

# ADDITIVE CONJUNCTION ACROSS LANGUAGES: ‘DESSUTEN’ AND ITS CORRESPONDENCES IN ENGLISH AND FRENCH

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## ABSTRACT

The present study investigates the Norwegian additive connective *dessuten* and its correspondences in English and French. The investigation is based on material from parallel corpora with the language pairs Norwegian-English and Norwegian-French. Since neither English nor French has any clearly favoured counterpart to *dessuten*, the wide range of correspondences lends itself to a study of the semantic field of additive conjunction. The individual correspondences of *dessuten* differ as regards the degree of emphasis given to the conjunction and as to the relative weighting of the conjoined segments. The position of *dessuten* is found to have an impact on the choice of overt vs. zero correspondence and also on the choice of lexical correspondence. By means of the semantic mirror method a semantic map of additive conjunction, as seen from the perspective of *dessuten*, is outlined.

## [1] INTRODUCTION

Connectives and the expression of conjunctive relations are known to vary across languages, and therefore constitute a fruitful area of cross-linguistic study. The type of cohesive tie known as conjunction (Halliday & Hasan 1976, 226ff.) can be realized by conjunctions and adverbials as well as clausal expressions such as *what is more*. As pointed out by Bondi (2012), “complete equivalence [...] is not the rule” when connectives are investigated across languages. The conjunctive relation of addition (Halliday & Hasan 1976, 244ff.) has been described as one of the most basic forms of cohesion, for example because it is acquired early by children (Knott & Sanders 1998; Spooren & Sanders 2008). Addition, prototypically expressed by the conjunction *and*, realizes a weak semantic connection between two discourse segments, providing a conjunctive, but no implicational, relation between two segments (Spooren & Sanders 2008, 2006). An additive relation between adjacent segments need not be marked by an explicit connector, but can be inferred if the segments contain referents that are “related in the world of experience [...], at the very least by simultaneity or succession” (Halliday & Matthiessen 2004, 406).

The starting point of the present investigation was the observation that the Norwegian additive connector *dessuten* is significantly more frequent in Norwegian original texts than in translations from English, while its frequency varies markedly between fiction and non-fiction in translations from French. Moreover, *dessuten* does not have any obvious English or French counterpart, but is translated from and into a range of expressions. The translation paradigms of *dessuten* should thus be a productive starting point for studying the expression of additive conjunction across the three languages Norwegian, English and French.

The investigation is based on the Oslo Multilingual Corpus (OMC), especially the English-Norwegian Parallel Corpus (ENPC) and the French-Norwegian Parallel Corpus (FNPC). In addition the multilingual translation corpus of Norwegian texts with translations into English, French and German (No-En-Fr-Ge) has been used to supplement the FNPC. The ENPC and the FNPC are bidirectional translation corpora; i.e. they contain both originals and translations in both languages. Both are divided into a fiction and a non-fiction part. The No-En-Fr-Ge translation corpus, however, contains only fiction, and is unidirectional, with Norwegian originals.<sup>1</sup>

Searches in these corpora reveal numerous translation correspondences of *dessuten*, for example *besides*, *also*, *what is more*, *moreover* and *in addition* / *en outre*, *de plus*, *aussi* and *d'ailleurs*, but none of them occurs above 25% of the time. Examples (1) and (2) give a brief impression of the variation.<sup>2</sup>

- (1) a. *Dessuten måtte jo et klaviatur stå i stuen.* (HW2)  
 b. *Moreover, a piano would need to be in the parlor.* (HW2TE)  
 c. *Et puis, un piano devait nécessairement rester au salon.* (HW2TF)
- (2) a. — *Det dreier seg dessuten om et mesterverk.* (JG3)  
 b. — *“And there’s a masterpiece involved here, too.”* (JG3TE)  
 c. — *Il s’agit d’ailleurs d’une œuvre d’art.* (JG3TF)

The present investigation includes a consideration of the contexts in which the different options are used. For example, the various correspondences of *dessuten* may be associated with different style levels, as indicated by the comparison of fictional and non-fictional texts. Furthermore, the various correspondences may differ slightly in meaning. Such meaning differences become clearer if we look at the translations into Norwegian of the most frequent English and French correspondences of *dessuten*. Finally, potential translation effects may be detected by comparing originals to translations in the same language. On the basis of corre-

[1] The sizes of the corpora are given in Tables A and B in the appendix. For further information, see <http://www.hf.uio.no/ilos/english/services/omc/>.

[2] Since the starting point of the investigation was the Norwegian *dessuten*, all examples have been given with the Norwegian version first. Examples with a ‘T’ in the identification tag (as in (7a)) are translations.

spondences in the OMC, I will attempt to draw up a semantic map of the additive relation across Norwegian, English and French.

[2] A CLOSER LOOK AT ADDITIVE CONJUNCTION AND ITS EXPRESSIONS  
CONJUNCTION, as defined by Halliday & Hasan (1976), refers to the type of cohesive tie that is realized by conjunctions and adverbials. Conjunction gives “a specification of the way in which what is to follow is systematically connected to what has gone before” (ibid., 227). In this framework, there are four main types of conjunction:

- Additive: the ‘and’ relation; adding (*and*), subtracting (*nor*), giving alternatives (*or*)
- Adversative: the ‘but’ relation, ‘contrary to expectation’
- Causal: the ‘because’ relation (cause, means, purpose, condition)
- Temporal: successive, simultaneous

An additive relation can be set up between real-world events or between “arguments in an exposition” (Martin & Rose 2007, 133). These uses have been described as external and internal addition, respectively (see Halliday & Hasan (1976, 242) and Martin & Rose (2007, 115ff)). Relatively unambiguous illustrations are provided in (3) and (4): in (3), two propositions are juxtaposed and linked referentially by simultaneity and linguistically by the conjunctions *og/and/et* plus *dessuten* in the Norwegian original. In (4), the clause with *dessuten* provides an additional argument against the addressee’s choice of a name.

- (3) a. Nye skatter tyrnget bondefamiliene, *og dessuten* gav vår barkebrødstider. (ILOS1)  
b. New taxes were levied on peasant families *and* bad harvests reduced many to eating bark bread. (ILOS1TE)  
c. Les impôts écrasèrent les paysans, *et* les mauvaises récoltes ouvrirent le temps du pain d’écorce. (ILOS1TF)
- (4) a. Det er vel rimelig at De velger et navn fra Deres egen avkrok av verden, men av den grunn sier det meg ingen ting. *Dessuten* har det ingen poesi, ingen atmosfære, ingen farve. (FC1)  
b. Well, it’s reasonable for you to choose a name from your own little corner of the world, I suppose, but for that reason it says nothing to me. *Besides* it has no poetry, no atmosphere, no colour. (FC1TE)

The distinction between external and internal conjunction might be useful for describing certain translation choices, particularly as certain English markers of addition (e.g. *furthermore*) are listed as typically internal in Halliday & Hasan (1976, 242). In practice, however, the distinction is hard to use systematically; individual instances often encode both, as the juxtaposition of real-world events may well contribute to constructing an argument.

It may be noted that Martin & Rose (2007) list *SIDETRACKING* as a subtype of (internal) addition, typically marked by connectives such as *anyway* or *incidentally*. This meaning may be inherent in *dessuten*, as indicated by the overview of dictionary definitions, including synonyms and translations, given in Table 1. *Bokmålsordboka* and *Nynorskordboka* simply list some synonyms of *dessuten* (in addition to the etymology ‘uten det’ = ‘without that’), while *Norsk Ordbok* and *Norsk Riksmålsordbok* give some (very similar) definitions as well, roughly saying “in addition to what has just been mentioned; used when presenting something that serves as further explanation or justification; connecting to a statement that delimits or contradicts what has just been said”.<sup>3</sup>

TABLE 1: Definitions, synonyms and translations of *dessuten* in a selection of dictionaries (excerpts).

<i>Bokmålsordboka</i>	(av <i>II dess</i> , eg ‘uten det’) i tillegg til det, ellers
<i>Nynorskordboka</i>	i tillegg (til det), attåt, elles
<i>Norsk ordbok</i>	forutan, i tillegg til det (som nett er nemnt) / knyter til ei nærare forklåring el. grunngjeving; / knyter til ei utsegn som avgrensar el motseier noko som nett er sagt.
<i>Norsk riksmålsordbok</i>	for uten, i tillegg til det som nettopp (like foran) er nevnt; dertil, tillike. – brukt når man fremfører noget som tjener til yderligere forklaring el begrunnelse; – brukt når man meddeler noget som et innskrenkende el opphevende tillegg til det foregående (jvf. <i>forresten</i> )
<i>Engelsk stor ordbok</i>	in addition, moreover, besides
<i>Fransk blå ordbok</i>	en outre, en plus, et puis

*Dessuten* denotes the type of additive relation that is termed “positive polarity” by Knott & Sanders (1998); their negative polarity addition corresponds broadly to Halliday & Hasan’s (1976) “adversative”. The additive relation can also include “alternative” in most accounts, e.g. Martin & Rose (2007, 124). For the sake of precision, let me emphasize that the present study is concerned with positive polarity addition, not including the “alternative” subtype (the ‘or’-relation).

[3] Glosses of the Norwegian synonyms of *dessuten* (in alphabetical order): *attåt* (‘besides’), *dertil* (‘thereto’, ‘in addition’), *elles/ellers* (‘otherwise’), *forresten* (‘incidentally’), *for uten* (‘without’), *i tillegg til det* (‘in addition to that’), *tillike* (‘similarly’).

## [3] CLASSIFYING CORRESPONDENCES

Following Johansson (2007, 23) the term CORRESPONDENCE is used to refer to sources as well as translations of a given word/phrase. Correspondences can be of three types:

- CONGRUENT, in which case the two items compared have the same syntactic form, as in (1a) and (1b) above, where the adverb *dessuten* is translated by the adverb *moreover*;
- DIVERGENT, in which case the two items compared belong to different word classes, as in (2a) and (2b), where the adverb is translated by the conjunction *and*, or in (2a) and (2c) where the adverb is translated by a prepositional phrase (albeit lexicalized and functioning as an adverbial);
- ZERO, in which case there is no overt expression of the word/phrase in the translation (as in (5)) or in the source text (as in (6)).

- (5) a. Melk ble *dessuten* brukt i mat og til mat, ... (AAS1)  
*Lit:* ‘milk was *dessuten* used in food and with food’  
 b. Nous avons utilisé le lait comme aliment, ... (AAS1TF)  
*Lit:* ‘we have used the milk as foodstuff’
- (6) a. Dr. P.s tinningslapper var øyensynlig helt intakte. *Dessuten* hadde han en vidunderlig musikalsk cortex. (OS1TN)  
 b. Dr. P.’s temporal lobes were obviously intact: he had a wonderful musical cortex. (OS1)

A correspondence such as that shown in (7) has also been counted as zero, as the additive relation expressed by *dessuten* is not present in the French original, which instead has a temporal adverb (*désormais*).

- (7) a. Men de har feilet, de gikk for langt, de driver oss til en siste kamp. *Dessuten* har vi ikke mer å miste. (KM1TN)  
*Lit:* ‘*dessuten* have we no more to lose’  
 b. Mais ils ont tort, ils vont trop loin, ils nous contraignent à la lutte ultime: [Ø] *désormais* nous n’avons plus rien à perdre. (KM1)  
*Lit:* ‘from now on we have no more to lose’

## [4] CORPUS INVESTIGATION: ‘DESSUTEN’ AND ITS CORRESPONDENCES IN THE OMC

Table 2 gives the frequencies of *dessuten* in the corpora used for this investigation. The different frequencies of translations and sources in both corpora indicate that

the expression of the relation coded in Norwegian by *dessuten* varies across languages; in fact the differences between original and translation is significant for both the ENPC and the FNPC.<sup>4</sup> The general trend is one of underuse in the translations, except that FNPC fiction shows the reverse trend. The difference between fiction and non-fiction, however, is significant only in the FNPC; in the ENPC it is not.

TABLE 2: Frequencies of *dessuten* in the ENPC and the FNPC.

	N. ORIGINAL		N. TRANSLATION		DIFF. (LL)
	raw figures	per 100,000 words	raw figures	per 100,000 words	
ENPC fiction	107	26.5	56	14.1	$p < 0.0001$
ENPC non-fiction	55	25.0	38	15.6	$p < 0.05$
FNPC fiction	3	2.7	37	58.5	$p < 0.0001$
FNPC non-fiction	32	23.4	13	9.7	$p < 0.001$
No-En-Fr-Ge	181	44.3	-	-	-

As Table 2 shows, there are very few examples of *dessuten* in the original fiction part of the FNPC. In order to get a broader range of French translation correspondences, 100 random examples of *dessuten* with French translations were added from the No-En-Fr-Ge translation corpus. Table 2 shows the total number of occurrences of *dessuten* in the No-En-Fr-Ge, a frequency which is much higher than in FNPC fiction. This oddity must be due to the small size of FNPC fiction (see Table B, Appendix) as well as the much longer text extracts in No-En-Fr-Ge, including a “rogue text”,<sup>5</sup> Jostein Gaarder’s *Maya*, which is responsible for 145 out of the 181 *dessuten* (and 75 out of the random 100).

[4.1] Correspondence types

The types of correspondence of *dessuten* are shown in Tables 3 on the facing page and 4 on the next page. Comparing these tables we find that the two language pairs differ as regards the most frequent correspondence type: congruent correspondences are most frequent between English and Norwegian, while non-congruent correspondences are most frequent between French and Norwegian. Between Norwegian and English, the frequency of non-congruent correspondences is greater in fiction than in non-fiction. Between Norwegian and French the frequency of congruent correspondences is higher in Norwegian translations from French in both fiction and non-fiction, while the rate of zero correspondence is higher when Norwegian is the source language.

Zero correspondence is about twice as frequent among the French correspondences. The French zero correspondences are much more frequent going from

[4] Significance was tested using Log likelihood, i.e. a measure of word frequency in relation to corpus size. The tool used was Paul Rayson’s calculator at <http://ucrel.lancs.ac.uk/llwizard.html>.  
[5] Rogue texts are defined as texts “which stand out as radically different from the others” (Sinclair 2005, 13).

TABLE 3: Correspondence types of *dessuten* in English.

	ENPC FICTION		ENPC NON-FICTION	
	NO $\Rightarrow$ ET	NT $\Leftarrow$ EO	NO $\Rightarrow$ ET	NT $\Leftarrow$ EO
congruent	57 (55%)	28 (50%)	30 (55%)	25 (66%)
non-congruent	35 (34%)	19 (34%)	10 (18%)	9 (24%)
zero	12 (12%)	9 (16%)	15 (27%)	4 (11%)
	104	56	55	38

TABLE 4: Correspondence types of *dessuten* in French.

	FNPC FICTION		NO-FR FICTION (random sample)	FNPC NON-FICTION	
	NO $\Rightarrow$ FT	NT $\Leftarrow$ FO	NO $\Rightarrow$ FT	NT $\Rightarrow$ FO	NT $\Leftarrow$ FO
congruent	0	11 (30%)	13 (13%)	4 (13%)	3 (23%)
non-congruent	3	22 (59%)	52 (52%)	17 (53%)	8 (62%)
zero	0	4 (11%)	35 (35%)	11 (34%)	2 (15%)
	3	37	100	32	13

Norwegian to French than the other way round – i.e. the French translators omit the connector much more often than the Norwegian translators add it. The English zero correspondences are most frequent in non-fiction with Norwegian original, and second-most frequent in fiction with Norwegian translations. There is thus not a very clear register difference, nor is there any easily explainable pattern as to the direction of translation: fiction and non-fiction show opposite tendencies. The difference in the proportions of zero correspondences is greater in non-fiction than in fiction, though. The relatively high frequency of zero correspondences may be due to the fact mentioned in the introduction, that the additive relation is often inferable if both of the conjoined segments contain referents that are related “in the world of experience” (Halliday & Matthiessen 2004, 406).

A special kind of zero correspondence is where *dessuten* is accompanied by *og* (‘and’) and the English or French correspondence only has *and* or *et*. There are 21 such examples in the material, 14 from English and seven from French. An example is given in (8); (3) and (6) above are of the same type.

- (8) a. Hun var ett år yngre, *og dessuten* var hun jente. (TTH1)  
 b. She was one year younger, *and* she was just a girl. (TTH1TE)
- (9) a. Som åstedsgransker var Archbold i ferd med å ta mål og notere, *og det var dessuten* kommet to rettskjemiske teknikere. (RR1TN)  
 Lit: ‘...*and* there were *dessuten* arrived two forensic technicians’

- b. Archbold as Scene-of-Crimes officer was measuring, making notes, *and* two technicians had arrived from forensics. (RR1)

For the Norwegian-English pair this type of zero correspondence turned out to be more frequent in translation from English into Norwegian than the other way round – it thus frequently represents explicitation of the additive relation, as in (9a). This might be because of the vagueness and multifunctionality of *and/og* as a marker of cohesive relations; *and/og* can for example also mark temporal sequence (e.g. Knott & Sanders (1998)). The addition of *dessuten* in translation may thus represent a resolution of any ambiguity of the cohesive relation. Note that the relation between the two conjoined clauses in (8) could not be temporal or causal in any case, so that the reduction of explicitness does not affect the type of cohesive relation.<sup>6</sup> To check whether this is an effect of translation, I searched in English originals in ENPC fiction for examples of *and besides*. Interestingly, the Norwegian translations tend to include an adverbial expression, but occasionally have zero correspondence of the conjunction, as in (10).

- (10) a. Of course, he might have been lying, I suppose, but that would have been an imaginative step for him to take. *And besides*, I have other evidence. (JB1)  
 b. Det er selvsagt mulig han løy, men det er mildt sagt vanskelig å forestille seg. *Dessuten* har jeg andre bevis. (JB1TN)

It seems that most of the examples of *og dessuten* and *and besides* mark internal addition (i.e. the discourse-organizing type). It may thus be an interesting avenue of further study to investigate whether *og* may be too weak a marker of this type of relation on its own.

#### [4.2] Lexical correspondences

As mentioned above, congruent correspondences of *dessuten* (i.e. adverbs) are the most frequent option in translations between Norwegian and English, while non-congruent correspondences are more frequent between Norwegian and French (the most frequent correspondences being PPs). Table 5 presents the correspondences that occur five times or more in the ENPC or four times or more in the French/Norwegian material (the lower threshold is due to the smaller size of the material).

Table 5 on the facing page shows that the spread of correspondences of *dessuten* is considerable in both English and French. The two most frequent English corre-

[6] One of the anonymous reviewers of this paper, apparently a native speaker of British English, interestingly points out that *and* in (8b) may very well be stressed, thus retaining some of the emphasis inherent in the original *dessuten*.



TABLE 5: Recurrent correspondences of *dessuten* in English and French.

ENPC (N=256)			FNPC (N=85), NO-FR-EN-GE (N=100)		
	N	%		N	%
<i>besides</i>	51	19%	<i>aussi</i> ('also')	19	10%
<i>also</i>	41	16%	<i>d'ailleurs</i> ('of other')	15	8%
<i>moreover</i>	18	7%	<i>en outre</i> ('among other')	13	7%
<i>and</i>	15	6%	<i>de plus</i> ('of more')	9	5%
<i>in addition</i>	13	5%	<i>en plus</i> ('among more')	9	5%
<i>what BE more</i>	12	5%	<i>et puis</i> ('and then')	7	4%
<i>as well</i>	7	3%	<i>de toute façon</i> ('of all manner')	5	3%
<i>furthermore</i>	7	3%	<i>du reste</i> ('of the rest')	5	3%
<i>and + adv</i>	5	2%	<i>et</i> ('and')	4	2%
<i>anyway</i>	5	2%	<i>sans compter</i> ('without counting')	4	2%
<i>too</i>	5	2%	others (below 4 hits)	45	24%
others (below 5 hits)	39	15%	Ø	50	27%
Ø	37	14%			

spidences, however, account for a much greater proportion of the correspondences than the two most frequent French ones. At the other end of the frequency range, French has a greater proportion of correspondences below the frequency threshold level (i.e. the ones grouped as 'others').

It is clear from Table 5 that the bilingual dictionaries quoted in Table 1 do not adequately reflect frequency data from the translations in the OMC. In particular, the following correspondences are missing: *also*, *furthermore* and *aussi*, *d'ailleurs*, *de plus*.

The overt correspondences of *dessuten* listed in Table 5 seem to suggest that the relationship between the conjoined propositions may vary, i.e. that *dessuten* may imply different ways of adding things. In other words, the correspondences seem to differ as to whether the added item is equal to the one mentioned first (*also*, *too*, *aussi*); emphasized (*moreover*, *what is more*, *en outre*, *sans compter/oublier*); an "optional extra" (*in addition*, *d'ailleurs*, *en plus*); or incidental / de-emphasized (*anyway*, *de toute façon*).

In examples (8) - (10) above, the conjoined clauses seem to be of equal importance, while in examples (11) and (12) the final clause is given extra emphasis by the presence of the additive connective.<sup>7</sup> In (13), the second clause seems to be

[7] For example, according to the *Macmillan Dictionary* *moreover* is "used for introducing an additional and important fact that supports or emphasizes what you have just said".

added as some kind of afterthought,<sup>8</sup> while in (14) it seems to mark an aside (cf. Martin & Rose's (2007) 'sidetracking' as a subtype of addition).

- (11) a. Hun var ikke vant til at det hendte noe uventet, *dessuten* hadde hun alltid overlatt til andre å ta viktige avgjørelser. (BV1)  
 b. She was not used to anything unexpected happening, *and what was more*, she had always left it up to others to make important decisions. (BV1TE)
- (12) a. En halv time seinere hadde jeg lært to ting. Oslos husmødre må ha et sterkt behov for plutselige telefonsamtaler når ektemennene er på jobb. *Dessuten* eier de ikke kødisiplin. (LSC2)  
 b. A half hour later I had learned two things. Oslo's housewives have an urgent need for telephone conversations when their husbands are at work. *Moreover*, they don't like to wait their turn. (LSC2TE)
- (13) a. "Han ler av meg," tenker Selma. Men hun kan vel ikke bebreide ham at han er for høflig nå? *Dessuten* vil hun ikke fornærme ham. (KM1TN)  
 b. "Il se moquer de moi", pense Selma. Mais peut-elle maintenant lui reprocher de se montrer trop poli...? *D'ailleurs*, elle ne veut pas le fâcher: elle a trop envie d'entendre son histoire. (KM1)
- (14) a. Men vi hadde sett mulighetene i gamla — og hadde *dessuten* ikke råd til annen farkost — så vi gikk på med tørre nevene, friskt mot, acetylenbrenner og sveiseapparat. (JM1)  
 b. But we saw possibilities in the old lady — *anyway* we couldn't afford any other vessel — so we started out with bare knuckles, high spirits, acetylene burner and welding apparatus. (JM1TE)

Table 5 reflects the fact that no single correspondence can be said to be the main counterpart of *dessuten* in either English or French. There is good reason to suspect that the same will be true in the reverse direction, i.e. that *dessuten* is not the only counterpart of any French or English connective. Altenberg's (1999) concept of mutual correspondence is a measure of this: it gives the frequency with which different (grammatical, semantic and lexical) expressions are translated into each other, and is calculated and expressed as a percentage by means of the following formula:

$$(15) \quad \frac{(A_t + B_t) \times 100}{A_s + B_s}$$

[8] This is supported by the definition of *d'ailleurs* given in *Larousse Dictionnaire de français*: "*D'ailleurs* s'emploie comme adverbe de liaison pour indiquer une considération incidente" ('...is used as a linking adverb to indicate an incidental relationship').

“ $A_t$  and  $B_t$  are the compared categories or items in the translations, and  $A_s$  and  $B_s$  are the compared categories in the source texts. The value will range from 0% (no correspondence) to 100% (full correspondence)” (Altenberg 1999, 254). For example, 28 out of 107 *dessuten* in ENPC fiction are translated into *besides*, while 15 out of 24 *besides* are translated into *dessuten*. The MC of *dessuten* and *besides* is thus  $(28 + 15) \times 100 / (107 + 24) = 32.8\%$ . The same technique was used for *dessuten* and its five most frequent English and French correspondences.<sup>9</sup> The results, calculated separately for fiction and non-fiction, are given in Table 6.

TABLE 6: Mutual correspondence of *dessuten* and its most frequent correspondences in English and French.

	FICTION	NON-FICTION
<i>besides</i>	32.8%	12.3%
<i>also</i>	6.8%	6.9%
<i>moreover</i>	6.5%	16.9%
<i>in addition</i>	6.4%	9.5%
<i>what's more</i>	10.6%	1.7%
<i>aussi</i>	4.4%	2.5%
<i>d'ailleurs</i>	9.4%	5.8%
<i>en outre</i>	3.8%	23.5%
<i>de plus</i>	3.4%	16.7%
<i>en plus</i>	7.4%	5.9%

The degree of mutual correspondence is low for most of the items; i.e. most of the English and French correspondences of *dessuten* are often translated into different Norwegian expressions, such as *forresten*, *attpåtil*, *også* (see further below). Interestingly, fiction and non-fiction differ as to their preferred correspondences of *dessuten*. The data thus indicate that while *dessuten* seems to be stylistically neutral (cf. Table 2), some of the English and French correspondences are not. This may be a factor in the choice of correspondence. The strongest mutual correspondences of *dessuten* are with *besides* for English fiction (32.8%) and *en outre* for French non-fiction (23.5%). Both MCs are asymmetrical; *en outre* and *besides* are translated into *dessuten* more often than the other way round. The MC of *dessuten* and *what's more* is also asymmetrical; in fiction, *dessuten* is translated into *what's more* in nine out of 107 cases, but *what's more* is translated into *dessuten* in three

[9] *And* is the fourth most frequent correspondence of *dessuten* in Table 5. However, because of its overwhelming frequency both as a connective and as a coordinator of phrases (*and* occurs 12,171 times in the original texts of ENPC fiction alone), it was not possible to investigate the mutual correspondence of *dessuten* and *and* with any degree of reliability. But as *and* seems to correspond to *og* over 90% of the time, the MC value for this pair will be extremely low. Number 6 in Table 5, *what's more*, has been included instead.

out of six cases (50%), which shows that low numbers may underlie a deceptively high percentage.

Although *also* and *aussi* are frequent correspondences of *dessuten* (Table 5), the degree of mutual correspondence is low because these items most frequently correspond to something other than *dessuten* (typically *også*; see below). However, translations of *dessuten* into *and/et* and *also/aussi* can be regarded as a kind of ‘normalization’ (Baker 1996, 176), as it represents the choice of a more neutral/general term in the target language. Conversely, the use of *dessuten* as a translation of *and/et* and *also/aussi* may be said to represent explication (ibid.), in the sense that more emphasis is given to the additive relation.

To check if the most frequent correspondences of *dessuten* simply reflect the general frequencies of these words, I searched in the original English and French texts for these items.<sup>10</sup> The results are given in Figure 1 below and Figure 2 on the facing page.

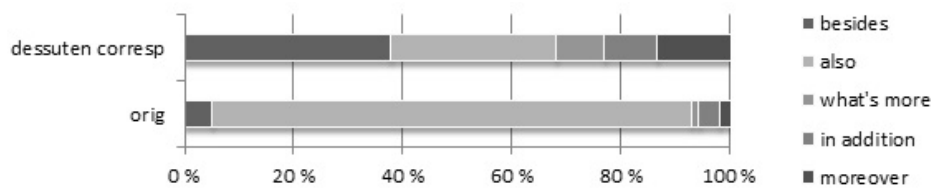


FIGURE 1: Frequencies of English correspondences of *dessuten* compared to general frequencies of the same items.

Figure 1 shows the most frequent English correspondences of *dessuten* in the top bar. The bottom bar shows the distribution of the same expressions in original English text, regardless of correspondence. As expected *also* is a much more frequent word than any of the others, and *what's more* is the least frequent option. This lends support to the suggestion made above, that the choice of *også* as a correspondence represents a kind of ‘normalization’; a reduction of the markedness of the additive relation. Conversely, the choice of *dessuten* as a translation of *også* represents explication.

Figure 2 gives corresponding information for the FNPC. Note that *de plus* and *en plus* often have other functions than that of connective, e.g. in the phrase *de plus en plus* (‘more and more’). Here, only the connective uses have been included. The same goes for *aussi*. The most common French correspondences have much more similar frequencies than the English ones do. We also see that the general frequency of *aussi* (in the bottom bar) is less dominant than *also* in Figure 1. The

[10] Also for reasons of high frequency (see note10), *and* was left out of this part of the investigation.

general frequencies of the alternatives to *also* are relatively similar, while *d'ailleurs* is much more frequent than *en outre*, *de plus* and *en plus*.

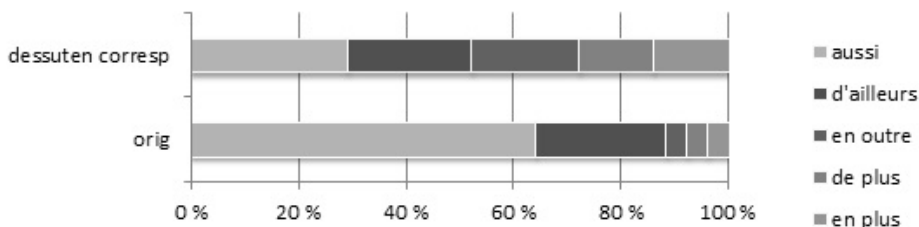


FIGURE 2: Frequencies of French correspondences of *dessuten* compared to general frequencies of the same items.

#### [4.3] *The importance of position*

*Dessuten* can occur in either clause-initial or clause-medial position in Norwegian. In addition, it can connect non-clausal segments. A survey of the positions of *dessuten* shows that initial position is the most common one in all the Norwegian-language texts in the corpora, with the exception of Jostein Gaarder's novels *Maya* (in No-En-Fr-Ge) and *Sophie's World* (in ENPC fiction) where medial position is used more extensively. If Gaarder's texts are disregarded, the use of initial position is just over twice as frequent as that of medial position. End position is not used at all.

It may be of interest to point out that the rate of zero correspondence is much higher for the medial *dessuten* than for the initial ones: for the ENPC the percentage of zero correspondence is 23 for medial position and 12 for initial, and for the Norwegian-French material the difference is even greater. The difference is statistically significant in both cases.<sup>11</sup> This may have several causes: the most plausible one is that initial position comes with thematic prominence (Matthiessen 1995, 27); (Martin & Rose 2007, 192), so that whatever is part of the clause theme will be preserved in translation if possible. Medial position, however, is not associated with any particular prominence (Hasselgård 2010, 294) so that clause-medial elements may be lost (or may be added inconspicuously) in translation.

The position of *dessuten* affects not only its correspondence types, but also the realization of the overt correspondences. The tendencies are illustrated in Table 8, which shows the recurrent translations of initial and medial *dessuten* into English and French, listed in descending order of frequency.

[11]  $p < 0.05$  for English correspondences and  $p < 0.01$  for French correspondences (Fisher's exact test, see <http://graphpad.com/quickcalcs/contingency1.cfm>).

TABLE 7: Recurrent translations of *dessuten* according to syntactic position.

	ENGLISH TRANSLATIONS	FRENCH TRANSLATIONS
INITIAL	besides (28), also (9), moreover (8), what BE more (8), in addition (5), and (4), as well (3), further (2), furthermore (2), nor (2), Ø (10)	en plus (5), de plus (4), du reste (4), en outre (4), et du reste (3), et puis (4), aussi (3), à quoi s'ajoute (2), puis (2), Ø (7)
	TOTAL = 101	TOTAL = 45
	also (13), moreover (5), and (3), as well (3), besides (3), furthermore (2), in addition (3), Ø (15)	aussi (9), d'ailleurs (5), en outre (5), de plus (3), de toute façon (3), en plus (3), et (3), sans compter (3), même (2), Ø (34)
MEDIAL	TOTAL = 55	TOTAL = 81

Interestingly, translators into both languages prefer different renderings of *dessuten* in initial than in medial position. Thus, while *besides* is by far the most frequent translation of initial *dessuten* (28%), it accounts for only five per cent of the translations of medial *dessuten*. In each of these translations, *besides* occurs in initial position. Conversely, *also* is the most popular translation of medial *dessuten* (24%), but accounts for only nine percent of the initial ones. The frequent use of *also* as a correspondence of medial *dessuten* might be due to the ease with which this connector fits into English medial position, since other English conjunct adverbials generally prefer initial position (Biber et al. 1999, 772).

The pattern is somewhat less clear as regards the French overt translations, but like *also*, *aussi* is more popular as a rendering of medial than of initial *dessuten*. The strongest tendency in the French material is thus the high frequency of zero translations of medial *dessuten* noted above, but we may also note that *d'ailleurs* and *de toute façon* are recurrent only as translations of medial *dessuten*.

[5] GETTING FROM A SINGLE CONNECTOR TO A SEMANTIC MAP OF ADDITIVE CONJUNCTION

To widen the perspective on additive conjunction we can take advantage of the parallel corpus to make the translation paradigms bidirectional. A method for doing this has been suggested by Dyvik (1998, 2004); i.e. the semantic mirror method illustrated in Figure 3. The method presupposes a bidirectional parallel corpus such as the ENPC/FNPC (thus No-En-Fr-Ge could not be used for this part of the study). In our case, it involves the following steps:

- (i) search in Norwegian texts for English and French correspondences of an item. The resulting translation paradigm is called the ‘*t*-image’.
- (ii) use the English and French correspondences to search for their Norwegian translations and sources. The resulting paradigms are the ‘inverse *t*-images’.

- (iii) The procedure can be repeated, using the items in the first inverse *t*-image to produce a second, etc.

The idea is that *t*-images will produce groups of correspondences with similar meanings, thus providing a powerful tool in contrastive lexical semantics. In Figure 3, the starting point is the Norwegian polysemous word *tak* (which has all the meanings shown in the first *t*-image to the right); the further exploration of correspondences of the items in the *t*-image produces the groups of translations in the inverse *t*-image to the left.

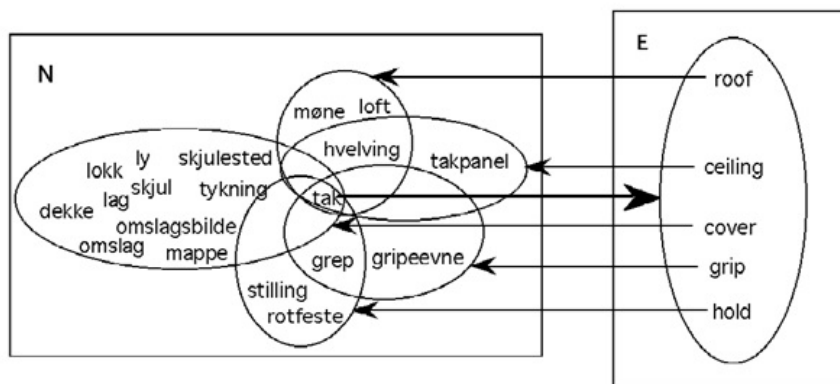


FIGURE 3: The first and inverse *t*-images of *tak* (Dyvik 2004, 316).

A slightly simplified semantic mirror method was used to create a semantic network of the additive relation from the point of view of *dessuten* (for a similar approach, see Simon-Vandenberghe & Aijmer (2007)). The first *t*-image of *dessuten* was provided in Table 5. Only the most frequent French and English correspondences of *dessuten* (with the exception of *and*; see explanation in note 10) were used as search terms in the original English and French texts in the ENPC and the FNPC to produce an inverse *t*-image. Predictably, *dessuten* turned up as one of the correspondences, but not always as the most frequent one. The results are shown in Table 8, where correspondences of each search term are given in order of descending frequency. If no frequency is given for a word, it means that it occurs only once. Zero correspondences have not been included. It may be noted, however, that both *also* and *aussi* have high percentages of zero correspondences (19% for *aussi*; 14% for *also*), which indicates that they are often perceived by translators as redundant. Table 8 gives the results for fiction and non-fiction separately

for the ENPC, but not for the FNPC, which is much smaller than the ENPC and not as well balanced.<sup>12</sup>

TABLE 8: The first and inverse *t*-images of *dessuten*.

FIRST <i>t</i> -IMAGE	INVERSE <i>t</i> -IMAGE	
	FICTION	NON-FICTION
<i>besides</i>	dessuten (15), forresten (3), også også (129), og (9), dessuten (6), heller ikke (5), så (3), og så (3), other (5)	dessuten (4), i tillegg til (2), ved siden av (2) også (227), dessuten (14), heller ikke (5), og (3), samtidig (3), videre (3), både – og (2), i tillegg (til) (2), other (20)
<i>what BE more</i>	attpåtil (3), dessuten (3)	hva mer er, dessuten i tillegg (til) (9), dessuten (4), dertil,
<i>in addition</i>	i tillegg (2)	også, uavhengig av, utenfor
<i>moreover</i>	til og med	dessuten (4), videre (2), også, og
<i>aussi</i>	også (93), dessuten (5), og (2), i tillegg (2), other (7)	
<i>d’ailleurs</i>	for øvrig (16), forresten (11), dessuten (9), men (2), egentlig, faktisk, heller ikke	
<i>en outre</i>	dessuten (4), i tillegg, også	
<i>de plus</i>	dessuten (2), i tillegg (3), enn videre, også	
<i>en plus</i>	i tillegg (4), attpåtil, dessuten, til og med, ved siden av	

The inverse *t*-images of *dessuten* bring out the polysemy of this word even more clearly than the translation paradigms shown in Table 5. There are few differences between fiction and non-fiction in the ENPC, but some expressions occur only in fiction (*forresten*, *attpåtil*), and others, with a more formal flavour, occur only in non-fiction (*videre*, *dertil*). Furthermore, *i tillegg (til)* is more frequent in non-fiction. Perhaps the most important meaning difference emerging from Table 8 is that between adding an element with (at least) equal importance to the first and adding an element which is incidental to the first. The former shows up in the correspondences of *what be more*, *moreover*, *en outre*, *de plus* and *en plus*, and the latter in the correspondences of *in addition* and *d’ailleurs*. *Besides* seems to imply some of the same vagueness on this account as *dessuten*, as *forresten* (‘incidentally’) turns up as one of its recurrent correspondences.

The investigations into the translation paradigms and *t*-images of *dessuten* have provided a set of words and phrases that can be said to constitute the semantic field of (positive) addition. Figure 4 visualizes this, starting from *dessuten* as the node word. The rows immediately above and below it represent its most frequent correspondences in English and French, respectively (i.e. the first *t*-images), while the top and bottom rows represent the inverse *t*-images emerging from both in-

[12] Glosses for the Norwegian correspondences other than *dessuten* (in alphabetical order): *attpåtil* (‘on top of that’), *både – og* (‘both – and’), *dertil*, (‘added to that’), *egentlig*, (‘actually’), *enn videre*, (‘furthermore’), *faktisk*, (‘in fact’), *for øvrig* (‘in addition’), *forresten* (‘incidentally’), *heller ikke* (‘nor’), *hva mer er* (‘what is more’), *i tillegg (til)* (‘in addition (to)’), *men* (‘but’), *og* (‘and’), *og så* (‘and then’), *også* (‘also’), *samtidig* (‘at the same time’), *så* (‘then’), *til og med* (‘even’), *uavhengig av* (‘independent of’), *utenfor* (‘outside’), *ved siden av* (‘on the side of’), *videre* (‘further’).



vestigations. *And* has been added to the first t-image row for English due to its frequency in Table 5, and *og* has similarly been added to the inverse t-images of both French and English correspondences on the assumption that it corresponds to (at least) *and*, *also* and *aussi*. The expressions to the left are words that can be considered relatively neutral in terms of their high frequency and rather general marking of addition, while those to the right indicate that the two conjoined items differ in importance. A slightly enlarged font indicates high-frequency correspondences.



FIGURE 4: A semantic map of additive relations emerging from *dessuten*.

## [6] CONCLUDING REMARKS

The present study has explored the semantic field of additive conjunction, taking the Norwegian adverb *dessuten* as its starting point, and looking for translation correspondences in both English and French. The three languages differ in their realization of additive connectives: English appears to be more similar to Norwegian in that most of the correspondences of *dessuten* were congruent, while French had more non-congruent correspondences. There was also a more sizeable proportion of zero correspondences in French than in English.

*Dessuten* can be characterized as a more emphatic marker of additive conjunction than the simple *og/and/et* (see also Halliday & Hasan (1976, 246)). The degree of emphasis implied seems to correlate with the position of *dessuten*; it appears more emphatic in initial than in non-initial position, as indicated by the ratio of zero correspondence of medial *dessuten*. It also turns out that *also/aussi* show up as frequent correspondences of *dessuten*, and it was suggested that this type of correspondence, because of the general frequencies of *also/aussi* as well as the lower degree of emphasis carried by these connectives, represents normalization if used as translations and explication when they occur as sources of *dessuten*.

No single item presents itself as *the* correspondence of *dessuten* in either language: both English and French offer a wide range of correspondences, none of which occurs above 25% of the time. While *dessuten* seems to be stylistically neutral across fiction and non-fiction, some of its English and French correspondences vary across these text types, in frequency as well as their degree of mutual correspondence with *dessuten* – and are thus not stylistically neutral. This is also brought out by the inverse *t*-image of Norwegian correspondences shown in Table 8.

The patterns of correspondences, as shown by explorations in two parallel corpora of two language pairs, bring out a vagueness in the additive relation marked by *dessuten*. This pertains particularly to the relative importance of the conjoined segments; i.e. the fact that adverbs as different as *anyway* and *more-over* both occur as acceptable correspondences must mean that *dessuten* is either vague or neutral as regards the relative importance of the two conjoined items. Since ‘correspondences’ are both translations and sources, both groups of correspondence indicate that translators may decide to emphasize or de-emphasize the importance of one of the conjoined segments compared to the original.

The present study has not answered all questions that can be asked about cross-linguistic paradigms of additive conjunction. In particular, it would be interesting to explore more additive connectives in a similar fashion, to arrive at a more complete map of this relation than the one outlined here. Such an extension might make it possible to take more account of the difference between external and internal conjunction, i.e. the difference between conjoining events and conjoining pieces of discourse, as a factor in choosing translation correspondences. Furthermore, it was suggested above that it might interesting to investigate combinations of additive adverbial expressions and *og/and/et* and their correspondences to find out about the strength (or degree of emphasis) of different types of expression. These issues will, however, have to await further study.

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APPENDIX

Appendix table A

TABLE 9: Size and composition of the English-Norwegian Parallel Corpus.

	ENPC/FICTION	ENPC/NON-FICTION
English original	402,500 words	252,000 words
Norwegian translation	398,000 words	244,000 words
Norwegian original	403,500 words	220,100 words
English translation	423,000 words	252,700 words

Appendix table B

TABLE 10: B: Size and composition of the French-Norwegian Parallel Corpus and the Norwegian-French translation corpus used to supplement it.

	FNPC/FICTION	FNPC/NON-FICTION	NO-FR-EN-GE
French original	55,800 words	117,500 words	
Norwegian translation	63,300 words	134,000 words	
Norwegian original	111,200 words	136,500 words	408,558 words
French translation	109,300 words	137,000 words	439,687 words

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