Appendix A

The Corpus of Cue Phrases

This appendix contains a list of the English cue phrases on which the classification of relations is to be based. Each phrase in the corpus passes the test for cue phrases set out in Section 4.2. The majority of the phrases were gathered systematically in the analysis of 'academic' discourse reported in Section 4.3; however, for the sake of completeness, several phrases which were discovered after the analysis have also been included (and identified as such).

The cue phrases are listed in alphabetical order in the table below; there are around 350 in all. The three columns in the table contain respectively a cue phrase, its syntactic category (though this is sometimes tricky to determine), and whether the phrase was found in the initial corpus analysis.

Phrase	Syntactic category	In corpus analysis
above all	Conj-adverb	Yes
accordingly	Conj-adverb	Yes
actually	Conj-adverb	Yes
admittedly	Conj-adverb	Yes
after	Conj-adverb	Yes
after	Subordinator	Yes
after all	Conj-adverb	Yes
after that	Conj-adverb	Yes
afterwards	Conj-adverb	Yes
again	Conj-adverb	Yes
all in all	Conj-adverb	Yes
all the same	Conj-adverb	Yes
also	Conj-adverb	Yes
alternatively	Conj-adverb	Yes
although	Subordinator	Yes
always assuming that	Subordinator	Yes
and	Coordinator	Yes

Phrase	Syntactic category	In corpus analysis
and/or	Coordinator	Yes
another time	Conj-adverb	No
anyway	Conj-adverb	Yes
apart from that	Prep Phrase	No
as	Subordinator	Yes
as a consequence	Conj-adverb	Yes
as a corollary	Conj-adverb	Yes
as a result	Conj-adverb	Yes
as it happened	Conj-adverb	No
as it is	Conj-adverb	No
as it turned out	Conj-adverb	No
as long as	Subordinator	Yes
as luck would have it	Conj-adverb	No
as soon as	Subordinator	Yes
as well	Conj-adverb	Yes
at any rate	Conj-adverb	Yes
at first	Conj-adverb	Yes
at first blush	Conj-adverb	Yes
at first sight	Conj-adverb	Yes
at first view	Conj-adverb	Yes
at last	Conj-adverb	No
at least	Conj-adverb	No
at once	Conj-adverb	No
at that	Prep Phrase	No
at the moment when	Subordinator	Yes
at the outset	Conj-adverb	Yes
at the same time	Conj-adverb	Yes
at which point	Prep Phrase	No
back	Adverb	No
because	Subordinator	Yes
before	Conj-adverb	Yes
before	Subordinator	Yes
before long	Conj-adverb	No
before then	Prep Phrase	No
before...ever	Subordinator	No
besides	Conj-adverb	No
but	Coordinator	Yes
but then	Coordinator	No
by all means	Conj-adverb	No
by and by	Conj-adverb	No
by comparison	Conj-adverb	Yes
by contrast	Conj-adverb	Yes
by the same token	Conj-adverb	Yes

Phrase	Syntactic category	In corpus analysis
by the time	Subordinator	No
by the way	Conj-adverb	Yes
by then	Prep Phrase	No
certainly	Conj-adverb	Yes
clearly	Conj-adverb	Yes
come to think of it	Conj-adverb	No
consequently	Conj-adverb	Yes
considering that	Subordinator	No
conversely	Conj-adverb	Yes
correspondingly	Conj-adverb	Yes
despite this	Conj-adverb	Yes
despite the fact that	Subordinator	Yes
each time	Subordinator	No
earlier	Conj-adverb	Yes
either	Conj-adverb	Yes
else	Coordinator	Yes
equally	Conj-adverb	Yes
especially because	Subordinator	No
especially if	Subordinator	No
especially when	Subordinator	No
essentially, then	Conj-adverb	Yes
even	Conj-adverb	Yes
even after	Subordinator	No
even before	Subordinator	No
even if	Subordinator	Yes
even so	Conj-adverb	Yes
even then	Conj-adverb	Yes
even though	Subordinator	Yes
even when	Subordinator	No
eventually	Conj-adverb	Yes
ever since	Conj-adverb	No
every time	Subordinator	Yes
everywhere	Subordinator	No
except	Conj-adverb	Yes
except after	Subordinator	No
except before	Subordinator	No
except if	Subordinator	No
except insofar as	Subordinator	Yes
except when	Subordinator	No
failing that	Conj-adverb	No
finally	Conj-adverb	Yes
first	Conj-adverb	Yes
first of all	Conj-adverb	Yes

Phrase	Syntactic category	In corpus analysis
firstly	Conj-adverb	Yes
following this	Conj-adverb	No
for	Subordinator	Yes
for a start	Conj-adverb	Yes
for another thing	Conj-adverb	Yes
for example	Conj-adverb	Yes
for fear that	Subordinator	No
for instance	Conj-adverb	Yes
for one thing	Conj-adverb	Yes
for one,	Conj-adverb	No
for that matter	Conj-adverb	No
for the simple reason	Subordinator	Yes
for this reason	Conj-adverb	Yes
fortunately	Conj-adverb	No
from then on	Prep Phrase	No
further	Conj-adverb	Yes
furthermore	Conj-adverb	Yes
given that	Subordinator	Yes
having said that	Conj-adverb	No
hence	Conj-adverb	Yes
however	Conj-adverb	Yes
however	Subordinator	No
I mean	Phr.w/scomp	No
if	Subordinator	Yes
if ever	Subordinator	Yes
if not	Conj-adverb	Yes
if only	Subordinator	Yes
if so	Conj-adverb	Yes
in a different vein	Conj-adverb	Yes
in actual fact	Conj-adverb	Yes
in addition	Conj-adverb	Yes
in any case	Conj-adverb	Yes
in case	Subordinator	Yes
in conclusion	Conj-adverb	Yes
in contrast	Conj-adverb	Yes
in doing this	Prep Phrase	No
in fact	Conj-adverb	Yes
in other respects	Prep Phrase	No
in other words	Conj-adverb	Yes
in particular	Conj-adverb	Yes
in short	Conj-adverb	Yes
in so doing	Prep Phrase	No
in spite of that	Conj-adverb	Yes

Phrase	Syntactic category	In corpus analysis
in sum	Conj-adverb	Yes
in that	Subordinator	No
in that case	Conj-adverb	Yes
in that respect	Prep Phrase	No
in the beginning	Conj-adverb	Yes
in the case of X	Conj-adverb	Yes
in the end	Conj-adverb	Yes
in the event	Conj-adverb	No
in the first place	Conj-adverb	Yes
in the hope that	Subordinator	No
in the meantime	Conj-adverb	Yes
in this way	Conj-adverb	Yes
in truth	Conj-adverb	No
in turn	Conj-adverb	Yes
in which case	Prep Phrase	No
inasmuch as	Subordinator	Yes
incidentally	Conj-adverb	Yes
indeed	Conj-adverb	Yes
initially	Conj-adverb	Yes
insofar as	Subordinator	No
instantly	Conj-adverb	No
instead	Conj-adverb	Yes
it follows that	Phr.w/scomp	Yes
it is because	Phr.w/scomp	No
it is only because	Phr.w/scomp	No
it might appear that	Phr.w/scomp	Yes
it might seem that	Phr.w/scomp	Yes
just	Conj-adverb	No
just as	Subordinator	Yes
just then	Conj-adverb	No
largely because	Subordinator	No
last	Conj-adverb	Yes
lastly	Conj-adverb	Yes
later	Conj-adverb	Yes
lest	Subordinator	No
let us assume	Phr.w/scomp	Yes
likewise	Conj-adverb	Yes
luckily	Conj-adverb	No
mainly because	Subordinator	No
meanwhile	Conj-adverb	Yes
merely	Conj-adverb	Yes
merely because	Subordinator	Yes
mind you	Conj-adverb	No

Phrase	Syntactic category	In corpus analysis
more Xly	Conj-adverb	Yes
moreover	Conj-adverb	Yes
most Xly	Conj-adverb	Yes
much as	Subordinator	No
much later	Conj-adverb	Yes
much sooner	Conj-adverb	Yes
naturally	Conj-adverb	Yes
neither is it the case	Phr.w/scomp	Yes
nevertheless	Conj-adverb	Yes
next	Conj-adverb	Yes
next time	Subordinator	No
no doubt	Conj-adverb	Yes
no sooner than	Subordinator	No
nonetheless	Conj-adverb	Yes
not	Conj-adverb	Yes
not because	Conj-adverb	Yes
not only	Conj-adverb	Yes
not that	Conj-adverb	Yes
notably	Conj-adverb	Yes
notwithstanding that	Subordinator	Yes
notwithstanding that,	Conj-adverb	Yes
now	Conj-adverb	No
now	Subordinator	Yes
now that	Subordinator	Yes
obviously	Conj-adverb	Yes
of course	Conj-adverb	Yes
on balance	Conj-adverb	No
on condition that	Subordinator	Yes
on one hand	Conj-adverb	Yes
on one side	Conj-adverb	Yes
on the assumption that	Subordinator	Yes
on the contrary	Conj-adverb	Yes
on the grounds that	Subordinator	Yes
on the one hand	Conj-adverb	Yes
on the one side	Conj-adverb	Yes
on the other hand	Conj-adverb	Yes
on the other side	Conj-adverb	Yes
on top of this	Conj-adverb	Yes
once	Subordinator	Yes
once again	Conj-adverb	Yes
once more	Conj-adverb	Yes
only	Conj-adverb	No
only after	Subordinator	No

Phrase	Syntactic category	In corpus analysis
only because	Subordinator	No
only before	Subordinator	No
only if	Subordinator	No
only when	Subordinator	No
or	Coordinator	Yes
or again	Coordinator	No
or else	Coordinator	Yes
originally	Conj-adverb	No
otherwise	Conj-adverb	Yes
overall	Conj-adverb	Yes
particularly because	Subordinator	No
particularly if	Subordinator	No
particularly when	Subordinator	No
plainly	Conj-adverb	Yes
presently	Conj-adverb	No
presumably because	Subordinator	Yes
previously	Conj-adverb	Yes
provided that	Subordinator	Yes
providing that	Subordinator	Yes
put another way	Conj-adverb	Yes
rather	Conj-adverb	Yes
reciprocally	Conj-adverb	Yes
regardless of that	Conj-adverb	Yes
regardless of whether	Subordinator	No
second	Conj-adverb	Yes
secondly	Conj-adverb	Yes
seeing as	Subordinator	No
similarly	Conj-adverb	Yes
simply because	Subordinator	Yes
simultaneously	Conj-adverb	Yes
since	Subordinator	Yes
so	Subordinator	Yes
so that	Subordinator	Yes
soon	Conj-adverb	No
specifically	Conj-adverb	Yes
still	Conj-adverb	Yes
subsequently	Conj-adverb	Yes
such that	Subordinator	Yes
suddenly	Conj-adverb	No
summarising	Conj-adverb	Yes
summing up	Conj-adverb	Yes
suppose	Phr.w/scomp	Yes
suppose that	Phr.w/scomp	Yes

Phrase	Syntactic category	In corpus analysis
supposing that	Subordinator	Yes
sure enough	Conj-adverb	Yes
surely	Conj-adverb	Yes
that is	Conj-adverb	Yes
that is to say	Conj-adverb	Yes
that's all	Sentence	No
that's how	Phr.w/scomp	No
that's when	Phr.w/scomp	No
that's why	Phr.w/scomp	No
the fact is that	Phr.w/scomp	Yes
the first time	Subordinator	No
the moment	Phr.w/scomp	No
the more often	Subordinator	Yes
the next time	Subordinator	No
the one time	Phr.w/scomp	No
the thing is	Phr.w/scomp	No
then	Coordinator	Yes
then again	Conj-adverb	Yes
thereafter	Conj-adverb	Yes
thereby	Conj-adverb	Yes
therefore	Conj-adverb	Yes
third	Conj-adverb	Yes
thirdly	Conj-adverb	Yes
this means	Phr.w/scomp	No
this time	Conj-adverb	Yes
though	Subordinator	Yes
though	Conj-adverb	No
thus	Conj-adverb	Yes
to be precise	Prep Phrase	No
to be sure	Conj-adverb	Yes
to begin with	Conj-adverb	Yes
to conclude	Conj-adverb	Yes
to make matters worse	Conj-adverb	No
to start with	Conj-adverb	Yes
to sum up	Conj-adverb	Yes
to summarise	Conj-adverb	Yes
to take an example	Conj-adverb	Yes
to the degree that	Subordinator	Yes
to the extent that	Subordinator	Yes
too	Conj-adverb	Yes
true	Conj-adverb	Yes
ultimately	Conj-adverb	Yes
undoubtedly	Conj-adverb	Yes

Phrase	Syntactic category	In corpus analysis
unfortunately	Conj-adverb	No
unless	Subordinator	Yes
until	Subordinator	Yes
until then	Prep Phrase	No
we might say	Phr.w/scomp	Yes
well	Conj-adverb	No
what is more	Conj-adverb	Yes
when	Subordinator	Yes
whenever	Subordinator	Yes
where	Subordinator	Yes
whereas	Conj-adverb	Yes
wherein	Subordinator	Yes
whereupon	Conj-adverb	No
wherever	Subordinator	Yes
whether or not	Subordinator	No
which is why	Phr.w/scomp	No
which means	Phr.w/scomp	No
which reminds me	Phr.w/scomp	No
while	Subordinator	Yes
whilst	Subordinator	No
with that	Prep. Phrase	No
yet	Coordinator	Yes
you know	Phr.w/scomp	No

Appendix B

The Taxonomy of Cue Phrases

This appendix contains the taxonomy of cue phrases which forms the basis for the feature definitions motivated in Chapter 6. It was created prior to the development of these definitions; the intention is that it should reflect theory-neutral intuitions about the substitution relationships between cue phrases, and that the feature definitions should then be based on these intuitions.[1]

The taxonomy presented here is complex: around 150 phrases have so far been incorporated. In order to achieve a complete taxonomy, the substitutability relationship between each pair of phrases must be represented; in other words, for any two phrases X and Y in the corpus, it must be specified whether X is synonymous with, hyponymous to, hypernymous to, exclusive with, or contingently intersubstitutable with Y. For a taxonomy of 150 phrases, this means that $(150 \times 149)/2$ (= 11175!) relationships must be documented. Using diagrams of the type described in Chapter 4, the great majority of the work can be done by inheritance; but there is still large amount of information to be depicted. Some further principles of organisation have thus been used; these were described briefly in Section 4.6.4, and are described in more detail below.

B.1 Exclusive Phrases and Multicategory Phrases

The taxonomy is roughly organised into ten **categories**, as can be seen in the 'top level' diagram in Figure B.1. The categories are as follows: SEQUENCES, CAUSES, RESULTS, RESTATEMENTS, TEMPORAL RELATIONS, NEGATIVE POLARITY RELATIONS, ADDITIONAL INFORMATION RELATIONS, HYPOTHETICAL RELATIONS, SIMILARITY RELATIONS, and DIGRESSION RELATIONS. These categories only permit a rough division of phrases: some phrases (termed **exclusive phrases**) are unique to a single category, but others (termed **multicategory phrases**) appear in more than one category. Because of multicategory phrases, the categories in Figure B.1 are all be depicted as

[1] In fact, a few of the phrases discussed in Chapter 6 have not yet been incorporated into the taxonomy. However, for these phrases, the relevant substitution relationships are given in Chapter 6 itself. The decision not to include them here too was made in an effort to keep 'pre-theoretical' and 'post-theoretical' intuitions separate.

contingently substitutable with each other. Figure B.2 provides more detail, showing the exclusivity between the exclusive phrases in each category.

Relationships between the phrases within the individual categories are given in Figures B.3 to B.12. Each of these figures isolates a single category, and shows

- how the exclusive phrases in the category relate to each other;
- how the exclusive phrases in the category relate to the multicategory phrases which belong to that category;
- how the exclusive phrases in the category relate to the multicategory phrases which do *not* belong in that category. (These are called **non-shared multicategory phrases**, and obviously none of them are substitutable for any of the exclusive phrases in the category.)

Finally, in Figure B.13, the relationships between all the multicategory phrases are given. The figures thus provide a complete description of the relationships between all the cue phrases, multicategory and exclusive.

B.2 A Note about 'Re-Entrancy' in the Taxonomy

Because of the way the taxonomy is organised, many of its phrases appear in more than one diagram. Thus, all the multicategory phrases appear in Figures B.3 through B.12, and in Figure B.13. The higher-level categories in the taxonomy (such as SEQUENCES and EXCLUSIVE SEQUENCE PHRASES) are also depicted more than once: they appear in the top-level diagrams in Figures B.1 and B.2, as well as in the figure corresponding to their own category. Identical categories appearing in separate diagrams are to be regarded as 'one and the same object' in the taxonomy, and the sum of all the relationships of this object with other objects in the taxonomy is given by the union of the relations depicted in all the different diagrams.

This has an important consequence for the depiction of contingent substitutability relationships in the taxonomy. These relationships, it will be recalled, are only inferred as a default, if none of the other relationships can be inferred. The distribution of the taxonomy diagram over several pages means that *each appearance* of a item in the taxonomy must be considered before a contingent substitutability relationship can be inferred. For instance, from Figure B.1 in isolation, we would conclude that the phrases from the SEQUENCES category are all contingently substitutable with those from the CAUSES category. But other parts of the diagram present exceptions to this default: for example, in Figure B.2, the 'exclusive' SEQUENCE phrases are depicted as exclusive with the 'exclusive' CAUSE phrases.

B.3 Additional Notation Used in the Diagrams

Finally, there are two points to note about the notation used in Figures B.3 through B.12. Firstly, in each diagram, the non-shared multicategory phrases are always grouped together in a single box. This is just to make the diagrams easier to understand: the true relations between all the multicategory phrases are given in Figure B.13. Secondly, in each diagram, the arcs linking the exclusive phrases to the box entitled 'exclusive phrases' have been left out, again to make the diagrams easier to read. Instead, exclusive phrases appear in bold type. Thus, for example, in Figure B.3, the phrases *furthermore*, *lastly*, etc are all assumed to be connected to the EXCLUSIVE SEQUENCE PHRASES box.

B.4 A Note about the Linguistic Examples

Figures B.3 through B.2 each include a set of example texts; the kind of texts which can be used to motivate the substitutability diagrams. In each case, the examples have been picked to illustrate a *selection* of the substitutability relationships in the diagram.

It is not possible to provide *all* the examples needed to motivate the diagrams. For one thing, claims about synonymity, exclusivity, hyponymity or hypernymity all express general statements about *all possible linguistic contexts*: they cannot be *verified* by linguistic data, only *falsified*. Only the relationship of contingent intersubstitutability can be motivated by a finite number of examples: here, only three examples are needed; one providing a context in which two phrases X and Y are substitutable, one providing a context in which X is not substitutable for Y, and one providing a context in which Y is not substitutable for X. Even in this latter case, due to lack of space, motivating examples are not always given; but it is normally quite easy to think of them.

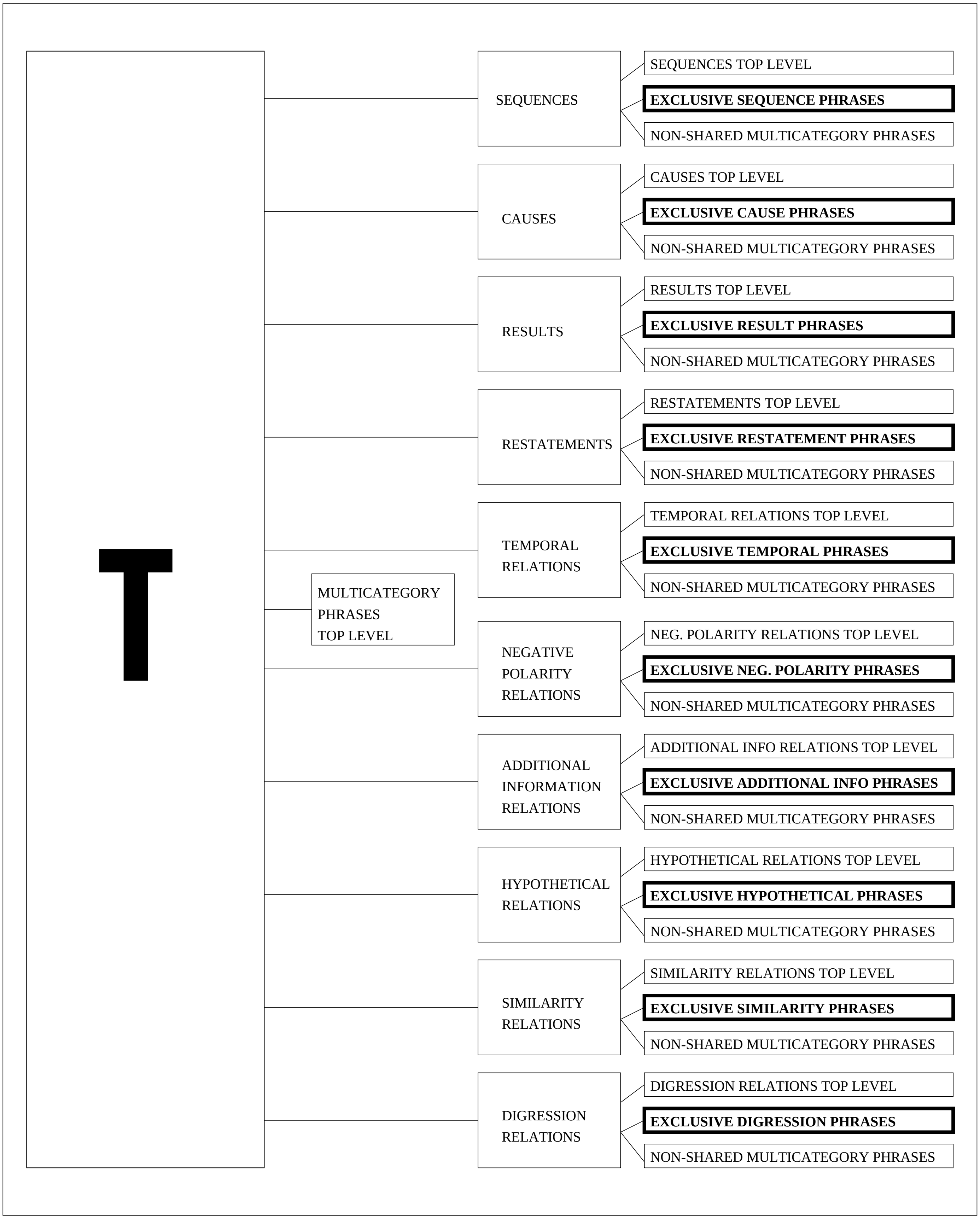

Figure B.1: The Top Level of the Taxonomy

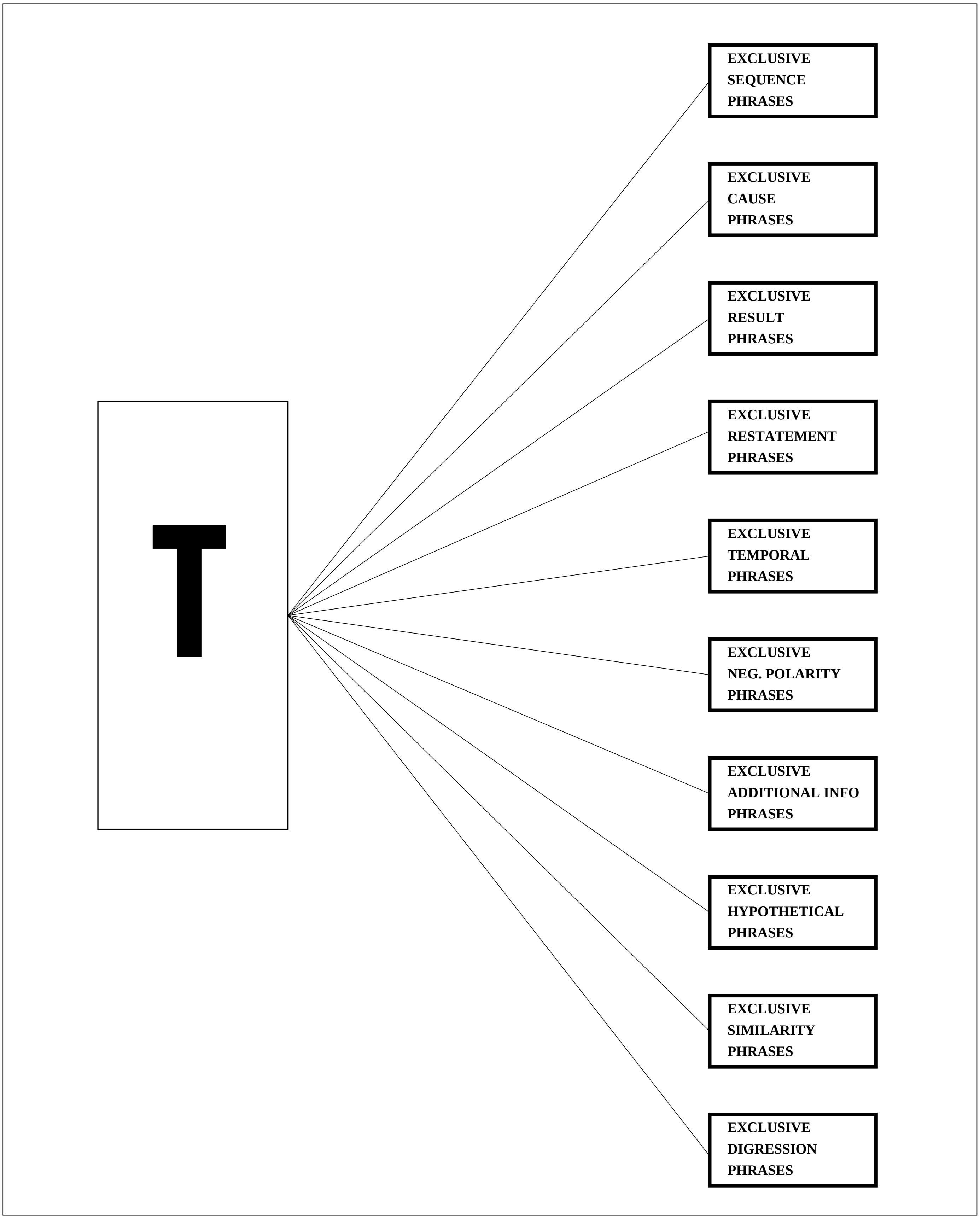

Figure B.2: 'Exclusive Phrases'

It looks as though Dan was preparing to sail.	*For a start,* ✓ *For one thing,* ✓ *Firstly,* ✓ *To start with,* # *First,* # *And*	he had taken off the sail covers and threaded the sheets; furthermore, I saw him checking the motor.
Dan set about making the boat ready to sail.	*First,* ✓ *To begin with,* ✓ *First of all,* # *For one thing,* # *Or*	he took off the sail covers and threaded the sheets; then he checked the motor.
Dan set about making the boat ready. He took off the sail cover and threaded the sheets;	*then* ✓ *and* ✓ *afterwards,* ✓ *later on,* ✓ *after this,* ✓ *in addition,* ✓ *too* → ✓ *as well* → # *furthermore,* # *besides,*	he checked the motor.
It looks as though Dan was preparing to sail. He had taken off the sail cover and threaded the sheets;	*what is more,* ✓ *and* ✓ *in addition,* ✓ *too* → ✓ *for another thing,* # *after this,* # *besides,*	I saw him checking the motor.
We should swap Liz and Kim. Liz is excellent in defence,	*whereas* ✓ *and* ✓ *while* ✓ *in addition,* ✓ *furthermore,* ✓ *on the other hand,* # *after this,* # *alternatively,*	Kim is much better in goal.
There are several possibilities. It could be in the office;	*or* ✓ *and* ✓ *alternatively,* ✓ *as well* → ✓ *then* ✓ *next* # *after this,* # *besides,*	it could be at home; finally, it could be at Phil's place.
I don't think that Bob can win. Firstly, he's out of training;	*secondly,* ✓ *next,* ✓ *(and)* ✓ *then* ✓ *on top of this* # *lastly,* # *besides,* # *after this,*	he's running at altitude; and finally, he's up against some pretty tough opponents.

Figure B.3: Sequence Phrases: Examples of Substitutability

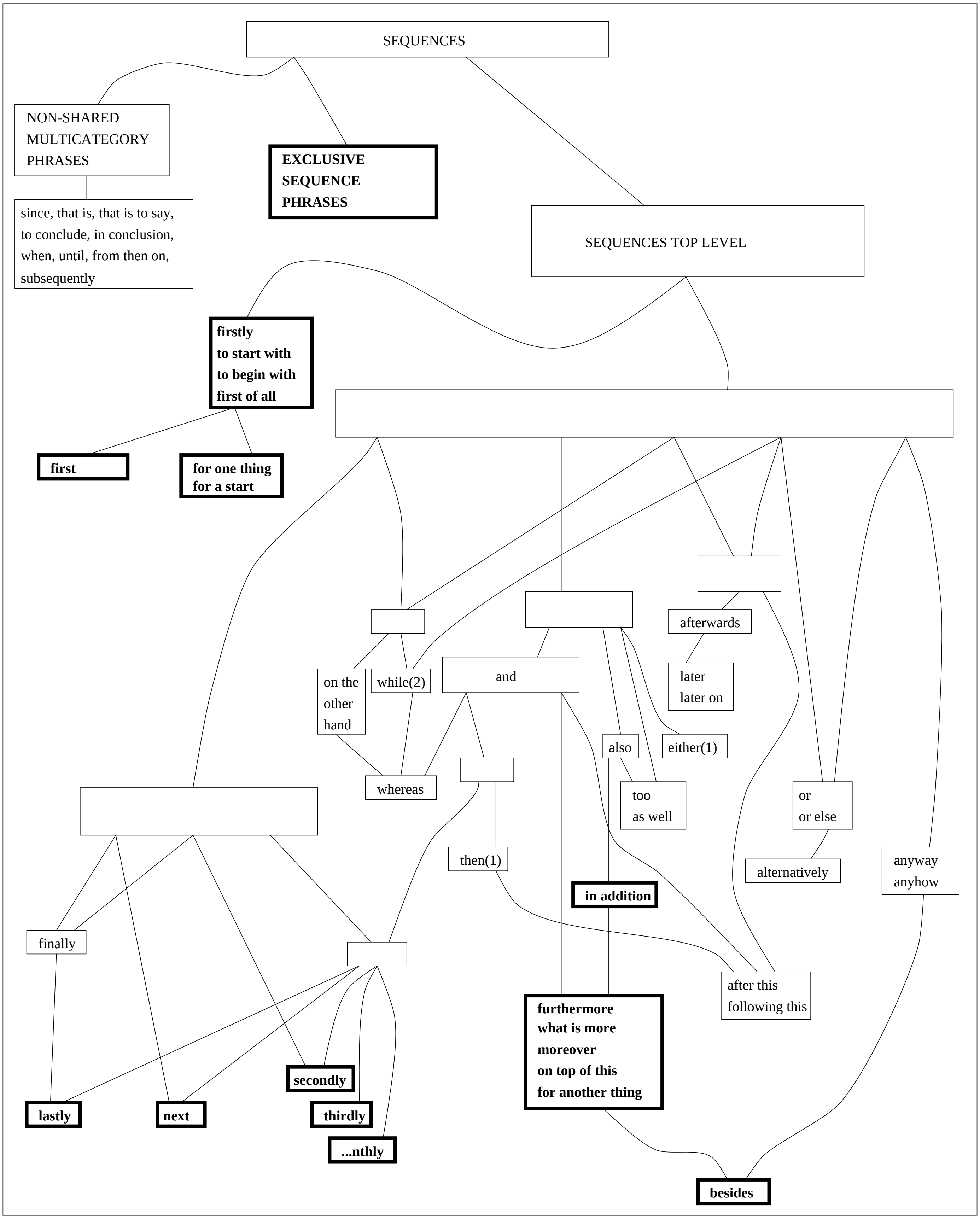

Figure B.3: Sequence Phrases: Substitutability Diagram

Sally left the engine running	*in case* # *in that* # *now that* # *because* # *when*	she was in a hurry when she came back.
It's a good proposal,	*except insofar as* √ *except in that* # *except because*	it makes no provision for bad debt.
It's a fairly good piece of work,	*considering that* √ *given that* √ *seeing as* # *because* # *in that* # *to the extent that* # *when*	you have been under a lot of pressure lately.
The proposal is useful,	*because* √ *since* √ *as* √ *in that* √ *insofar as* # *seeing as* # *to the extent that* # *considering that*	it gives us a fallback position if the forthcoming negotiations collapse.
	Seeing as √ *Given that* √ *Considering that* √ *Because* √ *Since* # *To the extent that*	we've got nothing but circumstantial evidence in this case, it's going to be difficult to get a conviction.
Compulsive gamblers fall into their addiction	*because* # *on the grounds that* # *since*	it provides an escape, however temporary, from the real world.
I have had this violin	*since* # *because* # *when*	I was a boy.
John stayed in bed that day,	*because* √ *as* √ *since* √ *on the grounds that* # *in that*	he was sick.
John must have been sick on Monday,	*because* √ *since* √ *as* √ *given that* # *on the grounds that* # *now that*	he stayed in bed all day.

Figure B.4: Cause Phrases: Examples of Substitutability

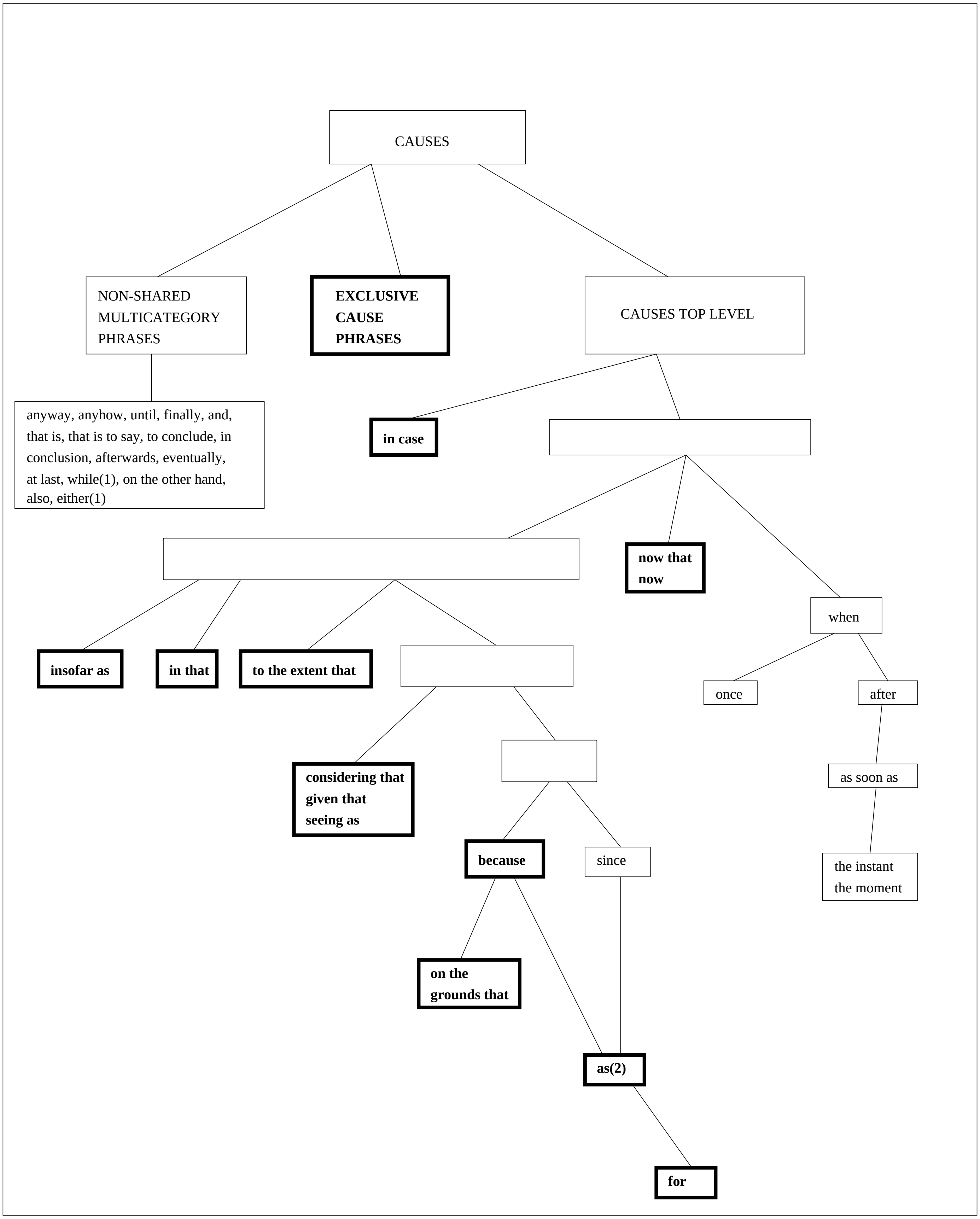

Figure B.4: Cause Phrases: Substitutability Diagram

Jim summoned his nerve and made a break for the door;	*at that,* √ *instantly,* √ *and* √ *after this,* √ *then* √ *as a result,* √ *consequently,* √ *so* # *in conclusion,* # *it follows that* # *to this end,* # *finally,* # *thereby,*	pandemonium broke out in the bar.
Sue left the country before the year was up;	*in so doing,* √ *thereby* → √ *immediately* → √ *and* √ *so* # *in short,* # *at that,* # *to this end,*	she lost her right to permanent residence.
We waited outside Mullen's door for three hours:	*at last,* √ *finally,* # *instantly,* # *at that,* # *in doing this,*	he agreed to see us.
The footprints are deep, and clearly defined.	*It follows that* √ *Plainly,* √ *That is to say,* √ *So* √ *Therefore,* # *As a result,* # *Finally,*	the thief was a heavy man.
The number is divisible by four;	*it follows that* √ *as a result,* √ *hence* √ *thus* # *instantly,* # *this way,*	it is divisible by two.
One night, Van Diemen nailed a pair of clogs to Mortimer's door.	*From then on,* √ *Thereafter,* √ *After this,* √ *(and)* # *All in all,*	Mortimer stopped coming to the Dog and Duck.
Mary held her breath,	*until* √ *so that* √ *and* √ *(finally)* # *from then on,* # *obviously*	she turned bright red.

Figure B.5: Result Phrases: Examples of Substitutability

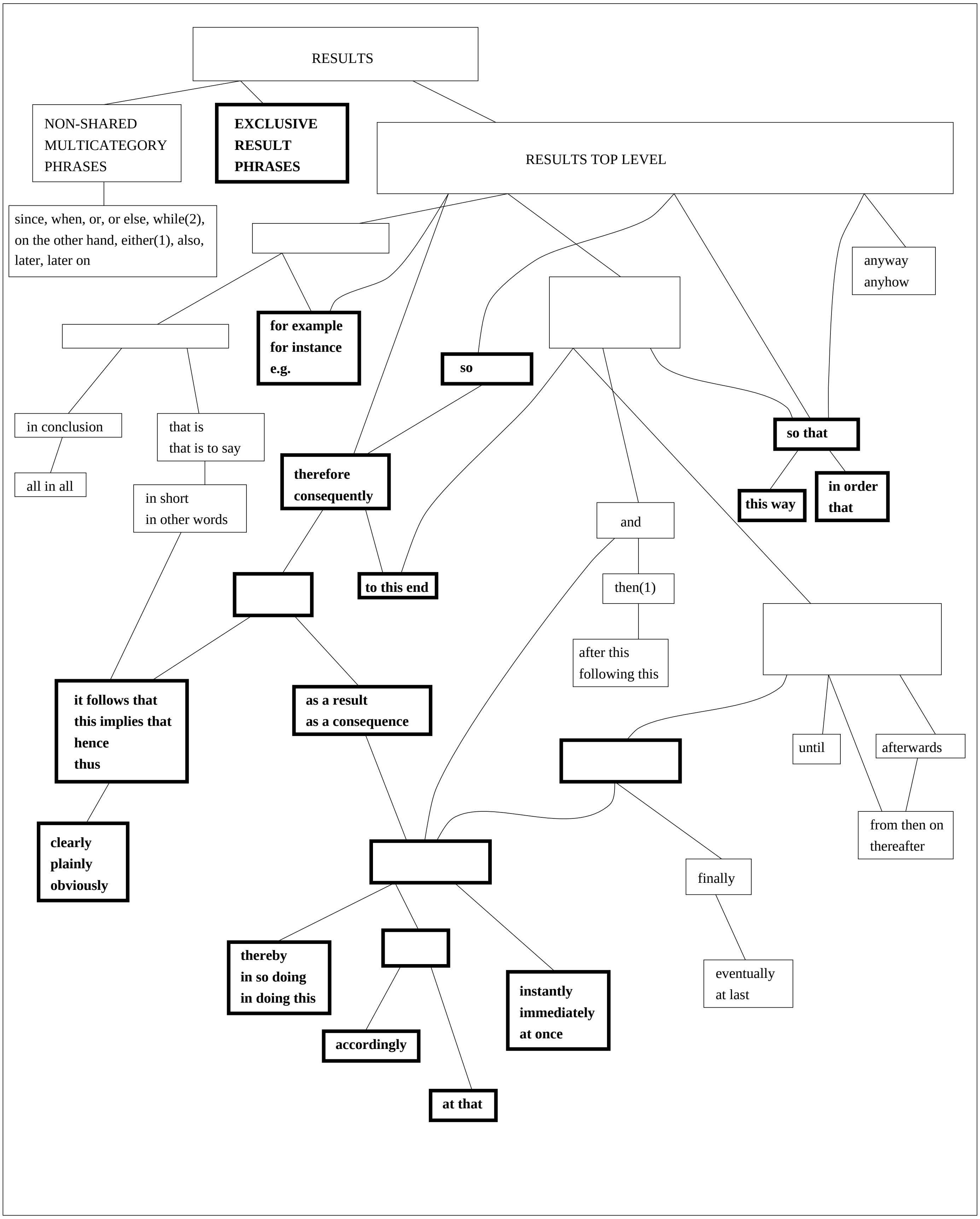

Figure B.5: Result Phrases: Substitutability Diagram

She'll be here at three o'clock this afternoon.	*At any rate,* ✓ *At least* ✓ *Or rather,* ✓ *That is,* # *In other words,* # *To recap,* # *In conclusion,* # *All in all,* # *Anyway,*	she hoped to be here at three: she might be a few minutes late.
It's high quality, good value for money, and easy to use:	*all in all,* ✓ *to conclude,* ✓ *in short,* ✓ *summing up,* # *or rather,* # *on the other hand,* # *at least,*	the RX-470 is an excellent package, and we highly recommend it.
As we have already seen, the story he told to Foley was completely different to the story he has given us.	*In conclusion,* ✓ *To conclude,* ✓ *In other words,* ✓ *In short,* # *All in all,* # *To summarise,* # *To recap,* # *Or rather,*	he must be lying to someone.
Foley doesn't like cowards; and if you don't agree to meet him, he'll think you're a coward. If you face up to him, he'll respect you, and he'll be more likely to make concessions.	*To sum up,* ✓ *To recap,* ✓ *Summing up:* ✓ *In conclusion,* ✓ *That is to say,* ✓ *In other words,* ✓ *All in all,* # *Or rather,* # *Anyway,*	we do think you should go to the meeting, but we don't think that you should agree to his demands.
The latest reports indicate that she doesn't want to visit our country.	*Or rather,* ✓ *That is,* ✓ *That is to say,* # *At any rate,* # *At least,* # *In conclusion,* # *All in all,* # *In other words,* # *To recap,*	she does want to visit, but not in the present political climate.

Figure B.6: Restatement Phrases: Examples of Substitutability

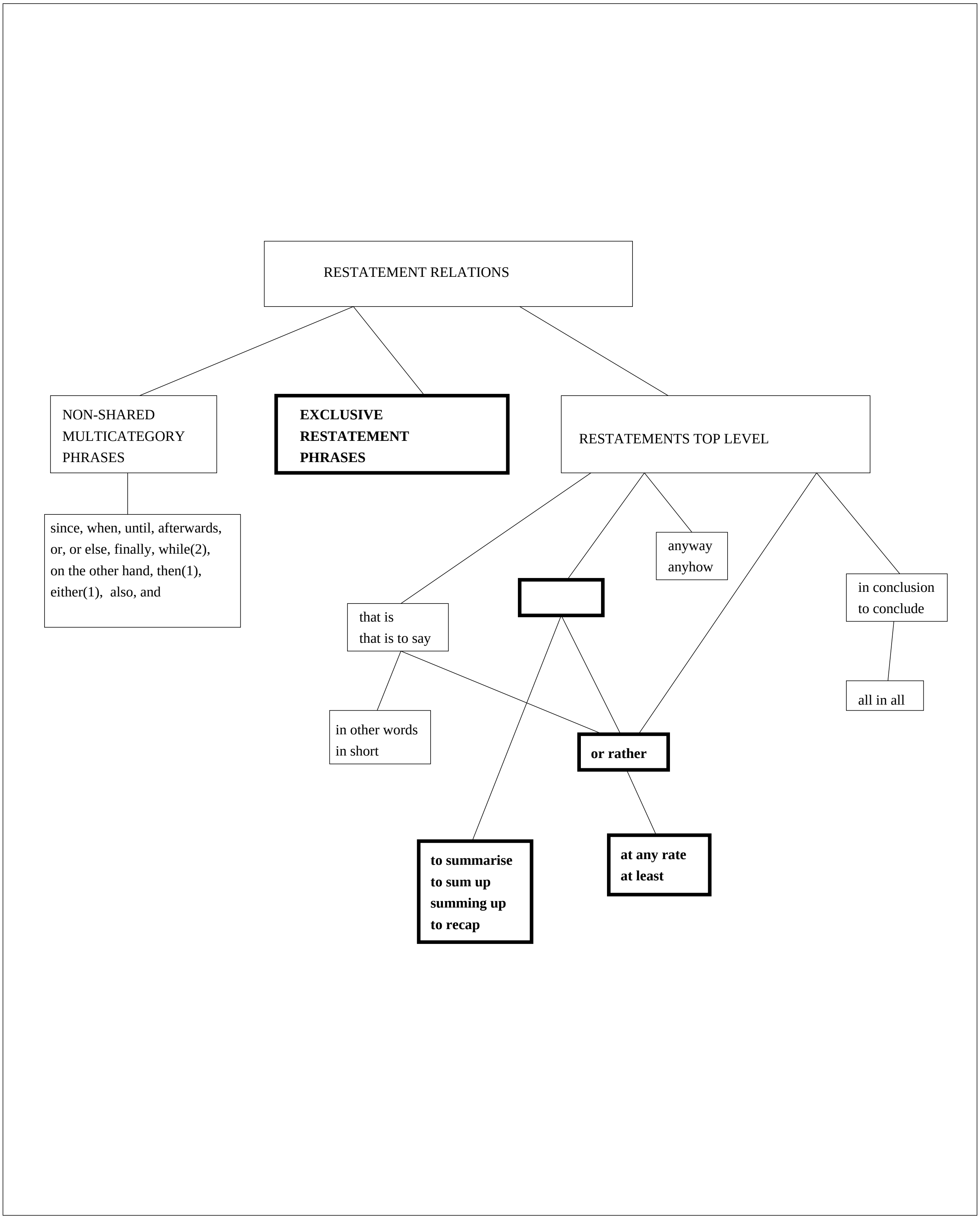

Figure B.6: Restatement Phrases: Substitutability Diagram

Jim felt the pain for the first time	*as* √ *when* √ *while* # *Meanwhile* # *and* # *once* # *after*	he was travelling to work.
It was a lazy Sunday afternoon. Bill tinkered with his old Honda,	*while* √ *and* √ *Meanwhile,* √ *as* # *when* # *then* # *finally* # *previously*	Bob mooched about on the deck reading the papers.
	As √ *When* # *While* # *After* # *Until* # *Ever since*	the children rushed by, Bob noticed that some of them were crying.
	The instant √ *As soon as* √ *After* # *As* # *Once* # *While*	we had stepped out of the house, there was a huge clap of thunder.
	Once √ *As soon as* √ *After* √ *The moment* # *As*	we had left the house, Jim began to talk more freely.
I have been frightened of bees	*ever since* √ *since* # *; previously,* # *; beforehand,* # *once* # *after*	I was a child.
The service begins at nine o'clock;	*afterwards,* √ *from then on,* √ *after this,* √ *and* √ *then* # *later on,* # *after*	it runs every half an hour.
Jim had a tattoo done while he was on service in the Philippines.	*Later on* √ *Later* √ *Afterwards* # *And* # *Following this*	he regretted it, because it made it harder for him to find a job.

Figure B.7: Temporal Phrases: Examples of Substitutability

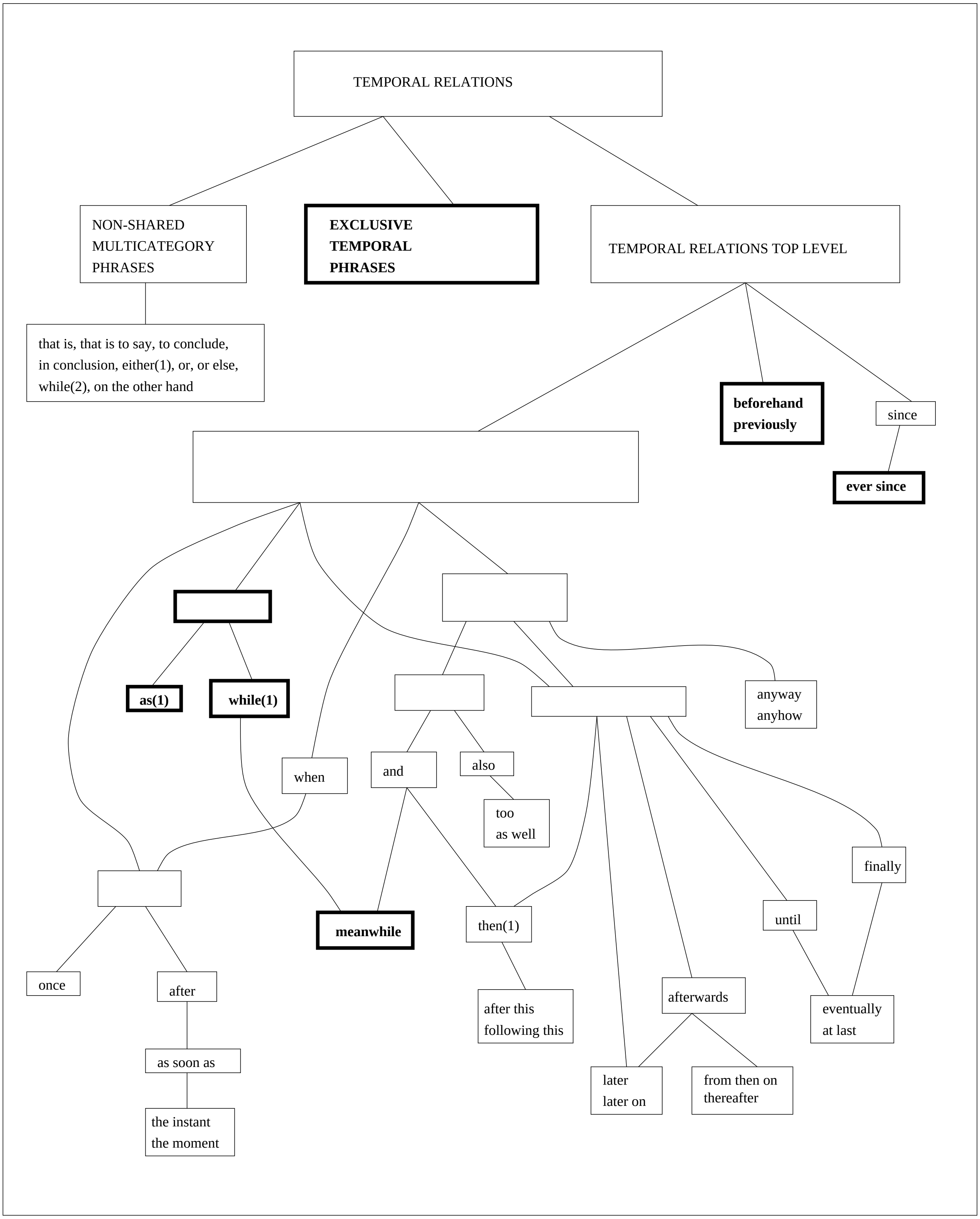

Figure B.7: Temporal Phrases: Substitutability Diagram

Jim didn't go to school that morning;	*instead,* \# *rather,* \# *but*	he stayed in bed.
It is not the government that is to blame;	*rather,* \# *instead,* \# *but*	it is the civil service.
She's part-time;	*but* ✓ *however,* ✓ *even so,* ✓ *in spite of this,* \# *although* \# *while*	she does more work than the rest of us put together.
She does more work than the rest of us put together,	*even though* \# *but* \# *while*	she's part-time.
That night, Bill and Bob were dressed very differently. Bill was wearing a red suit;	*whereas* ✓ *and* ✓ *on the other hand,* \# *but* \# *having said that,* \# *though* \# *all the same,*	Bob was wearing a blue one.
Jim was starving;	*but* ✓ *however,* \# *nevertheless,*	there was no food in the house.
We could go out for a walk.	*Having said that,* ✓ *Then again,* ✓ *On the other hand,* \# *Whereas* \# *And* \# *Though* \# *Despite this,*	it's raining: we may be better off indoors.
Give me your money;	*otherwise,* ✓ *or* \# *alternatively,* \# *and*	I'll punch you.
	Even though ✓ *While* \# *Whereas*	I am normally a timid man, on this occasion I was roused to anger.
Bill and Bob could not be more different.	*Whereas* ✓ *While* \# *Though*	Bill excels in all kinds of sports, Bob lives for his schoolbooks.
	Either ✓ *(Unless)* ✓ *(Until)* \# *On one hand*	you settle the matter amicably, or you will never be friends again.

Figure B.8: Negative Polarity Phrases: Examples of Substitutability

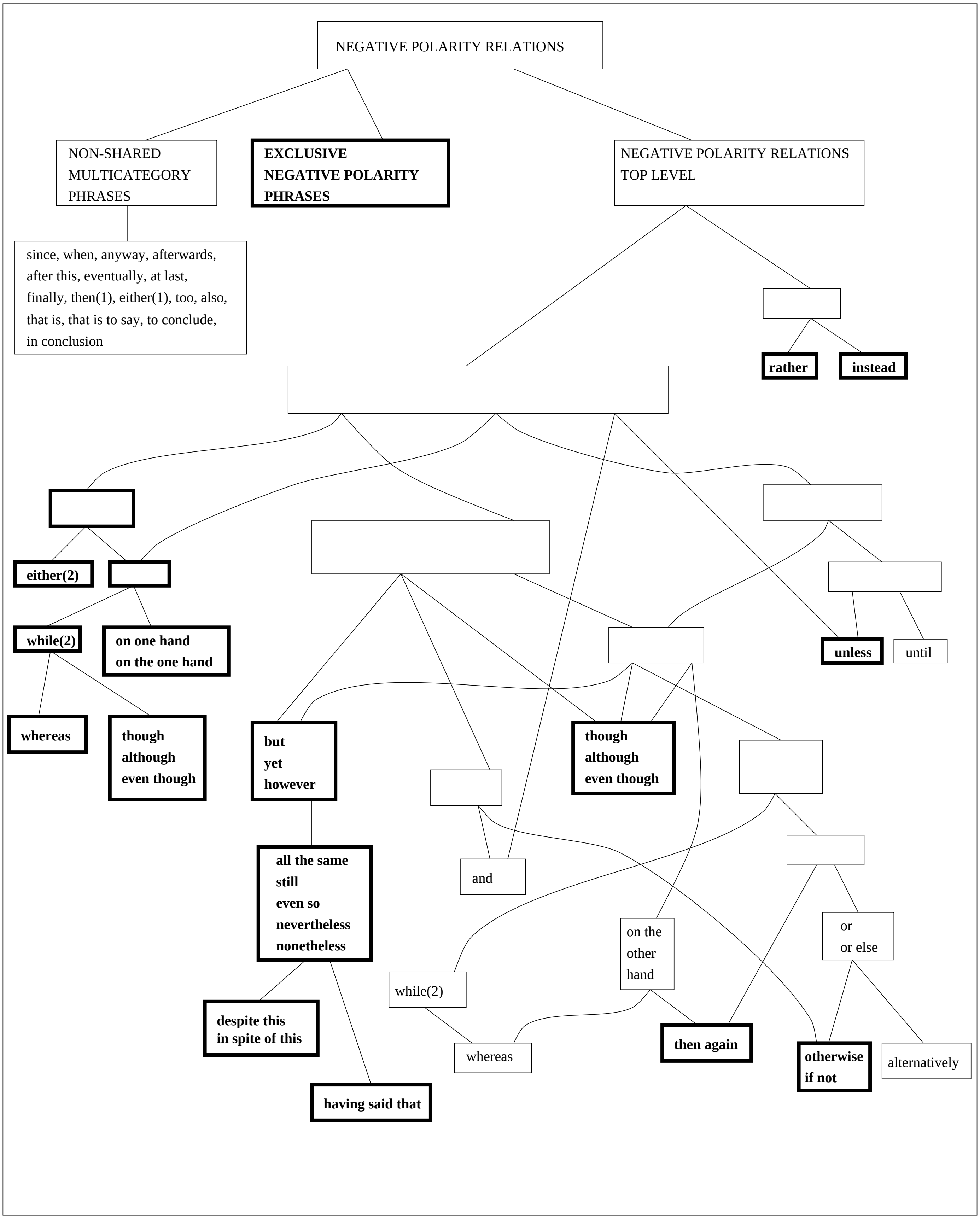

Figure B.8: Negative Polarity Phrases: Substitutability Diagram

I don't despise him at all:	*on the contrary,* ✓ *even* → ✓ *indeed* ✓ *as a matter of fact,* ✓ *in fact* # *in point of fact,*	I have a lot of respect for him.
I liked Perkins a great deal:	*indeed* ✓ *actually,* ✓ *in fact,* # *even* # *on the contrary,* # *in point of fact,* # *in truth,*	the whole squadron liked him.
We all liked Perkins.	*Even* # *Indeed,* # *On the contrary,* # *In fact,* # *Actually,*	the sergeant-major liked him.
Fred treated us very well while we were staying with him: he was very thoughtful. He	*even* # *indeed* # *on the contrary* # *in fact* # *actually*	drove us to the airport when we left.
Grandpa's always going on about his experiences during the war.	*In truth,* ✓ *In point of fact,* ✓ *In fact,* ✓ *Actually,* ✓ *As a matter of fact,* # *Indeed,* # *Even,* # *On the contrary,*	he was only in the catering corps; but he still seems to have had a pretty hairy time.

Figure B.9: Additional Information Phrases: Examples of Substitutability

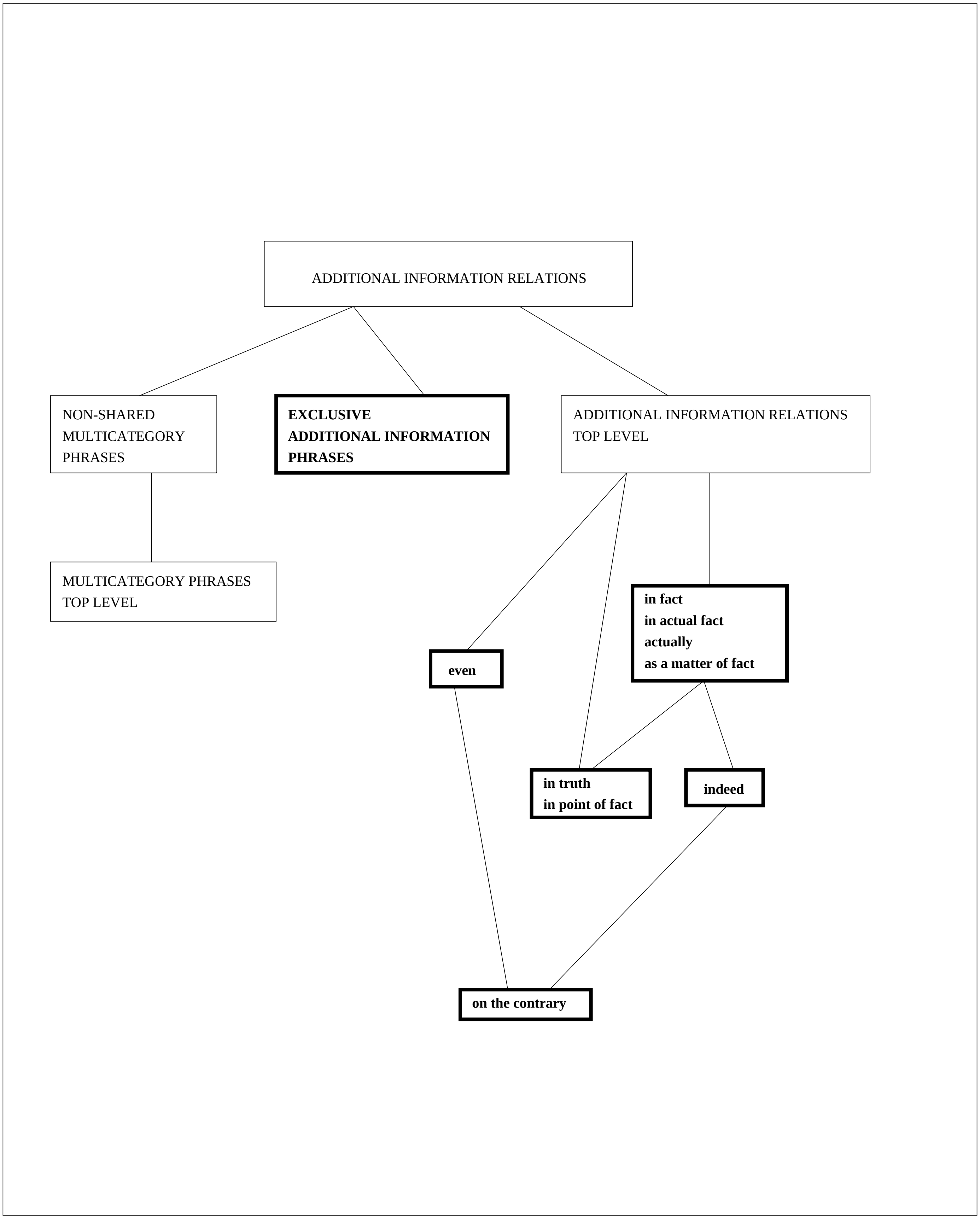

Figure B.9: Additional Information Phrases: Substitutability Diagram

	If only √ *If* √ *(Supposing that)* # *If ever* # *As long as* # *On condition that*	I had spoken up in yesterday's meeting, they would have been eating out of my hand by now!
	If ever √ *If* # *If only*	I strike it rich, I promise that I'll give you a fifty percent share in the business.
	If ever √ *If* √ *(Supposing)* # *If only* # *As long as* # *On condition that*	she decided to leave me, I would be heartbroken.
	As long as # *If* # *On condition that* # *If ever* # *If only*	the Tories are in power, we have no chance of electoral reform.
You can stay up with us	*on condition that* √ *as long as* √ *if* # *if ever* # *if only*	you promise to be quiet.
	Assuming that √ *Supposing that* √ *If* √ *As long as* # *If ever* # *On condition that*	I really am one of the lucky winners, then that holiday in Tonga may be on the cards after all!
	Assuming that √ *Supposing that* √ *(Suppose that)* √ *If* # *If ever*	they are travelling at about sixty miles an hour, they will arrive in about twenty minutes.
Suppose that Liz had genuinely forgotten our appointment:	*in that case,* √ *if so,* √ *(then)*	she wouldn't have sounded so apologetic on the phone this evening.
If you behave well tonight,	*then* # *if so,* # *in that case*	you'll have extra pocket money on Friday.

Figure B.10: Hypothetical Phrases: Examples of Substitutability

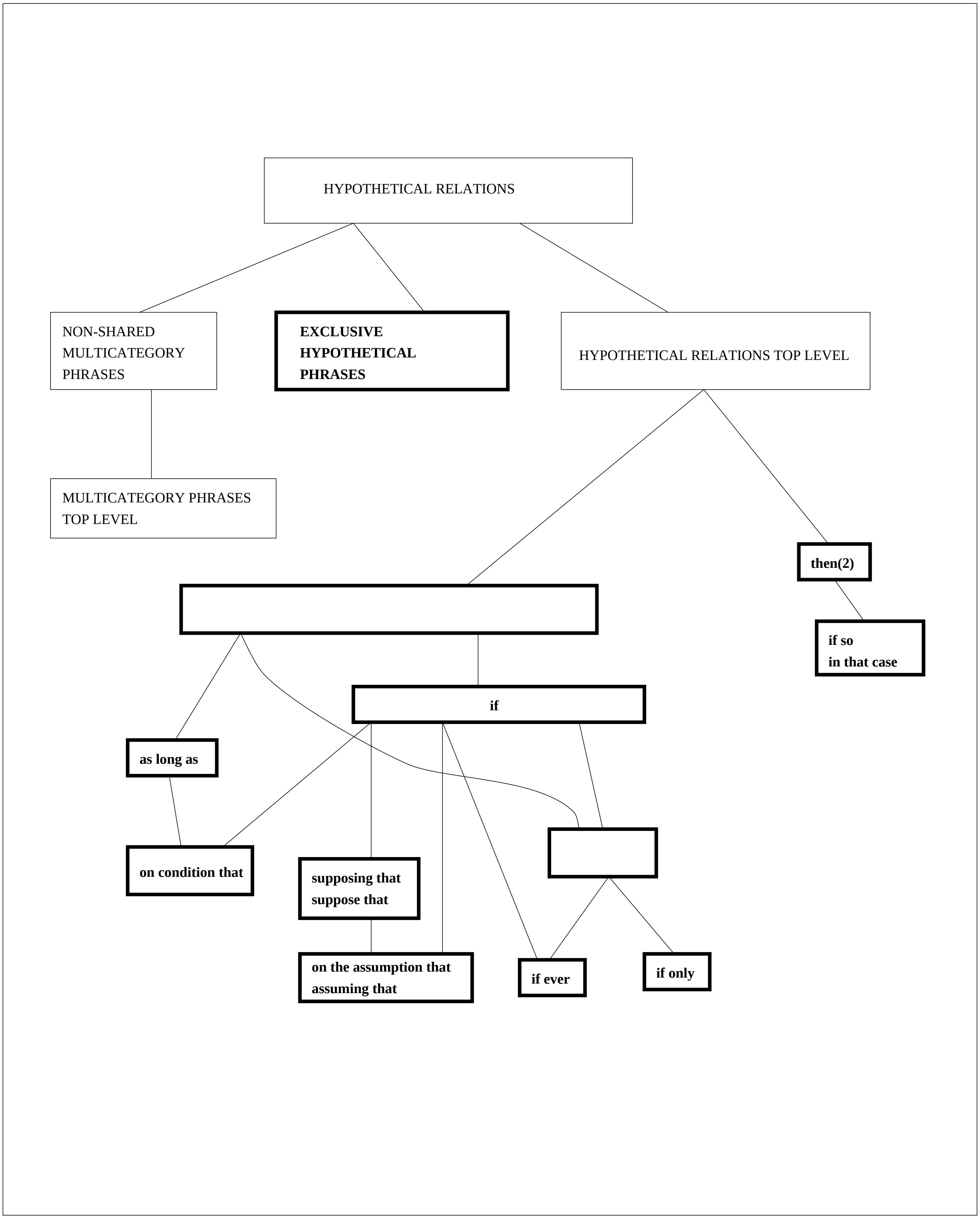

Figure B.10: Hypothetical Phrases: Substitutability Diagram

Jim jumped off the cliff, so Bill	*also* √ *as well* → √ *too* → # *in addition* # *either* # *just as*	jumped off.
I don't like Jim. He has no sense of humour;	*In addition,* √ *either* → √ *also* # *as well* # *too* # *as*	he has no brains.
Jip swam	*just as* √ *as* √ *the way* # *and* # *also* # *either*	all dogs swim: head up, with an expression of panic.

Figure B.11: Similarity Phrases: Examples of Substitutability

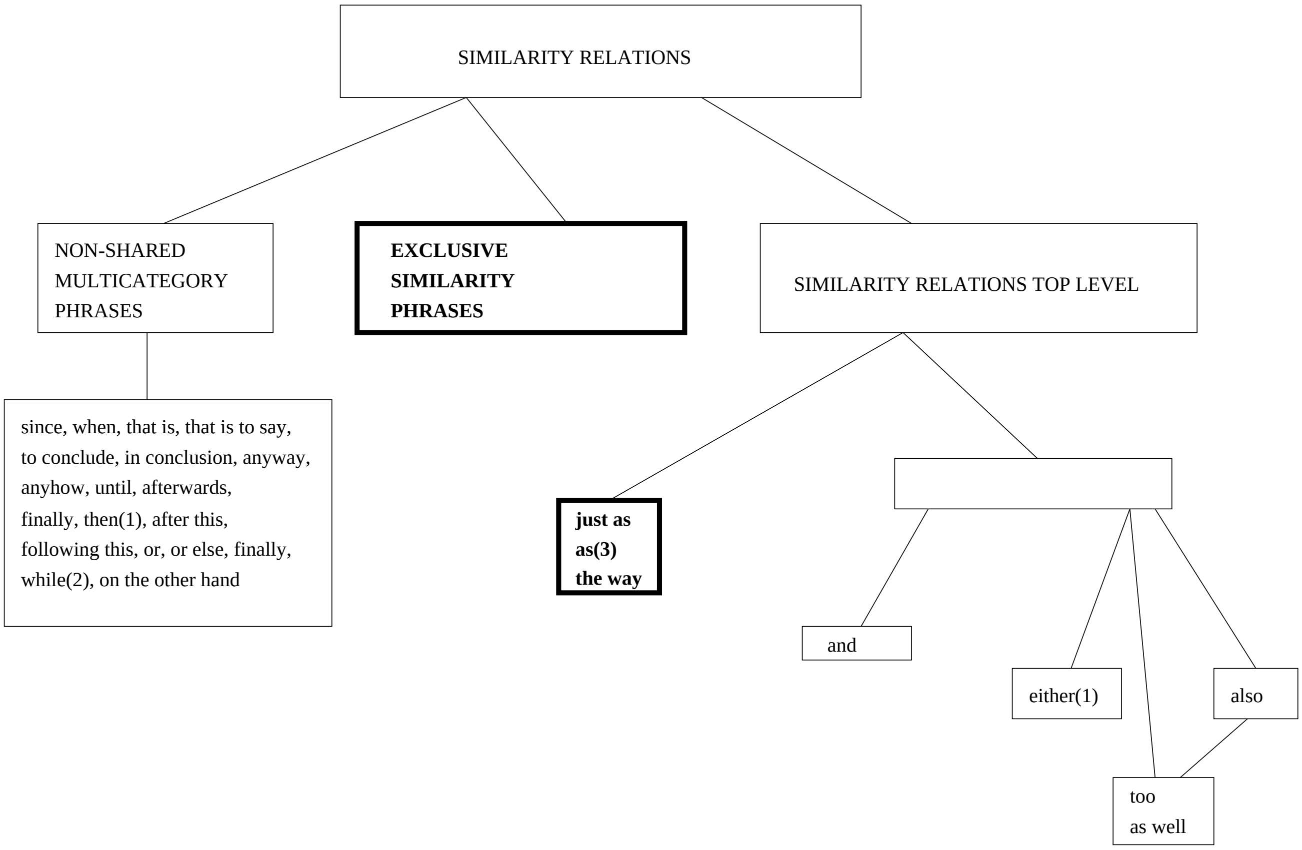

Figure B.11: Similarity Phrases: Substitutability Diagram

We were talking about Frank, and about how tidy his flat is these days. It's quite amazing, considering how it used to look.	*Incidentally,* ✓ *By the way,* # *And* # *Anyway,* # *Actually,* # *Besides,* # *Then* # *However,*	did you know that Frank has given up his job? He's now writing full time. Maybe that's why he's turned over a new leaf...

Figure B.12: Digression Phrases: Examples of Substitutability

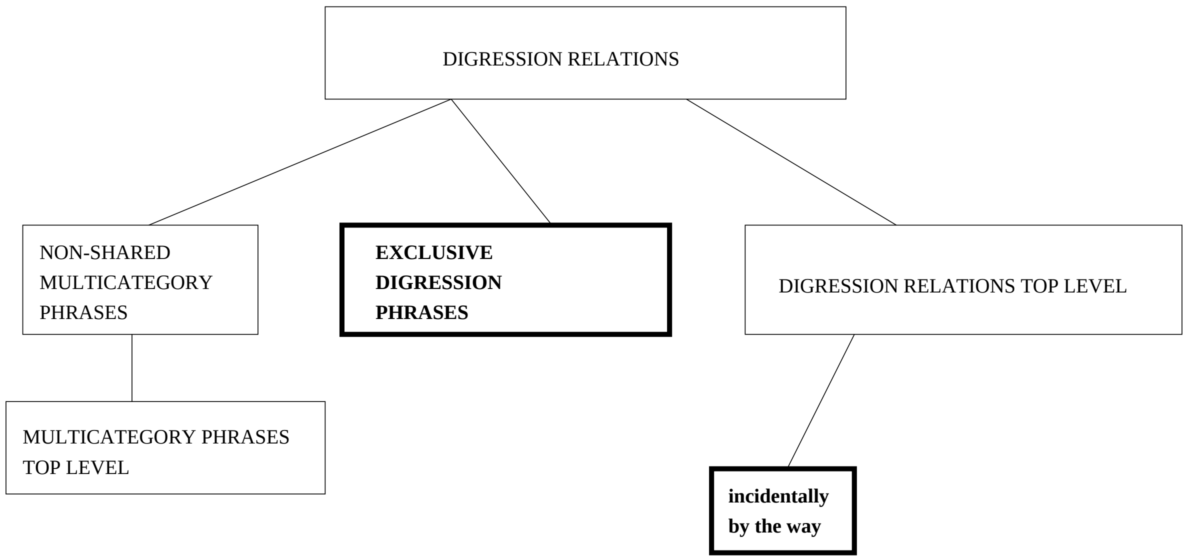

Figure B.12: Digression Phrases: Substitutability Diagram

We were all shocked	*when* # *since* # *in other words* # *and*	we heard that Kennedy had been assasinated.
Forensic has drawn a blank, door-to-door questioning is getting nowhere, and we can't even begin to think of a motive.	*In short,* # *When* # *Ever since* # *And* # *Anyway,* # *On the other hand,*	the case is a complete shambles.
John walked all afternoon	*, until* √ *, and* √ *, then* √ *; finally* √ *; eventually* # *, or* # *; on the other hand,* # *; either*	he reached a huge forest.
I'm not sure whether she should get the job. She is pretty smart;	*on the other hand,* # *whereas,* # *finally,* # *after this,* # *or esle* # *until*	she didn't show much enthusiasm in the interview.
It could be in the kitchen;	*or* √ *alternatively* √ *on the other hand,* √ *also* → √ *as well* → # *either* # *whereas* # *until* # *anyway,*	it could be in the living room.
I'm more or less a committed socialist,	*whereas* # *also* # *either* # *too*	she's far to the right of Genghis Khan.
It's good idea to keep them in their present jobs. Mullen has a flair for research;	*and* √ *also,* √ *whereas* # *as soon as* # *thereafter,* # *either*	Clarke is well suited to fieldwork.

Figure B.13: Multicategory Phrases: Examples of Substitutability

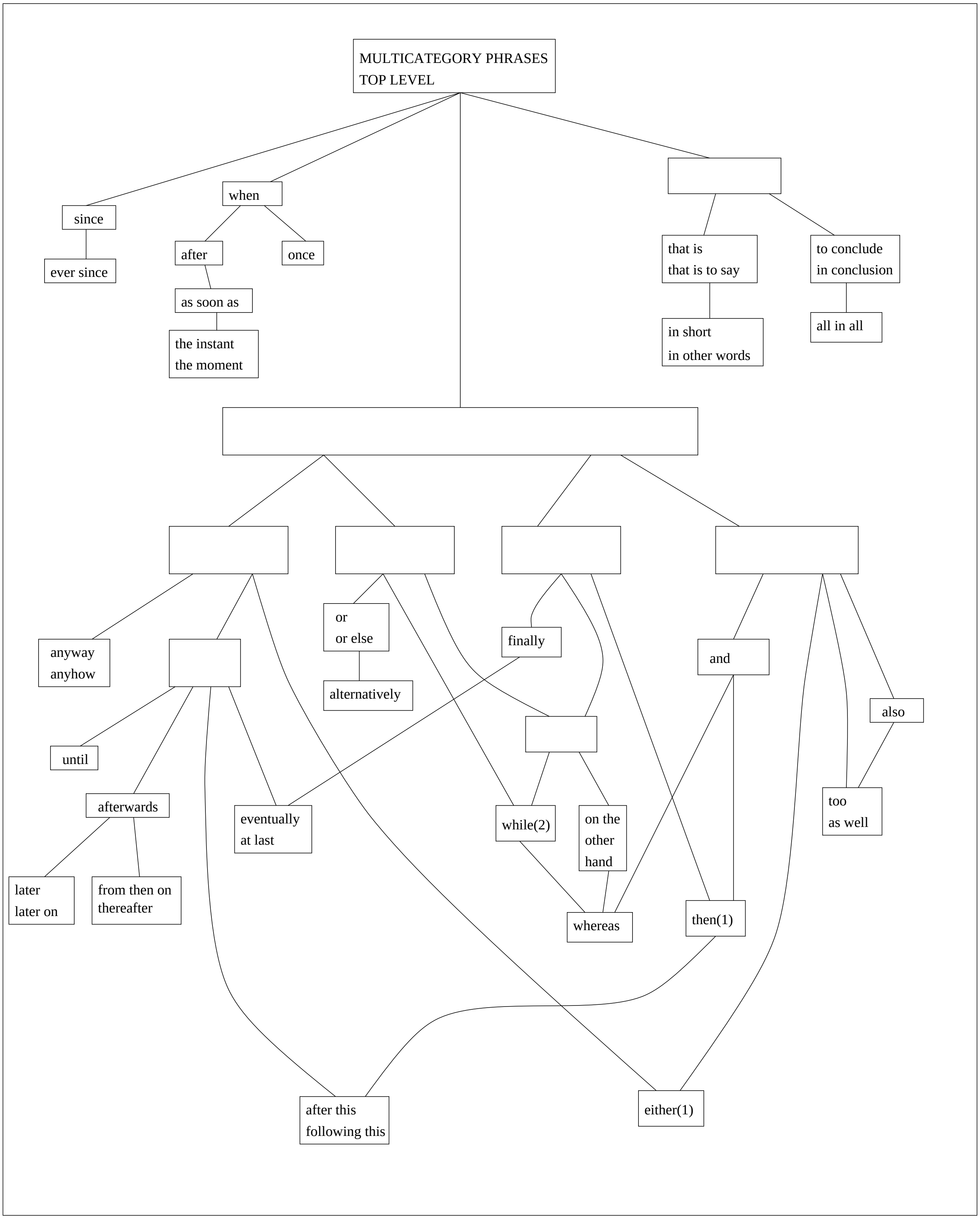

Figure B.13: Multicategory Phrases: Substitutability Diagram

Appendix C

The Core Set of Features Motivated from the Taxonomy

This appendix gives definitions for the eight features motivated in Chapter 6, along with some explanation of the variables in terms of which they are defined. The definitions given here are slightly different from those given in Chapter 6, as in this chapter they were introduced one by one, and reference could not be made to constructs yet to be introduced.

A relation is specified as holding between two adjacent text spans, S_A and S_C. The order of these spans is not initially specified.

Variables used in one definition have scope across all other definitions: thus, for instance, the value of A or C in one definition is expected to unify with the values of A and C in other definitions.

SOURCE OF COHERENCE

> SEMANTIC: the intended effect of the text containing the relation is that the reader believes some relation holds between two propositions A and C. A and C are the propositional contents of the two related text spans S_A and S_C.
>
> PRAGMATIC: the intended effect of the text containing the relation is that some relation actually holds between two propositions A and C. A and C are the intended effects of the two related text spans S_A and S_C.

ANCHOR

> CAUSE-DRIVEN: $A \in P_1 \ldots P_n$; $P_1 \wedge \ldots \wedge P_n$ is true.
>
> RESULT-DRIVEN: A corresponds to Q; and A is desired by the protagonist.

PATTERN OF INSTANTIATION

UNILATERAL: C' is on the same side of the rule as A' (but not the same as A).

BILATERAL: C' is on the opposite side of the rule to A'.

FOCUS OF POLARITY

ANCHOR-BASED: $F = A$; $F' = A'$; $I = C$; $I' = C'$.

COUNTERPART-BASED: $F = C$; $F' = C'$; $I = A$; $I' = A'$.

POLARITY

POSITIVE: $F = F'$; $I = I'$;

NEGATIVE: $F = \neg F'$; $I = I'$.

PRESUPPOSITIONALITY

PRESUPPOSED: $Precond$ is part of the left-hand side of the rule $X_1 \wedge \ldots \wedge X_n \rightarrow Y$, and A is Y.

NON-PRESUPPOSED: $Precond$ is A itself.

MODAL STATUS

ACTUAL: $Precond$ is known by the protagonist/writer.

HYPOTHETICAL: $Precond$ is not known by the protagonist/writer.

RULE TYPE

CAUSAL: the defeasible rule $P_1 \wedge \ldots \wedge P_n \rightarrow Q$ is a causal rule.

INDUCTIVE: the defeasible rule $P_1 \wedge \ldots \wedge P_n \rightarrow Q$ is an inductive rule.

There follows a brief description of each of the variables used in these definitions.

- S_A: the text span associated with the anchor of the relation.
- S_C: the text span associated with the counterpart of the relation.
- $P_1 \wedge \ldots \wedge P_n \rightarrow Q$: the rule linking A' and C'.
- A: the **anchor** of the relation.

- C: the **counterpart** of the relation.
- A': the anchor after the polarity transformation has taken place.
- C': the counterpart after the polarity transformation has taken place.
- F: the **focus of polarity**. Represents either the anchor or the counterpart before the polarity transformation.
- I: the **invariant**. Represents either the anchor or the counterpart before the polarity transformation.
- F': represents either the anchor or the counterpart after the polarity transformation.
- I': represents either the anchor or the counterpart after the polarity transformation.
- $X_1 \wedge \ldots \wedge X_n \rightarrow Y$: the rule for linking A to $Precond$.
- $Precond$: the proposition associated with the context preceding (or overlapping with) spans S_A and S_C.

Appendix D

A Preliminary Set of Relation Definitions

This appendix contains a table giving the set of relation definitions as it has so far been worked out. In fact, it is better thought of as containing definitions of cue phrases than definitions of relations. As argued in Section 6.4.2, the set of relation definitions should probably be regarded as an overlay on the set of cue phrase definitions. The issue of whether 'high-level' phrases should ever be thought of as markers of 'more abstract' relations was left unresolved; therefore it might be that the definitions of some of the higher-level cue phrases in the table should be left out of the final set of relation definitions. But in any case, it should not be necessary to devise any definitions in addition to those presented in the table.

A number of other caveats should be mentioned before the table is presented. Firstly, I have just selected a subset of cue phrases to look at at this stage. I have aimed to choose a wide range of different phrases, rather than to consider them in any particular order. In fact, the table is best seen as bringing together a collection of additional hypotheses to investigate in the style of Chapter 6. As has already been stressed, it was not possible to consider each phrase or each combination of feature values in detail in this chapter.

Secondly, the set of features used to frame the definitions is still not complete. Again, as emphasised in Chapter 6, there are many patterns of substitutability in the taxonomy which the current set of features does not yet seem able to explain; further features have still to be motivated.

Finally, there are many places where I am not sure of the value of a particular feature. These places are left blank, and should be distinguished from boxes containing a dash (—), which denote that a feature is undefined.

D.1 A Table of Cue Phrase Definitions

Cue Phrase	SOURCE OF COHERENCE	ANCHOR	PATTERN OF INSTANTIATION	FOCUS OF POLARITY	POLARITY	PRESUPPOSITION-ALITY	MODAL STATUS	RULE TYPE
if S_A, S_C	—	—	—	COUNT	—	PRES	HYP	CAUS
S_A; despite this, S_C	PRAG	CAUS	BILAT	COUNT	NEG	NON	ACT	CAUS
even if S_A, S_C		—	—	COUNT	NEG	PRES	HYP	CAUS
even when S_A, S_C			—	COUNT	NEG	PRES	ACT	CAUS
S_A; otherwise S_C		RES	BILAT	ANCH	NEG	NON	ACT	CAUS
unless S_A, S_C	PRAG	CAUS	BILAT	ANCH	NEG	PRES	HYP	CAUS
until S_A, S_C	SEM	CAUS	BILAT	ANCH	NEG	PRES	ACT	CAUS
because S_A, S_C	PRAG		BILAT	COUNT	POS	PRES	ACT	CAUS
S_A, in order that S_C	PRAG	RES	BILAT		POS	PRES		CAUS
to S_A, S_C	PRAG	RES			POS	PRES		CAUS
by S_A, S_C	PRAG	RES	BILAT		POS	PRES	ACT	CAUS
S_A; instead S_C			UNIL	COUNT	NEG	NON	ACT	CAUS
S_A; rather S_C			UNIL	COUNT	NEG	NON	ACT	CAUS
S_A or S_C	—	—	—	ANCH	NEG	NON	HYP	CAUS
S_A; besides, S_C	PRAG		UNIL	COUNT	NEG	NON		CAUS
S_C, before S_A	SEM					PRES	ACT	CAUS
S_A; instantly S_C	SEM					NON	ACT	CAUS
S_A; before long S_C	SEM					NON	ACT	CAUS
S_A; suddenly S_C	SEM					NON	ACT	CAUS
S_A; not that S_C	PRAG					NON		
S_A; even then S_C					NEG		—	CAUS
S_A; then S_C	—				POS		—	
S_A; next S_C	—				POS	NON	ACT	
S_A; finally S_C	—				POS	NON	ACT	
only if S_A, S_C	—				NEG	PRES	HYP	CAUS
only when S_A, S_C	SEM				NEG	PRES	ACT	CAUS
S_A; in that case, S_C					POS	NON	HYP	CAUS
S_A, so S_C	—	—	BILAT		POS			CAUS
S_A; it follows that S_C	PRAG		BILAT		POS	NON	ACT	CAUS
S_A; as a result S_C	SEM	CAUS	BILAT	COUNT	POS	NON	ACT	CAUS
S_A; but S_C	—	—	—	COUNT	NEG	NON	ACT	—
S_A; as it happened, S_C		RES	UNIL		—	NON	ACT	CAUS
S_A; fortunately, S_C	SEM	RES	UNIL		POS	NON	ACT	CAUS
S_A; unfortunately, S_C	SEM	RES	UNIL		NEG	NON	ACT	CAUS
S_A; on the other hand S_C	—		UNIL		NEG	NON	ACT	IND
S_A, whereas S_C	SEM		UNIL		NEG	PRES	ACT	IND
S_A; then again, S_C	PRAG		UNIL		NEG	NON	ACT	IND
admittedly, S_A; but S_C	PRAG		—		NEG	NON	ACT	
provided that S_A, S_C			BILAT	COUNT	—	PRES	HYP	CAUS
when S_A, S_C	SEM	—	—	COUNT		PRES	ACT	
S_A; meanwhile S_C	SEM		UNIL			NON	ACT	CAUS
while S_A, S_C	—		—		—	PRES	ACT	—?
S_A and S_C	—		—		—	NON		—?
S_A; furthermore, S_C	PRAG		UNIL		POS	NON	ACT	IND?