The Correspondence of Resultive Connectors in English and Swedish [1]

Bengt Altenberg, University of Lund

1.Introduction

Causality plays a fundamental role in human thought and communication (see e.g. Couper-Kuhlen and Kortmann 2000). As a result, expressions of causal relations are an important and common feature in most languages, in spoken as well as written discourse. Broadly speaking, a causal relation can be described as a relationship between a 'cause' and an 'effect'. When the relation is obvious or inferable from the context, it does not have to be overtly expressed:

> (1)   John was ill. He couldn't come to the party.

Often, however, an explicit connector is used to indicate the causal relationship:

> (2)   John was ill, **so** he couldn't come to the party.

Both (1) and (2) are examples of objective causal relations reflecting circumstances over which the subject has no control (also called 'semantic' or 'content' relations). But causality can also involve varying degrees of subjectivity (see Pander Maat and Sanders 2000) as in (3) where the second clause expresses an intentional action and the first the reason for this action:

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(3)   John wanted to study, **so** he didn't go to the party

That (3) differs from (2) is shown by the fact that *so* can be replaced by *as a result* in (2) but less naturally in (3).

In the real world the cause always precedes the effect in time, but in discourse the order of presentation varies. For example, in (1) - (3) the sequence of cause and effect parallels that of the real world (iconic word order), but in (4) the effect is presented before the cause (effect-cause order):

(4)   John couldn't come to the party, **because** he was ill.

Conceptually the cause can also be derived from the effect:

(5)   John didn't come to the party, **so** he must have been ill.

Here the conclusion presented in the second clause (the real-world cause) is based on the information in the first clause (the real-word effect). Conceptually, the 'effect' represented in the second clause is a pragmatic inference (cf. Sweetser 1990). A variant of this case are examples in which the 'effect' is a tentative conclusion or a declarative question triggered by the situation or a previous speaker's utterance:

(6)   A: John was ill.
       B: **So** he didn't go to the party?

Here the sequence of the utterances reflect the real-world order of cause and effect, but again the reverse order is also possible:

(7)   A. John didn't go to the party.
       B: He was ill **then**?

We see then that causality is a complex notion that can be presented in many ways. To accommodate the various possibilities (and others not mentioned here) languages like English and Swedish have a wide range of syntactically different means of expression, such as verbs (e.g. *cause*, *lead to*), prepositions (e.g. *because of*, *on account of*), subordinators (*because*, *since*, *as*), adverbial connectors (e.g. *as a result*, *so*, *therefore*) and

various clause-integrated expressions (e.g. *the result is, that's (the reason) why*).2 The choice of expression depends on a variety of factors, such as the semantic or pragmatic nature of the relationship, the sequence and grammatical realization of the causal units, and the style and register of the discourse. Languages tend to differ in their repertoire of connectors as well as in their readiness to signal causal relationships explicitly (see e.g. Mauranen 1993 and Fabricius-Hansen 2005). Although some research has been devoted to the use of causal connectors in individual languages, especially English, little is known about the cross-linguistic correspondences of causal connectors in different languages. Contrastive studies based on translation corpora are excellently suited to increase our knowledge in this respect. Such studies can identify the set of connectors that are available in the languages compared, how the connectors are used in real texts, and the cross-linguistic correspondence between them.

In this study I will briefly examine the correspondence of adverbial causal connectors in English and Swedish on the basis of the English-Swedish Parallel Corpus (see below). Since these connectors typically occur in clauses expressing the 'result' (effect, consequence or conclusion) of a preceding 'cause', I will follow Quirk et al. (1985: 634 ff.) and Biber et al. (1999: 877 ff.) and call them 'resultive' connectors.

The study is preliminary and mainly intended to demonstrate an approach that I have found useful as a first step in a cross-linguistic comparison of linguistic expressions in a bi-directional translation corpus. The approach is useful in that it provides a revealing picture of the main paradigms, or sets of expressions, that are used to express a certain 'meaning' in the languages compared and the degree of correspondence between the expressions involved (see Altenberg 1999). Once these have been established, it is possible to examine the correspondences in greater detail and describe the factors determining the choice of expression in the two languages.

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2 For a survey of the most common types and their use in spoken and written English, see Altenberg (1984).

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2. Material and method

The starting-point of the study is an inventory of connectors expressing 'result', 'inference' and 'conclusion' in the two languages, mainly drawn from Quirk et al. (1985) for English, and Teleman et al. (1999) for Swedish. The following connectors were included:

> English: *accordingly, as a result, as a consequence, because of this/that, consequently, for this/that reason, hence, in consequence, in that case, so, that's why, then, therefore, thus.*

> Swedish: *alltså* 'so', *då* 'then', *därför* 'therefore', *det är/var därför (som)* 'it is/was therefore (that)', *följaktligen* 'consequently', *följdriktigt* 'as a result', *för den skull* 'because of that', *i och med detta* '(in and) with this', *i så fall* 'in that case', *på grund av detta* 'because of this', *så* 'so', *således* 'thus', *sålunda* 'thus'.

The great majority of these are adverbial connectors but there are two exceptions. English *so* is a 'semi-coordinator' (see Quirk et al. 1985: 928) and its cognate Swedish counterpart *så* is clearly a coordinator (see Teleman et al. 1999: 2730). *That's why* is a so-called 'reversed *wh*-cleft' (or pseudo-cleft) construction (see Quirk et al. 1885: 1387f.). It is a variable grammatical construction but has been judged sufficiently common and conventionalized to be included as a resultive 'connector'. Swedish has no structural counterpart, but the near-equivalent *det*-cleft construction *det är/var därför (som)* 'it is/was therefore (that)', corresponding to an English *it*-cleft construction, was included for comparison.3 As Mats Johansson (2002) has demonstrated, English reversed *wh*-clefts and

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3Both the English and Swedish clefts are grammatically variable constructions: they can be inflected for tense and be modulated in terms of polarity and modality and they permit adverbial modification. The subject of the English *wh*-cleft is either the demonstrative pronoun *that* or *this* or relative *which*. For practical reasons I will just use their most common forms *that's why* and *det är det (som)* here.

Swedish *det*-clefts are often treated as functionally equivalent. As we shall see, both types are common as resultive markers in the material, in the original texts as well as in the translations.

In should be added that some of the examined connectors are anaphoric or deictic in character (e.g. English *because of this/that, for this/that reason, in that case, that's why, then* and Swedish *då, därför, i så fall, på grund av detta*), referring back to a cause, reason or circumstance in the preceding discourse. They might therefore be regarded as 'causal' rather than 'resultive' connectors.4 However, like the other connectors they occur in resultive clauses and contribute to our interpretation of these clauses as the 'result', 'consequence' or 'conclusion' of a preceding circumstance. Hence, no distinction has been made between them and non-anaphoric connectors in the inventory of connective items, but the anaphoric nature of some connectors will be considered when it seems to affect the choice of translation.

The resultive use of these connectors was examined in the English-Swedish Parallel Corpus (ESPC). This corpus consists of a wide range of text samples from original English and Swedish sources and their translations into the other language. Both fiction and non-fiction texts are represented in the corpus. The original English and Swedish texts have been matched as far as possible in terms of text type and purpose and the corpus can therefore be used both as a comparable corpus and as a translation corpus (on the advantages of this, see Johansson 1998 and Altenberg and Aijmer 2000). The total size of the corpus (including original texts and translations from both languages) is over 2,8 million words. For a

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4 Teleman et al. (1999: 4.150 ff.) make a distinction between 'conjunctional' sentence adverbials (e.g. *alltså, då, följaktligen, följdriktigt, således, sålunda*) and what they call 'free' anaphoric adverbials expressing cause and condition (e.g. *därför, fördenskull, i så fall, på grund av detta*) but admit that the borderline between the two types is unclear since both can express a logical relation to a preceding clause. One characteristic feature of 'free' adverbials is that they can be the focus of cleft constructions, be negated and questioned (cf. Quirk et al. 1985: 4, 145, 151) but this criterion, too, is not infallible (*i så fall*, for example, cannot be the focus of a cleft construction).

detailed description of the corpus, including an explanation of the text codes used in this paper, see Altenberg et al. (2001).

3. Distribution of connectors in the original texts

Altogether fourteen English and thirteen Swedish connectors were examined in the corpus. Their distribution in the English and Swedish original texts is shown in Tables 1 and 2.5

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5 Since the size of the non-fiction material is somewhat larger than that of the fiction material, the absolute figures for these two categories are not fully comparable. However, the proportion is the same in the two languages and the relative figures for the totals give an accurate picture of the main differences.

Resultive Connectors in English and Swedish

Table 1. *Resultive connectors in the English original texts*

English connectors	Fiction	Non-fiction	Total
so	281	110	391
therefore	19	96	115
then	77	23	100
thus	12	69	81
that's why	15	18	33
consequently	1	14	15
accordingly	0	9	9
as a result	1	8	9
for this/that reason	1	5	6
as a consequence	0	4	4
in consequence	1	3	4
in that case	2	2	4
hence	0	3	3
because of this/that	0	1	1
Total	410	365	775
Freq. per 10,000 words	12.0	10.0	11.0

Table 2. *Resultive connectors in the Swedish original texts*

Swedish connectors	Fiction	Non-fiction	Total
därför	105	306	411
då	146	95	241
alltså	138	102	240
så	115	34	149
det är därför (som)	33	12	45
således	10	35	45
i så fall	22	9	31
sålunda	4	20	24
följaktligen	8	6	14
för den skull	8	0	8
i och med detta	3	2	5
följdriktigt	1	0	1
på grund av detta	0	0	0
Total	593	621	1214
Freq. per 10,000 words	19.2	17.6	18.4

As we see, the frequency of the individual connectors varies greatly and both languages rely rather heavily on a restricted number of connectors. Only six English and nine Swedish connectors occur more than 10 times

in the material and the four most common connectors in each language account for nearly 90% of the examples in the corpus.

Many of the connectors also differ markedly in frequency in the two main text categories of the corpus. Among the English connectors, *so* and *then* are especially common in the fiction texts, while most of the other connectors are more common in the non-fiction texts. The Swedish connectors also tend to be stylistically biased, though not to the same extent. While *då, alltså, så, det är därför (som)* och *i så fall* are especially common in the fiction texts, most of the other connectors have a greater frequency in the non-fiction texts. These stylistic differences reflect the greater formality of the non-fiction texts and the incidence of dialogue in the fiction texts. As we shall see, this stylistic differentiation of the connectors also affects their degree of correspondence in the two languages.

Another striking difference demonstrated in Tables 1 and 2 is that the Swedish connectors are on the whole much more frequent than the English ones in both text categories. This suggests that the Swedish writers tend to be more generous in signalling causal relations in discourse. And since explicit marking of the relationship between utterances can be seen as serving to facilitate the listener's/reader's interpretation of discourse (cf. Blakemore 1992: 136 ff.), Swedish appears to be more listener/reader-oriented than English in this respect (cf. Altenberg 1999). However, it is difficult to tell if this reflects a general cultural difference or whether it is restricted to a particular category or set of connectors. I will return to this question in section 6.

4. Mutual correspondence

Let us now turn to the translation of the English and Swedish connectors and their cross-linguistic correspondence. Since each of the connectors can be rendered in a number of ways in the other language, a fruitful first step is to use the translations to estimate the 'mutual correspondence' of the different connectors in the two languages. This will give us an idea of the degree of functional similarity of the English and Swedish connectors and a starting-point for a closer look at their individual characteristics.

Resultive Connectors in English and Swedish

'Mutual correspondence' (MC) is a simple statistical measure of the frequency with which a pair of items from two languages are translated into each other in a bi-directional translation corpus (see Altenberg 1999). This can be calculated and expressed as a percentage by means of the formula

$$\frac{A_t + B_t}{A_s + B_s} \times 100$$

where A_t and B_t are the frequencies of the compared items in the translations, and A_s and B_s their frequencies in the sources texts. The value will range from 0 (no correspondence) to 100 (full correspondence). To take an example, if English *therefore* is always rendered by *därför* in the Swedish translations and *därför* always rendered by *therefore* in the English translations, the MC value will be 100%. If they are never translated into each other, the value will be 0%.

To establish the cross-linguistic correspondence of the English and Swedish resulitive connectors in the corpus, the MC values of all connectors occurring at least 10 times in the original texts were calculated. The pairs with the highest and lowest values are shown in Table 3. To indicate any bias in the direction of the translation, columns two and three also give the unidirectional tendencies, i.e. the tendency of the English connector to be translated into its Swedish counterpart (Eng > Swe) and of the Swedish connector to be translated into its English counterpart (Swe > Eng).

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Table 3. *Mutual correspondence of English and Swedish resultive connectors*

English	Swedish	MC	Eng > Swe	Swe > Eng
that's why	det är därför (som)	76.6	82.2	68.8
so	så	58.5	52.4	74.5
therefore	därför	55.5	76.5	49.6
then	då	51.6	61.0	47.3
consequently	följaktligen	44.8	46.7	53.3
thus	således	17.3	11.0	28.9
thus	sålunda	16.0	9.8	37.5
thus	alltså	13.4	14.6	12.9
so	alltså	12.5	8.4	19.2
so	därför	11.1	11.5	10.7
that's why	därför	8.4	12.5	8.0
then	i så fall	8.4	9.0	6.5
thus	följaktligen	6.3	3.7	21.4
- - -	- - -	- - -	- - -	- - -
that's why	följaktligen	0.0	0.0	0.0
so	det är därför (som)	0.0	0.0	0.0
then	därför	0.0	0.0	0.0
thus	i så fall	0.0	0.0	0.0
consequently	så	0.0	0.0	0.0

As shown in the table, the MC values of the various pairs describe a cline from 76.6% to 0%.6 Only ten pairs reach 10% and only four exceed 50%. On the whole, the values are surprisingly low. Only the topmost pair, *that's why* : *det är därför (som)*, has a relatively high MC value, while the following three pairs, *so* : *så*, *therefore* : *därför*, *then* : *då*, which are all cognates and closely related in meaning, are used as translations of each other in little more than half of the examples in the corpus. The remaining pairs either have a low MC value or never correspond at all.

6The pairs at the bottom of the table with a MC value of 0 only represent a selection of the large number of connectors that are never translated into each other.

There are several possible reasons for these low figures. For example, we cannot expect all resultive connectors in one of the languages to be functionally and stylistically equivalent to all the connectors in the other. Generally, a connector in one language has several possible translations in the other language. The use of competing alternatives of this kind will automatically reduce the MC values. Moreover, there may be partial functional overlap between connectors in the two languages. For example, *that's why* and *det är därför (som)* are functionally equivalent in some respects (e.g. both refer anaphorically to a given cause and the result is often presupposed) but they are syntactically different and not always perfect translation equivalents (see section 5). There are also stylistic differences between many of the connectors. An obvious example is the cognate pair *therefore* and *därför*. While *därför* is style-neutral, *therefore* is mainly restricted to formal contexts. This difference is clearly demonstrated in Table 1 which shows that *therefore* is much less common in the English fiction texts than in the non-fiction texts. The difference also gives rise to a clear translation bias, demonstrated in Table 3. While English *therefore* is readily translated by Swedish *därför* (76.9%), translations in the opposite direction are much less common (49.6%) and mainly restricted to the non-fiction texts (cf. Altenberg 1999). In the fiction texts *so* and *that's why* are generally the preferred translations.

Finally, a causal relation that is signalled by a connector in a source text may not be regarded as needing explicit marking in the translation. As a result, the connector is omitted and we have what is often called a 'zero translation'. This tendency will be further examined in section 6.

Although the scale of MC values in Table 3 is revealing, it is instructive to use the values more systematically and treat them as indicators of cross-linguistic connector 'paradigms'. In Table 4 the most common connectors have been grouped in a matrix in such a way that items with a comparatively high MC value appear closely together, vertically and/or horizontally. As a result, groups of connectors that seem to be related, cross-linguistically and language-internally, are highlighted (shaded in the figure).

Table 4. Mutual correspondence of the most common English and Swedish connectors

Swedish connectors	English connectors					
	that's why	there-fore	so	thus	conse-quently	then
det är därför	76.6	0.6	0.0	0.0	0.0	0.0
därför	8.4	55.5	11.1	4.3	3.8	0.0
så	0.6	0.4	58.5	3.0	0.0	1.2
alltså	0.7	4.2	12.5	13.4	2.0	3.2
således	0.0	3.1	2.1	17.3	1.7	0.7
sålunda	0.0	0.7	0.5	16.0	0.0	3.2
följaktligen	0.0	1.6	1.0	6.3	44.8	0.9
då	0.4	0.8	5.4	0.6	0.4	51.6
i så fall	0.0	0.7	0.0	0.0	0.0	8.4

For example, Swedish *därför* can be seen to correspond not only to English *therefore* (as might be expected) but also, though less strongly, to *that's why* and *so*. Similarly, English *so* does not only correspond to Swedish *så* but also to some extent to *därför* and *alltså*, and the latter in turn also corresponds to English *thus*, and so on. What emerges from the figure are what might be called 'paradigmatic subsets' in the two languages, containing functionally similar connectors, some of which may be regarded as core items (and prototypical translation equivalents) and some less common alternatives. These cross-linguistic paradigms are seen more clearly in Figure 1, where the paradigms and their subsets are presented in parallel columns and linked by lines representing the degree of MC of the different connector pairs.[7]

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[7]The width of the connecting lines is a rough attempt to represent the degree of MC of the connector pairs. Thus, the thickest line represents an MC of over 50%, a line of medium thickness an MC of 20-49%, a thin unbroken line an MC of 10-19%, and a broken line an MC of 5-9%.

Resultive Connectors in English and Swedish

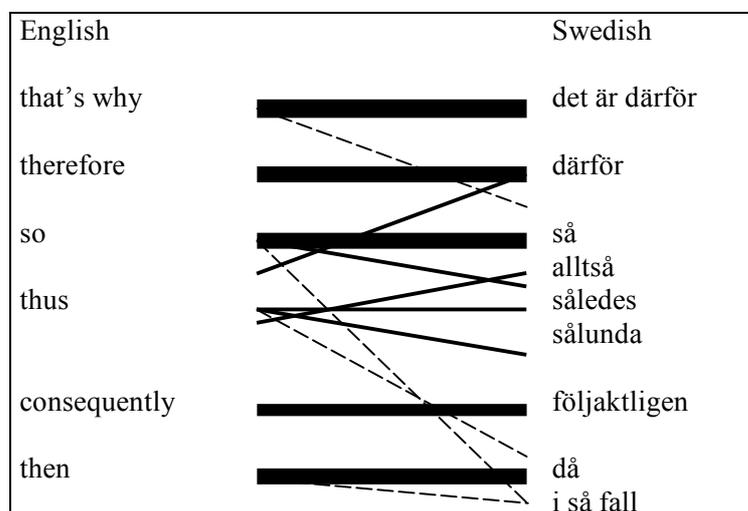| English		Swedish
that's why		det är därför
therefore		därför
so		så
		alltså
thus		således
		sålunda
consequently		följaktligen
then		då
		i så fall

Figure 1. *Cross-linguistic paradigms of causal connectors*

The cross-linguistic paradigms that emerge from this figure seem to consist of five subsets, each characterized by a pair of core items with a comparatively strong MC accompanied by one or more secondary alternatives with weaker correspondences to one or both of the core items. However, the subsets are not quite distinct: all of them are weakly related to some other subset, and the 'middle' subset (with *so* and *så* as core items) appears to be rather complex and heterogeneous. It should be emphasized that the subsets are just quantitative clusterings reflecting the preferred translations of the English and Swedish connectors in the corpus. To what extent the five subsets also represent functionally distinct categories, and how they are related to the functional uses outlined in examples (1) - (7) in the Introduction, can only be determined through a close analysis of the examples.8 This will be not done here. Instead I will

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8 Interesting attempts to account for the choice of connector in terms of subjectivity, or rather, the distance between the speaker and the 'subject of consciousness' responsible for the causal relation, have been made by Pander Maat and

take a closer look at the cleft constructions at the top of MC scale and then return to the issue of zero translations (omission) touched on above.

English wh-clefts and Swedish det-clefts

As we have seen, English reversed *wh*-clefts and Swedish *det*-clefts have the highest MC value of all the resultive connectors in the corpus. Strictly speaking, they are not of course adverbial connectors but syntactic constructions with a connective function that is similar to that of the adverbial connectors, linking a discourse unit expressing 'result' to the preceding discourse. The fact that Swedish *därför* is part of a *det*-cleft (corresponding to an English *it*-cleft) reflects a clear syntactic difference between the cognate adverbs *therefore* and *därför*: while the cleft use of *therefore* is obsolete and rare in English, Swedish *därför* can readily be the focus a *det*-cleft construction. In other words, *därför* is more clause-integrated and functions more like an adjunct than *therefore*.9 Conversely, Swedish cannot form reversed *wh*-clefts with a relative adverb as *wh*-word. However, as we shall see, there is a functionally similar Swedish construction in which the complement consists of a resultive support noun followed by a preposition and a nominal clause: *detta är anledningen till att…* (lit. 'this is the reason for that…'). Tables 5 and 6 show the translations of the Swedish *det*-clefts and the English *wh*-clefts.

Sanders (2000) for Dutch resultive connectors and by Mol (2004) in a comparison of English and Norwegian connectors.

9However, as Teleman et al. (1999: 4.151) point out, *därför* cannot be the focus of a cleft construction when the cleft clause expresses an indirect conclusion, i.e. when the causal relation is pragmatic rather than semantic: *Det lyste i fönstren. ?Det var därför de nog var hemma*.

Table 5. *English translations of Swedish 'det är därför (som)'*

English translations	Fiction	Non-fiction	Total	%
Reversed *wh*-cleft	28	9	37	82.2
therefore		1	1	
hence		1	1	
for this/that (very) reason		1	1	
that was the reason	1		1	
Other	2		2	
Zero	2		2	
Total	33	12	45	100

Table 6. *Swedish translations of 'that's why'*

Swedish translations	Fiction	Non-fiction	Total	%
det-cleft	13	9	22	66.7
därför	1	3	4	
detta är/var skälet till att	0	2	2	
det är ett skäl till att	1	0	1	
vilket är skälet till att	0	1	1	
detta är anledningen till att	0	1	1	
det är av detta skäl (som)	0	1	1	
detta är orsaken till att	0	1	1	
Total	15	18	33	100

As Table 5 shows, the great majority of the Swedish *det*-clefts are translated by an English reversed *wh*-cleft construction of the type *that's why*:

(8)   – Lyktan slocknade, sa han. Det var **därför** jag dröjde. (ARP1)   "My lamp went out," he said. "**That's why** I've been so long.

The close correspondence between Swedish *det*-clefts with a focused anaphoric adverb and English reversed *wh*-clefts has been demonstrated by M. Johansson (2002). What these constructions have in common are their strong identifying character and cohesive effect: both emphasize the existence of a specific (exclusive and exhaustive) reason for the result expressed in the cleft clause and in both the reason is identifiable by means of an anaphoric element, viz. *därför* in the Swedish construction and the demonstrative subject in the English construction. Since the re-

sult clause is normally presupposed, what is asserted and emphasized is that the reason can be found in the preceding context. The reason is either overtly expressed in the previous clause, as in (8), or inferable from the immediate context:

(9) – Minns du att jag för nåt år sen talade om att göra nånting annat? Innan det blir för sent, innan jag blir för gammal.
Wallander tänkte efter.
– Jag minns att du talade om flyktingar och FN. Var det Sudan?
– Uganda. Och jag har faktiskt fått ett erbjudande. Som jag har bestämt mig för att tacka ja till. […]
– Vad säger din hustru?
– Det är just **därför** jag ringer till dig. För att få moraliskt stöd. Jag har inte talat med henne ännu. (HM1)

"Do you remember I told you a few years ago that I was thinking about doing something else? Before it's too late, before I get too old."
Wallander tried to remember.
"I remember you talked about refugees and the UN. Was it the Sudan?"
"Uganda. And I've actually gotten an offer. Which I've decided to accept. […]"
"What does your wife say?"
"That's just why I'm calling. For some moral support. I haven't talked to her about it yet."

When the reference of *därför* is more 'global', comprising an extended stretch of discourse, the construction tends to have a summarizing rhetorical effect:

(10) Nu kan strukturpolitiken, rätt utformad, skapa bättre förutsättningar för EU och dess invånare. Det märkliga är då att strukturreformer som inte kostar verkar vara svårare att anta än budgetsanering — förmodligen för att man utmanar starka särintressen. Det är **därför** som jag vill gratulera kommissionen till ett modigt dokument, i vilket vikten av reformerade och bättre fungerande arbetsmarknader diskuteras. (ECAR1)

Now a correctly designed structural policy can create better conditions for the EU and its inhabitants. The remarkable thing is that structural reforms which cost nothing appear to be more difficult to accept than budget reorganization, probably because they challenge strong special interests. **That is why** I would like to congratulate the Commissioner on a courageous document which discusses the importance of reformed labour markets which work better.

Resultive Connectors in English and Swedish

Both constructions are syntactically flexible: they allow tense variation and adverbial modification and the anaphoric element can be the focus of a *yes/no* question:

(11)   – Det är en bunt stadsbor här som vill titta på våra trasmattor, sa Eriksson. – Varför det, sa Öman. – Det vet jag inte, sa Eriksson. Det är deras käringar som är intresserade. – Av trasmattor, sa Öman skeptiskt. – Så uttryckte dom sig, sa Eriksson. – Var det **därför** dom kom, sa Öman. – Nej, dom kom egentligen för att titta på Yngves. Men av nån anledning så började dom tala om trasmattor. (SC1)

     "There's a group of town folk here wanting to look at our rag rugs," Eriksson said. "What for?" asked Oman. "I don't know," said Eriksson. "It's their wives that are interested." "In rag mats?" Oman said sceptically. "That's what they said," replied Eriksson. "**Was that why** they came?" asked Oman. "No, they really came to look at the Yngves. But for some reason they began to talk about rag rugs."

However, English reversed *wh*-clefts are not only used to translate Swedish *det*-clefts with *därför* in focus. They are also used to render Swedish non-cleft constructions, especially when *därför* is clause-initial and has thematic prominence (cf. M. Johansson 2002: 160 ff.):

(12)   – Att gå till polisen skulle vara samma sak som att acceptera att något fruktansvärt har hänt, fortsatte Robert Åkerblom. **Därför** vågade jag inte. (HM2)

     "Going to the police would be like accepting that something awful had happened," Robert Åkerblom went on. "**That's why** I didn't dare."

While English *wh*-clefts are used as translations of Swedish *det*-clefts in 82.2% of the cases, the reverse translation of English *wh*-clefts into Swedish *det*-clefts is less common (66.7%). However, as Table 6 shows, most of the alternative renderings are either functionally equivalent to English *wh*-clefts: *detta/vilket är/var skälet/anledningen/orsaken till att…* (lit. 'this/which is/was the reason for that…'), or a regular *det*-cleft with a noun denoting reason in focus: *det är av detta skäl som…* 'it is for this reason that…'. If these variants are included as Swedish translation equivalents of the English *wh*-cleft, the mutual correspondence of the

English and Swedish constructions rises to 83.3%. This underlines the functional similarity of these constructions and their distinctive position in the cross-linguistic paradigms of resultive connectives in the two languages.10

Zero translations

Since omission of a causal connector in the target language is likely to affect the degree of cross-linguistic correspondence, it deserves to be examined further. Two questions will be briefly touched on here. Is omission a uniform tendency that affects the translation of all connectors to the same extent? Is it independent of the direction of translation?

To explore this, the zero translations of the most common connectors in the two languages were recorded and compared. The tendencies are shown in Table 7 and 8.11

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10 In a study of German and Norwegian correspondences to English *wh*-cleft constructions (with nominal as well as adverbial *wh*-words) in the Oslo Multilingual Corpus, Stig Johansson (2001) found that *det*-clefts dominated in Norwegian while non-cleft clauses with the anaphoric element in prominent initial position were preferred in German. Swedish is consequently very similar to Norwegian but also makes use of the German strategy, as illustrated in (12) above.
11 The category 'other' in the tables comprises the zero translations of the remaining, less common connectors of each language.

Resultive Connectors in English and Swedish

Table 7. *Swedish zero translations of English connectors*

English connectors	Total	Swedish zero translations	
		n	%
thus	82	14	17.1
then	100	14	14.0
so	391	54	13.8
therefore	115	9	7.8
consequently	15	1	6.7
that's why	32	0	0.0
Other	40	2	5.0
Total	775	94	12.1

Table 8. *English zero translations of Swedish connectors*

Swedish connectors	Total	English zero translations	
		n	%
alltså	240	86	35.8
då	241	78	32.4
således	45	14	31.1
sålunda	24	7	29.2
i så fall	31	6	19.4
därför	411	45	10.9
följaktligen	14	1	7.1
så	149	9	6.0
det är därför (som)	45	2	4.4
Other	14	7	50.0
Total	1214	255	21.0

We see that in both languages some connectors tend to produce more zero translations than others. Among the English connectors, *thus*, *then* and *so* are left untranslated in more than 10% of the examples, while *that's why* is always translated in some way. The English translations of the Swedish connectors also present a variable picture, but zero translations are on the whole much more common. No less than six of the connectors are left untranslated in more than 10% of the examples, and in four cases—*alltså*, *då*, *således* and *sålunda*—omission occurs in about a

third of the examples.12 On the whole, omission is nearly twice as common in translations from Swedish into English as in the opposite direction. Some typical examples of English zero translations are:

(13)　　– Vad var hon rädd för? frågade Martinsson.
Wallander tänkte efter innan han svarade.
– Hon var rädd för mig, svarade han sedan. Jag är inte helt säker men jag tyckte också att hon blev ännu mera rädd när jag ropade åt henne att jag var polis och att hon skulle stanna. Vad hon dessutom fruktade vet jag naturligtvis inte.
– Hon förstod **alltså** vad du sa? (HM1)

"What was she scared of?" asked Martinsson.
Wallander thought a moment before he replied.
"She was scared of me," he said. "I'm not completely sure, but I think she was even more frightened when I shouted at her that I was a policeman and told her to stop. What she was afraid of beyond that, I have no idea."
"She understood everything you said?"

(14)　　– Nej, skrattade George som svar på hennes fråga. Linsen fyller inte upp kikaren. **Då** skulle du inte orka lyfta den. (SCO1)

"No," laughed George in answer to her question. "The lens doesn't fill the telescope. You wouldn't be able to lift it."

12In fact, omission is the single most common English way of rendering Swedish alltså in the corpus (35.8%), followed by so (19.2% and thus (12.9%). In the case of då omission is the second most common rendering (32.4%), only outnumbered by then (47.3%).

(15) Sammanfattningsvis är det **alltså** inte alltid strikta medicinska kriterier som avgör prioriteringar till transplantationsbehandling. Det finns inte heller överenskommelser om principer hur avvägningen skall göras mellan individuell rättvisa t ex i form av tid på väntelista gentemot möjligheten att göra mest nytta med en bristresurs i det här fallet organ för transplantation. Det pågår **således** för närvarande en diskussion om ovanstående selektionsproblem. (ORG1)

In summary, it is not always strict medical criteria that determine priorities in transplantation surgery. Nor is there any agreement on what principles should be applied when weighing individual fairness, e.g. time on the waiting-list, against the possibility of doing the most good with a limited resource, in this case organs for transplantation. These selection problems are the subject of lively discussion at present.

Although zero translations occur in both directions of translation and seem to affect certain connectors more than others, especially those indicating a logical consequence or conclusion, the tendency is much stronger in the English translations. There seems to be an instinctive feeling among the English translators that causal relationships of these kinds do not need explicit marking by a connector if the context is clear enough. If this reflects a real cultural difference between English and Swedish discourse, we should also expect Swedish resultive connectors to be more frequent in the Swedish translations than in the English source texts. Or more precisely, we should expect connectors to turn up in the Swedish translations in examples where the English source text has no connector. This has not been tested systematically here, but to explore the possibility a small study was made of the English sources of the connector *alltså* in the Swedish translations in the corpus. The result is shown in Table 9:

Table 9. *English sources of Swedish alltså*

English sources	n	%
so	35	38.0
thus	12	13.0
then	6	
therefore	4	
I mean	2	
accordingly	1	
in effect	1	
Other	6	
Zero	25	27.2
Total	92	100.0

The table shows that, although most of the Swedish examples of *alltså* have a corresponding English connector as their origin (notably *so* and *thus*), nearly a third of the cases (27.2%) turn up 'out of the blue', i.e. without a corresponding source in the English texts. Two examples will suffice to illustrate this:

(16) Entropy, measured in the units calories per gram per degree, is the total quantity of heat added, divided by the temperature.
Consider the lifeless perfection of a snowflake, a crystal so exquisitely ordered in its fractal pattern that it is one of the most intricate of nonliving things. The quantity of heat needed to melt a snowflake to a raindrop is 80 times larger than the quantity needed to warm the raindrop by a single degree of temperature. The increase of entropy when snowflakes melt is 80 times larger than when they warm from -1°C to the melting point. (JL1)

Entropin är den totala tillsatta värmemängden dividerad med temperaturen.
Ta som exempel en perfekt snöflinga, en kristall så fint ordnad i ett fraktalmönster att den är bland de mest komplicerat uppbyggda icke-levande föremålen. Den mängd värme som krävs för att smälta snöflingan till en vattendroppe av samma temperatur är 80 gånger större än den mängd värme som krävs för att värma vattnet en enda grad. Ökningen i entropi är **alltså** 80 gånger större när snöflingan smälter än den är när flingan värms upp från −1 C till smältpunkten.

(17)　　　"How is your patient, Doctor? The one you told me about."
"Worse than yesterday." He hesitated. "She's gone into a coma."
"Then she is dying?" (AH1)

"Hur står det till med er patient, doktorn? Den som ni talade om?"
"Värre än i går." Han tvekade. "Hon ligger i koma."
"Då *är* hon **alltså** döende."

Alltså typically indicates a conclusion or logical consequence. In (16) the consequence expressed in the last sentence is evidently obvious enough to be left unmarked in the English original but is marked in the Swedish translation. In (17) the conclusion in the final utterance is signalled once in both the source text (*then*) and the translation (*då*). But the Swedish translator has also added *alltså*, which suggests that the conclusion is the result of objective logical reasoning. As a result, the tenative nature of the original is lost.13

This small study, then, together with the much higher frequency of English zero translations of Swedish resultive connectors, strongly indicates a more liberal use of resultive connectors in the Swedish texts. If we add to this the generally higher frequency of resultive connectors in the Swedish original texts observed in section 3, it seems safe to conclude that there is a cultural difference in the use of these connectors: while causal relationships are often left unmarked in English texts, they tend to be signalled explicitly by a connector to a greater extent in Swedish texts.[14] There are indications that this difference is especially strong

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13 On the historical development of *alltså* and its uses in Swedish, see Lehti-Eklund (1989) and (1990). On the use of Norwegian *da* and *altså* in Norwegian, which is very similar to their use in Swedish, see Fretheim (2000).

14 In a study of English and Norwegian correspondences of the German connectives *dabei* and *wieder* in the Oslo Multilingual Corpus, Fabricius-Hansen (2005) shows that similar differences in marking conventions exist across these languages. While German, and to a lesser extent Norwegian, tends to favour explicit marking, English often leaves discourse relations unmarked. These tendencies are dependent on the semantics of the connectives and on structural and contextual considerations, but the study confirms the existence of different cultural conventions in the marking of discourse relations.

in clauses denoting a logical consequence or conclusion, but this possibility has not been examined in detail here and requires further study.15

Conclusion

Calculating the mutual correspondence of a set of items in two languages on the basis of a bi-directional translation corpus is a fruitful beginning of a contrastive study. The approach makes it possible not only to estimate the degree of correspondence between the items but also to establish cross-linguistic paradigms which allow us to see more clearly the relationship between the items, across and within the compared languages.

In this study I have provided a sketch of the cross-linguistic paradigms of resultive connectors in English and Swedish. I have also looked more closely at a pair of resultive connectors with a high degree of correspondence, English *wh*-clefts and Swedish *det*-clefts, and indicated their special role in the cross-linguistic paradigms. In addition, I have briefly examined the zero translations of the resultive connectors in the corpus and linked the greater tendency of connector omission in the English translations to the overall greater frequency of connectors in the Swedish texts. Both tendencies suggest a cultural difference in the marking of causal relationships in discourse, manifested in a more generous explicit marking in the Swedish texts.

The main purpose of the paper has been to demonstrate the usefulness of an approach in corpus-based contrastive analysis. No attempt has been made to analyse the functional differences between the connectors in any detail or the factors determining the choice between the available

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15In Altenberg (1999) inferential connectors were found to have a lower MC than resultive connectors and also a greater tendency to be omitted in translations. However, no distinction has been made between inferential and resultive connectors here and it is difficult to compare the results.

options in the paradigms. More research is therefore needed, both as regards these factors and as regards the cultural differences observed in the marking of causal relationships in English and Swedish texts. Bi-directional translation corpora like the English-Swedish Parallel corpus will be an invaluable resource in this respect.

References

Altenberg, Bengt. 1984. "Causal linking in spoken and written English." *Studia Linguistica* 38: 20-69.

Altenberg, Bengt. 1999. "Adverbial connectors in English and Swedish: Semantic and lexical correspondences." In *Out of corpora. Studies in honour of Stig Johansson*, ed. by Hilde Hasselgård and Signe Okse-fjell, 249-268. Amsterdam: Rodopi.

Altenberg, Bengt, and Karin Aijmer. 2000. "The English-Swedish Parallel Corpus: a resource for contrastive research and translation studies." In Christian Mair and Marianne Hundt (eds), *Corpus linguistics and linguistic theory*, 15-35. Amsterdam: Rodopi.

Altenberg, Bengt, Karin Aijmer and Mikael Svensson. 1999. *The English-Swedish Parallel Corpus: Manual*. Department of English, University of Lund. (Also available at www.englund.lu.se/research/espc. html.)

Biber, Douglas, Stig Johansson, Geoffrey Leech, Susan Conrad and Edward Finegan. 1999. *Longman grammar of spoken and written English*. Harlow: Pearson Education.

Blakemore, Diane. 1992. *Understanding utterances*. Oxford: Blackwell.

Couper-Kuhlen, Elizabeth, and Bernd Kortmann (eds). 2000. *Cause, condition, concession, contrast. Cognitive and discourse perspectives*. Berlin & New York: Mouton de Gruyter.

Fabricius-Hansen, Cathrine. "Elusive connectives. A case study on the explicitness dimension of discourse coherence." *Linguistics* 43: 17-48.

Fretheim, Thorstein. 2000. "Procedural encoding of propositional attitude in Norwegian conditional clauses." In Gisle Andersen and Thorstein Fretheim (eds), *Pragmatic markers and propositional attitude*, 53-84. Amsterdam: John Benjamins.

Bengt Altenberg

Johansson, Mats. 2002. *Clefts in English and Swedish. A contrastive study of* it-*clefts and* wh-*clefts in original texts and translations*. Unpublished PhD dissertation. Department of English, Lund University.

Johansson, Stig. 1998. "On the role of corpora in cross-linguistic research." In Stig Johansson and Signe Oksefjell (eds), *Corpora and cross-linguistic research. Theory, method, and case studies*, 3-24. Amsterdam: Rodopi.

Johansson, Stig. 2001. "The German and Norwegian correspondences of the English construction type *that's what*." *Linguistics* 39: 3583-605.

Lehti-Eklund, Hanna. 1989. "Topikmarkörer i äldre svenska: form och funktioner." *Svenskans beskrivning* 17: 175-184.

Lehti-Eklund, Hanna. 1990. *Från adverb till markör i text. Studier i semantisk-syntaktisk utveckling i äldre svenska*. Skifter utgivna av svenska litteratursällskapet i Finland 561: Humanistiska avhandlingar 4. Helsingfors: Svenska litteratursällskapet i Finland.

Mauranen, Anna. 1993. *Cultural differences in academic rhetoric: a textlinguistic study*. Frankfurt: Peter Lang.

Mol, Susan. 2004. *Causality in a cross-linguistic perspective. So, therefore, and thus versus* så*, derfor, and* således. Unpublished hovedfag thesis. Department of British and American Studies, University of Oslo.

Pander Maat, Henk, and Ted Sanders. 2000. "Domains of use or subjectivity? The distribution of three Dutch causal connectives explained." In Couper-Kuhlen and Kortmann (eds), 57-82.

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech and Jan Svartvik. 1985. *A comprehensive grammar of the English language*. London: Longman.

Sweetser, Eve E. 1990. *From etymology to pragmatics*. Cambridge: Cambridge University Press.

Teleman, Ulf, Staffan Hellberg and Erik Andersson. 1999. *Svenska Akademiens grammatik*. Stockholm: Svenska Akademien/Norstedt.