

The decline of *damit* in English-German translations. A diachronic perspective on source language interference

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Abstract

*This article reports on a diachronic study of the quantitative and qualitative use of the composite deictic *damit* ‘therewith’ in a corpus of English-German translations and comparable German texts (investigated time period: 1978–2002; genre of texts: popular science). It was found that the investigated translations and comparable texts have branched off in different directions, with the frequency of *damit* decreasing in the former and increasing in the latter. The results obtained from the study provide insight into current developments in the English and German genres of popular science and provide a diachronic perspective on source language interference in translation.*

1. Introduction

Regardless of how good a translation is, it is always a ‘foreign particle’ in its linguistic environment, as it will – more or less visibly – display a “shining-through” (Teich 2003) of the source language. The ubiquity and inevitability of this phenomenon led Toury to postulate his “law of source language interference” for translated texts. He claims that the extent of source language interference correlates with the prestige of the source language in the target culture¹ (Toury 1995: 278). In other words, the higher the esteem of a source language in a given target culture, the less translators feel the need to align their works with the communicative conventions of the latter, i.e. to apply a “cultural filter” (House 2009: 38f).

In the extreme case, the prestige of the target language is so great and the number of translated texts so large that source language interference may result in profound changes to the target language. This happens when translations start to serve as models for the composition of texts originally written by native speakers of the target language. One example of such a translation-induced language change is seen in the strong impact that translations from Latin have had both on the grammatical system and communicative norms of the German language (Koller 1998).

Today’s *lingua franca* is English, and its global influence is unparalleled in history. One statistically apparent consequence of this global influence is the great number of translations from English into other languages. As the UNESCO’s *Index Translationum*² reveals, no other language is translated as often as English. The majority of the 1.8 million translations

1 Baker expresses a similar opinion, who “says virtually the same thing, albeit the other way round” (Pym 2008), suggesting that “the higher the status of the source text and language, the less the tendency to normalise”, i.e. to conform to the “typical patterns” of the target language (Baker 1996, p. 183). Another, perhaps even more important determinant of source language interference and target language normalization are the differences between the grammatical systems of the source and target language (Teich 2003).

2 The UNESCO’s *Index Translationum* is a database of book translations from and into 260 different languages. It can be queried online at <http://databases.unesco.org/xtrans/xtra-form.shtml>.

currently found in this database have English as a source language (c. 55%; the second most common source language is French, with a comparatively small share of c. 10%). And the most common target language of these translations is German (with a share of c. 17%; French follows with 13%).

These figures suggest that English might have a similar influence on German as Latin once had. As the grammatical system of today's German is well developed and codified, it is unlikely to be (directly) influenced by translations from English. The communicative norms of German, however, might still be susceptible to translation-induced change³. In fact, a number of studies from our project *Covert Translation* (see the following section) have pointed in that direction.

One example of an unspoken communicative norm⁴ is the preference of German discourse for explicitness, which contrasts with the relative implicitness of English discourse. In the present context, explicitness means the verbalization of message parts whose meaning the addressee would (most likely) be able to infer, through contextual effects, shared knowledge between author and reader, etc., if they were not verbalized. Empirical studies have shown that while English authors commonly rely on such reader inferences, German authors tend to 'play it safe' and resort to explicit verbalizations (House 1997, 2004, 2006)⁵, by using, for example, a connective for overtly encoding semantic relations (Stein 1979, Doherty 2002, Behrens 2005, Fabricius-Hansen 2005, Becher submitted a).

This article presents a study with the aim of investigating whether English-German translations might have an impact on the tendency of German discourse towards cohesive explicitness, i.e. the overt encoding of semantic relations. The German deictic *damit* was chosen as the object of investigation, as it was identified as an important means used by German authors (and English-German translators) to achieve cohesive explicitness.

The article is structured as follows. The data and methods used in the investigation are presented in Section 1.1, followed by a brief outline of the functions of *damit* in written German discourse in Section 1.2. Section 1.3 will then review some previous research relevant to the present study. The two hypotheses underlying the study will be stated in the final part of this introductory section (1.4). The results obtained from the study are presented in Section 2, which will then be discussed in detail in Section 3. The last section of this article features a short summary and some concluding remarks.

3 In his discussion of the influence of Latin-German translations on the development of German, Koller (1998) distinguishes between (grammatical) *system innovations* and (pragmatic) *norm innovations* that may be carried into the target language by translations. The study presented in this article deals exclusively with the latter type of translation-induced language change.

4 In this article, the terms *norm*, *convention* and *preference* are used interchangeably to refer to relatively standardized (but often not explicitly codified) patterns of linguistic interaction in a given speech community.

5 This is not to say, of course, that German is inherently more explicit than English. For example, German prefers an adverbial phrase in certain situations in which English favors an (often more explicit) adverbial clause (Doherty 1999; this case and many other cases in which the preferred degree of explicitness differs in English and German are insightfully discussed in Doherty 2002).

1.1 Data and Method

The present study was conducted within the scope of the project *Covert Translation*, which is part of the University of Hamburg's Research Center on Multilingualism funded by the Deutsche Forschungsgemeinschaft (German Research Foundation). The aim of the project led by Juliane House is to investigate the influence of English on the communicative norms of the German language through translation. Two genres were chosen for investigation for which English influence was expected to be most pronounced: business communication and popular science. In these two genres, English-German translations are said to function as models for the production of texts originally written in German, which makes the influence of English seem likely (Böttger 2004, Baumgarten 2007). Only the popular science part of the corpus was investigated in the present study. It consists of three components:

1. English texts
2. their German translations
3. comparable (non-translated) German texts

Most of the texts were published in the popular scientific journal *Scientific American* or its German daughter publication, *Spektrum der Wissenschaft*. The texts were taken from two distinct time periods, 1978–1982 and 1999–2002. The diachronic makeup of the corpus makes it possible to track changes over time and, most importantly, to ascertain whether or not these actually stem from the English-German translations. The corpus has a total word count of only c. 500,000, which is sufficient, however, for the reliable investigation of highly frequent linguistic items such as *damit*. Table 1 outlines the structure of the corpus.

	1978–1982	1999–2002
English source texts	26 texts (42497 words)	38 texts (122866 words)
German translations	26 texts (37830 words)	38 texts (113420 words)
comparable German texts	19 texts (82480 words)	32 texts (100648 words)

Table 1: Structure of the popular science corpus

Due to the different sizes of the individual subcorpora, frequencies of occurrence will be provided as absolute as well as normalized frequencies and/or percentages throughout the article.

The investigation consisted of two steps. First, the frequency of *damit* was counted in all subcorpora in order to discover (1) possible differences between the English-German translations and the comparable German texts and (2) any diachronic developments that may have occurred. Second, a qualitative analysis of all occurrences of *damit* in the translated subcorpora was conducted in order to assess the extent to which the translators' use of the

deictic was influenced by source language interference⁶.

1.2. German *damit* and its uses in written discourse

The object of this investigation is the German deictic *damit* ‘therewith’. In a previous study carried out using a subset of the presented corpus, I found deictic expressions – with the exception of personal deictics – to be considerably more frequent in the investigated German texts than in the English ones (Becher submitted a). I suggested two (interconnected) reasons for this finding: first, the use of deictics as a cohesive device is more customary in German than in English (cf. Ehlich 1992). Second, deictics are often used by authors to increase the propositional explicitness of their texts, a strategy which is more characteristic of German than of English discourse (cf. Section 1; examples follow). The use of deictic expressions is thus inextricably linked to culturally determined discourse norms and constitutes an important aspect of English-German language contrast.

The deictic *damit* is part of a subclass of deictics common in German, the *composite deictics* (“zusammengesetzte Verweiswörter”, Rehbein 1995)⁷. It consists of two parts:

1. The first part (*da-* ‘there’) is a deictic which, when used in written discourse, typically corefers with an antecedent expression in the surrounding discourse by instructing the addressee to focus (or re-focus) their attention on the associated parts of their knowledge⁸ (cf. Ehlich 1982, 1992, 2007, Redder 1990: 138ff; similarly Diessel 2006; on the role of the addressee’s knowledge see Blühdorn 1993, 1995).
2. The second part (*-mit* ‘with’) is a preposition. Its semantic function is the establishment of a – very abstract – meaning relation (which may be termed “concomitance”, cf. Seiler 1974) between the knowledge parts focused by the deictic and the running sentence. Syntactically, *-mit* marks the composite deictic as a prepositional phrase (cf. Pittner 2008: 75), a phrase type which can occupy a variety of syntactic positions (cf. Zifonun et al. 1997: 2135ff).

(Rehbein 1995, similarly Braunmüller 1985; cf. also Redder’s (forthc.) analysis of *dabei*)

Its morphological composition makes *damit* an extremely versatile means for establishing semantic relations in written text. Both components of *damit* are semantically highly underspecified: Its deictic part *da-* may refer to all four kinds of objects that may be referred to in language, namely (1.) physical/spatial objects, (2.) temporal objects (events,

6 Occurrences of *damit* used as a subordinator (cf. Schrodtt 1988) and as a correlate of a subordinate clause (cf. Dončeva 1982, Pasch et al. 2003: 559f) were excluded from the frequency counts as well as from the translation analysis. These uses fulfill a purely grammatical function within the sentence and are thus not comparable to the deictic/connective ‘default’ function of *damit* (as described in Section 1.2).

7 Composite deictics are often referred to as *pronominal adverbs*, a somewhat unsuitable term that fails to acknowledge the syntactic and semantic flexibility of these peculiar words (cf. Rehbein 1995 and the following examples).

8 This formulation may sound cumbersome, but it brings out the deictic nature of *da-*, which accounts for its specific properties as compared to anaphorics like e.g. *es* ‘it’. Deictics and anaphorics behave differently in establishing coreference relations in discourse and thus should not be confused (cf. the cited works by Ehlich and Becher submitted a).

states, etc.), (3.) epistemic objects (propositions) and (4.) deontic objects (speech acts). And its prepositional part *-mit* may encode relations participating in all four types of relations expressible in language, namely (1.) similarity relations, (2.) situating relations, (3.) conditional relations and (4.) causal/instrumental relations⁹. Note that this does not necessarily mean that *damit* may encode all possible meaning relations; some relations are probably blocked (cf. Blühdorn's analysis of *da* [2009b: 5f]).

While a full-blown semantic analysis of *damit* is not possible within the limited scope of this article, the preliminary analysis given above at least explains the remarkable semantic flexibility of the connective that we are going to observe in the following examples. To ease (and shorten) exposition, the description of the examples will focus on the deictic element of *damit*; the semantic relations encoded by the prepositional element *-mit* will only be mentioned incidentally.

In our first example, *damit* corefers with an antecedent noun phrase (*Saugnäpfe* 'suckers'):

- (1) Männliche wie weibliche Tiere verfügen über Saugnäpfe, aber nur die Männchen heften sich *damit* an der Wand der Blutgefäße fest.

'Male as well as female animals have suckers, but only the males attach to the walls of the blood vessels *with them*.'

A proper English translation of (1) would make use of an anaphoric expression (cf. *with them* in the provided gloss) to convey the same coreference relation. In German, however, deictic coreference seems to be commonplace in cases where it would also be possible to use an anaphoric (Becher submitted a).

In (2), *damit* does not have a concrete antecedent, i.e. it cannot be said to corefer with an element of the linguistic surface structure; rather, it seems to refer to the 'content' of the preceding sentence (cf. Lyons 1977: 668). More precisely, *damit* instructs the reader to shift their focus of attention to the proposition¹⁰ expressed in the preceding sentence, thus integrating it as a referent into the current sentence (cf. Consten et al. 2007):

- (2) Sterne bilden sich nach allgemeiner Auffassung in dichten Wolken aus Gas und Staub. *Damit* im Einklang steht die Beobachtung, daß sehr junge Sterne in solchen Wolken und deren unmittelbarer Umgebung anzutreffen sind.

'Stars, according to common perception, form in dense clouds of gas and dust. Consistent *with this* is the observation that very young stars may be found in their immediate surroundings.'

The next example, no. 3, shows how *damit* may be used by an author to signal the structure of the text to the reader.

9 This tentative analysis is based on Blühdorn (2008, 2009a), who proposes a typology of semantic relations that is "meant to give a complete account of the universe of semantic relations capable of being encoded in language." (2009a: 8)

10 Note that the epistemic modal operator *according to common perception* is not in the scope of *da-*, only the unmodified proposition 'stars form in dense clouds of gas and dust'.

- (3) ...Software-Realisierungen sind im allgemeinen sehr viel langsamer (um einen Faktor 10 bis 100) als eine Hardware-Implementierung. Diese ist allerdings aufwendig und teuer, weil die Befehle der JVM – schon wegen des Resolutionsprozesses – extrem komplex sind.

Damit verläuft die Entwicklung des Netzwerkcomputers genau in die Gegenrichtung zur bisherigen Tendenz.

‘That is to say that the development of the network computer runs right into the opposite direction as compared to the current tendency.’

Here, the deictic ‘globally’ refers to what was said in the preceding paragraph (cf. Dončeva 1980, Rehbein 1995). In this way, *damit* functions as what Halliday and Matthiesen call an “expository” connective (2004: 542), as it introduces a stretch of discourse which “restates the thesis of the primary clause [here: preceding paragraph] in different words, to present it from another point of view, or perhaps just to reinforce the message” (397f). More specifically, *damit* serves as a signal of the Situation–Evaluation discourse pattern (cf. Jordan 1984, Hoey 2001; see also example 10 in Section 2.2.2): the first paragraph in (3) describes a Situation, the Evaluation of which is provided in the second paragraph. The role of *damit* is to make explicit that the author’s Evaluation follows directly from the characteristics of the presented Situation (rather than from other, unmentioned facts). The deictic thus functions as a signal of the text’s structure and in this way increases its cohesive explicitness. In fact, *damit* could even be omitted from (3), as the reader can infer on their own that an Evaluation has been made and that it is based on what was said in the preceding discourse¹¹.

In general, *damit* is often used for the sole purpose of making meaning relations explicit, a strategy associated with the communicative norms of German. It thus comes as no surprise that such uses of *damit* do not have a corresponding English equivalent. A proper translation would make use of something like *that is to say that* as in example 3 (cf. the provided gloss) in order to capture the meaning of *damit* or would omit the deictic altogether.

In sum, we have seen that *damit* is an important part of the cohesive toolbox of the German language. It may be used to encode reference relations ranging from ‘narrow’ reference to the referent of an antecedent noun phrase (ex. 1) up to ‘wide’ reference to the semantic structure of a whole paragraph (ex. 3). In cases of ‘wide’ reference, *damit* is often no longer distinguishable from non-deictic connectives such as *also* ‘thus’ and *folglich* ‘consequently’. Due to its potential for making inferable meaning relations explicit, *damit* is strongly associated with the communicative style of German. Moreover, the deictic has no close equivalent in English¹². This raises the questions of how, when and why English-German translators use *damit*. Before we address this question (in Section 5.2), we will review some relevant previous findings from the project *Covert Translation*.

11 Cf. the English source text of example 10, to be discussed in Section 2.2.2, where an underlying Situation-Evaluation pattern is not explicitly signalled, but inferable.

12 The English cognate *therewith* cannot be considered a close equivalent of *damit*, as it “is obsolete as a clausal connective or conjunction, and appears only as a phrasal adjunct in formal, very specialized texts” (Behrens 2005). This view is confirmed by evidence from the popular science corpus investigated in the present study, which contains only one occurrence of *therewith*.

1.3 Previous research

Previous studies from the project *Covert Translation* (for a recent overview see House forthc.) have shown that the influence of English on German through translation is subtle and complex:

Böttger's (2004) qualitative analysis of a 'corporate philosophy' text and its German translation has shown that the translator partly followed the communicative conventions of English and partly those of German. The resulting genre-mix may well be a sign of an adoption of Anglophone conventions in the genre of German business communication. On the other hand, Probst's (2007) analysis of an English IT textbook and its German translation (using the same method as Böttger, namely House's Model of Translation Quality Assessment, see House 1977, 1997) showed no indication of an adoption of Anglophone textual norms.

Similarly, German communicative conventions were found to be maintained in a qualitative and quantitative investigation of epistemically used modal verbs and their translations to German (using the same corpus as the present study). In contrast, a diachronic investigation of the use of sentence-initial concessive conjunctions (Engl. *But* and its German equivalents *Aber* and *Doch*) using the same data showed signs of English influence: it was found that (1) the translated corpus texts exhibit an 'over-use' of sentence-initial *Aber* and *Doch* compared to the non-translated texts, (2) this over-use is due to an increasing tendency among translators to translate *Aber* as *Doch* and (3) the non-translated German texts also show a growing frequency of *Aber* and *Doch* that appears to be associated with usage patterns strongly resembling the use of *But* in English popular science texts. These three observations suggest that the increasing use of sentence-initial *aber* and *doch* is a norm innovation which has spread from English-German translations to originally German popular science texts.

In Becher, House and Kranich (forthc.), where the findings outlined above are reported, we suggested that the different results obtained for modal verbs (maintenance of German communicative norms) and sentence-initial concessive conjunctions (adoption of Anglophone norms) are due to differences in subjectively perceived form-function-equivalence. We hypothesized that the perception of formal and functional equivalence between linguistic items like *But* and *Aber/Doch* by translators facilitates transfer and thus the import of linguistic norm innovations into the target language. The profound differences between the English and German systems of epistemic modality would then seem to 'block' convergence phenomena in this domain. As Kranich (forthc.) has shown, for example, English mainly relies on its highly grammaticalized modal verbs, while German makes use of a variety of modal devices such as modal particles, a word class that does not exist in English (cf. Nehls 1989, König 2001: 325f, König and Gast 2009: 245ff).

While there do not appear to be any studies on deictic expressions in English-German translations, Behrens (2005) has studied the Norwegian connective *dermed* in a corpus of translations to and from English and German. Norwegian *dermed* and German *damit* seem to be quite similar, since the two words are often used to translate each other (2005: 10f). Behrens' study is relevant for the present one in the following two respects: first, her results suggest that "the use of connectives is more 'normal' in German and Norwegian than in English" (2005: 28). This can be linked to the general observation that German favors a

greater degree of cohesive explicitness than English. Second, and most interestingly with regard to the present study, Behrens found a considerably higher frequency of *dermed* in English-Norwegian translations than in non-translated Norwegian texts. She concludes that Norwegian translations tend to over-normalize or exaggerate features of the target language (2005: 30). Behrens' results will be compared to those from the present study in Section 4.

1.4. Hypothesis

If the use of *damit* in the genre of popular science is in fact influenced by translation from English into German, we would expect to make the following two observations:

1. The frequency of *damit* is lower in English-German translations than in the corresponding non-translated German texts. This 'under-use' of *damit* is a result of source language interference from the original English texts.
2. The frequency of *damit* diachronically decreases in comparable texts as German-speaking authors, influenced by English-German translations, no longer feel the need to make cohesive relations explicit.

These two postulated observations served as hypotheses for the present study.

2. Results

2.1 Quantitative results

As shown in Table 2, *damit* has undergone an interesting change in frequency in both the English-German translations and the comparable German texts.

	1978–1982	1999–2002	development
English-German translations	84.6	65.2	–22.9%
comparable German texts	87.3	117.2	+34.3%

Table 2: Frequency of *damit* in the popular science corpus (per 100,000 words; n=296)

In the earlier time period (1978–1982), the frequency of *damit* is nearly the same in both subcorpora. During the later time period (1999–2002), however, the frequencies change in different directions: while the number of occurrences of *damit* decreased by c. 23% in the English-German translations, it increased by c. 34% in the non-translated German texts. As a result, *damit* is used almost twice as frequently during the second time period in the non-translated texts as in the translations.

This observation lends support to hypothesis 1, which postulates an under-use of *damit* in the English-German translations (cf. Section 1.4). Hypothesis 2, on the other hand, is clearly falsified, as the under-use of *damit* in the translations has definitely not propagated to the comparable texts. On the contrary, *damit* has flourished here, widening the gap between

translations and comparable texts¹³.

One important question remains: is the observed change in frequency of the use of *damit* in the translations actually due to source language interference, i.e. has interference increased from 1978 to 2002? In principle, other factors might account for the decline of *damit*. Further, it seems unlikely that the texts from 1978–1982 exhibit no source language interference at all, or that interference abruptly set in at some point after 1982. It is up to the following qualitative and quantitative translation analysis to address these problems.

2.2 Translation analysis

In the preceding section, we have seen that the frequency of *damit* in German translations of English popular scientific texts has considerably decreased in the time from 1978 to 2002. In the present section, we attempt to assess whether or not this frequency development is actually due to source language interference, as hypothesis no. 1 postulates. In order to accomplish this, we first need to know when translators use *damit*.

Generally speaking, two groups of occurrences of *damit* can be distinguished in English-German translations. The occurrences of the first group were used to translate an equivalent expression in the English source text. The occurrences of the second group, on the other hand, were added by the translator and thus increase the cohesive explicitness of the target text vis-à-vis the source text. In the following, the two groups of occurrences of *damit* will be discussed as well as the diachronic development of the different uses of *damit* in the translations.

2.2.1 Occurrences of *damit* with an equivalent in the source text

In the simplest case, *damit* is used to translate a deictic (or preposition + deictic) in the English source text:

(4) EO (English original): ...the pill and injectables. *With these*, women can control whether or not they become pregnant...

GT (German translation): ...die Pille und Verhütungsspritzen. *Damit* liegt es bei der Frau, ob sie schwanger werden will oder nicht...

‘...the pill and contraceptive injectables. *With these* it is up to the woman whether she wants to become pregnant or not.’

In (4), *damit* serves as a short form of *mit diesen* ‘with these’, which could be used

13 A closer investigation of all occurrences of *damit* in their given contexts did not yield any clues as to why its frequency of use has risen in the comparable texts. However, it was found that the rise in frequency seems to be part of a greater trend towards the use of causal connective adverbs. This trend is even stronger for connectives other than *damit*. For example, the frequency of German *also* ‘thus’ increased by c. 145% in the comparable texts. For the time being, it is impossible to say why the use of connectives like *damit* and *also* has increased in the relatively short time period investigated here. This question could only be answered by a comprehensive study of the expression of causal relations in the popular science corpus, which of course lies beyond the scope of the present study.

equally well. Occurrences of *damit* which translate an English anaphoric are a bit more interesting:

- (5) EO: The rivalry has cast a spotlight on the human genetic code – and what, exactly, researchers now plan to do *with it*.

GT: Ins Blickfeld gerückt ist durch diesen medienwirksam inszenierten Wettstreit nicht nur das Human-Genom selbst, sondern auch die Strategie, die die Forscher *damit* verfolgen.

‘Not only has the human genome itself come into view...but also the strategy that researchers pursue *with it*.’

Here, the anaphoric expression *mit ihm* ‘with it’ would also work as a translation of *with it*. However, as was noted in Section 1.2, German seems to prefer a deictic in many situations where an anaphoric is customary in English.

Due to its variable scope, *damit* may also be used to translate an English connective adverb:

- (6) EO: With their high albedo, snow and ice cool the atmosphere and *thus* stabilize their own existence.

GT: Schnee und Eis kühlen mit ihrer hohen Albedo die Atmosphäre ab und stabilisieren sich *damit* selbst.

‘Snow and ice cool down the atmosphere with their high albedo and *thus* stabilize themselves.’

In this example, the referent of *damit* is a fact (cf. ex. 2 in Section 1.2), namely ‘snow and ice cool down the atmosphere with their high albedo’. In this way, *damit*, while retaining its deictic force, works like the instrumental/causal/resultative¹⁴ connective *thus* in the English source sentence.

Finally, there is the case in which the use of *damit* has not been triggered by a specific source text expression, but rather by a translator’s effort to avoid lexical repetition:

- (7) EO: The capacity for reconstitution gives humans a great degree of fluency, flexibility and creativity...Initial studies imply that children with ADHD are less capable *of reconstitution* than are other children.

GT: Dieses Vermögen des freien Kombinierens verleiht dem Menschen seine hohe Geschicklichkeit, Anpassungsfähigkeit und Kreativität...Wie erste Studien mit hyperaktiven Kindern zeigen, haben diese *damit* Schwierigkeiten.

‘This capacity for reconstitution gives man his high [degree of] dexterity, flexibility and creativity...As first studies with hyperactive children show, they have their

14 Since the meaning of *thus* – and also *damit* – is semantically underspecified, the connective typically allows for several different readings (cf. Blühdorn 2009b).

problems *with that*.’

In the English source text, the key term *reconstitution* is repeated in the second sentence. The German translator, however, apparently wanting to avoid a repetition or paraphrase, has chosen the composite deictic *damit* to refer to the previous mention of the term. It is possible that lexical repetition is generally less acceptable in German than in English. This would explain (tentative) findings reported by Steiner (2008) and Gonzalez-Diaz and Kranich (2009) which suggest that German texts tend to have higher type-token-ratios than comparable English texts.

In (8), the author of the English source text refers to the aforementioned *iron* by paraphrasing it as a *vital element*. The German translator, however, has already used a paraphrase of *iron* (*das lebenswichtige Element* ‘the vital element’), which is probably the reason why s/he resorts to *damit*, thus avoiding a repetition of either expression.

(8) EO: ...iron is sequestered in the liver, which prevents invading bacteria from getting adequate supplies of *this vital element*.

GT: ...hält die Leber das lebenswichtige Element fest, so dass bakterielle Erreger nicht mehr ausreichend *damit* versorgt werden.

‘...the liver keeps hold of the vital element, so that bacterial agents are no longer adequately supplied *with it*.’

2.2.2 Occurrences of *damit* without an equivalent in the source text

As was pointed out in Section 1.2, *damit* is often used to explicitly signal cohesive relations, a strategy which is more characteristic of German than of English texts. It thus comes as no surprise that *damit* often does not have a corresponding English equivalent in the source text, as seen in the following examples.

(9) EO: ...such genes usually affect processes other than meiosis and...are almost always harmful.

GT: Gewöhnlich ändern solche Gene nicht nur den Verlauf der Reduktionsteilung, sondern beeinträchtigen auch andere Vorgänge...und erweisen sich *damit* als schädlich.

‘Usually such genes do not only change the course of meiosis, but also affect other processes and *thus* prove to be harmful.’

In the English source text sentence of (9), the semantically underdetermined conjunction *and* gives rise to the implicature that there is a causal relation between the two clause (cf. Posner 1980, Sweetser 1990: 87ff), i.e. the reader will infer that the mentioned genes are harmful because they affect processes other than meiosis. The German translator, however, has used *damit* as a causal connective to relieve the reader of drawing this inference. The translator’s insertion of *damit* can thus be regarded as a case of ‘explicitation’.

It is often claimed (see Pápai 2004 for a literature review) that explicitation is a universal

and inevitable result of the translation process, a view that can be traced back to Blum-Kulka (1986). However, in most ‘explicitating’ uses of *damit*, it seems much more plausible to attribute the phenomenon to differences in the communicative norms and structural properties of English and German (Becher submitted b). This does not exclude the possibility, of course, that there are indeed cases of explicitation caused by certain cognitive processes underlying translation. However, my findings suggest that this factor plays a minor role in English-German translations – if any at all (cf. also House 2004 and Baumgarten et al. 2008). As for (9), I would argue that it is the German preference for explicitness that has led the translator to add a supplementary *damit* as a cohesive signal.

The following example, no. 10, is a very similar case, in which the translator explicitates by using *damit* to signal a transition from Situation to Evaluation (cf. ex. 3 above).

(10) EO: ...it may have a genetic underpinning. Today’s view of the basis of the condition is strikingly different from that of just a few years ago.

GT: ...könnte bei solchen Kindern eine genetisch bedingte Entwicklungsstörung vorliegen. Die Einordnung des Syndroms hat sich *damit* in den letzten Jahren grundlegend gewandelt.

‘...could be a genetically caused developmental disorder. The classification of the syndrome has *thus* fundamentally changed in the last years.’

Finally, there are cases in which the translator’s restructuring of the source text (rather than an effort to make the translation more explicit) seems to be the reason for the use of *damit*. Cf. the following example:

(11) EO: Currently children (and adults) with ADHD often receive drugs such as Ritalin that boost their capacity to inhibit and regulate impulsive behaviors.

GT: Betroffene Kinder (auch Erwachsene) erhalten beispielsweise Stimulantien wie Ritalin; *damit* können viele deutlich besser ihre Impulse zügeln und ihr Verhalten steuern.

‘Affected children (also adults), for example, receive stimulants such as Ritalin; *with them*, many can considerably better curb their impulses and control their behaviour.’

While the English sentence in (11) ‘re-uses’ the object of the first clause (*drugs such as Ritalin*) as a causal, i.e. non-agentive subject in the second (relative) clause, the translator has decided to employ an agentive subject instead, namely *viele* ‘many’ (which is partly coreferential with the subject of the first clause, *betroffene Kinder...* ‘affected children’). The reason for this decision is most probably the fact that non-agentive subjects are less common in German than in English (Rohdenburg 1974, Hawkins 1981, 1986). The translator has employed *damit* in order to re-use the object of the first clause (*Stimulantien wie Ritalin* ‘stimulants such as Ritalin’) as an instrumental adverbial in the second clause (without repeating or paraphrasing it), thus compensating for the causal subject of the English relative clause. We can therefore reasonably surmise that the addition of *damit* to the translation is ultimately the result of the translator’s decision to restructure the sentence from the source text in order to adapt it to the communicative preferences of German.

2.2.3 The diachronic perspective

In the last two sections, we have seen that occurrences of *damit* in translations from English can be divided into two different groups. Occurrences of the first group seem to be motivated by equivalent expressions in the English source text, while occurrences of the second group were supplied by the translator in order to conform to the communicative preferences of German (which, *inter alia*, prefer cohesive explicitness and agentive subjects). If the decline of *damit* in the English-German translations observed in Section 2.1 was caused by an increasing degree of source language interference, we would expect the last group of *damit* occurrences to have shrunk over time (due to the translators' diminishing efforts to conform to the communicative norms of German). As Table 3 shows, this is clearly not the case. In fact, it seems to be the other way around!

	1978–1982	1999–2002	development
connective adverb	28%	14%	–14
anaphoric or deictic	19%	7%	–12
no equivalent	38%	58%	+20
paraphrase or repetition	6%	9%	+3
other	9%	12%	+3
TOTAL	100%	100%	

Table 3: Source text equivalents of *damit*: 1978–1982 vs. 1999–2002 (percentages; n=106)

The table lists all occurrences of *damit* in the English-German translation corpus according to their respective equivalents in the source text. In this way, it provides two English-German ‘translation images’ (cf. Dyvik 1998) of *damit*, one for 1978–1982 and one for 1999–2002. The first data row of the table shows that occurrences of *damit* translating a connective adverb have become rarer over time: while we find 28% of all occurrences of *damit* translating an English connective adverb (chiefly *thus*, *therefore*, *So* or *hence*) from 1978 to 1982, only 14% are found for the texts from 1999 to 2002. Occurrences of *damit* translating an English anaphoric or deictic (primarily *it* and *this*) exhibit a similar decrease in percentage for the time period investigated (–12 percentage points). Contrary to expectation, the share of occurrences of *damit* without an equivalent in the English source text increased (+20 percentage points). Other translational equivalents of *damit* (last two data rows in Table 3) are more or less evenly distributed across the two time periods.

3. Discussion

While the percentages presented in Table 3 should be taken with a grain of salt, as they are based on a relatively small number of occurrences¹⁵, one conclusion seems warranted: source language interference has decreased over time, as the share of *damit* occurrences used in ‘free’ translations (no equivalent in the English source text) has grown. Concomitantly, the share of occurrences of *damit* used as ‘literal’ translations (of English connectives, anaphorics and deictics) has shrunk.

So how can we explain the decrease in the overall frequency of *damit* in the English-German translations (standing in opposition to the frequency increase in the non-translated German texts)? One possibility that comes to mind is the following: source language interference has not increased but rather remained constant; instead, the English equivalents triggering the use of *damit* – connective adverbs, anaphorics and deictics – have decreased in frequency. As Table 4 shows, this is indeed the case. The connective adverbs *thus*, *therefore*, *So*, and *hence*¹⁶, as well as the pronouns *it* and *this*, have all decreased considerably in frequency in the popular scientific texts investigated here.

	1978–1982	1999–2002	development
thus	8.7	3.6	–58.9%
therefore	5.2	2.7	–48.1%
So	4.5	2.4	–47.2%
hence	3.8	0.9	–76.2%
it	70.6	57.2	–18.9%
this	54.8	40.0	–27.0%

Table 4: Frequency of some cohesive devices in the English source texts (per 100,000 words)

These results indicate that English popular science texts have become less cohesive over time, at least as far as adverbial connectives, anaphorics and deictics – some of the most important means of establishing textual cohesion (cf. Halliday and Hasan 1976) – are concerned. The reason for this could be what has sometimes been called the ‘colloquialization’ of written English. In a number of corpus-based studies, it has been found

15 The percentages are based on 32 occurrences for 1978–1982 and 74 occurrences for 1999–2002, totaling 106 occurrences. The different frequencies for the two time periods result from the different sizes of the respective subcorpora (cf. Table 1).

16 Again, absolute numbers are small due to the limited size of the corpus: taken together, the connective adverbs *thus*, *therefore*, *So* and *hence* occur 94 times from 1978–1982 and 117 times from 1999–2002. However, since all four causal connectives show the same trend, the obtained frequencies are likely to be reliable. The absolute numbers for *it* and *this* are much larger: 533 occurrences for 1978–1982 and 1195 occurrences for 1999–2002 (combined frequencies; inflected forms were not counted).

that several phenomena associated with spoken language such as progressives and *going-to*-futures have become significantly more common in written English from 1961 to 1991 (see e.g. Mair 1997, Leech 2004, Mair 2006, Mair and Leech 2006). This development may be due to both conscious and subconscious efforts of Anglophone authors to make their texts seem more informal (Mair 2006: 183ff).

Now, the observations presented in Table 4 might mark the other side of the coin, since it is often claimed (e.g. by Gumperz et al. 1984) that written discourse makes frequent use of lexical cohesive signals such as connective adverbs, while spoken discourse often relies on contextual and prosodic cues¹⁷. Cf. the following two (fictitious) utterances.

(12) Sorry I'm late, I got into a traffic jam.

(12') Sorry I'm late, *it's because* I got into a traffic jam.

(12) sounds much more 'natural' than (12'). Why is this the case? In terms of (contextual) coherence, (12) and (12') are similar: in both cases, the addressee is able to infer from their world knowledge and from the extralinguistic context that the event mentioned in the second clause supplies a reason – and thus an excuse – for the situation presented in the first clause (cf. Gohl 2000). (12) and (12') are different in terms of (textual) cohesion, however: (12') is more cohesive than (12), because the coherence of the two clauses is overtly signaled by an anaphoric (*it*) and a conjunction (*because*). This certainly does not mean that (12') is more coherent than (12): cohesion is nothing more than the overt marking of – contextually inferable – coherence relations and thus “neither a sufficient, nor, indeed, a necessary prerequisite for a text to be understood as coherent.” (Bublitz 1994: 216) In this case, the – in principle redundant – use of cohesive devices leads (12') to sound even overly explicit and therefore 'unnatural'. On the other hand, the redundant marking of semantic relations seems to be typical of written texts, which are normally characterized by a spatial and/or temporal separation of author and reader and therefore by a lack of shared context (Ehlich 1984). Thus, the decline of connective adverbs, anaphorics and deictics in the English popular science texts investigated in this study may well be interpreted as another instance of colloquialization¹⁸.

Whatever the reason for the decline of cohesive devices in the English source texts, this recent development seems to have entailed the decline of *damit* in their translations. We can now answer the question posed at the end of Section 2.1. In our answer, we have to distinguish between interference as a process and interference as a product. When we recognize this important distinction, we can see that the *process* of interference has not increased, i.e. translators did not suddenly start to adhere to the English source texts to a greater extent than they did before. Rather, it is the *product* of interference that has increased,

17 Quantitative investigations of the use of connective adverbs in speech and writing by Biber (1988: 103, 111f) and Biber et al. (1999: 886ff) leave no doubt that this crude generalization needs to be further investigated, an objective which lies beyond the scope of the present paper. My argumentation is thus based on the simplified assumption that lexical connectives are generally more frequent in written than in spoken discourse.

18 Needless to say, this is nothing more than a tentative explanation (based on a crudely simplified notion of the distribution of cohesive devices across speech and writing, cf. note 17) that is in urgent need of further study.

or more precisely: become quantitatively apparent, due to the declining frequency of source text expressions that act as triggers for the use of *damit*.

A prerequisite for source language interference is the existence of equivalence relations between certain linguistic items or constructions, in this case between *damit* and certain English connective adverbs, anaphorics and deictics – as perceived by translators. We are, of course, dealing with *subjective* rather than *objective*¹⁹ equivalence here (cf. Heine and Kuteva (2005: 4). It seems that this perceived or subjective equivalence, combined with the German translators' tendency to adhere to the English source text, is the ultimate reason for the decline of *damit* in the English-German translations investigated here²⁰.

4. Summary and Conclusion

The results of the study presented in this article may be summed up as follows.

1. Overall, the frequency of *damit* has decreased by c. 23% in the translations from English, while its frequency in the non-translated German texts has increased by c. 34%.
2. The number of occurrences of *damit* used in 'literal' translations (of English connectives, anaphorics and deictics) has decreased.
3. The number of occurrences of *damit* used in 'free' translations (no equivalent in the English source text) has increased.

It has been argued that in order to explain these results, one must distinguish between a process and product view of source language interference. While the strength of the interference process has arguably remained the same throughout the time periods investigated, the interference product has only become quantitatively visible in later translations (1999–2002). This is because the source text expressions triggering the use of *damit* in the interference process (connective adverbs, anaphorics and deictics) have declined considerably in frequency. The reason for the 'disappearance' of these expressions has been hypothesized to be the so-called colloquialization of the communicative norms of written English.

What are the consequences of the observed developments? Obviously, the translated texts have become less cohesive over the course of the investigated time periods, while the non-translated texts have become more cohesive (as far as cohesive relations signaled by

19 I do not wish to imply that there is such a thing as objective equivalence between utterances of different languages. In fact, it is disputed whether what I call 'objective equivalence' is a useful concept at all (see Kenny 1998 for a short overview of the discussion).

20 On the other hand, the results show that subjective equivalence has its limits in the case of *damit*. The English-German translators represented in the corpus seem to be (at least subconsciously) aware of the fact that German communicative norms favor a connective in many cases where a coherence relation (such as Situation–Evaluation) is not explicitly signaled in the English source text. *Damit* is thus often added as an explicating device (cf. examples 9 and 10; more examples of norm-induced explicitation by means of *damit* are offered in Becher submitted b).

connective adverbs like *damit* are concerned), meaning that the two text types have branched off in different directions. However, the investigated translations do not come across as ‘unnatural’ or foreign. This is because the changes are subtle and purely quantitative: the textual function of *damit* was found to be the same in the translations and the original German texts. Further, the observed quantitative differences may very well disappear in the near future. Since translations are considered to be relatively ‘normalized’ or ‘standardized’ (Toury 1995, Baker 1996) – as evidenced e.g. by their tendency to make more use of high frequency vocabulary (Laviosa 1998) and less of creative word coinages (Olohan 2004: 108ff) than non-translated texts – it is possible that they are also more conservative from a diachronic point of view, meaning that it takes a while for contemporary changes in the use of a given target language to reach translated texts. If this speculation is true, we should observe an increase in the frequency of *damit* in English-German translations of popular science texts during the next few decades.

The comparison with Behrens’ (2005) results on Norwegian *dermed* promised in Section 1.3 is not easy. Behrens found *dermed* to be considerably more frequent in Norwegian texts translated from English than in non-translated Norwegian texts. This suggests that the translators of Behrens’ corpus texts took pains to adapt their works to the communicative norms of Norwegian (and even overshot the mark) – in contrast to German translators, whose works are characterized by interference rather than normalization/standardization. In fact, Behrens notes that the over-use of *dermed* in translation “occurs as compensation for the typical structure of causal subjects in English, as a strengthening of the consequential implicature in *and*-conjunction, and after direct speech” (2005: 29). These are translational choices that are associated with the communicative norms of Norwegian, which seem to resemble those of German in certain respects. For example, the strengthening of the causal implicature in an instance of *and*-conjunction by means of *dermed* makes the translation more explicit than the English source text. As has been shown above, *damit* is often used for similar purposes (cf. the examples in Section 2.2.2). Moreover, the English-Norwegian translation image of *dermed* (Behrens 2005: 11) is strikingly similar to the English-German one found for *damit* in the present study (Table 3). It is therefore difficult to say why *dermed* is over-used in the English-Norwegian translations investigated by Behrens, while *damit* is under-used in English-German translations investigated here. As noted above, one possible reason is that Norwegian translators are more concerned with the communicative norms of ‘their’ language than German translators. Whether this somewhat speculative interpretation is correct would be an interesting question for further study.

In any case, the main hypothesis underlying the study presented in this article, namely that German popular science texts have gradually aligned their use of *damit* with English-German translations from the same genre, has been falsified. The increasing frequency of the use of *damit* and other connective adverbs such as *also* (see note 13) suggests that a trend towards cohesive explicitness existed in the German popular science genre during the investigated time period, a trend which has prevailed over the influence of English-German translations.

In Section 1.3, results from a previous study were reported which suggest that the use of *Aber* and *Doch* in German popular science texts has been substantially influenced by the use of these two conjunctions in English-German translations. This poses the question of why not even the slightest hint of an Anglophone influence has been observed for the use of *damit*. In

Becher (2008), I suggested that the rise of *Aber* and *Doch* may be part of an endogenous, i.e. language-internal development of German genre conventions towards a more interactional (i.e. overtly addressee-oriented, cf. Thompson and Thetela 1995, Thompson 2001) style. If this is true, the influence of English-German translations has only reinforced an already present, language-internal development. In other words, it has only been possible for English-German translations to serve as models for monolingual German texts from the same genre because there already was a demand among German popular science authors for new ways of popularizing science – for example by presenting information in an interactional fashion. This speculation seems plausible in light of the present findings, as it would also explain the lack of a translation-induced influence in the use of *damit*: since German texts exhibit a trend towards increased cohesive explicitness, they are ‘immune’ to Anglophone influence in this domain; in other words, there is no endogenous development, no pre-existing demand by German authors with which a potential influence of English-German translations could tie in. It will be interesting to see if future studies from our project support or falsify this tentative explanation.

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