that the temporal and consequential relations observed for 'and'-conjunctions also arise for their non-conjoined counterparts; this is one of the points standardly proffered as evidence that the relations need not be seen as part of the semantics of 'and' itself. However, the examples in (2) and (3), used to illustrate this point, did have to be chosen rather carefully; consider the following:

- (20) a. He hit her and she screamed.  
 b. She screamed and he hit her.  
 c. He hit her. She screamed.  
 d. She screamed. He hit her.

While the forward-directed cause-consequence relation is strongly favoured in the two conjunction cases, (20a) and (20b), this is not inevitably so for the juxtaposed cases in (20c) and (20d). In both cases, the second sentence might well be taken as giving the cause or reason for the behaviour described in the first. Both the cause-consequence and the fact-explanation interpretations are compatible with common-sense assumptions about human interactions, and, without further contextualisation, neither is obviously preferable to the other. What's interesting about (19b), though, is the dominance of the fact-explanation interpretation. After all, a cause-consequence interpretation is no more implausible than the fact-explanation one; also, it would better reflect a forward temporal relation and the idea that background information is given first: 'here's a general property of Max which has had the consequence that ...'. Such a relationship can be made to seem more plausible than the fact-explanation one, by changing the example to bring it into line with prevailing assumptions about the inability to read and job prospects:

- (21) a. Max can't read and he's a street-cleaner.  
 b. Max can't read. He's a street-cleaner.  
 c. Max is a street-cleaner. He can't read.

However, this doesn't seem to make much difference to the interpretation process; while a forward cause-consequence relation is highly accessible in the conjunction case in (21a), in both (21b) (which mirrors the ordering of the conjuncts in (21a)) and (21c), the second sentence is readily taken as an explanation for the fact observed in the first.

So the (temporary) shift of focus in this section is, from a consideration of why certain relations are precluded from the interpretation of ‘and’-conjunctions, to similar considerations regarding the juxtaposed sentences and, in particular, to the dominance of the explanatory interpretation of the second one. The account of the latter will not amount to very much more than an earnest assertion that we are explanation-seeking creatures, so that, in general, when we register a new fact/assumption about the world, we look for an explanation for it. When the source of that new fact is an utterance, the speaker can assume that a further utterance on her part which supplies an explanation for it will be relevant to the addressee.

Either the world is a vast causal nexus and our mental representation system has evolved in such a way as to accurately reflect this, or, the world is not like this, being perhaps just ‘the totality of facts’, but we have, nevertheless, developed this highly effective (that is, survival-promoting), even if inaccurate, way of representing it and acting on it. However ‘it’ may really be, there is overwhelming evidence that in our striving to achieve a satisfactory understanding of events in the world we very much go in for organising our interpretations in terms of cause-consequence relations; we will cleave to implausible, unevidenced causal accounts rather than have none at all (hence God, the First Cause and *causa sui*).

Work in many areas of cognition demonstrates this. For instance, in their study of the sort of reasoning that humans employ when required to make ‘judgments under uncertainty’, Tversky & Kahneman (1982) have demonstrated the great ease with which people construct causal accounts for outcomes which they could not predict. In the field of social psychology a dominant paradigm is ‘attribution theory’ which sees humans as lay scientists attempting to infer causes (find explanations) for the effects they observe, including, crucially, the causes of particular instances of human behaviour (see Kelley 1972). Many people investigating the inferential processes involved in text comprehension, whether in AI, psychology or pragmatics, have remarked on the fundamental role of causal assumptions in understanding a text as a coherent whole rather than as a series of unrelated statements (for instance, Schank 1975, Keenan, Baillet & Brown 1984, Myers, Shinjo & Duffy 1987, Singer 1994, Noordman & Vonk 1998). There is considerable evidence that we are much better at remembering both real and fictional sequences of events that are causally connected than those that are just temporally connected (Abbott & Black 1986, 129-130).

In these various disciplines, there is extensive use of the notion of causal schemas; that is, of knowledge structures consisting of a package of propositional representations, concerning two or more states of affairs, which are explicitly represented as causally related. As discussed in section 3.2.1, we seem to have a great many stable schemas of this sort; for instance, the death from shooting scenario, the dropping and breaking of vases, etc. However, given the ease with which causal connections are imposed on novel sequences there would seem to be other less fully scripted, more flexible, causal schemas, varying in their degree of articulation and in the number and type of open slots they employ, thus allowing for the construction of new causal sequences. In the absence of established or adaptable causal schemas, the default procedure might be as general as ‘Given two states of affairs P, Q, the one hotly followed by the other, consider P as having caused Q’.

The automatic reflex-like nature of the causal-link-making mechanism in our mental life is demonstrated by work on perceptual processes. Michotte (1963) showed the irresistible tendency in humans to perceive sequences of events in terms of causal relations, even when the perceiver is fully aware that the relation between the events is incidental and the apparent causality is illusory. For example, although it is reasonable, given our knowledge of the world,

for us to believe that the collision of one billiard ball with another has caused the movement of that other, we do not actually believe that a patch of green light projected on a screen and moved along to make contact with a patch of red light causes the subsequent movement of the red light, but we nevertheless inevitably perceive it as doing so. Building on this, Rock (1983) talks of the ‘coincidence-explanation’ principle in accounting for the favoured perception of ambiguous sensory stimuli. He claims that the perceptual system prefers, wherever possible, to account for all co-occurring changes, correlated events or apparent regularities in the percept in terms of a common cause; there is an implicit aversion to unexplained or coincidental variation or regularity. He continues: ‘Temporal contiguity alone is a powerful determinant of perceived causation ... So, for example, if a loud noise occurs just as a light goes out, there is a feeling that the one has caused the other or that they are co-caused. This is a clear example of rejecting coincidence even though we “know” better.’ (Rock 1983, 137-138).<sup>10</sup>

In our understanding of human behaviour and social relations, causes and consequences are no less central and considerably more diverse. Much of our cognitive life is given over to explaining and predicting people’s actions/behaviour. Describing this activity calls for a wider array of terms than ‘cause’ and ‘effect’. On the causing side of the relation, we talk of people as having ‘reasons’, or ‘motives’ for behaving in certain ways, of their being driven, forced, induced, seduced, tempted, enabled, allowed, etc, by others or by circumstances, to act in certain ways; on the effect side we talk of consequences, results, outcomes, achievements, side-effects, etc. At the centre of all this lies our attribution to each other of such mental states as beliefs, desires and intentions (discussed in chapter 1, section 1.4). This folk psychological theory, or theory of mind, appears to emerge in the normal child between the ages of three and four years (Leslie 1987a, 1987b). In conjunction with the cause-consequence concept, already a fundamental feature of the child’s representational system, it gives rise to the ability to explain episodes of human behaviour in terms of mental causes. The answer to the question ‘why did Mary look in the box?’ moves from ‘because there were chocolates in there’ to ‘because she *thought/knew* there were chocolates in there and she *wanted* some’. Quite generally, establishing the agency of a state of affairs is only a small part of what matters to us; we want to know the agent’s motives, his intentions, the extent to which he knew what he was doing, etc. This sort of ‘intentional’ explanation has manifold social and moral implications; on this basis, responsibility is assigned, blame and credit are allotted, excuses or mitigating factors may be found, punishments and rewards are meted out, social relations are strengthened or weakened.

While nature may or may not be a system of causes and effects, what is clear is that it is not a system of explanations. We have to construct explanations for ourselves and we may communicate them to one other. Explanations are the products of minds, possibly only human minds. Explanations are ‘meta-’ with regard to causes and reasons. They are answers to questions of a certain sort, usually of a ‘why?’, and sometimes of a ‘how?’, sort. Aristotle’s doctrine of ‘the four causes’, the formal, the material, the final and the efficient, is now generally construed as a taxonomy of types of explanation and provides a useful way of thinking about the sorts of relations between facts which we take to be explanatory. A *formal explanation* of a state of affairs, x, will be concerned with what constitutes an x; a *material explanation* of the same state of affairs will be concerned with the means by which x came to be; a *final (or teleological) explanation* concerns the ultimate purpose of x; an *efficient explanation* concerns the immediate ‘trigger’ for the occurrence of x. To illustrate, consider each type as a response to a ‘why/how’ question raised by the description in (22):



- (22) The chicken crossed the road.
- |            |  |
|------------|--|
| Formal:    | She was on the east side at 2.00 and by 2.10 she was on the west side. |
| Material:  | She hopped like crazy for ten minutes.                                 |
| Final:     | She wanted to join Elmo on the other side.                             |
| Efficient: | Elmo told her to get on over, or else.                                 |

While both the final and efficient types are natural responses to the English ‘why?’, the formal may seem better prompted by ‘How do you know (that she crossed the road)?’ (a point that will be taken up again later) and the material by ‘How did the chicken ...?’. But they are all explanatory: they all involve the citing of a cause, reason or enabler of the state of affairs described by (22), or of the belief that the state of affairs pertains. This distinguishes them from the answers to ‘who?’, ‘what?’, ‘when?’ and ‘where?’ type questions, that do not function as explanations (at least not primarily). As the discussion so far would lead us to expect, explicit conjoining of (22) with any of these destroys the explanatory relation:

- (23) a. The chicken crossed the road and she hopped like crazy for ten minutes.  
 b. The chicken crossed the road and she wanted to join Elmo on the other side.  
 etc.

This point will be taken up again in section 3.5.1, where I consider why this interpretation is impossible and whether these four types of explanation exhaust the relations precluded by ‘and’-conjunctions.

There are good and bad explanations (but not good and bad causes), there are real reasons and bogus reasons (rationalizations) that may be offered as explanations for behaviour, and there are great individual differences in what people will accept as satisfactory explanations. But when it comes to the explanation interpretation of utterances such as those just given and the earlier (9a)-(11a), (19b), (20c), (20d), (21b) and (21c), such adequacy considerations are essentially post-interpretive. Taking the second utterance as explanatory of the first is simply the first strategy tried; when the effects it yields are puzzling, as in the case of (19b), where Max’s being a linguist is hardly a compelling explanation of his inability to read, the next interpretation accessed and checked for adequate relevance, I think, is one on which the speaker is taken as giving a facetious explanation, rather than as doing something else entirely, such as just listing two facts about Max or predicating a property of Max and then giving a plausible consequence of that property.

Why is it the first strategy tried and why is it maintained even when far from satisfactory? It follows from a fundamental organising principle of our cognitive makeup, which requires that our representations of individual states of affairs reflect them as being embedded in a mesh of (broadly speaking) causal relations with other states of affairs. A representation that cannot be so integrated will generally not be found relevant (it won’t have cognitive effects). Relevant information is information that connects up with one’s existing representation of the world so as to effect certain improvements on it; such ‘improvements’, or positive cognitive effects, include (a) the provision of confirmatory evidence, or stronger grounding, for some existing assumptions, (b) the disconfirmation and elimination of others, (c) the derivation of further implications which follow from the new and the existing representations jointly, and (d) the reorganising of information, perhaps into schemas, so as to make subsequent information processing less effortful.

Another way of thinking about relevant information is as information that answers questions one has or, equivalently, that fills in incomplete representations (assumption schemas). An explicit question tells the hearer what sort of information the questioner regards as desirable or relevant (that is, rich enough in effects to be worthy of attention). As Wilson & Sperber (1988b) put it, questions interpretively represent<sup>11</sup> relevant thoughts or propositions; while yes-no questions express complete propositions which call for confirmation or disconfirmation, wh-questions express incomplete (that is, not fully propositional) logical forms which represent the sort of complete proposition the questioner considers relevant. The kind of completion required is explicitly indicated by the wh-word: what, when, how, why, etc. For instance, a ‘why P?’ question can be understood as interpretively representing an assumption schema of the sort ‘P because \_\_\_\_’, indicating that the provision of an explanatory proposition would be relevant.

In the juxtaposed utterances we are considering, for instance (11a) repeated here, there is no explicit question:

- (11) a. Max fell. He slipped on a banana skin.

But, as the preceding discussion of causal representation and its fundamental role in our mental lives is intended to suggest, when we register a new piece of information P, for instance, that Max fell, we standardly construct a ‘P because \_\_\_\_’ assumption schema, the completion of which will be relevant to us. So a speaker is usually safe in assuming that a hearer presented with a description will automatically formulate a ‘why?’ question (or, equivalently, access a ‘P because \_\_\_\_’ schema); she can anticipate this, and perhaps preempt an explicit question, by supplying an explanation, which is bound to achieve the expected standard of relevance. Conversely, hearers, looking for interpretations which meet their expectation of optimal relevance, will take the second utterance as explanatory of the first unless there are overwhelming reasons not to. The relation is so readily accessible that it is usually not encoded; that is, the speaker does not preface the second utterance with ‘That is because ...’ or ‘The reason is that ...’. The decoding of these would put the hearer to extra work, which would be justified only if it gave rise to some effects which were additional to those yielded by the standard low effort employment of the explanatory strategy.

Finally, recall that the cause-consequence relation understood to hold in many conjunctive cases, such as (2d), repeated here, is a pragmatic enrichment of the encoded logical form; that is, it contributes to the proposition expressed (the basic-level explicature), and so to the truth-conditions of the utterance.

- (2) d. She shot him in the head and he died instantly.

What about the cause-consequence relation understood to hold in the case of (11a) above, to the effect that Max’s slipping on a banana skin caused him to fall. I think this is an implicature rather than an explicature, though it is a very strongly communicated one. The derivation process is very similar to that of example (93) in section 2.3.4; I reproduce the crucial part of the derivation:

- (24) a. S’s utterance will achieve relevance by explaining why or how Max fell.  
           *(Expectation of relevance created by S’s assertion that Max fell.)*  
       b. Max slipped on a banana skin.

- (First accessible reference assignment which could enter into an explanation of Max's falling.)*
- c. A standard reason for someone falling is that they slipped on a banana skin.  
*(First accessible assumption that might help explain how Max fell.)*
  - d. Max fell because he slipped on a banana skin.  
*(Inferred from (b) and (c), satisfying (a), so accepted as an implicature of S's utterance.)*

The following seems to be a likely generalisation: an inferred cause-consequence relationship between states of affairs functions as a pragmatic enrichment when the utterance expresses a single conjunctive proposition and as an implicature when it holds between a sequence of propositions expressed.<sup>12</sup>

### 3.5 Relevance relations and units of processing

I return now to the issue of the relations that can be understood to hold between the states of affairs described in the conjuncts of an explicit 'and'-conjunction, and, in particular, to why certain relations possible in the juxtaposed cases are not possible in the 'and'-conjunctions. There are two questions here:

- (a) Since the bid for explanations of observed and communicated facts is so fundamental, apparently the first strategy pursued in the interpretation of the second sentence uttered in the juxtaposed cases, why is it precluded from the interpretation of 'and'-conjunctions?
- (b) Supposing an adequate answer to this question can be given, does it provide the whole story of the differences between conjunctions and juxtapositions? That is, can all the precluded relations be understood as cases of explanation? Preempting a little, it is not obvious that the sort of exemplification relation understood in (12a) ('Wars are breaking out all over; Champaign and Urbana have begun having border skirmishes') can be included here, and there is a variety of other 'elaboration relations', as they are often called, which can arise between juxtaposed cases but not between conjuncts. The second question, then, is how are these other differences to be explained?

I address these questions in order in the next two subsections.

#### 3.5.1 The conjunction unit

The claim is that the second conjunct can never function in an explanatory role vis-a-vis the first conjunct. It's important to distinguish this from the claim being made by the 'semantic command' analysis, that the state of affairs described in the second conjunct can never be understood as the cause of the first. We have already seen that this latter view is false, as shown by the Horn example in (17), repeated here, (and appropriate contextualisations of (9b)-(11b)):

- (17) A: Did John break the vase?  
B: Well, the vase broke and he dropped it.

Although the interpretation of B's response will, doubtless, involve deriving the assumption that John is responsible for the breaking of the vase, I don't think there is any temptation here to describe B as explaining to A that John caused the breaking of the vase. Rather, B gives A two facts and leaves it to him to do as he likes with them. The 'semantic command' analysis of 'and'

misses the point: it makes the false prediction that ‘and’ excludes the possibility of the second conjunct being understood as temporally or causally prior to the first and it bypasses what really needs to be accounted for, which is the preclusion of an explanatory role for the second conjunct.

In her study of such discourse connectives as ‘so’, ‘moreover’, ‘furthermore’, ‘after all’, and ‘you see’, Blakemore (1987, 119-20) notes a contrast in the acceptability of conjunctions in which they are made to occur, whether explicitly or implicitly (that is, encoded or left to inference):

- (25) a. The road was icy and [so] she slipped.  
b. She’s good-looking and [furthermore/moreover] her father’s rich.  
c. ? She slipped and [you see] the road was icy.  
d. ? She passed the French exam and [after all] she is a native speaker.

Taking out the ‘and’ to render them non-conjunctive makes all four equally acceptable. As discussed in the previous chapter, Blakemore’s analysis of the semantics of these connectives is in terms of directives to the hearer to put the proposition they introduce into a particular inferential relation with other available propositions; in this way, she achieves a uniform characterisation and these connectives seem to form a natural class, distinct from truth-conditional connectives such as ‘after’, ‘before’, ‘while’, ‘because’, ‘unless’, etc. So the question is why they should split into two groups when used in an ‘and’-conjunction. Part of the answer is given by the following observation: ‘... the proposition introduced by “you see” must be relevant as an explanation. That is, it is relevant as an answer [to a question] raised by the presentation of the first proposition. ... The same point applies to the connection expressed by “after all”’ (Blakemore, 1987, 123). The rest of the answer, of course, has to address the preclusion of the explanatory function from a conjunction.<sup>13</sup>

Blakemore’s claim is that, when a speaker produces an explicit conjunction, it is that complex conjoined proposition that carries the presumption of optimal relevance and not the constituent propositions (the conjuncts) individually. That is, it is the conjunction as a whole, which is the unit that should satisfy the presumption of optimal relevance. It follows from the communicative principle of relevance that a hearer is entitled to assume that he won’t be required to expend processing effort gratuitously; that is, that the effort demanded will be adequately rewarded by cognitive effects. A hearer presented with a conjoined sentence is being required to undertake the processing that follows from the lexical and syntactic structure involved in conjoining and can therefore expect effects that would not follow from the conjuncts taken individually. The individual conjuncts may be relevant in their own right, but there is no automatic presumption that they will have adequate effects individually.<sup>14</sup>

This single processing unit idea receives some support from the fact that a conjoined subject, phrasal or sentential, may function as a syntactic unit with a single determiner or complementiser, and take a singular verb:

- (26) a. Friends, whose [kindness and encouragement] has ...  
b. My [hope and wish] is to ...  
c. That [John had an affair and Mary left him] is a sad fact.

Further support comes from work in discourse analysis. Schiffrin (1986, 1987) looked at a wide range of attested conversations, comparing uses of ‘and’ with ‘zero’ (no connective), and

concluded that a primary use of ‘and’ by speakers was to signal to hearers that the new utterance was to be understood as a continuation of either the immediately preceding utterance or an earlier one which had been interrupted or side-lined in some way. As she puts it, “‘and’ often displays an upcoming utterance as part of a not yet completed interactional unit’ (Schiffrin 1986, 57).

Let’s consider some of the earlier examples as processing units meeting the expectation of relevance as a whole. As the examples in (2) (a few of which are repeated here) illustrate, conjunctions are frequently taken to communicate a chronological sequence of events and, where relevant, the state of affairs described by the second conjunct is taken as a consequence of the first.

- (2) b. He handed her the scalpel and she made the incision.
- d. He left her and she took to the bottle.
- f. She went to the yoga class and felt her anxiety lift.

In cases such as (2b)-(2f), the cognitive effects of the conjunction unit crucially hinge on these assumed relations; for instance, the effects of (2b) may include implications concerning the working relationship between the ‘he’ and ‘she’, and the nature of the activity they are engaged in, which will depend on the assumption that the second action described followed closely on the first and the first was a necessary precursor of the second (that is, she needed the scalpel in order to perform her incision). The particular scenario understood here will be taken as an instance of a more general stereotypical schema, about people working together to perform an operation, and it might prompt some adjusting of standing assumptions in this schema about male and female roles. Assuming that schemas (sets of related propositions, stored together) really are cognitive units, and there is much evidence to support this (see Anderson 1980, Lloyd 1989), I suggest that, in at least a great number of cases, conjunctions will map directly onto such units rather than onto individual propositions. Their relevance will lie, at least partially, in the reinforcing effect they have on the schema as a whole and the modifications they might introduce to subparts of the schema.

Example (2a) was included as a case that did not give rise to a directional interpretation, and (18a) might be another such case where reversal of the conjuncts makes little difference to the interpretation.

- (2) a. It’s summer in England and it’s winter in New Zealand.

- (18) a. Max can’t read and he’s a linguist.

Symmetric these may be, but, given what I’ve said about the principle of relevance applied to conjunctions, they ought to have some effects that follow from their having been conjoined. The obvious sort of effect here is, broadly speaking, one of contrast.<sup>15</sup> In (2a) the effects would involve various comparative judgements about England and New Zealand, the activities one could pursue there at this time of year, the way the two landscapes might look, which place one might prefer to be in, etc. In (18a) where it is two properties, predicated of a single individual, which seem to be understood contrastively, the effects might principally consist of implications (and questions) about the sort of abilities and character that Max might have, given this unusual co-occurrence of attributes.

If it is correct that a conjunction is processed as a single unit for relevance, then the last step in the account of the exclusion of explanatory interpretations from conjunctions follows directly: one conjunct cannot function as an explanation for the state of affairs described in the other, since an explanation is an answer to a ‘why?’ or ‘how come?’ question and ‘questions and answers are by their very nature planned as separate utterances, each one satisfying the principle of relevance individually’ (Blakemore 1987, 123).

This account applies in a pleasing way to some examples which exhibit rather different properties from those of the cases considered so far:

- (27) a. Jim has a new girlfriend. He goes to New York every weekend.  
b. Jim has a new girlfriend and he goes to New York every weekend.

There are various possible interpretations of (27a), including a cause-consequence one, on which (27a) and (27b) are essentially the same, schematically ‘P (and) so Q’. But what I’m concerned with here is an interpretation of the juxtaposition in (27a) which is not possible for the conjunction in (27b). The solution just proposed, for the restrictions on conjunction interpretation, predicts that the second conjunct of (27b) will not be able to function as an explanation of the fact given in the first conjunct, which indeed seems to be the case. As we have seen, this is the sort of relation that juxtaposed utterances, on the other hand, frequently enter into.

However, the backwards causal relation which hearers are likely to understand for the juxtaposition in (27a) is different from that discussed so far. It is obviously not the case that Jim’s going to New York every weekend is a cause or a reason for his having a new girlfriend. Rather, it is the fact of his going to New York every weekend that gives the speaker grounds for her *belief* that Jim has a new girlfriend; that is, it plays a causal role (as a premise) in her deriving this conclusion. It is not too surprising that this is an accessible interpretation for the juxtaposed utterances, since, as is widely acknowledged, it is often the intended interpretation of a ‘because’-clause, as in (28a):

- (28) a. Jim must have a new girlfriend, because he goes to New York every weekend.  
b. Jane has left, because her son isn’t here.

The two scope possibilities for ‘because’-clauses are clearly evident in (28b): it can be interpreted either as giving the reason for Jane’s having left, or as providing evidence for the speaker’s belief that she has left. This is the often discussed distinction between a content relation and an epistemic relation (see, for instance, Sweetser 1990 and Oversteegen 1997). Further context is required to choose between the two possibilities in this case.

This ‘reason for believing’ interpretation of the juxtaposed utterances in (27a) is easily handled within relevance theory, which, as outlined in chapter 2, section 2.3.1, claims that an utterance may communicate several propositions explicitly. So, for instance, the first utterance in (27a), used literally, would have at least the following explicatures:

- (29) a. The speaker is saying that Jim has a new girlfriend.  
b. The speaker believes that Jim has a new girlfriend.  
c. Jim has a new girlfriend.

So a ‘why?’ question can be raised in reaction to any of these and the second utterance taken as explanatory of any of them. In the case of (27a), the second utterance, ‘he goes to New York every weekend’, is most likely to be taken as an explanatory follow-up to (29b), the higher-level explicature representing the speaker’s propositional attitude, rather than to (29c), the proposition expressed, which has been the target of the explanation in all the previously discussed juxtaposed cases.

In the next section, a new group of examples is considered, showing that there are relations other than explanation, that can be communicated by using juxtaposed sentences, but which cannot be communicated if the two sentences are conjoined in a single unit. I shall try to extend the account already given to cover these.

### 3.5.2 Elaboration relations

The story given above for the prohibition on an explanation relation between conjoined sentences turned on the fact that an explanation is an answer to a ‘why?’ question (whether explicit or implicit) and, as quoted above from Blakemore, ‘questions and answers are by their very nature planned as separate utterances’. This would indicate that the account should extend beyond ‘why?’ questions to other types of question. The following examples, suggested by Deirdre Wilson, show that this is so:

- (30) a. I ate somewhere nice last week; I ate at Macdonald’s.  
b. I ate somewhere nice last week and I ate at Macdonald’s.
- (31) a. I met a great actress at the party; I met Vanessa Redgrave.  
b. I met a great actress at the party and I met Vanessa Redgrave.

The juxtaposed variants here do not communicate an explanation; the second utterance in each of (30a) and (31a) does not give a cause or a reason for the event described in the first utterance, or for the speaker’s belief in the proposition it expresses, nor do they provide an analysis (a formal explanation) of any of the concepts in the first utterance. They do have an amplificatory function, though, and are readily understood as responses to questions, prompted by the first utterance. In fact, the first utterance in each of (30a) and (31a) seems specifically designed to raise the questions ‘where?’ and ‘who?’, respectively, which the second utterances answer. Again, conjoining these with ‘and’, as in (30b) and (31b), knocks out that interpretation and causes a strikingly different one to come to mind (involving some sort of contrastive relation).

Notice that these differences between the (a) and (b) versions could not be accounted for at all by the semantic analysis in terms of ‘semantic command’, nor by any other semantic analysis for that matter. They follow, however, from the observation that ‘and’-conjunctions are single processing units, meeting the pragmatic criterion of optimal relevance as a whole. It may be that questions of the ‘who?’, ‘what?’, ‘where?’, ‘when?’ sort have to be more deliberately provoked, as they are in these cases, than does the ‘why?’ or ‘how come?’, explanation-requiring, sort of question, whose insistent appearance has already been noted, in discussing the juxtaposition examples in (19)-(21).

It is also interesting to note which sorts of sentence level linguistic entities can be conjoined and which cannot. For convenience I’ll refer to the declarative, the imperative and the interrogative as sentence types, and represent the types as follows: P, P!, and P?. Clearly, an

acceptable conjunction can be formed by conjoining two sentences of the same type, but there seem to be certain restrictions on the mixing of types:

- (32) a. [P! and Q]  
Mow the lawn and I'll lend you my stilettos.  
b. [P and Q!]  
He'll be here soon and make sure dinner is ready.  
c. [P and Q?]  
You'll get back together and will it make you happy?  
d. [P? and Q]  
? Will you be happy with him and you'll have to give up your job.  
e. [P? and Q] where Q is answer to P?  
?? Why did he leave her and she did nag at him all the time.

There are varying degrees of acceptability here, but (32e) seems to be the least happy of these attempted conjunctions, with (32d) also somewhat uneasy. It looks as if question-answer conjunctions are not possible, which is what the account of the exclusion of the fact-explanation interpretation of conjunctions predicts. It may be that the only [P? and Q] type that we can get away with is, in fact, interpreted as [P?] [R and Q] where R is the inferred answer to P?, so (32d) is understood as:

- (33) Will you be happy with him? You won't be and you'll have to give up your job.

It is noticeable that the acceptability of this sort of conjunction drops markedly when the intended answer to the question isn't immediately apparent:

- (34) Why did the chicken cross the road and she is such a featherbrain.

If these observations are right, there is a quite general restriction on the conjoining of an interrogative and declarative, and (32d) is more accurately represented as a case of sentence-initial 'and':

- (35) a. Will you be happy with him? And you'll have to give up your job.

So the single processing unit nature of conjunction, coupled with the observation that, in various of the juxtaposed cases, the second utterance appears to be answering an implicit question raised by the first, provide the ingredients for an account of why so many of these relations cannot be communicated by a conjoined utterance.

Other relations possible for juxtaposed cases but excluded from conjunction are exemplification and restatement or reformulation. Bar-Lev & Palacas (1980) mention some of these, including (12) above, repeated here, and (36):

- (12) a. Wars are breaking out all over; Champaign and Urbana have begun having border skirmishes.  
b. Wars are breaking out all over and Champaign and Urbana have begun having border skirmishes.



- (36) a. Language is rule-governed: it follows regular patterns.  
 b. Language is rule-governed and it follows regular patterns.

With regard to these and others,<sup>16</sup> they say: ‘... “and” is mutually exclusive with other conjoining relationships, including exemplification, conclusivity, and explanation ... In nontemporal, noncausal cases, “and” is inadmissible in relationships heading in either direction, forward or backward’ (B-L&P 1980, 143-4). These observations seem to be essentially correct, but I do not think that B-L&P’s analysis can account for them. The conjunctions in (12b) and (36b) do meet their ‘semantic command’ requirement, since the second conjunct is not interpretable as temporally or causally prior to the first, but the following question then arises: why is it that they cannot be understood in the same way as the juxtaposed cases? This question is not addressed by B-L&P.

Elaboration relations, which include exemplification and restatement, have received a lot of attention recently, in the coherence theory literature.<sup>17</sup> The relation of elaboration is one type of coherence relation, which is usually kept distinct from a variety of other backward-directed relations such as evidence, justification, and explanation. Classifications of these relations vary, but frequently cited subtypes of elaboration are exemplification, restatement and several varieties of specification. Here are a couple of examples of the ‘specification’ relation, taken from Mann & Thompson (1986):

- (37) Your behaviour bothers me. You come in drunk and you insult the waiter.  
 (38) Karen is so photogenic. She has a really brilliant smile.

They categorize (37) as a case of ‘generalization-instance’, that is, the second utterance provides an instance of the abstract generalization in the first, and (38) as a case of ‘whole-part’ specification. These, again, are cases where conjoining the clauses with ‘and’ blocks the relation.<sup>18</sup> The account given so far can be extended to these various examples falling under the general elaboration label, in that the second utterance in each case can be understood as answering an anticipated question: for (12a) ‘where are wars breaking out?’, for (36a) ‘what does it mean to say language is rule-governed?’ or ‘why?’, for (37) ‘what’s the problem with the behaviour?’ or ‘why?’, for (38) ‘in what respect is she photogenic?’ or ‘how?’

However, there is more to be said about at least some of these examples. In cases such as (36a), where the second utterance can be construed as another way of putting the first, it is, in relevance-theoretic terms, an *interpretation* of the first utterance (rather than a description of a state of affairs). This way of thinking about reformulations, or restatements, has been discussed within relevance theory by Blakemore (1993, 1996, 1997a). In the course of this work, she has analysed a variety of conceptual (as opposed to procedural) discourse markers, whose function seems to be to tell the hearer that the utterance they preface (or some part of it) is a representation of a preceding utterance (or some part of it), rather than a description of a state of affairs. This group of markers includes ‘that is’, ‘in other words’, and ‘in short’. Here is one of her examples:

- (39) a. At the beginning of this piece there is an example of an anacrusis.  
 b. *That is*, it begins with an unaccented note which is not part of the first full bar.  
 (from Blakemore 1997a, 8)

The relation of (39b) to (39a) is more or less identical to that of the second utterance to the first in (36a) above, although there is no explicit indicator of the relation in (36a). It would be natural to suppose that the second utterance in (36a) is interpreted as a reformulation of the first utterance, one which gives the hearer easier access to the contextual assumptions against which processing the proposition expressed by the first utterance will achieve an array of effects. Put differently, these are cases of ‘formal’ explanation (see discussion of explanation types in section 3.4 above); they involve *explaining* the meaning of ‘anacrusis’ and of ‘rule-governed’ (as applied to language), thereby enabling the hearer to derive further contextual effects from the first utterance (assuming he did not already have a full grasp of the meaning of these expressions). This explanatory, question-answering role of the second utterance accounts for the nonoccurrence of the relation in (36b), the conjoined counterpart of (36a). Formal explanations (that is, explications of the meaning of expressions) will, necessarily, involve the interpretive use of a representation.

Finally, consider the exemplification relation, exemplified in (12a) above, (perhaps also in (38) despite its ‘specification’ labelling), and here in (40a), a relation which disappears when the two sentences are conjoined :

- (40) a. I always pick the wrong queue;<sup>19</sup> yesterday I ended up waiting a quarter of an hour to get to the checkout.  
 b. I always pick the wrong queue and yesterday I ended up waiting a quarter of an hour to get to the checkout.

The second utterance in (40a) could be comfortably prefaced by ‘for example’ or ‘for instance’. In Carston (1992, 164), I suggested that exemplification is a way of providing evidence (inductive support) for a claim. Blakemore (1997a, 2001) gives some substance to this idea, pointing out that the recognition of a particular state of affairs as an example brings with it an assumption that it is *typical* in some respect, and that, therefore, there is a set of other cases which have the same property. She says ‘it is the suggestion that there are other cases which could have been cited which makes exemplification such a good means of providing evidence for the claim exemplified’ (Blakemore 2001). To make a claim and then to present evidence for it is to produce two utterances, each of which carries the presumption of relevance individually; this explains why exemplification is not a possible relation between the conjuncts of an ‘and’-conjunction, since they comprise a single unit processed for relevance.

The relations discussed in these sections, which can arise for juxtaposed cases but not for conjunctions, are explanation, evidence, reformulation and certain sorts of elaboration; logical consequence is another (see endnote 16). They all have in common the property that they are not relations ‘out there’ in the world; they are relations that hold only in minds, perhaps only in human minds. They are relations between representations. On the other hand, the temporal and cause-consequence relations, which may hold between conjuncts, are very much out there, or, at least, are assumed by us to be out there; we register them perceptually and we represent them in our factual beliefs.

In the next section, I leave the two-unit cases and concentrate on completing the account of the pragmatics of ‘and’-conjunctions, focussing on the forward-directed temporal sequence relation so typical of these examples.

### 3.6 Processing effort and iconicity

A temporal sequence relation is very often inferred to hold between the state of affairs described by the first conjunct and that described by the second. The pragmatic account of this, given in section 3.2.1, relied heavily on the idea of highly accessible narrative scripts, in which these sequential relations are represented. But this cannot be the whole story, since there is a range of other cases in which sequential (and cause-consequence) enrichment cannot be a result of scripted knowledge.

Consider the following:

- (41) a. Sally cooked some vegetables and she began to feel more optimistic.
- b. Mary put on her tutu and did a highland fling.
- c. Bill saw his therapist and fell down a manhole.
  
- (42) a. Tonto rode into the sunset and he jumped onto his horse.
- b. Bill went to bed and he took off his shoes.

Each of the examples in (41) is taken to communicate a temporal sequence, though none of them involves a stereotypical scenario, in which they are represented as sequential.<sup>20</sup> The examples in (42), on the other hand, give ready access to a script: the ‘jumping onto horse and riding into sunset’ script and the ‘taking off shoes, etc. and getting into bed’ script, so the question they raise is why the stereotypical script does not lead to a backwards temporal relation being inferred as holding in the two examples. Why isn’t (42b) understood as ‘Bill went to bed after he took off his shoes’?

I’ve dismissed accounts that rely on a pragmatic maxim or principle which enjoins speakers to present their descriptions of states of affairs in the order in which these took place in the world. These are kinds of iconicity principles, as is made explicit in Harnish’s (1976, 359) supermaxim: ‘Be representational; in so far as possible, make your sayings “mirror” the world’, from which his more specific mirroring submaxims of time and space follow.<sup>21</sup> For the reasons already given, in section 3.3, it would not be a good move to reinstate maxims of this sort, although they do seem to account for the persistent interpretation of ‘and’-conjunctions as involving temporal sequence, even in cases like (42a)-(42b), where this runs counter to stereotypical assumptions and leaves us with a weird interpretation.

The explanation is, I think, a general cognitive one rather than a specifically pragmatic one; it concerns the relative ease/difficulty of certain processing paths. The processing of proximal stimuli of an unintended sort cannot but take place in a certain order. When a certain (visible or auditory) event,  $e_1$ , occurs in the world, and is followed by a second event,  $e_2$ , and both of these are picked up by the appropriate sensory transducer and processed perceptually and conceptually, the processing of a representation of the first event begins before the processing of a representation of the second event. So, to a significant extent, the processing of the second event takes place in the context of the prior processing of the first event, rather than vice versa. We have no choice but to process an awful lot of information in this way; it impinges on our receptors in the order in which it occurs. Given this utterly banal fact (true doubtless of other sentient beings too), the human cognitive system presumably finds it natural (easy) to process other stimuli (those designed by humans, including ostension) in a similar way.

This cognitive explanation enters into utterance interpretation, hence pragmatics, by virtue of the rather obvious fact that utterance processing involves effort. In the absence of

explicit (encoded) signposts telling a hearer what temporal relations hold between states of affairs described in a single processing unit, as is often the case with ‘and’-conjunction, an order of presentation that matches the temporal order of the events is the least costly in processing effort demands. There is no need for principles or maxims enjoining iconic representation; it follows from the precepts of relevance theory that, other things being equal, a speaker will cause her hearer as little processing effort as possible in achieving the intended cognitive effects of her utterance.<sup>22</sup>

Mental scripts of stereotypical sequences of events represent their real-world temporal relations, so, in many instances, the temporal sequence inference is supported by both general ease of processing considerations and a script which represents events as occurring sequentially. When there is no script, as in the examples in (41), the natural processing track is taken, and when there is a clash between a script and this most accessible route, as in the examples in (42), it is the latter that seems to prevail.

However, we have seen earlier a couple of cases which might appear to be exceptions to these generalizations; I repeat them here:

- (43) A: Did John break the vase?  
 B: Well, the vase broke and he dropped it.
- (44) A: Bob wants me to get rid of these mats. He trips over them all the time. Still, I don’t suppose he’ll break his neck.  
 B: Well, I don’t know. John broke his leg and he tripped on a Persian rug.

It seems that, despite the order in which the conjuncts are presented here, the temporal order the hearer will recover accords with that of the standard script (first the dropping then the breakage, first the tripping then the leg-breaking).

In fact, it is not too difficult to envisage a context in which (42b) is understood in such a way that it is not at odds with the standard scripted temporal sequence: suppose a parent is trying to persuade a child that she should take off her shoes before she gets into bed, by citing her older brother, Bill, whom the child takes as a role model, as having done so. In this context, the utterance will have a particular, fairly marked pattern of accentuation and intonation (as is also the case for (43B) and (44B)):

- (45) BILL went to bed and | HE took off HIS shoes.  
 [upper case indicates accented syllables; | marks intonation phrases (IPs); there is a fall-rise contour in each IP]

In all three examples, what is presented is not a narrative, but an argument or example intended to encourage the hearer to reach a certain conclusion: that John did break the vase, that one can hurt oneself badly from tripping on a mat or rug, and that the child should take off her shoes before she goes to bed. The relevant conclusion follows from the information expressed in the two conjuncts and a further premise concerning temporal and/or cause-consequence relations, which is highly accessible to the hearer, either via a script (vase dropping and breaking) or via the context (the child knows that her mother wants her to take off her shoes before she goes to bed). While a full explanation of these interesting examples remains to be given, they clearly have certain special features which distinguish them from the narrative cases, which have been

the focus of this section, and for which the most accessible assumption is that the temporal ordering of the events described matches the order of their utterance (even when this conflicts with a stereotypical script). The marked intonation contour in examples (43)-(45) demands extra attention, thereby indicating that the standard least effort processing route is not to be followed here. Although the issue of the temporal ordering of the states of affairs described does enter into the interpretation of these examples, it is not part of the proposition explicitly expressed by the speaker but is left for the hearer to access as a distinct proposition; at most it is weakly implicated by the speaker. For further discussion of these ‘non-narrative’ cases, see Blakemore & Carston (1999).

### **3.7 Residual issues**

#### **3.7.1 Pragmatic enrichment or unrepresented Background?**

I have argued against a number of different semantic accounts of the relations that can hold between the conjuncts of an ‘and’-conjunction and, in the case of ‘semantic command’, those that cannot. The pragmatic account of the various temporal, consequential and other conjunct relations that I have favoured has a very cognitive flavour to it: knowledge structures in the form of stereotypical scripts have played a large part, as has the idea that the human mind is constantly looking for and assuming causal relations among the states of affairs it perceives and conceives, and an iconic processing route was claimed to be the least effortful, other things being equal.

I have presented these conjunct relations as cases where pragmatically inferred meaning contributes to the proposition explicitly expressed (that is, to the truth-conditional content of the utterance). This view recalls an interesting issue that arose towards the end of chapter 1, in the context of the discussion of Searle’s concept of the Background. The question there was: which, if any, elements of the great mass of contextual/background material go into the proposition expressed? Alternatively, which unencoded elements of total utterance meaning enter into the proposition expressed (that is, enrich the encoded logical form) and which do not? Which unencoded elements does the hearer actually infer? Consider the following familiar utterances:

- (46)   a.     I’ve had breakfast.  
       b.     She ran to the edge of the cliff and jumped.  
       c.     She gave him the key and he opened the door.

Temporal sequence is inferred in (46b) and (46c); in addition, it has been claimed that, in each case, a hearer recovers an unarticulated constituent, in the process of deriving the proposition the speaker intended to express: ‘today’, for (46a), ‘over the cliff’ for (46b), ‘with the key she gave him’ in (46c), as well as the temporal sequence. But Searle points out that there are a number of other elements of meaning which, though not literally expressed, are assumed by both speaker and hearer; for instance, that the ‘having’ of breakfast was an instance of ingesting in the normal way through the mouth, that the jumping over the cliff took place in a situation in which the laws of gravity held, and that the door opening was performed in the normal way by putting the key in the keyhole in the door rather than, say, by gouging a hole in it. Are these elements of the Background also recovered and represented by the hearer as part of the proposition expressed by

the speaker? If so, what limits are there on this process of building in material? If not, why not, what distinguishes them from the constituents that are recovered and represented?

I don't think that any of these Background elements of meaning would be represented by the hearer of these utterances, except in the unusual case of a context in which there was some doubt about their holding. In general, elements are inferred only if they are likely to make a positive contribution to the relevance of the utterance, that is, only if they contribute to the derivation of cognitive effects. The point about the Background is that it is a body of taken-for-granted, *unrepresented* dispositions and manifest assumptions, which make it possible for the *representations* that are our actual thoughts and utterances to be meaningful. There is a question about what exactly is in the Background and what is not, and there are possible disruptions of the Background, which cause aspects of it to lose their background status and become represented, but these matters do not bear on the concept itself.

With regard to the examples in (46), it does seem that the relevance of (46a) depends on the breakfast having taken place 'today', and that of (46b) depends on the jumping being 'over the cliff'. Cognitive effects follow from these. Nothing more follows from the breakfasting having been in the normal ingesting way or from the jumping having been subject to gravity, though much may have followed from these NOT being in force. As for the instrumental inference of 'with a key' in (46c), I suspect that that is one that comes for free, along with the other material, in the door-opening script, whether relevant in the particular case or not. Scripts may be viewed as some sort of intermediate structure, between unrepresented Background and particular propositional representations of non-stereotypical knowledge.

### 3.7.2 The semantics of 'and' and the logic of 'and'

This chapter began by rehearsing Grice's pragmatic account of the temporal sequence relation which is understood in many 'and'-conjunctions: it is a (generalised) conversational implicature derived via the manner maxim of ordering. For Grice, this was but one instance of his general project to preserve the view that the semantics of certain natural language expressions does not depart from that of their logical operator counterparts (negation, conjunction, disjunction, the conditional, the universal quantifier, the existential quantifier and the iota operator). It is probably fair to say that the debate over whether the equivalence holds has not been finally settled in any of the particular cases, though some, such as the conditional, have been much more contentious than others.

In arguing for a pragmatic account of the various rich conjunct relations, I have, so far, been content to go along with the apparent conclusion that the semantics of natural language 'and' is captured by the standard truth table for '&'. However, although the arguments in the preceding sections all point to a minimal meaning for 'and', there is no reason to suppose that in a cognitively-realistic decoding semantics the characterisation of the meaning of 'and' (or of any other natural language connective) should match the definition of the corresponding element in a logical calculus, whose semantics is resolutely truth- and reference-based. This sort of translational semantics, which provides the linguistic input to pragmatic processing, is not directly concerned with the relation between linguistic forms and the external world, but with the relation between linguistic forms and the cognitive information they encode.

As outlined in section 2.3.7, within the relevance-theoretic approach to utterance understanding, there is an important strand of semantic investigation, based on the distinction between conceptual and procedural encoding, initiated by Blakemore (1987). So within this framework, a natural question to ask is whether 'and' encodes a concept (as assumed so far) or a

procedure. Of course, whatever the answer, it must preserve the fundamental logical property of ‘and’, which is standardly captured by the deductive rule of ‘and’-elimination:

- (47)        *And-elimination*  
           a.     *Input:* (P and Q)  
                   *Output:* P  
           b.     *Input:* (P and Q)  
                   *Output:* Q

Among the English connectives which have been argued to encode procedures are *but*, *moreover*, *after all*, *so*, *although* and *whereas*. One of the preliminary observations often made in discussions of these examples is that they do not contribute to the truth-conditional content of utterances in which they appear. For any one of these cases, call it *c*, an utterance of ‘P, *c* Q’ is true if and only if P is true and Q is true. In other words, a truth-statement for these cases would be identical to the truth-statement for an ‘and’-conjunction. Similarly, if they were given a truth table, it would be identical to the truth table for ‘and’, though we would hasten to say that, of course, this did not exhaust, or even begin to capture, their meaning (which has a crucial ‘non-truth-conditional’ component). They appear, therefore, to be truth-**functional** unlike such truth-**conditional** connectives as *because*, *after*, *before* and *when*, for which it is not possible to give a complete truth table, as no truth value can be computed on the basis of just the information that each of their constituent propositions is true.

In practice, the connectives in class *c* are not generally given a truth table, nor submitted to truth-conditional analysis. The reason for this seems clear for those cases like *moreover*, *after all*, *so* and denial-of-expectation *but*: they are not conjunctive in that they do not form complex sentences or well-formed-formulas. Rather, they are discourse connectives, whose meaning specifies the sort of inferential relation which the utterance they prefix enters into with existing contextual assumptions. Like the juxtaposed cases discussed in this chapter, ‘P, *c* Q’ consists of two separate sentences (and so two processing units): ‘P’ and ‘*c* Q’, each of which would constitute a distinct input to a truth-conditional semantics. Note that from ‘*c* Q’ there follows deductively ‘Q’, so that the deductive output of the two units making up ‘P, *c* Q’ is identical to that of ‘P and Q’, shown in (47). Others in this class of procedural connectives, such as *although*, *whereas* and, perhaps, *since*, are syntactically conjunctive; as subordinating conjunctions, the clause they prefix can only occur as a subpart of a single sentence (or well-formed formula). Sentences of the form ‘P although Q’ are, therefore, just as much input to a would-be complete truth-conditional semantics for natural language sentences as those of the form ‘P and Q’.<sup>23</sup>

Let’s entertain the possibility that the information encoded by ‘and’ is procedural. Before considering what that procedure might be, recall what a procedural encoding is supposed to do. It doesn’t contribute a constituent to a representation, as a conceptual encoding does; rather, it constrains or facilitates some aspect of the pragmatic inferential phase of utterance interpretation. For instance, indexicals reduce the search space for referents, and discourse connectives indicate the type of contextual assumptions or implications to be accessed. In this chapter, we have seen that the sorts of relations between two segments that can be communicated when they are ‘and’-conjoined are quite a lot more limited than the range that is possible when the segments are merely juxtaposed, which suggests that the presence of ‘and’ exerts a constraining effect on interpretation. However, given the arguments of the preceding sections, it cannot be that an

‘and’-constraint encodes anything about temporal or causal relations; what is responsible for the restrictions on conjunct relations is, rather, the fact that an ‘and’-conjunction comprises a single processing unit. So, if ‘and’ encodes a procedure, it must amount to something like ‘treat the propositions I connect as a single unit for pragmatic processing’. Such a procedure would, like those encoded by pronouns, function as a constraint on the derivation of the proposition expressed by the utterance, limiting the process of pragmatic enrichment.

However, there are strong reasons to doubt that a procedural account is right. The proposal given is the only plausible possibility, but it looks very much as if it is redundant, since the formation of a single unit of coordinated parts is already achieved through the syntax. An alternative suggestion is that ‘and’ has no linguistic meaning at all, whether conceptual or procedural, and that the restrictions on the relations that can be pragmatically inferred, compared with those for the juxtaposed cases, are purely a function of syntactic coordination. The truth-functional properties of ‘and’ would fall out readily from such an assumption. Rather than having elimination rules as part of a logical entry attached to an ‘and’ concept, the truth of the propositions conjoined by a semantically empty ‘and’ would simply follow as it does in the case of bare juxtapositions: P logically implies P; Q logically implies Q.<sup>24</sup>

Naturally, the Gricean advocacy of the equivalence of other natural language connectives and determiners to their truth-conditional counterparts can be similarly questioned. Westerstahl (1985) and Breheny (1999, 28) claim that determiners (‘a’, ‘the’, ‘every’, etc.) are context-dependent and distinct from their logical counterparts. Both Atlas (1989) and Seuren (2000) have argued that natural language negation is not to be equated with the truth-functional logical notion. Both pursue a unitary semantic analysis of ‘not’, neutral between the various different interpretations it can be given; Atlas opts for a very general abstract sense and Seuren for a speech act notion of rejection.

The following general conclusion about natural language semantics and logic seems to me to be well worth pursuing: ‘The logical properties of the sentences of natural languages are best seen as epiphenomenal on the semantic and cognitive processing of the sentences in question. They emerge when semantic processes and properties are looked at from the point of view of preservation of truth through sequences of sentences, which is the defining question of logic, not of semantics’ (Seuren 2000, 289). That there might well be divergences between cognitive semantics and logical semantics does not follow directly from the linguistic underdeterminacy thesis, but the two certainly harmonise. What underdeterminacy clearly entails is that few, if any, natural language sentences have fixed, determinate truth conditions. The truth relation holds between thoughts and states of affairs, so between propositions expressed by utterances (semantic/pragmatic hybrids) and states of affairs. Then, it is systems of thought, rather than linguistic systems, for which a truth calculus, that is, a logic, should be devised. If this is right, there is no obvious reason to suppose, or to consider it desirable, that what natural language connectives and determiners encode is identical to the context-free, truth-based properties of logical operators; rather, there is some reason to expect differences in at least some cases.

### **3.8 Conclusion: from generalised conversational implicature to propositional enrichment**



Let me briefly sum up how the analyses in this chapter illustrate the theoretical positions, taken in the previous chapters, on the semantics/pragmatics distinction and the explicit/implicit (= explicature/implicature) distinction. I have rejected semantic analyses which endeavour to attribute the various possible temporal and cause-consequence relations between the conjuncts to the meaning of ‘and’ itself. These relations are a product of pragmatic inference. In this, I am at one with Grice and neo-Griceans, like Gazdar, Levinson and Horn. The standard assumptions of this general position, however, are that ‘and’ is semantically equivalent to ‘&’ and that the pragmatically inferred relations are generalised implicatures. These assumptions have not been supported here. I have considered other minimalist possibilities for the meaning of ‘and’, including that it has no linguistic semantics at all, and I have argued that the pragmatically inferred relations are cases of enrichment, contributing to the proposition expressed by the utterance, hence to its basic-level explicature. This analysis is a clear demonstration of the strong linguistic underdeterminacy view: encoded linguistic meaning may do little more than provide a skeletal framework which is both augmented (into explicatures) and complemented (with implicatures), by fast, effective mechanisms of pragmatic inference.

The source of the interpretive differences between ‘and’-conjunctions and corresponding ‘and’-less sentence juxtapositions is that, while the latter comprise two distinct utterance units, the ‘and’-conjunctions are single pragmatic processing units which meet relevance expectations as a whole rather than individually. This is the crucial ingredient in explaining the inaccessibility of a wide variety of possible relationships between states of affairs described by the conjuncts, including a range of explanatory relations and other question-answer type relations.

I hope that the account in this chapter goes some way toward puncturing Levinson’s (1989) allegation that relevance theory is incapable of accounting for the phenomena that he classifies as generalised implicature (see endnote 35 of previous chapter). On his account, the ‘conjunction-buttressing’ inferences, as he calls them, are generalised I-implicatures, that is, pragmatic inferences governed by a maxim that enjoins stereotypical informational enrichment. (Horn (1984b, 1989) takes essentially the same position.) However, once we drop the untenable assumption that a pragmatic inference inevitably results in an implicature, it becomes pretty clear, that these ‘and’-enriching inferences have to be taken as contributions to the explicit content of the utterance.

This opens the way to a reconsideration of other cases of alleged generalised implicature, including the well-known scalar implicature cases, exemplified in (48):

- (48) a. I like some of Woody Allen’s movies.  
 Implicature: I don’t like all of Woody Allen’s movies.  
 b. Jim has four children.  
 Implicature: Jim has no more than four children.  
 c. Sarah is a poet or a philosopher.  
 Implicature: Sarah isn’t both a poet and a philosopher.

The case for the inference to be accounted a pragmatic contribution to the explicit content of the utterance seems to have been won for cardinal number expressions (see Carston 1990/95, 1998a; Horn 1992b); it remains unsettled in the case of the non-cardinal scalar terms (but see Geurts 1998b).

## Notes

1. Neo-Griceans who support this ‘generalised implicature’ view include Gazdar 1979, Horn 1972, 1984b, 1989, 1996, Atlas 1989, and Levinson 1987a, 1988, 1995, 2000. In Stephen Levinson’s view, this is just one instance of what he takes to be an important and prevalent phenomenon, for which he has developed a specific theory: generalised conversational implicature (GCI) theory. As mentioned in the previous chapter (see especially note 4), he treats GCI as a distinct phenomenon from particularised implicature (PCI): generalised implicatures arise quite generally across contexts unless they are blocked by specific salient assumptions, while particularised implicatures are ‘nonce’ inferences, dependent on specific contextual assumptions for their derivation. GCI theory is conceived of as a module within pragmatics, having its own distinct pragmatic principles and formalised in a system of default inference rules. The temporal sequence relation arising for ‘and’-conjunctions is one of the examples that is taken to fall within this theory.

Although the term ‘generalised conversational implicature’ comes from Grice, Levinson’s work is a significant departure from his. There is no evidence that Grice gave any theoretical weight to a distinction between generalised and particularised conversational implicature, and the postulation of a system of default logical rules, attached to particular lexical items, runs counter to the aim of accounting for pragmatic inference in terms of quite general conversational maxims rooted in considerations of human rationality. With regard to the case of ‘and’, the GCI approach runs into a number of problems: it does not account for the wide range of subtly different temporal, cause-consequence and other relations, which ‘and’-conjunctions can communicate (see the examples in (2)); it postulates a default inference rule for temporal sequence attached to ‘and’, but the same inference goes through for juxtaposed cases (see the examples in (3)); it cannot account for the fact that temporal sequence may be assumed, on the basis of conjunct ordering, even when it is inconsistent with highly accessible general knowledge (and so should be defeated according to GCI theory). For some discussion of Levinson (1987a, 1988), see Carston (1990/95, 1998a) and section 3.8 of this chapter. However, his latest and fullest rendering of GCI theory (Levinson 2000) remains to be considered in detail.

2. Like most others discussing the general properties of sentential ‘and’-conjunctions, I am not considering an apparently exceptional class of examples, of which the following are three:

- (i) She’s gone and ruined her dress now.
- (ii) I’ve got to try and find that document.
- (iii) Do me a favour and shut it.

As Schmerling (1975) points out these do not behave syntactically or semantically like cases of logical conjunction.

3. I may be using the term conjunction in a rather non-standard way. Many authors write of (asyndetic) conjunction relations when discussing what I am calling juxtaposed or ‘non-conjunctive’ cases; some would say the conjunction relation is implicit (inferred) in these cases, to distinguish them from the explicit (encoded) cases when a linguistic connective is

present. Furthermore, they would make a distinction between coordinating conjunction (whether encoded or inferred) and subordinating conjunction (whether encoded or inferred). However, I don't think that my simple distinction in this chapter between what I call conjunctions (examples where the linguistic element 'and' is present) and juxtapositions (where there is no linguistically given connective), should cause any conceptual difficulties.

4. This line of argument has to be employed with care. Consider the following (mis)use of it:

- (i) John is tall but Bill is short.
- (ii) John is tall. Bill is short.

Since the juxtaposed sentences in (ii) communicate a contrast comparable to that of (i), a blind application of the argument would suggest that the connective 'but' does not encode anything about a contrast, and that this is pragmatically inferred in both cases. For independent reasons, it's clear that this is not right, and appropriate choice of examples makes it evident:

- (iii) John is rich but he is tall.
- (iv) John is rich. He is tall.

While no relation of contrast is communicated by (iv), the use of 'but' in (iii) ensures its presence, however odd it may seem, indicating that this is what is encoded by 'but'.

5. Anderson (1980) discusses the notion of schema in general and considers a range of evidence for its status as a real cognitive unit. Brewer (1999) gives a brief history of the role of schemas, frames and scripts in psychology and artificial intelligence, and supplies a useful reference list.

6. Other pragmatic accounts give a lot of weight to stereotypical interpretation too. For instance, Levinson's (1987a, 1988, 2000) I-principle (Principle of Informational enrichment) entitles hearers to derive implicatures which are stereotypical enrichments of the information encoded by the utterance. However, this principle makes some false predictions, and offers nothing by way of explanation for why hearers should enrich stereotypically (when they do) instead of in more unusual (and interesting) ways. For critical discussion of Levinson's account, see Carston 1990/95, Carston 1994a, Wilson & Sperber 1993b/98.

7. The account of the pragmatic derivation of the temporal relation between the conjuncts which I gave in Carston (1988/91) was a little different; there I saw it as a byproduct of the necessary assignment of temporal reference to the past tense of the verbs in each of the conjuncts, so for (2b) 'handed' and 'made'. The result of this process looked like the following:

X handed Y the scalpel at  $t$  & Y made the incision at  $t+n$

(where  $t$  is some more or less specific time prior to the time of utterance and  $t+n$  is some more or less specific time, later than  $t$ )

This made it more like a saturation account; Grice and others accepted reference assignment as one of the few processes required to bring the linguistic content up to a complete proposition. There are various problems with this (see Recanati 1989b, 301, footnote 3, and Wilson & Sperber 1993b/98), the most obvious being that it won't account for cases involving temporal spans rather than specific times. I see no reason now to attach it so closely to a reference fixing process; along with the various cause-consequence relations, it can be accounted for by a free enrichment process, which involves highly accessible assumption schemas and the relevance-theoretic constraint.

8. Another example which they present with this set is of the variety known as 'pseudo-imperative':

- (i) Stand up, and I'm going to break your arm.
- (ii) Stand up; I'm going to break your arm.

As with the other pairs, these are not equivalent in the meaning they communicate. They are, however, very different from the others and raise several further issues, so I leave them aside here. See Clark (1991, 1993a) for a survey of ideas about these cases and for a relevance-theoretic account.

9. This statement will seem a little strong in the light of the observations in chapter 5, where I make a case for the loose use of linguistic expressions bringing about alterations to the proposition expressed, which involve the loss of some encoded linguistic content. However, I think it will be evident that these cases, where a pragmatic loosening is warranted, are very different from what would be required here, which is that general world knowledge completely reverses some alleged lexical content.

10. These observations stand in opposition to the Humean view that the causal idea is the result of a lengthy period of experiencing, sensorily, repeated occurrences of spatio-temporal contiguity between objects or events. To the contrary, Michotte's experiments indicate that some causal connections are directly perceived (as opposed to all being a function of higher-level cognitive processes). Furthermore, Michotte claimed, causally connected events do not necessarily have to be experienced repeatedly for the causal link to be forged (it's enough to be bitten by the dog once). Given this, he thought it probable that even very young infants perceive events as cause-effect episodes rather than as mere sequences. The results of recent experimental work support this prediction. Leslie and Keeble (1987) have suggestive evidence that six-month-old infants already perceive cause-effect relations, providing a strong case for the innateness of the assumption and for the early stage at which it is operational (along with other concepts concerning the properties of physical objects, of course). For recent discussion of these matters and of the nature of causal cognition more broadly, see Sperber, Premack & Premack (1995).

11. This is an instance of the important distinction made in relevance theory between descriptive and interpretive representation, touched on briefly in chapter 2, section 2.3.6. Descriptively used representations represent states of affairs directly. Interpretively used representations (thoughts or utterances) represent other representations; utterances are always first order interpretive in that they represent thoughts, but they may be interpretive to further orders, for instance, if they report speech or thought. The interesting thing about questions is that they are intrinsically (semantically) interpretive: they represent certain relevant (or desirable) assumptions. See Sperber & Wilson (1986a/95b, chapter 4, sections 7 and 10), Wilson & Sperber (1988a), Clark (1991).

12. There is an interesting comparison to be made between this implicature account of the cause-consequence relation in (11a) and the following examples: (i) is from Frege and is discussed by Neale (1999, 48); (ii) is similar in the information it conveys but the clauses are differently ordered:

- (i) Napoleon, who recognised the danger to his right flank, personally led his guards against the enemy position.
- (ii) Napoleon personally led his guard against the enemy position, having recognised the danger to his right flank.

Frege says there are two thoughts expressed in (i) and Neale agrees but suggests that, instead of the conjunction of two propositions that Frege seems to assume, the utterance expresses a sequence of propositions:

- (iii) Napoleon personally led his guards against the enemy position
- (iv) Napoleon recognised the danger to his right flank.

There is also the third thought, that his knowledge of the danger to his right flank was the *reason* for Napoleon leading the guards against the enemy position, that is, a cause-consequence relation is conveyed. Frege thinks this third thought is ‘just lightly suggested’ rather than expressed, and Neale agrees with him on this, saying that this third thought is not a proposition expressed but rather an implicature. Like these examples, and more obviously so, an utterance of (11a) expresses a sequence of propositions, rather than a single complex conjunctive proposition, and the analysis is also that the cause-consequence relation constitutes an implicature rather than a development of a logical form into a proposition expressed (explicature).

13. Interestingly, ‘after all’ and ‘you see’ can apparently occur comfortably in a ‘but’-conjunction:

- (i) She failed the exam but, after all, she’s been unwell all year.
- (ii) He has the qualifications but, you see, he doesn’t get on with the boss.

Blakemore (1987, 125-141) suggests that, on its denial of expectation use, 'but' is not a coordinating conjunction at all, but a (non-truth-conditional) discourse connective; if this is right, each of (i) and (ii) consists of two processing units and it is not surprising that explanation-indicating devices can be acceptably employed.

14. I do not mean to imply that, in contrast with the conjunction examples, the juxtaposed cases are inevitably treated as two processing units, each independently satisfying the optimal relevance criterion. All the examples considered in the text do seem to function as effectively two utterances, but one can conceive of cases where they might function conjunctively, so be treated as a single unit, and of other cases where the first one might have a scene-setting, background-giving role, such that its purpose is essentially as a bit of context against which the second is to be processed.

15. It is certainly not the case that all of the adversative relations that can be expressed by the use of 'but' can also be achieved by 'and'-enrichment. Kitis (1995) discusses examples involving two apparently contrasting clauses which are nevertheless interpreted differently depending on the presence of 'and' or 'but':

- (i) Her husband is in hospital and she is seeing other men.
- (ii) Her husband is in hospital but she is seeing other men.

The difference here is explainable in terms of the conjunctive nature of (i), a single processing unit, and the non-conjunctive nature of the denial-of-expectation 'but' in (ii). While the speaker of (i) communicates an attitude of surprise/outrage that the two conjuncts in (i) are true together, the speaker of (ii) suggests that the inference that one might have drawn from the first segment, that she is having a miserable time, is illegitimate. See Blakemore & Carston (1999) for more discussion of these cases.

In the course of a discussion of epistemic modality, Papafragou (1997) mentions two examples where replacing 'but' by 'and' results in unacceptability:

- (iii) He may be a university professor, but he sure is dumb.
- (iv) ? He may be a university professor and he sure is dumb.

An explanation of this difference remains to be given but, again, it seems highly likely that the conjunctive nature of 'and' as opposed to the non-conjunctive nature of the 'but' here will enter into the account.

16. Bar-Lev & Palacas (1980) also give the following pair of examples:

- (i) There are his footsteps: he's been here recently.
- (ii) There are his footsteps and he's been here recently.

The conclusion, or logical consequence, relation which can be understood to hold for (i), but not for (ii), is yet another distinct case from the, broadly speaking, ‘elaborative’, or amplificatory, relations I am discussing in this section. I considered this case at length in Carston (1993). Again, the observation that ‘and’-conjunctions comprise a single processing unit plays a crucial role; the other component of the explanation concerns the fact that the logical consequence relation is an inferential relation and inferential relations, quite generally, hold between distinct processing units. It follows that a conjunction unit may function, as a whole, as a premise in an argument, or, as a whole, as a conclusion in an argument, but that it cannot communicate a premise-conclusion relation as holding between its constituent propositions.

17. Coherence theorists generally assume that there is a fixed set of discourse relations (for instance, cause, reason, enabler, evidence, justification, specification, exemplification, restatement, etc.) which play a central role in the coherence of discourses and texts, and, therefore, in judgements of the acceptability or well-formedness of texts. There are various attempts to provide a (usually hierarchical) taxonomy of these, with results varying from four basic relations to several hundred of a more fine-grained sort (see, for instance, Sanders, Spooren & Noordman 1992, 1993; Hovy & Maier 1994). Lascarides & Asher (1993) provide a more formal treatment of some of these relations, integrating defeasible rules of discourse relation assignment (specifically, narration, background, result, explanation, elaboration) with the discourse structure building mechanisms of the DRT framework.

Some theorists assume that the identification of discourse relations in a text is a crucial aspect of understanding it (for instance, Hobbs 1979, 1983; Mann & Thompson 1987, 1988). Blakemore (1997a, 2001) is critical of these approaches, disputing both the possibility of finding any definitive set of coherence relations and the need for recovery of propositions expressing these relations in understanding a discourse. She shows that the understanding of an utterance or discourse depends, not on the classification of the coherence relations it exhibits, but on how it achieves relevance. For an interesting discussion of the different goals and predictions of coherence theory and relevance theory, see Giora (1997) and Wilson (1998a).

18. While the elaboration relations discussed in this section are precluded by ‘and’-conjunction, this is not the case for all those subtypes of the relation given in the literature. As well as ‘generalization-instance’ and ‘whole-part’, Mann & Thompson (1986) mention ‘set-member’, ‘process-step’ and ‘object-attribute’, respectively exemplified by the following:

- (i) I love to collect classic automobiles. My favourite car is my 1988 Duryea.
- (ii) It’s time to make the cake. I start by taking out the milk and eggs.
- (iii) I’m Officer Jordan. I was born in 1952 and I joined the police force in 1970.

Arguably, each of these conjoins quite happily with ‘and’ into a single unit and seems to preserve the relation in question. I draw two lessons from this. First, there is still some way to go in giving the full account of ‘and’-conjunctions. Second, this may well be just another indication of the arbitrary nature of the sets of relations drawn up by the coherence theorists and of the labels the different relations are given; motivating the relations is an ongoing concern (see Knott & Dale 1994).

19. The use of a variety of different punctuation marks across the juxtaposed cases (whether full stops, colons, semi-colons, etc) is a rough indication of some of the different relations that hold between the two units. See Nunberg (1990) for some ideas about the sort of information communicated by these marks.

20. Lloyd (1989, chapter 8) makes the case for what he calls a *narrative psychodynamics*, that is, for narrative with its characteristic temporal sequentiality as a basic structure of cognition, whose basic connective is 'and then'. He develops this idea in the context of a discussion of the properties of human thought which distinguish it from logical ideals of rational thought, and writes of us posing to ourselves an urgent 'what next?' question, seeking plot, rather than proof. This idea is worth exploring further, but I can't do that here.

21. Iconic representation involves a pictorial element, which makes it not wholly conceptual or descriptive; there is a degree of isomorphism between the representation and what it represents, usually a second order relation between (a) the relations between the external entities, and (b) the relations between their corresponding internal representations (see Recanati 1993, 113). Iconicity (naturalness) of linguistic form is supported in functionalist literature on syntax; see especially Haiman (1983, 1985, 1994), and for useful discussion of the role of iconicity in the formalist/functionalist debate, Newmeyer (1998, chapter 3). More directly relevant to pragmatics, Sweetser (1990, 87-93) discusses iconicity at the cognitive level, which inevitably enters into language use.

22. Just as the submaxim of manner concerning orderliness in the narration of events is subsumed by the processing effort considerations that are fundamental to relevance-theoretic pragmatics, so too are the other manner submaxims, of brevity and clarity, at least to the extent that these make correct predictions. As discussed in section 3.3, the orderliness maxim gets it wrong in a number of cases of juxtaposed utterances, and brevity may be sacrificed, if the more succinct of two possibilities requires more processing effort than the longer option, for instance, 'condiments' versus 'salt and pepper'.

23. Although syntactically conjunctive, it may well be that what utterances of this sort express is two distinct propositions rather than a single conjunctive proposition. This position is argued for by Iten (1998, 2000); see also relevant discussion in note 27 of chapter 2.

24. It is worth noting that Schiffrin (1986), who investigates the use of 'and' in a wide range of kinds of discourse, using mostly naturally occurring data, comes to a conclusion that supports the idea that 'and' has no linguistic semantics distinct from its syntactic conjoining function: 'I show that *and* is used in everyday discourse to build idea structure and to continue speakers' actions. Although both findings support a minimalist semantics for *and*, they also suggest that



the truth-functional meaning of *and* bears less on its use in discourse than does its grammatical role' (Schiffrin 1986, 41).