The distribution of *also* and *too*

Data elicitation experiments in English linguistics

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Hiermit versichere ich, dass ich die Arbeit in allen Teilen selbständig verfasst und keine anderen als die angegebenen Hilfsmittel benutzt habe.

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1 Introduction

This study has a dual focus in that it aims to develop a viable methodology for elicitation experiments in English linguistics, while simultaneously applying the proposed methods to investigate an actual subject, the distribtion of the additive particles *also* and *too*.

Traditionally, data for linguistic research is gained by sampling natural language corpora. Although this approach is valid and, indeed, has been applied here, elicitation experiments can gain in validity and informative value by additionally introducing questionnaires to accompany corpus research. Online questionnaires particularly are a cost-effective and highly customizable tool to create a linguistic database against which existing data can be tested. For the purpose of this study, I have created six online questionnaires to test three hypotheses about the distribution of *also* and *too*. Two interdependent hypotheses assume that the use of the two particles is sensitive to structural properties of the 'added constituent' while the third one, the information-structural hypothesis, argues that the use of *also* and *too* is controlled by the information structure of the sentence. In addition to the questionnaires, a balanced sample was extracted from the "British National Corpus" and tested against corpus data from previous studies as well as the data elicited online.

In the course of this study, the additive particles will firstly be defined in terms of their structural properties, and the hypotheses about their use introduced and explicated. Furthermore, the data elicitation process will be detailed, as well as results from previous studies be taken into account. The hypotheses will subsequently be tested against the data from both corpus research and elicitation per questionnaires, and the outcome discussed.

Concluding the study, I will focus on the results of the distribution analysis as well as evaluate the introduction of the online questionnaires and their application in the context of testing the hypotheses against empirical linguistic data.

2 *Also* and *too*

The two additive particles *also* and *too* are generally regarded as synonyms (cf. Roget 1986). Their distribution in use, however, is dependent on several different factors. While *also* is usually intuitively associated with a formal style and written texts, *too* with spoken language and informal register. Structurally, the two particles differ in the positions they may take in a clause. Quirk, Greenbaum, Leech & Svartvik (1985, 490-498) describe the position *also* usually takes as 'medial', while *too* usually takes a clause-final, or in the terms of Quirk et al. 'end', position. As for a description in relation to topic and focus of a sentence, *also* can additionally take a position that immediately precedes what Reis & Rosengren (1997, 241) call the 'added constituent' (AC). The AC is "the 'variable material' in the proposition of the [clause including the particle] compared with some other proposition q in context" (ibid., 241). Hence, *also* has two position options, preceding or following the focus/AC, while *too* usually follows it. Furthermore, both particles can also, albeit less frequently, take a variety of other positions than the ones presented above. *Also*, for example, can occur in 'initial' position in a clause (Quirk et al.'s (1985) term), thus focusing the whole clause as AC. *Too* can immediately follow the AC into an intermediate position as well as occuring in positions further to the right, which are not clause-final.

In his paper "The distribution of *also* and *too*: A preliminary corpus study" (Gast 2006), Volker Gast notes that the two particles also differ in whether they are usually stressed or unstressed in relation to the positions they take. "In English [...], additive particles are generally unstressed when they precede the added constituent while they attract stress when they follow it. Accordingly, (additive) *too* is invariable stressed, whereas *also* may be either stressed or unstressed, depending on its position relative to the focus." (Gast 2006, 164).

It has been attempted to describe some of the principles that determine the position of either additive particle in a given clause, most notably by Fjelkestam-Nilsson (1983) and Gast (2006), but not all of these hypotheses were sufficiently tested in order to validate or falsify them. This study therefore attempts to add some further insight into the factors that influence the distribution of *also* and *too*.

2.1 Classification and terminology

For the purposes of this study, a brief classification of *also* and *too* is necessary, if only in order to attain consistency in the terminology.

The two preceding studies concerned with the distribution of *also* and *too*, Fjelkestam-Nilsson (1983) and Gast (2006), classify them differently. While Fjelkestam-Nilsson chooses a term relative to their grammatical function – 'additive adverbials' (ibid., 2) – and follows Quirk & Greenbaum (1973) in sub-classifying them as 'additive focusing adjuncts', Gast classifies them on the level of lexical category and adopts a terminology that accounts for any difficulties in assigning *also* and *too* to any one strict grammatical function by using the rather open term 'additive particles'. Although the latter term will be used throughout this study to refer to *also* and *too*, a detailed classification in terms of grammatical function will help to clarify the grammatical status of the two particles.

Also and *too* are classified as 'additive focusing adjuncts' by Quirk, Greenbaum, Leech & Svartvik (1974). 'Adjuncts' are defined as adverbials that are "integrated to some extent into the structure of the clause", as opposed to 'disjuncts' and 'conjuncts', which are defined as "primarily non-connective and peripheral to the clause structure" and "primarily connective and peripheral to the clause structure" respectively (ibid., 421). 'Additive focusing adjuncts' define a focussed part of a communication as an addition by means of their use (ibid., 431).

Quirk et al. (1985) describe adverbials according to the grammatical realization of their semantic roles. In contrast to Quirk et al. (1974), in this system *also* and *too* are classified as 'additive focusing subjuncts', 'subjuncts' being defined as adverbials which have a "subordinate role in comparison with other clause elements" (ibid., 566). 'Additive focusing subjuncts' then "indicate that the utterance concerned is additionally true in respect of the part focused" (ibid., 604).

Biber (2004) classifies *also* and *too* as 'additive circumstance adverbials', and describes their primary function as "[showing] that one bit of propositional content is being added to a previously mentioned idea or entity" (ibid., 780). 'Circumstance adverbials' in turn are simply defined as adding information "about the action or state described in the clause" (ibid., 763).

Carter & McCarthy (2006) classify *also* and *too* as 'additive linking adjuncts'. These adjuncts "indicate that the second text segment adds to, gives further or more specific information on, reinforces or expands in some way the information in the first" (ibid., 257).

Also and *too* are classified in two different ways in Huddleston & Pullum (2005). Firstly, they are listed as 'focusing modifiers', and more precisely as 'additive focusing modifiers' (ibid., 592), thus being assigned a semantic function, as it is "not sufficient to identify the syntactic head that they modify: one must know which element they apply to semantically" (ibid., 586).[1]

Secondly, both additive particles are classified as 'additive pure connective adjuncts', with 'pure' referring to the fact that these types of adjuncts have "no other function than that of connecting their clause to the surrounding text (or context)" while 'impure connectives' combine that function with other functions, such as 'reason' (ibid., 777).

Although not a grammar as such, Reis & Rosengren (1997) deliver an in-depth grammatical analysis of *auch*, the German equivalent of *also* and *too*. In the course of their study they claim that the "by now accepted term for [these] elements" (ibid., 237) is 'focus particles' or 'focus adverbs'.

While Reis & Rosengren give no source for their assumption about the accepted terminology, it is safe to say that the interaction with focus structure seems to be a generally accepted function of *also* and *too*. While Reis & Rosengren continue to argue that this assumed function should be neglected in favour of the term 'scope particles' (ibid., 240), these detailed arguments about sub-classification are of no further consequence for the purpose of this study. It should rather be taken into account that whatever the outcome of their analysis, Reis & Rosengren also adhere to the more general classification of *also* and *too* by lexical category as 'additive particles' (cf. ibid., title).

In the preceding paragraphs, a brief review of the classification of *also* and *too* in different grammars of English was attempted in order to establish a consistent terminology for use within this study. While the sub-classification differed from

[1]To gain this knowledge can turn out to be a non-trivial task when interpreting the information-structural properties of sentences, as will become obvious in section 4.1.4.1.

case to case, it could be established that the main property of the two particles is 'additive', with all grammars following this classification, if within different taxonomies. Therefore *also* and *too* will be summarized under the term 'additive particles' in the course of this study, thereby ultimately following Gast's (2006) terminology.

3 Hypotheses

3.1 The structural hypotheses S_1 and S_2

The first set of hypotheses about the distribution of *also* and *too* to be tested concerns the sensitivity of the two additive particles to the structural properties of the added constituent ("S hypotheses", [1]). They were first explored by Fjelkestam-Nilsson (1983) and were picked up again by Gast (2006).

(1) S_1: *Also* and *too* are sensitive to the grammatical function of the added constituent.

S_2: *Also* and *too* are sensitive to the length of the added constituent.

Fjelkestam-Nilsson is quick to dismiss any relation between the use of a specific additive particle and the grammatical function of the added constituent: "It is obviously only the length of the focused constituent, and not its structure, that influences lexical variation." (Fjelkestam-Nilsson 1983, 77). She nevertheless acknowledges that *too* has a tendency to co-occur with subject ACs, while *also* tends to co-occur with ACs that consist of other constituents than predicate and subject, e.g., objects and adverbials (ibid., 79). She gains this insight by a vast analysis of natural language corpora (cf. section 4.1 below), data which Gast (2006) uses to further define the influence of the grammatical structure of the AC on the distribution of the additive particles. He states that stressed additive particles tend to maintain a certain distance to the AC, and as subjects are often in clause-initial position whereas *too* most frequently occurs in clause-final position, there is an obvious rationale behind the higher frequency of subject ACs co-occuring with *too* as compared to co-occurrence with *also*.

Fjelkestam-Nilsson is definitive on the relation between the length of the AC and the use of *also* or *too*. Not only does her corpus data support her, Gast's (2006) metric of the A/T index – the ratio of the relative frequency of *also* to the relative frequency of *too* in a sample – support her thesis by showing that there is a positive correlation between the A/T index and the length of the AC. For further discussion of the principles behind this correlation, see section 4.1.

3.2 The information-structural hypothesis I_1

While the structural hypotheses S_1 and S_2 were strongly supported by Fjelkestam-Nilsson's (1983) corpus research and further validated by the data elicited for and presented in this study (see respective sections), Gast (2006) introduced another, previously unexplored, hypothesis which proved more difficult to validate by means of corpus research (ibid., 172, 175): the information-structural hypothesis I_1 (2).

(2) I_1 : Additive particles can occur only to one side of the added material.

I_1 is based on the structural difference between *also* and *too*: while *also* can take either a 'medial' position (symbol *M* [cf. Quirk et al. 1985: 490-496]) in the clause or a position immediately preceding the AC, *too* usually takes a clause-final ('end' [cf. ibid., 498-501], symbol *E*) position, viz. while *also* can either precede or follow the AC, *too* always follows it.

Gast argues that "*also* and *too* behave differently with respect to the information structure of their host sentences" (2006: 172). With the aid of two examples (reproduced here as [3] and [4]), he shows that usage of clause-final *too* (too_{E}) is possible where medial *also* ($also_{\mathrm{M}}$) is not.

(3) Jane: *I love you.*
Tarzan: a. *I love you, too.*
b. **I 'also love you.*

(4) Jane: *Why are you so unhappy?*
Tarzan: a. *My house has burnt down, and my wifes has left me, too.*
b. **My house has burnt down, and my wife has 'also left me.*

Both (3b) and (4b) are semantically deviant when assuming unmarked intonation and only the indicated primary stress position ('), unless they are uttered within certain contexts which, however, seem rather constructed (e.g., if Jane had said *Jack loves me*, or if Tarzan personified his house and therefore conceived its burning down as 'leaving' (cf. ibid.)). I_1 accounts for the deviance of (3b) and (4b) as well as the intuitive correctness of (3a) and (4a) in that it states both analyses' principle grammatical background, which Gast (2006) details, and which shall briefly be reproduced at this point.

Gast defines (3) as "instantiating a 'contrastive topic' structure" (ibid., 172), i.e., a structure in which both the focal (here: the object) and topical (here: the subject) parts of the sentence are contrasted with alternative contextual values - as depicted in (5) (reproduced from ibid.) - both taken together making up the AC of (3a) and (3b).

(5) Jane:		I_{Jane}	*love*	you_{Tarzan}.	
		↕		↕	
Tarzan:	(*and*)	I_{Tarzan}	*love*	you_{Jane}	(TOO).

Thus in contrastive topic constructions with the AC including both topic and focus, too_{E} and $also_{\text{E}}$ are possible while $also_{\text{M}}$ is not (cf. [6], reproduced from [ibid.]).

(6) a. $[I]_{\text{AC}}$ *love* $[you]_{\text{AC}}$ TOO.

b. $*[I]_{\text{AC}}$ ALSO *love* $[you]_{\text{AC}}$.

The analysis of (4) follows the same principles, with the whole clause *my wife has left me* making up the AC (cf. [7]).

(7) a. *My house has burnt down, and* [*my wife has left me*]$_{\text{AC}}$, TOO.

b. **My house has burnt down, and* [*my wife has*]$_{\text{AC}}$ ALSO [*left me*]$_{\text{AC}}$.

Both (3) and (4) hint at the validity of I_1. However, the hypothesis cannot be validated unless solid empirical evidence can be found to support it. Gast suggests that methods of corpus research are unsuitable for gaining such evidence on the following grounds.

(a) Computerized research procedures are unsuitable to find examples of $also_{\mathrm{M}}$ with AC constituents to its left and its right, because of the contextual information required for the primary analysis, which might possibly be highly specific. Manual corpus research may provide a solution, albeit an intricate one, inasmuch as a sample of substantial size would be needed in order to gain empirically valid results.[2]

(b) Corpus research by its nature excludes the possible return of any negative evidence. Statistical methods may be applied to circumvent such issues. However, these would not be sufficient to bypass any possibility of neglecting extremely rare exceptions to a grammatical rule constructed on the basis of I_1.

(c) Somewhat conversing argument (b), if evidence running counter to I_1 can be found in the corpus data, it might not be statistically significant but merely a 'performance error' and thus unsuitable for any falsification of I_1 (cf. ibid., 173-175).

To circumvent these issues, Gast suggests "[...] an empirical investigation using questionnaires, interviews and elicitation procedures [...]" (ibid., 175).

4 Data elicitation

Testing linguistic hypotheses against data elicited from natural language corpora is a standard procedure, and both Fjelkestam-Nilsson (1983) and Gast (2006) have elicited data for their studies from language corpora (cf. section 4.1).

While Gast was able to confirm the structural hypotheses he introduced in his study (cf. Gast 2006, 170), his conclusions are based on a rather slim data sample[3]. In order to re-evaluate the findings of both Fjelkestam-Nilsson and Gast, the analysis will have to be based on a wider sample. In order to achieve this,

[2]Gast rightly notes that the term he uses ("sufficient size") is in itself problematic: "[...] What does it mean for a sample to be 'of sufficient size' to be indicative of a syntactic rule, rather than extreme rarity in discourse?" (ibid., 173).

[3]Volker Gast, p. c., January 2008.

a two-fold strategy for data elicitation towards testing the S hypotheses will be pursued in this study. Firstly, a corpus analysis will be carried out. Secondly, online questionnaires will be used to elicit data for the hypotheses.

Despite the problematic presuppositions for testing I_1 with corpus-based methods (cf. section 4.1.4.1 below), a corpus analysis was nevertheless carried out for this hypothesis. The sample was designed to be of a highly diversified nature in order to maximize the possibility of finding significant evidence running counter to I_1.

Additionally, following Gast's suggestion, the hypothesis was tested using a set of online questionnaires, which included text as well as audio tasks. The inclusion of audio material in the questionnaire is due to the fact that Gast's (2006) deviating example (reproduced here as [9] below) is from the LLC:c, a corpus of spoken English. Under the supposition that the medium of the example is in fact significant, it seemed necessary to include spoken items in the questionnaire with the intention to provoke negative evidence for I_1.

Before turning to the actual analysis of corpus data though, some issues with corpus research in general should be addressed. Corpus-based research usually bases its interpretation of data elicited from natural language corpora on the random sample model. Evert (2006) however argues that there is little randomness in natural language corpora, which indeed collect (more or less) non-random speaker output. Nevertheless, by choosing a certain corpus for a study, an element of randomness is introduced into the equation, which later needs to be accounted for by statistical methods. And while in order to apply methods of statistical inference properly one would need to know the relation between the corpus and all 'possible' output of a language, choosing a random sample at least helps to keep up a certain level of randomness without having to calculate across whole corpora or indeed whole languages. This problem is partly accounted for by corpora like the BNC, the "British National Corpus", that are balanced for text type, medium and register, at least theoretically including samples from all types of output. But still even such a balanced sample was balanced by someone, i.e. the researcher compiling the sample, which arguably adds another factor of non-randomness to the equation. Additionally, language corpora are unable to represent the actual pro-

portions in natural languages, for example the ratio of spoken to written language. Nevertheless they are a helpful tools to at least converge on a comprehensible and processible sample of language output.

Linguistic questionnaires on the other hand can assist in validating corpus data as well as eliciting independent data. They are capable of provoking highly specified information and thus control the data output much better than corpora. On the other hand, there are certain qualifications for questionnaires as well, especially concerning the amount of data that can be elicited. This is mainly due to the need for subjects to complete such a questionnaire, and also interrelated factors, such as questionnaire length, medium, etc. Online questionnaires seem to provide a cheap alternative to printed questionnaires, as a mere single "copy" can potentially elicit data from a vast number of subjects. It has severe limitations as well, as spoken language, for example, can not or only under very special conditions be elicited, and in contrast to directed face-to-face elicitation, the experimental situation cannot be controlled. The attitude towards spoken language, however, can be elicited with the aid of technology (cf. section 4.2.1).

Greenbaum & Quirk (1970) have developed testing routines to use with questionnaires, and this study partly follows their outlines (cf. ibid.), in that it uses their test type definitions and scoring system, albeit in a slightly adapted version.

An earlier study of mine (Bothe 2006) used an online questionnaire to elicit distribution data for *also* and *too*, with the elicited data, however, being used to test a different set of hypotheses than discussed here. It was helpful in bringing up issues for working with online questionnaires that have been addressed for this study. The recruitment of subjects, for example, yielded few results in the earlier study, and strategies to gain a larger base were adopted for this study accordingly. Similarly, the 2006 questionnaire followed Greenbaum & Quirk (1970) in detail and thus included 100 items, which is far too high a number for online questionnaires, where subjects tend to be less patient. This is probably due to common multitasking desktop environments and the diversions they provide, and the number of items per questionnaire was cut by half for this study accordingly, while at the same time the use of control questionnaires was introduced to be able to minimize the chance for interferences that can not be accounted for with single

questionnaires. For further details about questionnaire design, see the respective sections below.

4.1 Corpus analysis

As mentioned above, both Fjelkestam-Nilsson (1983) and Gast (2006) used data from natural language corpora for their studies. While the former used the "Brown University Corpus of American texts" (Fjelkestam-Nilsson 1983, 7) – referring to "A Standard Corpus of Present-Day Edited American English, for use with Digital Computers" (BROWN, ∼1m words, 1961) - and the "Lancaster-Oslo/Bergen Corpus" (LOB, ∼1m words, 1961) to test against S_1 and S_2,[4] while the latter additionally tested S_1 against a small set of data from the "British National Corpus" (BNC, ∼100m words, 1970s–1993), and I_1 against the "complete London-Lund Corpus" (LLC:c, ∼1m words).

This section will briefly summarize their results for each hypothesis and compare them with additional corpus specifically extracted from the BNC for this purpose. First of all, however, the rationale for extracting a balanced sample from the BNC for this study will be detailed.

4.1.1 Sample setup

The data for the comparison were obtained from the BNC via *BNCweb* (Hoffmann & Evert 2008). After extracting the sample, it was manually tagged for AC. In cases where the sentence context was unclear, but was needed to define the AC for that sentence, additional context information was extracted from the BNC via the VIEW interface (Davies 2004), which is more verbose about context than *BNCweb*.

[4] Fjelkestam-Nilsson (1983) does not actually test pre-worded hypotheses. It is rather that her results seem to have suggested the actual wording of S_1 and S_2 by Gast. Therefore it would be more accurate to say "[...] to arrive at results which could be subsumed as S_1 and S_2".

4.1.1.1 The sample

BNCweb is a web-based client program for retrieving data from the BNC XML Edition. *BNCweb* relies on the Corpus Query Processor (CQP) language, with the respective syntax for querying *also* and *too* being for example [`word=‘‘also’’%c`] for a simple search for the word form 'also', and [`word=‘‘too’’ & pos=‘‘AV0’’`] for restricting search results to forms of *too* that are POS-tagged as 'general adverb' ('AV0' being the tag for 'adverbs not subclassified as Adverb particle or *Wh*-adverb' in the BNC's *CLAWS-5* tagset).

From the BNC, a semi-balanced sample of 480 items (half of it queried for *also*, the other half for *too*) was extracted to test against the S hypotheses, with 240 items coming from the portion of the corpus that includes written texts ('written portion'), and the same number of items coming from the portion that includes spoken texts ('spoken portion'). For testing against I_1, another sample of 240 items was extracted, querying the BNC for *also* only.[5] Again, half of it came from the written, the other half from the spoken portion of the corpus. The balanced number of items per portion refers to Gast's (2006) hypotheses regarding the influence of 'medium' on the distribution of the additive particles. While his data does not support the hypotheses, they could not be unambiguously falsified either. Therefore it seemed advisable to rule out a bias for medium in order to prevent the inclusion of unwanted variable interferences.

Generally, balanced samples should be aimed at to eliminate these possible disturbances and create a statistically sound sample. However, in this case creating a fully balanced sample is near impossible due to the number of variables involved. For the written portion of the BNC, *BNCweb* defines 104 values over 14 variables, which can be used to define the composition of the resulting sample.[6] A truly balanced sample that is still based on the random sample model (and therefore must take into account both coincidence and, in this case, unequal prob-

[5] This was due to the fact that *also* is the particle much more often assigned to an *M* position.

[6] The variables provided by the client are: Publication Date; Medium of Text; Text Sample; Domain; Derived Text Type; Estimated Circulation Size; Perceived Level of Difficulty; Domicile of Author; Age of Author; Sex of Author; Type of Author; Target Audience Age; Target Audience Sex; Genre. The point of some of these variables, specifically Domicile of Author, Type of Author (values are Corporate, Multiple, Sole), Perceived Level of Difficulty and the Target Audience variables, seems at least debatable.

ability) thus would have to include at least $\prod_{i=1}^{14}(2^{n_i}-1) = 9.25E+029$ items.[7] With a total of 123,351 items in the whole of the BNC, based on the CQP query [`word=''also''%c`], the creation of a sample that is balanced over all values is impossible.

The same is true for the query options of the spoken portion of the BNC, which include 6 variables with a total of 55 values for restrictions concerning the speaker alone. Further restrictions can be made by choosing values from 'General restrictions' and 'Genre' as well as two classes of sub-variables (cf. Table 1).

Restriction type	Variable	Value	Subvariable	Value
General Restrictions for Spoken Texts	Overall	Demographically Sampled Texts	Age of Respondent	0-14 15-24 25-34 35-44 45-49 60+
			Social Class of Respondent	AB C1 C2 DE
			Sex	Male Female
		Spoken Context-governed Texts	Domain	Educational/Informative Business Public/Institutional Leisure
	Interaction Type	Monologue Dialogue		
	Region where Spoken Text was Captured	South Midlands North		
Genre	24 Genres as defined by David Lee's Genre Classification Scheme (cf. Lee (2001))			

Table 1: Advanced restrictions in *BNCweb* for the spoken portion of the BNC.

In an approach to circumvent the issues at hand and still retain a fairly balanced sample, the BNC was queried using only two of the *BNCweb* variables: 'Sex of Author', and the respective variables for register ('Derived Text Type' in the written portion and its correspondent 'Genre' in the spoken portion). These two variables were chosen for reasons to do with the previous studies on *also* and *too*. Gast (2006) (and to a certain extent also Fjelkestam-Nilsson (1983)) discusses the influence of register on the distribution of *also* and *too*. While his data does not support his hypotheses on this influence (cf. Gast: 166), some indications he found forbid a straightfoward dismissal of his hypotheses. As the BNC implicitly cate-

[7]Even if every combination of values possible would yield a result, there remains a chance that part of the items would include artefacts, so that actually more than one item per combination would be needed in order to reduce the probability of non-reliable items.

gorises its written portion on the basis of register (as 'Text Type'), and as register should be excluded from this anlysis to avoid any interference of factors other than those concerned with the grammatical function of the AC, the sample must be as balanced for register as possible. Thus it has to include balanced numbers of results for at least the most important values of the 'Text Type' variable.[8]

Fjelkestam-Nilsson explores another hypothesis in her corpus-based study, i.e., the influence of a speaker's sex on the use of *also* and *too* (cf. ibid., 95–114). Although unable to find structural differences in the use of the additive particles between women and men, she proves that women use additive particles in general much more frequently than men do: the usage ratio for *also*+*too*/2,000-word-passage is 1.57 for women as compared to 0.98 for men. In Fjelkestam-Nilsson's (1983) data, women use additive particles 1.6 times as often as men. In order to exclude the remainder probability of a speaker's sex having an impact on the results in this study, the sample was accordingly balanced for sex as well.

While the written portion of the BNC makes relatively simple distinctions of implicit formality via its variable 'Text Type', the multitude of 'Genres' (24 in total) in the spoken portion is not mirrored by a less differential variable such as 'Text Type'. In order to achieve a basic balance over 'Genre', four values were chosen on the basis of their number of results for a *BNCweb* query by [`word=''also'' & pos=''AV0''`],[9] and their order on a scale of formality ('formal' > 'rather formal' > 'rather informal' > 'informal').

The scale of formality has been constructed on three different parameters, following Gast (2006): the ratio of non-contracted to contracted negation ('NC/C ratio'; The latter type can be "interpreted as an indicator of little social distance between the interlocutors." [ibid., 169]); the relative frequency of nominalisations in *-ment*, with abstract, and therefore formal, topics generally featuring a higher relative frequency; the relative frequency of the conjunction *however*, an "indicator of an explicit and dialectic discourse organization" (ibid.).

[8] Of the six values for this variable, only the major four were used. The remaining two ('Other published material' and 'Unpublished written material') did not seem to be biased for register. As it was necessary to include only the most important values – for the mathematical reasons explained above – they were excluded from the sample.

[9] *Also*, rather than *too*, was chosen for this query because *also* is relatively more frequent than *too* (*also*: 1206.26 instances/1m words, *too*: 660 instances/1m words).

The query for nominalisations in *-ment* posed a few issues, as simply searching for nouns with a *-ment* ending would obviously return unwanted items such as *comment*, *document*, *garment*, *moment*, and even *government*, *refurbishment*, *replacement*, *tournament* and *entertainement*, which are not strictly the kind of nominalised forms to be included in the array, due to their reduced capacity as formality indicators.[10] Therefore, these were first identified using a wide query and then excluded from the search with the respective query syntax (8).

(8) `[pos=‘‘N.*’’ & word=‘‘.*ment’’ & word!=‘‘moment’’%c & word!=‘‘comment’’%c & word!=‘‘document’’%c & word!=‘‘garment’’%c & word!=‘‘moment’’%c & word!=‘‘government’’%c & word!=‘‘refurbishment’’%c & word!=‘‘replacement’’%c & word!=‘‘tournament’’%c & word!=‘‘entertainment’’%c]`[11]

The distribution over the four formality categories was calculated as follows. The NC/C ratio array for the contracted negation parameter results was first split into two primary formality groups (PFGs, ‘formal’ and ‘informal’), with those ‘Genre’ categories with an NC/C ratio >1 in the ‘formal’ PFG, and those with an NC/C ratio <1 in the ‘informal’ PFG. For both groups, the arithmetic mean ($\bar{x}$) was calculated, and categories with an NC/C ratio $>\bar{x}$ were included in the ‘formal’ and ‘rather informal’ secondary formality groups (SFGs) respectively, whereas categories with an NC/C ratio $<\bar{x}$ were included in the ‘rather formal’ and ‘informal’ SFGs respectively. The arrays for both the nominalisation and the *however* parameter results were split into PFGs along $\bar{x}$, and the PFGs were again split along their respective $\bar{x}$, with the categories with a relative frequency $>\bar{x}$ included in the ‘formal’ and ‘rather informal’ SFGs respectively, and the categories with a relative frequency $<\bar{x}$ included in the ‘rather formal’ and ‘informal’ SFGs respectively.

Interestingly, most categories did not show consistency for SFG inclusion over the three parameters. This suggests that the three parameters selected might

[10]This assumption is based on an analysis of the results of `[pos=‘‘N.*’’ & word=‘‘*.ment’’]`.

[11]The argument `%c` by way of its inclusion makes the query case-insensitive for the search arguments it is suffixed to.

in fact not be reliable, at least not in the combination applied to the 'Genre' categories in the spoken portion of the BNC. Alternatively, a scale of formality could be based on more than these three parameters, for example the branching properties of sentences. Levin & Garrett (1990) were able to prove that left-branching and center-branching sentences are judged to be more formal that right-branching sentences. On the lexical level, different keywords indicating formality could be queried, such as *may* or *perhaps* (cf. Ardila (2003)).

In another step, four 'Genre' categories for querying the spoken portion of the BNC for *also* were singled out, despite their slightly ambiguous labelling for formality.[12] This was achieved by virtue of a scoring system. Four points were assigned to a category for any of the three parameters, if the category was classified as 'formal' through this parameter. Three points were assigned for a classification as 'rather formal', two for 'rather informal' and one for 'informal'. On the basis of the total scores for each category, the four SFGs were calculated in the same way as for the nominalisation and *however* parameters. From each SFG, one category was chosen for inclusion in the query restriction values. This choice was based on the total number of items in each category, resulting from the [`word=''also'' & pos=''AV0''`] query, as well as a maximum number of classifications for the respective SFG.[13]

The figures for the 'Genre' categories of the spoken portion of the BNC are given in Table 2 below. The categories that were chosen for inclusion in the sample query parameters are: S:pub_debate ('Formal', "public debates, discussions, meetings"), S:courtroom ('Rather formal', "legal presentations or debates"), S:brdcast:documentary ('Rather informal', "TV documentaries"), S:conv ('Informal', "face-to-face spontaneous conversations").[14]

[12] As the query for *too* ([`word=''too'' & pos=''AV0''`]) would not return enough results in any single genre to make up a sample balanced for medium, the BNC was queried over all genres of one SFG at a time (cf. Table 4). The genre 'S:unclassified' from the 'rather informal' SFG was not included due to its ambivalent composition.

[13] While four of the categories with an overall 'informal' classification were in fact classified as 'informal' for all three parameters – and the chosen 'rather informal' category was classified as that for all three parameters as well –, the chosen 'rather formal' category was only classified twice as such, and the chosen 'formal' category indeed only once as 'formal'.

[14] Cf. Lee (2001).

Table 2: Formality values for 'Genre' categories in the spoken portion of the BNC.

'Genre' category	Hits	NC/C ratio	$SFG_{NC/C}$	$score_{NC/C}$	$f_{\text{-ment}}$	$SFG_{\text{-ment}}$	$score_{\text{-ment}}$	$f_{however}$	$SFG_{however}$	$score_{however}$	$\sum score$	$SFG_{\sum score}$
S:pub_debate	**336**	**1.22**	**RF**	**3**	**9123.46**	**F**	**4**	**330.94**	**RF**	**3**	**10**	**F**
S:speech:scripted	268	1.44	RF	3	4631.64	F	4	290.13	RF	3	10	F
S:lect:polit_law_edu	51	0.91	RI	2	2587.2	RF	3	350.15	F	4	9	F
S:parliament	137	1.38	RF	3	4933.75	F	4	185.02	RI	2	9	F
S:interview	92	0.58	RI	2	2302.23	RF	3	335.74	F	4	9	F
S:courtroom	**129**	**0.97**	**RI**	**2**	**3354.85**	**RF**	**3**	**209.19**	**RF**	**3**	**8**	**RF**
S:lect:nat_science	31	1.1	RF	3	1089.89	I	1	348.77	F	4	8	RF
S:brdcast:discussn	631	79.48	F	4	1682	RI	2	102.42	I	1	7	RF
S:lect:humanities_arts	42	0.51	I	1	1514.27	RI	2	349.45	F	4	7	RF
S:brdcast:news	267	0.68	RI	2	2222.18	RF	3	178.53	RI	2	7	RF
S:tutorial	152	0.62	RI	2	2106.6	RI	2	248.65	RF	3	7	RF
S:meeting	125	0.6	RI	2	2938.46	RF	3	116.45	RI	2	7	RF
S:sermon	49	1.16	RF	3	1618.85	RI	2	132.89	RI	2	7	RF
S:lect:commerce	13	0.45	I	1	1378.59	RI	2	525.18	F	4	7	RF
S:brdcast:documentary	**29**	**0.98**	**RI**	**2**	**2148.33**	**RI**	**2**	**143.22**	**RI**	**2**	**6**	**RI**
S:interview:oral_history	281	33.14	F	4	992.11	I	1	54.71	I	1	6	RI
S:lect:soc_science	146	0.54	I	1	1209.65	I	1	345.62	F	4	6	RI
S:unclassified	297	0.48	I	1	1322.05	RI	2	117.62	RI	2	5	RI
S:speech:unscripted	310	0.47	I	1	2315.27	RF	3	93.72	I	1	5	RI
S:demonstratn	14	0.38	I	1	623.79	I	1	187.14	RI	2	4	I
S:conv	**636**	**0.28**	**I**	**1**	**338.93**	**I**	**1**	**15.82**	**I**	**1**	**3**	**I**
S:classroom	173	0.39	I	1	537.3	I	1	43.81	I	1	3	I
S:consult	43	0.44	I	1	1191.5	I	1	14.36	I	1	3	I
S:sportslive	13	0.39	I	1	475.77	I	1	59.47	I	1	3	I
$\bar{x}_{f_i}$					2193.28			199.13			6.5	
$\bar{x}_{PFG_{formal}}$		1.09			3468.81			268.03			8	
$\bar{x}_{PFG_{informal}}$		7.12			1427.96			149.9			4.4	

Legend: Hits = No. of items in result set for CQP query [`word=''also'' & pos=''AV0''`]; $SFG_{NC/C}$ = SFG value for category based on category's NC/C ratio; $score_{NC/C}$ = Formality score for category based on $SFG_{NC/C}$; $f_{\text{-ment}}$ = Relative frequency of *-ment* nominalisations for category; $SFG_{\text{-ment}}$ = SFG value for category based on $f_{\text{-ment}}$; $score_{\text{-ment}}$ = Formality score for category based on $SFG_{\text{-ment}}$; $f_{however}$ = Relative frequency of *however* for category; $SFG_{however}$ = SFG value for category based on $f_{however}$; $score_{however}$ = Formality score for category based on $SFG_{however}$; $\sum score$ = Total formality score for category; $SFG_{\sum score}$ = Overall SFG value for category based on $\sum score$; $\bar{x}_{f_i}$ = Arithmetic mean value for relative frequencies of parameter values in category; $\bar{x}_{PFG_{formal}}$ = Arithmetic mean value for parameter values for formal PFG in category; $\bar{x}_{PFG_{informal}}$ = Arithmetic mean value for parameter values for informal PFG in category; F = 'formal' SFG; RF = 'rahter formal' SFG; RI = 'rather informal' SFG; I = 'informal SFG'.

The composition of the 'written' and 'spoken' subsamples is represented in Tables 3 and 4, respectively. Both samples were balanced without taking coincidence into account, i.e., combination was calculated on the variable rather than the value level. That means, every value in every variable can combine with any other value from the respective other variable exactly once, and cannot combine with groups of values from within its own variable and/or the other variable.

Queried particle		S_1 & S_2 sample				I_1 sample	
		also		*too*		*also*	
Variable		Sex		Sex		Sex	
	Value	Male	Female	Male	Female	Male	Female
Text Type	Academic prose	15	15	15	15	30	30
	Fiction and verse	15	15	15	15	30	30
	Non-academic prose and biography	15	15	15	15	30	30
	Newspapers	15	15	15	15	30	30

Table 3: Number of items per restriction value combination extracted from the written portion of the BNC for inclusion in the BNC samples.

Queried particle		S_1 & S_2 sample				I_1 sample	
		also		*too*		*also*	
Variable[15]		Sex		Sex		Sex	
	Value	Male	Female	Male	Female	Male	Female
Genre / Genre formality	S:pub_debate	15	15			30	30
	'formal'			15	15		
	S:courtroom	15	15			30	30
	'rather formal'			15	15		
	S:brdcast:documentary	15	15			30	30
	'rather informal'			15	15		
	S:conv	15	15			30	30
	'informal'			15	15		

Table 4: Number of items per restriction value combination extracted from the spoken portion of the BNC for inclusion in the BNC samples.

[15] *BNCweb* gives three values for the 'Sex' variable, 'Mixed' being the third one. However, as this value effectively obviates balance over 'Sex of Author', it was excluded here.

4.1.2 Testing S_1 against corpus data

4.1.2.1 Results from Fjelkestam-Nilsson (1983)

In her vast corpus study, Fjelkestam-Nilsson elicited data from the LOB and the BUC as well as JAC (Jacobson 1964), and found that the AC that most frequently combines with *also* is OC ('other constituents', i.e., other constituents than subjects or predicates, e.g., objects and adverbials), about one half of the occurrences in the corpora are $also_{\mathrm{OC}}$, while the remainder of the items combines with subjects ('S') and predicates ('P') in evenly distributed frequencies. *Too* on the other hand is found to combine most frequently with S and of the remainder, the ratio between combination with OC and combination with S is approximately 2:1. Her results are summarized in Table 5.

		S		P		OC	
		N	%	N	%	N	%
also	BUC	248	27.9	215	24.2	426	47.9
	LOB	228	26.9	223	26.3	398	46.8
	JAC	43	21.9	61	31.1	92	46.9
too	BUC	131	50.4	37	14.2	92	35.4
	LOB	146	47.5	50	16.3	111	36.2
	JAC	89	60.5	18	12.2	40	27.2

Table 5: Summary of S_1 related data from Fjelkestam-Nilsson (1983).

4.1.3 Testing S_2 against corpus data

4.1.3.1 Results from Fjelkestam-Nilsson (1983)

As mentioned above, Fjelkestam-Nilsson highlights the impact the length of the AC has on the distribution of *also* and *too*. She proves this by virtue of her data, categorizing the ACs according to their length as 1w, 2w, 3+w (see also section 4.2.1.1.2 below). *Also*, according to her, is mainly used to focus long constituents, *too* to focus short constituents. Although she considers a relationship between

grammatical structure of the AC and its length, she fails to cross-calculate the two values to a meaningful degree, instead focusing on a differential analysis of the AC (noun phrases with and without postmodifiers and OC). Gast later introduces the A/T index which allows for comparatively effortless calculation of correlation across categories. Fjelkestam-Nilsson's data are summarized in Table 6 below.

			1w		2w		3+w		$\sum$
			N	%	N	%	N	%	
S	BUC	*also*	19	41.3	23	71.9	82	96.5	124
		too	27	58.7	9	28.1	3	3.5	39
	LOB	*also*	17	32.1	17	58.6	83	91.2	117
		too	36	67.9	12	41.1	8	8.8	56
OC	BUC	*also*	17	54.8	27	79.4	200	93.5	244
		too	14	45.2	7	20.6	14	6.5	35
	LOB	*also*	7	38.9	20	66.7	187	93.5	214
		too	11	61.1	10	33.3	13	6.5	34

Table 6: Summary of S_2 related data from Fjelkestam-Nilsson (1983).

4.1.4 Testing I_1 against corpus data

4.1.4.1 Results from Gast (2006)

In his paper, Gast mentions example (9), which he found in the London-Lund Corpus (LLC), and which is possibly in breach with I_1. Whether this is, however, an example of 'performance error' or indeed evidence against the information-structural hypothesis shall be considered at this point.

(9) [*Eight musicians are talking about the organisation of their rehearsals; two of them – speaker a, identified as Gill/ian, and speaker b – had a conversation about the topic the previous day; b is speaking*]
. . . yes, if it – if it's a successful compromise, that's fine. But I mean – compromises by their nature normally aren't – [əm] *– but I think it's probably –* [əɹ] *– I still think practically – it's probably the best thing to do.*

Whât [ə] whât ˌGill and ˌI were ˈǎlso disˌcussing yèsterday
– I think it's quite – important that if we do a sort of bunch of rehearsals based on Tuesday, say – I think there are – the schedule for the next one – is too far strung out for my liking [...]
[contextual information by Gast]

Gast analyses the information structure for critical part of (9) as shown in (10).

(10)
$$\begin{array}{ccccc} [\textit{Gill and speaker}]_{\mathrm{AC}} & & \textit{were (also) discussing} & [\textit{yesterday}]_{\mathrm{AC}}. \\ \updownarrow & & & \updownarrow \\ [\textit{All eight musicians}]_{\mathrm{AC}} & & \textit{are discussing} & [\textit{today}]_{\mathrm{AC}}. \end{array}$$

Note that this analysis contrasts *Gill and I* with the entire set of eight musicians given by the context, and *yesterday* with today, implied by the time of utterance and the context (all musicians are discussing at the time of utterance). However, Gast himself suggests that this is not the only possible analysis (cf. ibid., 174), as *Gill and I* can be argued to be simply a subset of the eight musicians, thus 'weakening' the contrast between the two. Furthermore, *yesterday* can be argued to be outside the scope (SC) of *also*, resulting in the analysis presented in (11), which would reconcile the example with I_1.

(11) *Yesterday,* $([\textit{Gill and I}]_{\mathrm{AC}}$ *were also discussing that* $[\ldots])_{\mathrm{SC}}$.

The above considerations show that assigning the AC value within the information structure of complex sentences while having to consider the context is a non-trivial task. As can be seen above, on the level of information structure both *Gill and I* and *yesterday* could be argued to contribute to the AC. Equally, there are good reasons for questioning whether both components are in fact part of the AC. Furthermore, one should take into account the following.

Semantically speaking, the most important 'new information' in the example is the subordinate clause to the right of yesterday: *I think it's quite important that if we do a sort of bunch of rehearsals based on Tuesday, say,* [*we do consider that*] *I think there are* [*issues with*] *the schedule for the next one* [*as it*] *is too far strung out for my liking.*[16]

[16] Additions have been included to attain a certain level of completeness and syntactic correctness.

Consequently, another possible analysis would disregard the attribution of AC values to *Gill and I* and *yesterday*. Accordingly, the context would have to be re-considered, with *Gill and I* being a (virtually random) subset (SST) of eight musicians and therefore given information, and *yesterday* being outside the scope of *also* and therefore neglectable. The resulting analysis is represented in (12).[17]

(12) [*Eight musicians are discussing the organisation of their rehearsals; a subset of the group has already had a discussion about the same topic at some (neglectable) point in the past*]
What musician a and I were also discussing is that I think it's important to consider the schedule for the next rehearsal.

The information structure of (12) can be represented as in (13) below.

(13) *What* [*a and I*]$_{\text{SST}}$ *were also discussing is* [*that I think it's important to consider the schedule for the next rehersal*]$_{\text{AC}}$.

A more simplified and thus still less ambiguous re-phrased version of (13) – including the subset of the musicians in question in a pronoun, simplifying the syntax and excluding the subordinate clause with a 'placeholder' – is presented in (14) below.

(14) *We were also discussing* [*the following*]$_{\text{AC}}$.

(13), by disregarding both subject and time reference as part of the AC, supports I_1. However, the discussion of *Gill and I* and *yesterday* as parts of the AC is valid. I therefore propose that the term 'AC' needs a more thorough definition. As mentioned above, it was originally defined by Reis & Rosengren as "the 'variable material' in the proposition of the [clause including the particle] compared with some other proposition q in context" (1997: 241, their italics). In contrast, they define 'identical material' (ID) as "the rest [of] the material common to both propositions" (ibid.). While this definition of the AC does account for the clause AC in (13), it would not account for the more ambiguous parts *Gill and I* and *yesterday* in (9). As discussed above, it would be possible to regard both parts

[17]The example was abridged for reasons of legibility.

as not being included in the AC, but at the same time they cannot be simply regarded as part of the ID for the following reasons.

While *Gill and I* can be interpreted as a subset of eight musicians, it is clearly not identical with the whole set of eight musicians, the ID. Similarly, while *yesterday* can be regarded as outside the scope of *also*, it is still not part of the ID, since the (implied) time of utterance of (9) cannot be anything but today. In order to include both instances in the term 'AC', the latter would have to differentiate between different levels of 'new' material. Doherty (2005) classifies information in a sentence as either 'given' (this corresponds with Reis & Rosengren's (1997) term 'ID', 'identical material'), 'resumed' or 'contrastive'. She also translates these values into a hierarchy of relevance, where 'contrastive' information claims the highest position, 1, 'resumed' the medial position, 2, and 'given' information the lowest, 3. Adapted for the AC, the focus clause of (12) could be termed 'AC_1'. While the (arguably) unfocussed subject and time reference cannot be classified as strictly 'resumed' information, they can nevertheless be embedded into a hierarchy of focus and thus be termed either 'secondary AC' or simply 'AC_2'.[18]

Such a differential definition of 'AC' would of course entail a new definition of I_1, given in (14) below and termed I_{1a} ('alternative'):

(15) I_{1a}: Additive particles can occur only to one side of the AC_1.

Taking into account the above considerations, a classification of the original example (9) as evidence towards a dismissal of I_1 does not seem feasible due to the difficulties in assigning an unambiguous information-structural interpretation. Even if one considers the example fit to falsify I_1, I_{1a} would still remain to be tested against it, with a high probability of the outcome to support latter hypothesis.

[18] Depending on the choice of interpretation, they might in fact also be classified as 'unfocussed' ('AC_3').

4.2 Data elicitation by online questionnaires

4.2.1 Questionnaire design and implementation

The questionnaire interfaces used for this study were programmed in PHP Hypertext Preprocessor (PHP) language, and the collected data was saved in a MySQL database. Both the PHP files and the MySQL database were located on a server at the Freie Universität Berlin. Subjects gained access via an index file (index.php), of which one for each "family' of hypotheses (S and I) was located in a dedicated directory on the server.

The index file was designed to collect the subject's IP via the reserved server variable `$_SERVER['REMOTE_ADDR']`, strip the IP's periods and check the resulting integer against a MySQL table which included the IP ranges for different countries. The returned country name as well as the website which referred the subject to the questionnaire (gained by use of `$_SERVER['HTTP_REFERER']`) were saved in variables. From another MySQL table storing earlier subjects' input (or a token empty row with a `0` for the 'questionnaire ID' column if the subject was the first to access the site), the last value from the 'questionnaire ID'[19] column was extracted, and a new 'questionnaire ID' value was allocated for the current subject. The MySQL results table was checked again to see if the current subject had already filled out a questionnaire with the new ID, and if this was the case, yet another new questionnaire value was allocated. In the case that a subject with the current IP had already filled out questionnaires with all possible 'questionnaire IDs', he or she was referred to another PHP file, which displayed a message that thanked the subject for his or her dedication and stored the content of the IP variable in a MySQL database table which tracked occurrences of this case.

Once a 'questionnaire ID' was found that did not have a record for the current IP, the subject was referred to the respective PHP file, and the referer variable as well as those with the IP and the country name for the IP were passed to the same PHP file. The questionnaire PHP file (e.g., q1.php) sanitized ("`preg_replaced`") the variables passed on from index.php and saved them in a new set of variables.

[19] 'Questionnaire IDs' are integers from a range = number of questionnaires per family of hypotheses. Thus, there were four questionnaires testing the two S hypotheses and two questionnaires testing I_1.

It also displayed a form with the task items and collected the subject's input by storing it in form variables. The collected form data along the IP, country and referer variables were then passed on to another PHP file which would be able to save the files (e.g., save1.php).

The save file was programmed to sanitize the data[20] as well as check whether an attempt was made to save data for the current 'questionnaire ID' from the current IP. This was to prevent the duplication of data, which without this method would have occurred whenever a subject reloaded the save file. If this indeed happened, the subject would be referred to another PHP file which displayed a warning message and provided a link to the index page in case the subject was willing to fill in another questionnaire; the file also stored the occurrence of this case in a dedicated MySQL table. If no data for the current 'questionnaire ID' was saved from the current IP before, the form data as well as metadata were stored in the result table of the MySQL database and a message of thanks was displayed.

The questionnaires used to test I_1 additionally featured pre-recorded samples of the items that were tested. These were implemented in the questionnaire with an *Adobe Flash*™plugin that allowed subjects to play, repeat and pause each sample recording.

4.2.1.1 Questionnaire design for S_1 and S_2

The data elicitation per online questionnaire was carried out with two questionnaires per hypothesis. The questionnaires were structured based on the following algorithm.

Each questionnaire comprised of 50 task items. This is a deviation from Greenbaum & Quirk's (1970) suggestion to use batteries of 100 test items (ibid., 8), but usage figures for Bothe (2006, 18) strongly suggested a reduction of the total number of test items in order to gain a larger database by not discouraging subjects through a high numbers of items. This concern was especially valid in terms of the use of control questionnaires (see below) and the resulting need for twice as

[20] Again preg_replace was used, a routine to strip the strings in the passed-on variables of any MySQL or PHP commands that could have been placed there in order to gain control over the database.

many subjects as compared to the use of single questionnaires in order to match up the numbers of primary and complementary questionnaire.

The task items were split into three sections of around 20 items, with each section containing test items of a different type. The test types, used in accordance with Greenbaum & Quirk (1970), were completion tests of the forced-choice selection type for performance testing, and evaluation and ranking tests for judgement testing. While for the forced-choice selection tests (testing use of the additive particles), subjects were asked to fill in one gap of two, three or four, the judgement tests were asking subjects to evaluate one given sentence or rank two sentences in order of preference. The scale of answer choices for the evaluation tests comprised 'The sentence is perfectly natural and normal.', 'The sentence is wholly unnatural and abnormal.', 'Somewhere between' and 'Not sure'. The scale for the ranking tests comprised 'I prefer the sentence in a.', 'I prefer the sentence in b.', 'Neither sentence is preferable to the other.' and 'Not sure'. In the judgement section, subjects were furthermore asked to make a short statement about their choice for every task item.

The ratio of performance tests to judgement tests was chosen to be 1:2 because performance tests tend to demand a greater portion of individual contribution from subjects than judgement tests, which in turn might decrease the subject's willingness to contribute his or her answers. Only a small portion of the total number of questionnaire items, around one third (total number: 18), were related to the tested hypothesis in order to mask the purpose of the questionnaire.

The remaining two thirds of each questionnaire consisted of items that were randomly picked from Huddleston & Pullum (2005), Biber (2004), and Carter & McCarthy (2006) (cf. Appendix A). Most of these items, although not all, included adverb phrases. These non-related items were introduced to divert subjects from the purpose of the questionnaire.

Half of each section's hypothesis-related items (HRIs, six in total per section) was testing the use and the attitude towards use of *also*, the other half the use and the attitude towards use of *too*.

A number of HRIs in each questionnaire consisted of items in deviance from the expected use, i.e., sentences where use of *also* would be expected were constructed

with *too*, and vice versa. Equally, a portion of the other non-HRIs were intentionally deviant in some form (e.g., wrong syntax, wrong word class, etc.). These deviating items were introduced to avoid expectation of consistency: If the vast majority of the test items is either exclusively deviant or exclusively non-deviant, the subject is likely to expect the following items to follow that pattern. This may result in digression from the questionnaire's tasks and/or decreasing motivation to complete the questionnaire in general.

The deviating items were distributed with the following ratio: The primary questionnaire contained three primary HRIs for each additive particle in the performance section of the questionnaire. In this section, deviance or non-deviance in relation to the hypotheses is only produced by subjects' answers and thus tagging the HRIs in this section for deviance was unnecessary. However, in order to achieve a balanced non-deviant/deviant (ND/D) ratio across the whole questionnaire, HRIs in the performance section were virtually tagged deviant or non-deviant to enable inversion of this virtual ND/D distribution in the judgement section (see below). The ND/D ratio for this section was 2:1.

In the judgement section, an additional three HRIs were introduced for each additive particle, of which two HRIs for *also* and one for *too* were introduced in the evaluation test subsection, and correspondingly two for *too* and one for *also* in the ranking test subsection. This section also contained the correspondingly inverted virtual deviant or non-deviant form of the primary HRIs from the performance section, making up the remainder of the three HRIs per additive particle in each subsection.

In the evaluation section, two of the three newly introduced HRIs were non-deviant, the remaining one deviant. The ND/D ratio for the evaluation section was 1:2. This unbalanced ratio was applied as a result of the following rationale. The performance section was likely to provoke answers that are unbiased towards any "problem" with the sentence the respective task should be performed on. This is due to the open nature of this test type and performance tests in general. Similarly, the tasks in the ranking section gave two options for each item, and choices could be made instinctively rather than with an awareness of any problem. The evaluation tasks, however, inherently forced subjects to focus on possible problems

with the item in question due to the wording of the task. It is safe to assume[21] that Brown & Levinson's universal politeness strategy of seeking agreement (Brown & Levinson 1988: 118), against the background of Leech's 'Maxim of Agreement'[22] (Leech 1984: 138) and Grice's "avant la lettre" validation of Brown & Levinson's strategy (Grice 1975: 47), has some impact on subjects' tendencies to seek agreeing answers. Therefore, if subjects evaluated any deviant item as "unnatural" – and thus breach the Maxim of Agreement[23] – the outcome would be stronger evidence than if subjects were merely identifying non-deviant items as non-deviant. Correspondingly, a greater proportion of deviant HRIs was included in this section.

As the ranking subsection in each case included both a deviant and the non-deviant form of the HRI, tagging the HRIs for deviance again proved unnecessary. However, in order to prevent the discovery and subsequent expectation of patterns on the side of the subjects, a virtual tagging for deviance was applied and deviant and non-deviant forms – for HRIs as well as non-HRIs – were distributed with an ND/D ratio of 2:1 over the first of the two sentences to be ranked respectively, and item sets with deviating items as the first of their two sentences distributed randomly over the whole section.

The non-related items were also tagged for deviance, with the original source sentence tagged as non-deviant. To avoid pattern recognition by subjects that answered more than one questionnaire, the complementary questionnaires featured the inverted version of the item, i.e., if the primary questionnaire used a non-deviant item, the complementary questionnaire would feature the deviant item and vice versa. Additionally, all non-related items were given a cryptic 'name' value in the HTML <input> tag – and items in the ranking section a cryptic 'value' value in the same tag – in the PHP source code in order to avoid subjects with knowledge of HTML or PHP to expose non-related filler items as such.[24]

[21] These assumptions take into consideration that questionnaires create a virtual communicative situation, with questions being asked and answered. Therefore, the validity of pragmatic principles in this context must be acknowledged.

[22] 'Agreement' in this case would be agreement with the 'speaker' of the questionnaire, the virtual communicative instance that sets the tasks and 'utters' the task sentences.

[23] 'Agreement' in this case would be agreement with the 'speaker' of the questionnaire, the virtual communicative instance that sets the tasks and 'utters' the task sentences.

[24] Subjects could access the source code of the questionnaire by simply using the respective function of their browser ("View Page Source", or similar). While PHP functions themselves

The second, complementary, of the two questionnaires that were used to test either hypothesis functioned as a control tool for the first, with the tasks of the evaluation section in one questionnaire being an exact inversion of the same section in the other, i.e., where the primary questionnaire featured a non-deviant item, the complementary questionnaire featured a deviant item, and vice versa. The expected outcome of the use of such a control tool would obviously be an exact inversion of the primary questionnaire's results for this section in the complementary (control) questionnaire's results.

In addition, the performance section of the complementary questionnaire featured the three additionally introduced HRIs per additive particle from the primary questionnaire's judgement section, rather than the same primary HRIs, to create a broader foundation of results for the subsequent analysis.

The ranking section of the complementary questionnaire featured the same items as in the primary questionnaire but with inverted ND/D order for HRIs in the event of subjects returning to fill in another questionnaire.

The order of items in the sections was left unchanged, with the new HRIs in the performance section going in the respective slots of the primary HRIs.

4.2.1.1.1 The S_1 questionnaire

The HRIs in the questionnaires used to test hypothesis S_1 were divided into three categories based on the grammatical function of the AC, following Fjelkestam-Nilsson (1983: 28): subject (S), predicate (P) and 'other constituents' (OC). As all three types of ACs "combine more frequently with *also* than with *too*" (Gast 2006: 170), it would in principle seem futile to tag HRIs for deviance in anticipation of subjects choosing *also* over *too* in all possible cases. The analysis of the A/T indices for all three categories in combination with the results from the S_2 questionnaires will ultimately show what impact the grammatical function

cannot be accessed and viewed via this function, the HTML code used to display the online form items could be viewed and would reveal certain properties of each item, such as the item's internal identification code (cf. the respective lists of HRIs in the sections below.) and the internal input-dependent value via the <input> tag. If the same values had been used for all non-related items, these items could easily be identified as filler material.

of the AC has on the distribution of *also* and *too*. However, as (Gast 2006) has shown, the A/T index for subject ACs is relatively low (1.56 for data from the LOB, cf. Fjelkestam-Nilsson 1983: 52). Therefore S would be the category of HRIs where most choices of *too* could be expected. As it was necessary to virtually tag HRIs for the two S_2 questionnaires in order to avoid pattern recognition, the HRIs were tagged along category lines, with S tagged non-deviant for *too* and P and OC tagged non-deviant for *also*. For a list of all items included in the S_1 questionnaires, see Appendix A.

4.2.1.1.2 The S_2 questionnaire

The HRIs in the questionnaires used to test hypothesis S_2 were divided into three categories based on the number of words in the AC, following Fjelkestam-Nilsson (ibid., 65): one word (1w), two words (2w), and three or more words (3+w). The items in each category were equally distributed across both questionnaires, with items in each category making up a third of the total numbers of used HRIs in either questionnaire (two items per category and additive particle, twelve occurrences of items from each category across both questionnaires, with 36 occurrences of HRIs across both questionnaires in total).

In order to avoid an imbalance between the categories within either of the questionnaires, one item per category was included in either set of three HRIs per additive particle, the set used for the performance section as well as the ones used for the evaluation and ranking sections.

Deviance in this section was defined largely in accordance with Fjelkestam-Nilsson's (ibid., 65-74, 117) analysis: *also* mostly occurs with long (3+w) ACs, *too* occurs with 1w and 2w ACs. However, while this analysis is certainly correct for the extreme ends of the scale (1w and 3+w), her figures 4:1 and 4:2 (ibid., 68, 69) suggest that, especially with subject ACs, the results for the 2w category are not as distinct. Although the absolute percentages for *also* and *too* do show a slight preference for *too* with 2w subject ACs, the values converge in the overall curve progression from 1w to 3+w. Hence all HRIs with 2w ACs were left unmarked for *also* or *too* preference for the S_2 questionnaires, and ND/D tagging was based on

the original source.[25]

For a list of all items included in the S_2 questionnaires, see Appendix A.

4.2.1.2 Questionnaire design for I_1

The data elicitation per online questionnaire was carried out with two questionnaires, one of which was used as a complementary control questionnaire, similar to the complementary questionnaires used for testing S_1 and S2.

Both questionnaires, in analogy to the S_1 and S_2 questionnaires, comprised of 50 items, 30 of them testing items in text form, the other 20 testing original audio material. The questionnaires included five sections rather than three, with the last two being solely dedicated to testing audio material, since stress positions and intonation structure are crucial to the interpretation of the information structure of a sentence. All sections included 10 test items only. It seemed necessary to reduce the number of test items per section, in comparison with the S_1 and S_2 questionnaires, in order to include all three test types (forced-choice selection performance tests; evaluation and ranking judgement tests), while at the same time maintaining the limit of 50 items per questionnaire and applying two types of test (both types of judgement tests) to the additional audio material. The ratio of performance to judgement tests in both I_1 questionnaires was 1:4, in contrast to a 1:2 ratio for the S_1 and S_2 questionnaires. Thus the results would include less evidence of proactive use of the additive particles, but it seemed necessary to decrease the number of test items which demand a higher level of co-operation in light of the inclusion of time-consuming tasks asking subjects to listen to audio material.

The HRIs – a total of 12 HRIs were used for the I_1 questionnaires – comprised of (in part slightly modified) versions of (3), (4) and (9) as well as variations of these three examples, as it was the author's main concern to test both the deviant first two examples against the hypothetical existence of negative evidence and, if possible, find a solution to the problems posed by example (9).

[25] I.e., the sentence as found in the BYU-BNC or another source was tagged non-deviant, whether it featured *also* or *too*.

The non-HRIs were based on the HRIs used in the S_1 and S_2 questionnaires, with usually one sentence added and assigned to a second 'speaker' to build up the context of a virtual conversation.

The HRI to non-HRI ratio for all sections was 2:3 (as compared to a 1:2 ratio for the S_1 and S_2 questionnaires) in consequence of the reduced total number of items per section and the need to test as many HRIs as possible. This ratio of course increased the risk of exposure of the questionnaires' purpose. However, the fact that most of the non-HRIs tested use of and attitude towards other particles or adjuncts (cf. Appendix A) would allow for a partial unmasking of questionnaire structure without betraying its distinct purpose.[26]

The ND/D ratio for the sections in the I_1 questionnaires was 1:1 since deviation in the case of I_1 with the utilisation of a small pool of 'base' HRIs (i.e., the above-mentioned examples (3),(4) and (9)) was straightforward: use of *also* in either of the examples or one of their variations was defined as deviant, use of *too* as non-deviant. Where the S questionnaires' HRIs were determined by two parameters each (non-deviance with *also* or *too*, and either a length parameter or a grammatical function parameter for the AC), the I_1 questionnaires' HRIs were defined by only this one parameter. Hence a balanced ND/D ratio seemed appropriate. The text evaluation section (section 2 in both questionnaires) was the only exception, with an ND/D ratio of 1:3 in the primary and 3:1 in the complementary questionnaire respectively.[27]

As done for the S questionnaires, non-HRIs were assigned a cryptic name value in the HTML <input> tag in order to avoid their exposure as filler material, with the structure of this 'ID' paralleling that of the HRIs.

The complementary questionnaire for I_1 was constructed along the same principles as those for the S hypotheses. The evaluation and ranking sections used the same items as the corresponding sections in the primary questionnaire while

[26] Assumable levels of unmasking (possibly linked to the subject's general educational background, and more specifically his or her linguistic knowledge) could be paraphrased as follows. Level 1: "The questionnaire tests the use of 'small words'"; Level 2: "The questionnaire tests the use of particles/adjuncts"; Level 3: "The questionnaire tests the use of particles/adjuncts, especially of *also* and *too*"; Level 4: "The questionnaire tests the use of *also* and *too*".

[27] The reasons for employing this unbalanced ratio for the evaluation sections have been described above.

inverting their deviance value. Again, the performance section of the complementary questionnaire introduced new items in order to test the hypothesis against a maximum number of different items.

4.3 Subjects

One of the major difficulties that Bothe (2006) describes is the recruitment of a substantial number of subjects for the data elicitation procedure. For this study, two approaches were applied in order to find subjects for the data elicitation.[28] Personal contacts were asked by email to complete the questionnaire. Additionally, the existence of the questionnaires was made public via social networking platforms, and readers were asked to help with the completion of a questionnaire. These social networking platforms were varied and included *MySpace*™(a website where users can create a public user profile, often used by music groups to distribute their music online), *twitter*™(a web-based service that allows users to post short messages that are displayed on the user's public profile page), and a number of internet message boards (as varied as a user forum concerned with a distribution of the Linux operating system, a forum website for LaTeX 2_εusers, and several message boards discussing music and lifestyle).

5 Results and discussion

5.1 Methodological insights

Methodologically, the approach pursued in this study was successful in that the corpus sample consisted of valid data that could be evaluated with the common statistical procedures. Whether it was large enough (of "sufficient size", to quote Gast 2006: 173) is hard to evaluate, although it was certainly large enough to provide valuable indications concerning the inflexibility of I_1.

The data elicitation per questionnaires was also successful. A relatively large number of subjects could be recruited to create a database for testing the hypothe-

[28] For results see section 5.1

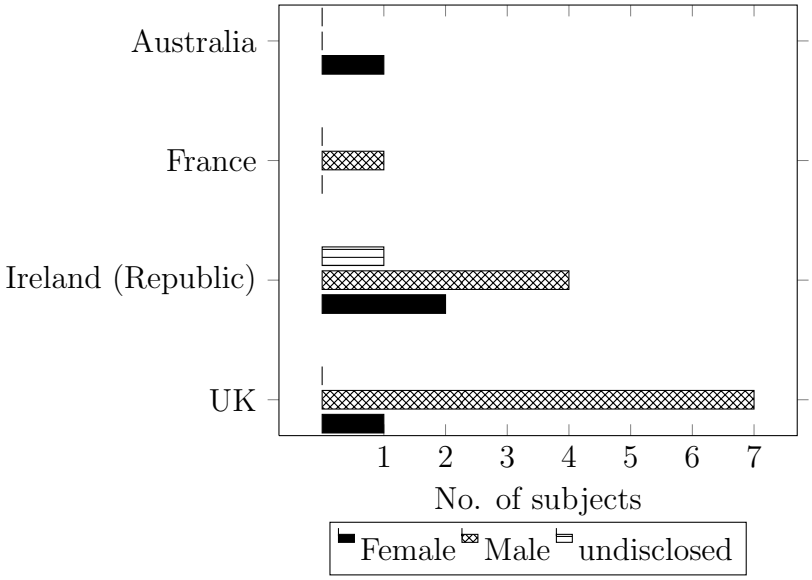

Figure 1: Country of birth and sex of subjects who have completed the primary or complementary S_1 questionnaire.

ses. A total of 34 subjects completed the S questionnaires, of which nine completed the primary S_1 questionnaire, nine the complementary S_1 questionnaire, eight the primary S_2 questionnaire and nine the complementary S_2 questionnaire. A total of 20 subjects completed the I_1 questionnaires, eleven of them the primary, and the remaining nine the complementary part.[29] While these figures are far from impressive, it has to be taken into account that Bothe (2006) yielded only nine results in total, and only very basic methods to recruit subjects were employed. In order to recruit a larger subjectbase, further, costly and time-consuming, initiative would be needed, such as offering rewards, tracking subjects' responses, etc.

From the total number of 54 subjects, eight were not native speakers of English, and their data was consequently not included in the analysis. Countries of birth and sex for the remainders is presented in Figures 1, 2 and 3 below.

The larger number of subjects for this study in comparison to Bothe (2006) is probably due to the utilisation of social networking platforms. Of 54 subjects, 42

[29]These partly unbalanced figures are a result of two subjects starting to complete the same questionnaire at any one time, and thus being assigned the same questionnaire ID.

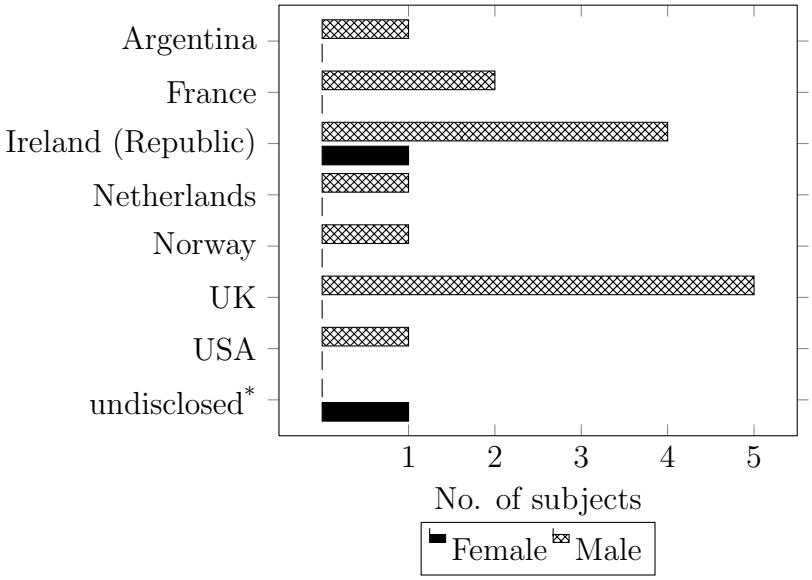

Figure 2: Country of birth and sex of subjects who have completed the primary or complementary S_2 questionnaire.

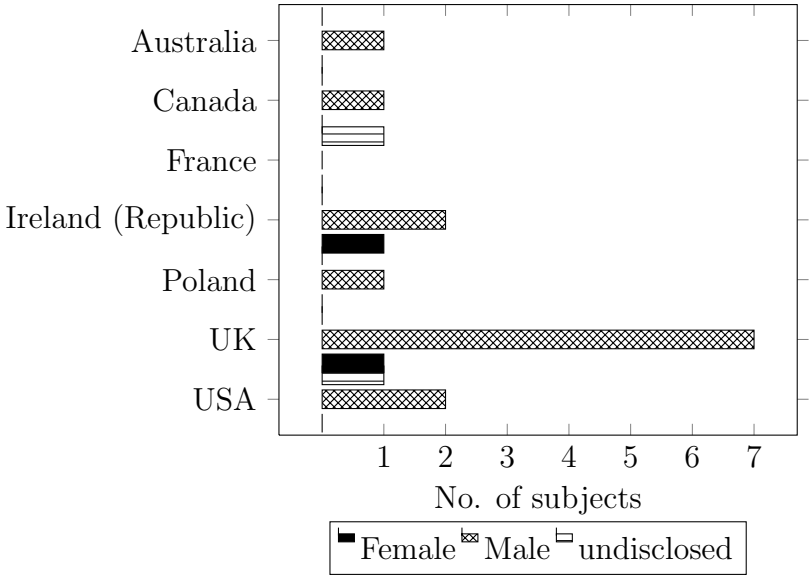

Figure 3: Country of birth and sex of subjects who have completed the primary or complementary I_1 questionnaire.

were referred to one of the questionnaires via such a platform, the majority coming from the messageboards rather than the "classical" platform *MySpace*™. Four subjects have clicked the hyperlink in an email that referred them to a questionnaire, and the referer for seven subjects is unable to trace back.[30] Interestingly, no subjects were referred from the microblogging service *twitter*™.

5.2 Hypothesis S_1

5.2.1 S_1: Corpus analysis

The data from the BNC sample generally confirm the correctness of Gast's assumptions based on Fjelkestam-Nilsson's data. Of the 480 items from the BNC tested against S_1, the number of items that had a predicative AC (P) was highest (216 items), followed by those with a subject AC (S, 174 items) and those with an AC featuring an object or other component (OC, 90 items). While *also* is combined most frequently with P (147 instances, vs. 50 OC and 43 S combinations), *too* is combined most frequently with subject ACs (131 instances, vs. 69 P and 40 OC combinations). On applying Gast's 'A/T index' formula (the ratio of the relative frequency of *also* to the relative frequency of *too*) to all of the three grammatical funtions of the AC, the calculation gives $A/T_S = 0.33$, $A/T_{OC} = 1.25$ and $A/T_P = 2.13$.

A comparison with Gast's results is shown in Table 7. While the conclusion related to S_1 is the same for both data sources, i.e., *also* and *too* seem indeed to be sensitive to the grammatical function of the AC, both the single A/T indices and the scaling factors differ in between sources. However, testing the differences in A/T indices for significance with the χ^2 test shows that the probability for the differences to be significant is very low ($\chi^2 = 0.18, df = 2, p > 0.05$). The procentual probability value, calculated on the basis of this χ^2 value is $p = 0.9091 = 90.91\%$. The data from the BNC can therefore be taken to express the same as the data from the LOB.

[30] This is probably because the respective subjects "copied" the hyperlink to a questionnaire into the memory of their computer and "pasted" it into the URL field of their web browser.

A/T index	S	Factor	OC	Factor	P
Gast (2006)	1.56	$<_{2.3}$	3.59	$<_{1.2}$	4.46
Present study	0.33	$<_{3.8}$	1.25	$<_{1.7}$	2.13

Table 7: Comparison of A/T indices for grammatical functions of the AC in Gast (2006) and the present study.

If compared with further corpus data from Fjelkestam-Nilsson – data that also seems to support S_1 but partly shows significant differences in both the A/T indices and the factors as well (cf. Table 8) – the result from a χ^2 test applied to this extended data is comparable to the one applied to the data of Gast (2006) and the present study ($\chi^2 = 0.42, df = 6, p > 0.05$). The procentual probability value, calculated on the basis of this χ^2 value is $p = 0.9987 = 99.87\%$. Thus the support the datasets from four different corpora lend to S_1 must be considered substantial, as all four datasets show the same tendency for additive particles' sensitivity to the grammatical function of the AC.

A/T index	S	Factor	OC	Factor	P
Gast (2006)	1.56	$<_{2.3}$	3.59	$<_{1.2}$	4.46
Present study	0.33	$<_{3.8}$	1.25	$<_{1.7}$	2.13
Fjelkestam-Nilsson (1983) (BUC)	1.89	$<_{2.5}$	4.63	$<_{1.3}$	5.81
Fjelkestam-Nilsson (1983) (JAC)	0.48	$<_{4.8}$	2.3	$<_{1.5}$	3.39

Table 8: Comparison of A/T indices for grammatical functions of the AC in Gast (2006), the present study, and Fjelkestam-Nilsson (1983).

5.2.2 S_1: Data elicitation by online questionnaires

Before turning to the actual results yielded by the questionnaires, it is necessary to briefly explain the metrics used to analyse their data. Greenbaum & Quirk provide a scoring system for linguistic data elicitation by questionnaire (cf. 1970, 19). Their system has been delevoped by them for experiments that test acceptability of forms rather than distribution. It was therefore necessary to adapt it to the setup of the present study. Greenbaum & Quirk's scoring system is detailed in Table 9, alongside with the re-interpretation made for the present study. The

results for the questionnaires testing S_1 are presented in Figure 4 and Tables 11 and 10. For a comprehensive list of questionnaire items, see Appendix A.

	Greenbaum & Quirk (1970)		Score		Present study
Compliance	'Response' sentence = 'target' sentence		A		Use of particle in compliance with hypothesis (optional: 'response' sentence ‖ source sentence) ∨ Choice of particle in compliance with hypothesis (optional: comment refers to choice of particle)
Hesitation	peripheral		B		Choice of particle in compliance with hypothesis and inclusion of 'meta-comments' not concerned with 'problem area' or any other linguistic problem
	central but not concerned with evasion		C		not used
	concerned with evasion		D		Choice of particle in compliance with hypotheses and linguistic/metalinguistic comment not concerned with 'problem area'
Non-compliance	peripheral		E		not used
	central but not evasive	RNC	F	RNC	Use or choice of particle not in compliance with hypothesis
	central and evasive	RNC	G	RNC	Option 'Somewhere between' or 'Neither option is preferable to the other' chosen.
	total omission	RNC	O	RNC	Option 'Not sure' chosen

Table 9: Scoring system for data elicitation questionnaires in Greenbaum & Quirk (1970), and adaptation for present study.

The total compliance/non-compliance ratio (C/NC ratio) over both questionnaires is 137:151 = 0.91 (60:84 = 0.71 for the primary, 77:67 = 1.15 for the complementary questionnaire). Substracting the G and O scores,[31] the ratio is 137:108 = 1.27, which still means a very large number of respondents chose an option that is maximally opposed to the expected response, i.e. they chose or chose to use *too* where *also* was expected and vice versa. Converted into percentages, this means that 52% of responses are in deviance from the expected response, an extraordinary quota. Although obvious, this result was tested with the χ^2 test with Yates' correction for continuity. The result is $\chi^2 = 201.948, df = 1, p =< 0.0001$, which means that it is extremely statistically significant.

The relation between use of the additive particles and attitude towards their use is as follows. The C/NC ratio for use is 1.4, the C/NC ratio for attitude is 0.73. That means that while the majority of subjects still use the additive particles in compliance to S_1, they fail to acknowledge compliant use of them.

[31] These are measures employed to test compliance with the task rather than with the expected use of *also* or *too*

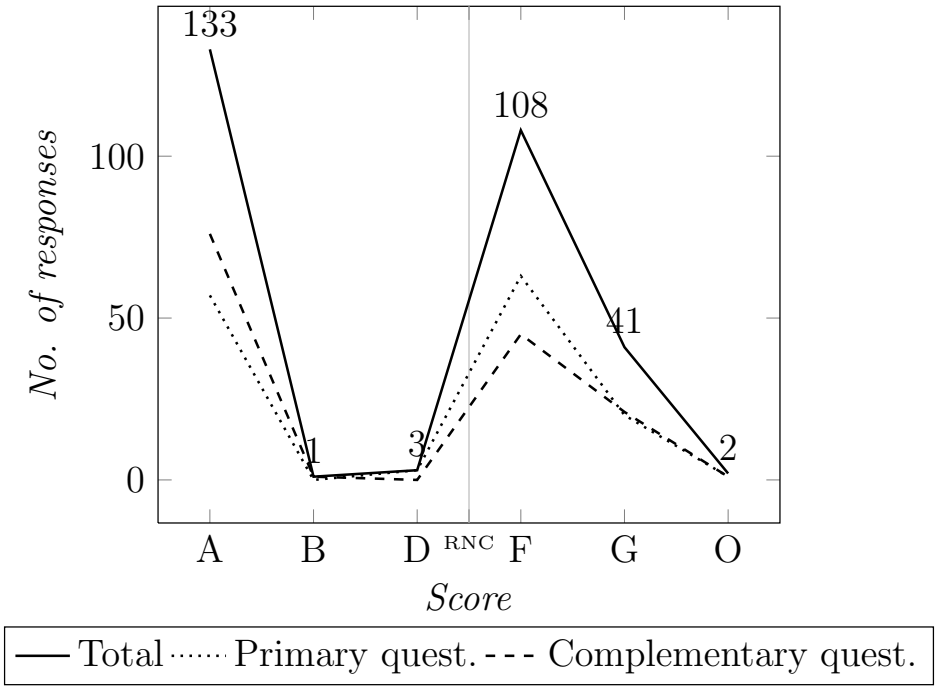

Figure 4: Score results for S_1 questionnaires.

Item ID	Expected response	Score					
		A	B	D	F	G	O
S1P_PER_T2_P_D	also	5			3		
S1P_PER_T3_S_ND	too	6			2		
S1P_PER_A2_S_ND	too	2			6		
S1P_PER_A3_P_D	also	7			1		
S1P_PER_A1_S_ND	too	1			7		
S1P_PER_T1_P_ND	also	4			4		
S1P_EVAL_A2_S_D	unnormal				8		
S1P_EVAL_A4_P_D	unnormal	3			1	4	
S1P_EVAL_T5_OC_ND	normal				5	3	
S1P_EVAL_A6_OC_ND	normal	5			2		1
S1P_EVAL_T3_S_D	unnormal			1	4	3	
S1P_EVAL_T1_P_D	unnormal	2			3	3	
S1P_RANK_T2_P_ND	also	3		1	3	1	
S1P_RANK_T4_S_ND	too	4			4		
S1P_RANK_A3_P_ND	also	5		1	1	1	
S1P_RANK_A5_OC_D	also	7			1		
S1P_RANK_A1_S_D	too				6	2	
S1P_RANK_T6_OC_ND	also	3			2	3	

Table 10: S_1 *primary* questionnaire: Expected responses and score results per item.

Item ID	Expected response	Score					
		A	B	D	F	G	O
S1C_PER_T5_OC_D	also	1			7		
S1C_PER_T6_OC_ND	also	5			3		
S1C_PER_A5_OC_ND	also	8					
S1C_PER_A6_OC_D	also	6			2		
S1C_PER_A4_P_ND	also	8					
S1C_PER_T4_S_ND	too	3			5		
S1C_EVAL_A2_S_ND	normal	3				5	
S1C_EVAL_A4_P_ND	normal	4			2	2	
S1C_EVAL_T5_OC_D	unnormal	5	1			2	
S1C_EVAL_A6_OC_D	unnormal	1			2	4	1
S1C_EVAL_T3_S_ND	normal	6				2	
S1C_EVAL_T1_P_ND	normal				7	1	
S1C_RANK_T2_P_D	also	2			5	1	
S1C_RANK_T4_S_D	too	2			4	2	
S1C_RANK_A3_P_D	also	8					
S1C_RANK_A5_OC_ND	also	8					
S1C_RANK_A1_S_ND	too	2			6		
S1C_RANK_T6_OC_D	also	4			2	2	

Table 11: S_1 *complementary* questionnaire: Expected responses and score results per item.

5.2.3 S_1: Discussion

Are the above findings strong enough evidence to dismiss S_1? Or is the high ratio of non-compliance with S_1 perhaps a matter of statistical interference? A closer look at the results is needed in order to answer these questions.

The task for item S1P_PER_A2_S_ND asked subjects to fill in either *also* or *too* into one of the gaps (. . .) in the following sentence.

(16) *The officer corps was reduced by 50%, with many officers retiring on full pay.* . . . [*the overall size of the army*]$_{\text{AC}}$ . . . *was* . . . *cut* . . . . {BNC HSC 24}[32]

Although the AC is the subject in the sentence and should thus combine with *too*, 6 out of 8 subjects filled in *also*. The source item includes *also* as well. However, two hypotheses about the distribution of the two additive particles do in fact provide

[32]The braces give the source of the sentence.

possible statistical interference: According to S_2, the AC should combine with *also* due to its length (3+w). And additionally, one of Gast's (2006) hypotheses ("In formal style, *also* is more frequent than *too*", cf. 2006, 166) provides another factor of intereference: BNC HSC 24 belongs to the BNC category "unpublished university essays", a category that arguably belongs to a rather formal genre. Interference of variables can thus be safely assumed in this case.[33]

Another, fairly extreme, example is item S1C_EVAL_T1_P_ND with seven F scores and one G score out of eight total responses, for which subjects were asked to evaluate the following sentence.

(17) *You write a very pretty hand and also* [*spell tolerably*]$_{\text{AC}}$. {BNC FU4 236}

In this case, the AC is of the AC_{P} variety and should thus combine with *also*. Even so, not only is the sentence rather informal[34] and is thus prone to combine with *too* according to Gast's above-mentioned hypothesis, neither does the length of the AC determine clearly whether the additive particle of choice should be *also* (cf. tagging rationale in section 4.2.1.1.2.). These two factors seem to overrule compliance with S_1 in this example.

One last example, with similar results as the one just discussed, is item S1P_RANK_A1_S_D from the ranking section of the primary s_1 questionnaire. It yielded a 100% RNC score, with six F and two G scores. Subjects were asked to rank the bold sentences from the following two items in their order of preference.

(18) a. *The Khmers Rouges are the leading merchants of chaos.* ***But*** [***the Phnom Penh government***]$_{\text{AC}}$ ***also has its reasons for favouring instability.*** {BNC CR9 844}

b. ... ***But the Phnom Penh government has its reasons for favouring instability too.***

[33]Interestingly, and very much in favour of the above explanation, the same sentence has an F score of 100% in the performance section of the same questionnaire.

[34]One subject's comment on the item reads "Is this an insult? Or just a line from one of oscar wilde's books?" BNC FU4 is in fact Samual Richardson's 1740 novel *Pamela*, so the subject's comment was not far-fetched at all.

Not only the length of the AC (3+w) and the fact that this snippet from the newspaper *The Economist* comes from a text type that tends to be rather formal seem to interfere with S_1 here. In accordance with S_{2a} (see below), decreasing the complexity of the CRD of this sentence seems to be more important than using *too* because the AC happens to be the subject.

In summary, S_1 can clearly be declared valid on the basis of the corpus data discussed above. And although the data elicitation by online questionnaire revealed some restrictions for its consequences for the distribution of *also* and *too*, there are a number of results from the questionnaire that clearly lend it support (cf. Tables 10 and 11 in conjunction with Appendix A). On the whole, however, the data from the questionnaires have clearly shown that S_1 is only of minor overall consequence for the distribution of the additive particles discussed here. This is largely due to the fact that when in interference, other variables (e.g., as defined by S_2, S_{2a} and Gast's (2006) hypothesis about the influence of formality) will overrule it.

While a research approach that combines data elicitation via both natural language corpora and online questionnaires has been proven to provide reliable data, it will be the task of future research into this hypothesis to create an experimental environment more capable of regarding data in isolation from interfering variables.

5.3 Hypothesis S_2

5.3.1 S_2: Corpus analysis

The data from the BNC again clearly support Gast's (2006) results. The A/T indices are 0.19 for ACs of one word ('1w', 114 items in sample), 0.46 for ACs of two words ('2w', 67 items in sample), and 2.05 for ACs of three or more words ('3+w', 299 items in sample). Table 12 compares the BNC data with the data presented by Gast (2006), and A/T indices calculated on further data elicited by Fjelkestam-Nilsson (1983): the A/T indices are given for length and all three grammatical functions for BNC data while the data from the other two studies do not include AC_{P}s.

	1w	Factor	2w	Factor	3+w	χ^2	*df*	*p* (*p*%)
BNC S	0.04	$<_{11.67}$	0.5	$<_{1.46}$	0.73			
LOB S	0.47	$<_{3}$	1.42	$<_{7.32}$	10.38	1.419	4	0.8408 (84%)
BUC S	0.7	$<_{3.63}$	2.56	$<_{10.7}$	27.33			
$\bar{x}_{\mathrm{S}}$	0.41		1.49		12.81			
BNC OC	0.42	$>_{4.58}$	0.09	$<_{28.47}$	2.59			
LOB OC	0.64	$<_{3.14}$	2	$<_{7.19}$	14.38	1.325	4	0.8571 (86%)
BUC OC	1.21	$<_{3.18}$	3.86	$<_{3.7}$	14.29			
$\bar{x}_{\mathrm{OC}}$	0.76		1.98		10.42			
BNC P	0.71	$>_{1.07}$	0.67	$<_{4.76}$	3.18			

Table 12: Comparison of A/T indices for length of the AC in Gast (2006), the present study, and Fjelkestam-Nilsson (1983).

Prima facie, the results from the BNC seem to run counter to S_2: There are negative factors between the values for 1w and 2w for the A/T indices for items with ACs that are neither predicative nor subject (BNC OC) as well as for items with predicative ACs (BNC P). The negative factor for BNC OC can be explained by the highly ambivalent nature of the category. 'OC', 'other constituents', includes a wide range of possibilities for the construction of the AC, ranging from personal pronouns to long NPs. Due to the assumed correlation (see below) between length and grammatical function of the AC, this has a direct impact on the choice of the additive particle. In any given sample, the occurence of a relatively large number of short $\mathrm{AC_{OC}}$s that combine with *also* in combination with a relatively large number of long $\mathrm{AC_{OC}}$s that combine with *too* will immediately effect the A/T index for these ACs. Given that the BNC example includes 50 combinations of *also* with an $\mathrm{AC_{OC}}$, and only 40 combinations of *too* with the same type of AC might account for this outlier.

However, although there are deviations from the positive correlation between the length of the AC and its grammatical function in the data, the χ^2 test for the $\mathrm{AC_S}$ section of the table returns a very high p value (0.8571). That means that

there is a very high probability that this deviation is insignificant. Additionally, a χ^2 test for the BNC P values and $\bar{x}_{\mathrm{S}}$ as well as $\bar{x}_{\mathrm{OC}}$ also shows that the deviation in BNC P is highly insignificant ($\chi^2 = 1.271$, $df = 4$, $p = 0.8662 = 87\%$), suggesting that the same correlation between use of *also* and *too* exists for $\mathrm{AC_{P}}$s as for the other two categories. This should nevertheless be subject of future research. All in all, the results for all corpus samples taken together clearly suggest that S_2 is valid.

It was Gast (2006) who suggested that there may be a direct relationship between the length of the AC and its grammatical function. This claim is based on DuBois's (1987) assumptions about the qualities different POS take on with the introduction of new information to a sentence. DuBois argues that "an already active concept tends to be realized linguistically in an attenuated form [...]." (1987, 816). Now, with the corpus data at hand, judging whether the two criteria are actually interdependent will be straightforward, and simply includes putting the assumption on a firm statistical footing by calculating the Pearson product-moment correlation coefficient (r). Due to the deviation in the BNC P data, r was calculated for the $\mathrm{AC_S}$ and $\mathrm{AC_{OC}}$ data from all three corpora. The result is $r = 0.87 (p < 0.01)$. Therefore a significant correlation between the two criteria can be stated. Figure 5 provides a graphical overview.

The considerations above have shown that S_2 is logically and statistically valid, but they are not qualified to explain why additive particles should be sensitive to the length of a constituent in the first place.

Before attempting an explanation, it should be noted that this question is partly based on the assumption that it is the length of the constituent that determines the grammatical function (cf. Gast (2006, 171): "it is [...] conceivable that the distributional contrast between added constituents with different grammatical functions is at least partly a *consequence* of the length of the relevant constituents" [my italics]). While this is a purely philosophical issue on the level of statistics, it is certainly of some importance when it comes to the analysis of actual language use. What DuBois (1987, cf. quote above) suggests when he speaks about the "realization" of "concepts" is, that the concept – whether already active or about to be introduced – will determine its form. In the case of the distribution of additive

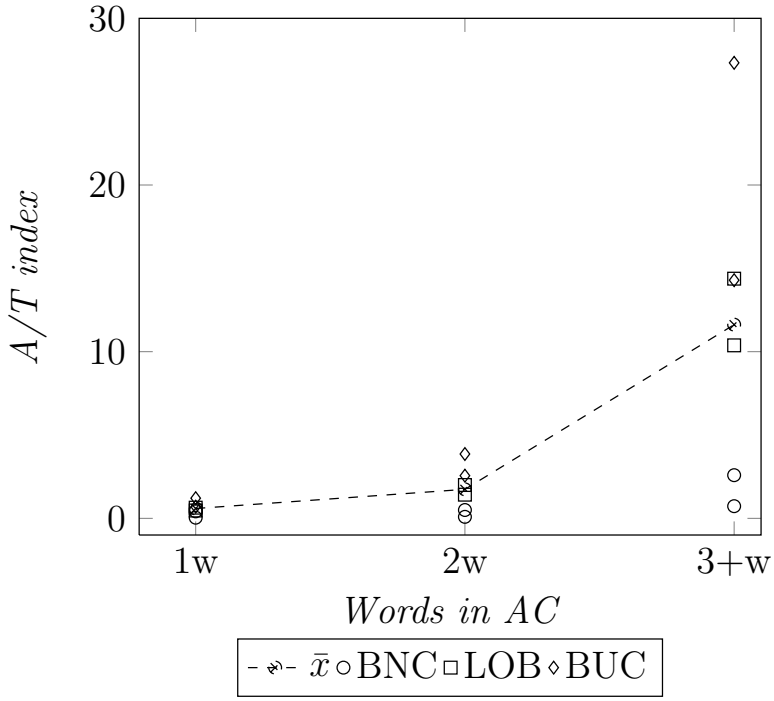

Figure 5: Scatterplot of A/T indices for all AC_S and AC_{OC} values, also showing overall progression of $\bar{x}$ for each length value (dashed line).

particles, this would mean that a concept will arguably also primarily determine the grammatical structure in which it will be realised. E.g., if the new concept to be introduced is a concrete person or object, the realisation is likely to take the form of a noun or pronoun (as AC_S or AC_{OC}). If the new concept is more abstract, it will likely take the form of a verb or VP as AC_P. In both cases it could be argued that the grammatical structure of a "concept realization" is directly defined by the "nature" of the concept itself. In turn, it would be the grammatical structure that then determines the length of the realisation – or AC, so as to return to familiar terminology –, and not vice versa. However, these matters deserve a seperate discussion not restricted to and by linguistics.

As a fact, distributional contrasts between different types of AC are also an outcome of the length of the AC. This, Gast (2006) argues, could be explained by psycholinguistic theory: Hawkins (1994), for example, provides a theory of parsing

which can be utilized to explain the phenomenon at hand.

Fodor (1983) supplies one of the fundamentals for Hawkins' theory when he says that one of the main properties of the parser is that it is fast: "Identifying sentences and visual arrays are among the fastest of our psychological processes" (ibid., 61). It should be added that not only is it a fast process, but it also works towards maximisation of the processing speed, if one considers it as being one of the principles responsible for generating output as well as computing input (cf. Kirby 1999: 25n.2). Similarly constitutional for Hawkins' parsing theory is the parser's innate feature of determinism, described in Marcus (1980) by way of his 'machine hypothesis' as "strict in that it does not simulate a non-deterministic machine" (ibid., 11).

The main principle in Hawkins' theory is that of 'early immediate consituent' (EIC) recognition. It combines both the above-mentioned processing speed and determinism by stating that word and constituent orders depend on the rapidity and effectiveness they enable for recognition and production of syntactic units and their immediate constituents ('IC's) in language performance. At the core of this principle is the EIC. ICs are the primary constituents of sentences (e.g., VP, NP, etc.). EIC recognition enables the identification and processong of ICs as early in the parsing process as possible. Consider example (19), adapted from Hawkins (1994, 57).

(19) a. I $_{\text{VP}}$[gave $_{\text{NP}}$[the valuable book that was so hard to find] $_{\text{PP}}$[to Mary]]

b. I $_{\text{VP}}$[gave $_{\text{NP}}$[the valuable book that was so hard to find] $_{\text{PP}}$[a new cover]]

c. I $_{\text{VP}}$[gave $_{\text{PP}}$[to Mary] $_{\text{NP}}$[the valuable book that was so hard to find]]

All three VPs have three ICs each: the verb *gave*, the determiner *the* in the long NP, plus in (19a) the PP, and respectively the determiner *a* in the second NP in (19b). (19a) and (19b) force the examination of eleven words (*gave–to/a*) before all ICs are recognized, while recognition of all ICs in (19c) takes the recognition of just four words. Hawkins calls the set of 'nodes' that must be parsed in order to recognise the VP (the 'mother node') and all of its ICs the 'constituent recognition domain' (CRD). Consequently, EIC recognition depends on a CRD of minimum complexity.

The impact this has on the distribution of *also* and *too* is best explained by way of another example.

(20) a. *An important part of the weekend will be the auction of tools, books and other objects. There will* also *be* [*visits to Wye College's Agricultural Museum and the Museum of Kent Rural Life at Sandling*]$_{\text{AC}}$.

b. *An important part of the weekend will be the auction of tools, books and other objects. There will be* [*visits to Wye College's Agricultural Museum and the Museum of Kent Rural Life at Sandling*]$_{\text{AC}}$, too.

The contrast between (20a), taken from the BNC, and (20b) with *too* instead of *also*, is obvious and can now be explained by the difference in complexity of the sentences' CRDs: "In a structure like [...[[ω_1 ω_2 ω_3]$_{\text{AC}}$ too]$_{\text{IC}_1}$], the 'constituent recognition domain' for IC$_1$[35] comprises [[ω_1 ω_2 ω_3]$_{\text{AC}}$ too]. [...] In a structure of the form [...also [[ω_1 ω_2 ω_3]$_{\text{AC}}$], the [CRD] only comprises *also* and ω_1" (Gast 2006, 171). Due to the minimum of complexity of its CRD, (20a)'s mother node can be determined after the head of the AC (*visits*) has been processed, while it can only be determined for (20b) after the whole of the sentence has been processed. On the background of these considerations, an alternative version of S$_2$ in psycholinguistic terms could read as in (21) below.

(21) S$_{2a}$: *Also* and *too* are sensitive to the complexity of the constituent recognition domain of their phrasal mother node.

5.3.2 S$_2$: Data elicitation by online questionnaires

The results for the questionnaires testing S$_2$ are presented in Figure 6 and Tables 13 and 14.

The total compliance/non-compliance ratio (C/NC ratio) over both questionnaires is 58:86 = 0.67 (25:36 = 0.69 for the primary, 33:50 = 0.66 for the complementary questionnaire). These ratios are adjusted for G scores for 2w items, as

[35] Gast's original tag 'C1' was changed to 'IC$_1$' for the sake of terminological consistency.

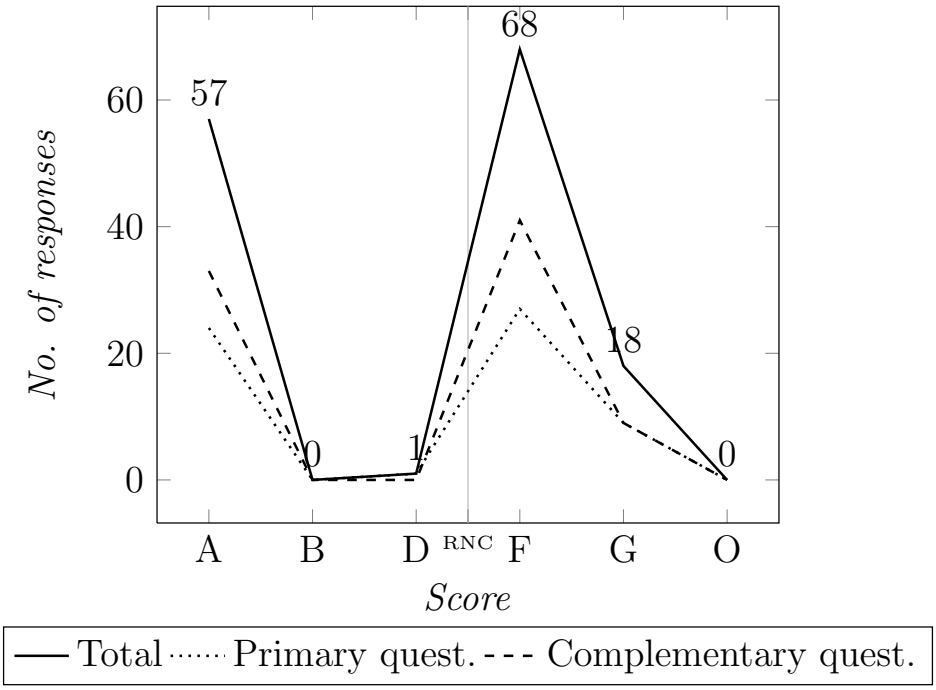

Figure 6: Score results for S_2 questionnaires.

Item ID	Expected value	Score						∑"also"	∑"too"	Item
		A	B	D	F	G	O			
S2P_PER_T2_L2_D	?							1	4	
S2P_PER_T3_L1_ND	also	3			2					
S2P_PER_A2_L2_ND	?							5		
S2P_PER_A3_L3_D	also	5								
S2P_PER_A1_L3_ND	also	1			4					
S2P_PER_T1_L1_ND	too	3			2					
S2P_EVAL_A2_L2_D	?									also
S2P_EVAL_A4_L3_D	unnormal	1			2	2				
S2P_EVAL_T5_L2_ND	?									too
S2P_EVAL_A6_L3_ND	normal	3				2				
S2P_EVAL_T3_L1_D	unnormal				4	1				
S2P_EVAL_T1_L1_D	unnormal	1			4					
S2P_RANK_T2_L2_ND	?									
S2P_RANK_T4_L1_ND	too	1			3	1				
S2P_RANK_A3_L3_ND	also	3		1	2					
S2P_RANK_A5_L2_D	?									
S2P_RANK_A1_L3_D	also	1			2	2				
S2P_RANK_T6_L1_ND	too	2			2	1				

Table 13: S_2 *primary* questionnaire: Expected and actual responses, and score results per item.

Item ID	Expected value	Score						∑"also"	∑"too"	Item
		A	B	D	F	G	O			
S2C_PER_T5_L2_D	?							6	1	
S2C_PER_T6_L1_ND	too	4			2					
S2C_PER_A5_L2_ND	?							7		
S2C_PER_A6_L3_D	also	7								
S2C_PER_A4_L3_ND	also	2			5					
S2C_PER_T4_L1_ND	too	1			6					
S2C_EVAL_A2_L2_ND	?									also
S2C_EVAL_A4_L3_ND	normal	6			1					
S2C_EVAL_T5_L2_D	?									also
S2C_EVAL_A6_L3_D	unnormal	1			4	2				
S2C_EVAL_T3_L1_ND	normal	3			2	2				
S2C_EVAL_T1_L1_ND	normal	2			4	1				
S2C_RANK_T2_L2_D	?									
S2C_RANK_T4_L1_D	too				6	1				
S2C_RANK_A3_L3_D	also	5			2					
S2C_RANK_A5_L2_ND	?									
S2C_RANK_A1_L3_ND	also	1			6					
S2C_RANK_T6_L1_D	too	1			3	3				

Table 14: S_2 *complementary* questionnaire: Expected and actual responses, and score results per item.

taking them into account for the C/NC ratios would skew the calculation because logically there cannot be non-compliance for items that do not have a deviance value attached to them.[36] Substracting the G and O scores, the ratio is 58:68 = 0.85. Just as for the adjusted C/NC score for the S_1 questionnaire, this still means a very large number of respondents chose an option that is maximally opposed to the expected response. Converted into percentages, this means that 54% of responses are in deviance from the expected response, again a very high quota. This result was also tested with the χ^2 test with Yates' correction for continuity. The result is $\chi^2 = 90.411, df = 1, p =< 0.0001$, which means that it is extremely statistically significant.

The relation between use of the additive particles and attitude towards their use is as follows. The C/NC ratio for use of *also* and *too* is 1.4, the C/NC ratio for attitude toward us of *also* and *too* is 0.73. That means that while the majority of

[36]Non-compliance arguably refers to subjects who do not adhere to the set tasks. In this case, however, skewing the statistical basis for the calculations seemed a worse option than not following Greenbaum & Quirk (1970).

subjects still use the additive particles in compliance to S_2, they fail to acknowledge compliant use of them.

5.3.3 S_2: Discussion

For S_2 the same issues apply as for S_1: Are the findings strong enough evidence to dismiss the hypothesis? Again, a closer look at single results will be of interest.

The results for the evaluation sections as a whole show an extreme tendency to evaluate sentences as 'normal', with a ratio of almost 4:1 to 'unnormal' responses. It is not implausible that this is indeed an effect of a tendency on the subjects' side to seek agreeing answers, as discussed in section 4.2.1.1. Of course impassiveness towards deviance on the grounds of such an interfering tendency can skew the overall results.

Additionally, there are items with outlying results that also effect the overal result, especially when operating wih a slim database as is the case here. S2C_-PER_T4_L1_ND with its 1w AC (see below), for example, evinces an A/T index of 6.0.

(22) *Sue has bought a new skin for her snare drum, and she has ... bought* $[sticks]_{\mathrm{AC}}$ .... {own example}

In this case, another principle seems to have effected subjects towards choosing *also* over *too*, namely the close proximity of the AC to the most frequent position of *too*, *E*. As both the AC and the additive particle would be stressed in performance of the sentence, choosing *too* would clearly lead to a sub-optimal prosodic sentence organisation (see below).

(23) *Sue has bought a new skin for her snare drum, and she has bought* ˌ*sticks* ˈ*too.*

S2P_EVAL_T3_L1_D, (24), is a perfect example of the impact a universal politeness strategy of seeking agreement (cf. section 4.2.1.1) can have on the evaluation

choices of subjects.[37] The item in question is rather informal, features a 1w AC, and has a CRD which will only increase by one word if the S_2-compliant response is chosen and the item declared 'unnormal'. Yet four subjects choose 'normal' as their response, and one fails to comply by choosing 'Somewhere between'.

(24) *We plan to go and visit Bordeaux.* ***We also plan to visit*** $[Paris]_{AC}$.

The results for the S_2 questionnaires also include results regarding the slightly ambivalent 2w ACs (cf. section 4.2.1.1.2). Results from the performance section of both S_2 questionnaires could be taken directly into account, while for the evaluation section, results that declared the use of one additive particle as 'normal' and the use of the other as 'unnormal' – and vice versa – were given A and F scores accordingly. The A/T index for these figures is 3.13, which compares to a $\bar{\chi}_{\sum \mathrm{A/T}}$ of 1.38, calculated from the LOB, BUC and BNC data as well as the BNC P A/T index.

In order to be able to χ^2 test this remarkable difference, expected frequencies were calculated using the figures that were used to calculate the A/T indices for 2w ACs as presented in Table 12, by simply calculating their arithmetic mean. χ^2, with Yates' correction, was 14.673 ($df = 1$, two-tailed$p = 0.0001$), the difference therefore of high statistical significance. However, this result must not be overrated as the A/T index for 2w ACs from the questionnaire was calculated on a slim database of only 5 subjects and 12 instances.

5.4 Hypothesis I_1

5.4.1 I_1: Corpus analysis

The corpus results for the S hypotheses have been interpreted mainly with statistic procedures. The interpretation of the data for I_1, however, demands a closer look at single items, as the following discussion will show.

The majority of the 720 items sampled from the BNC feature the additive particle to one side of the AC. However, there are three items that seem to be

[37] Another explanation for the subjects' responses is of course that the deviation in the sentence is simply not remarkable enough to declare it unnormal.

in breach with I_1 at first sight. Gast's (2006) find, discussed in section 3.2, has seemed to do the same, and triggered a re-evaluation of the classification of the AC. In the consequence, an alternative version of I_1 has been drafted to include Gast's example (9).

For examples from the BNC considered at this point, it should be evaluated whether any of them would breach both I_1 and I_{1a}, or alternatively would breach I_1 but would be compatible to I_{1a}.[38]

(25) [At a camera club meeting, one of the photographers speaks about the required features for a formal photograph of a young lady, with an example at hand.]
This one's, certainly, got very soft lighting. Erm, no harsh shadows anywhere on her face. Nice flaunting of the er the erm the face, her cheeks there. Nice lighting on the hair.
And I like [the inclusion]$_{AC}$ TOO, [of just a little bit of jewellery]$_{AC}$, not too much.
This earring here, this pendant earring just lifts that area up just a little bit, not too much, not too obtrusive, but just enough for sort of a a highlight catching the pendant earring just to lift it up a little.

(26) [Excerpt from Seymour-Ure (1996), a book about the history of British broadcasting.]
[...] *ITV series were frequently mistaken for BBC products. Upstairs Downstairs, World at War, Edward VII (in the 1970s); Brideshead Revisited, Jewel in the Crown (1980s) –; all were ITV programmes that set the elitists purring. They went out, of course, alongside the likes of Opportunity knocks, The Golden Shot, Crossroads and Emmerdale Farm.*
By the 1980s [the BBC]$_{AC}$ TOO had [Blankety-Blank and EastEnders]$_{AC}$.
But, even so, viewers in 1987 still perceived ITV as better at quiz and game shows, entertainment and variety, adventure ... and feature films [...]

[38] Note that the assignment of the AC status to parts of the sentence is based on assumption at encounter. These examples were chosen for discussion because they *seem* to be evidence against the validity of I_1. Additional contextual information is given in square brackets. Underbrackets ⌊⌋ are used to link the parts of an assumed "split AC".

(27) [Excerpt from an article in the newspaper "The East Anglian" which discusses smokers' reactions to a smoking ban for trains. The *he* referred to in the text is a train company representative defending the ban.]
The main reason for the ban was the problem of non-smoking coaches becoming crowded with people standing, while seats remained empty in smoking carriages.
[Cleaning costs]$_{\text{AC}}$ would ALSO be reduced [and the risk of lineside fires]$_{\text{AC}}$, he said.
Some fires last summer damaged signalling cables.

Example (25)'s critical part is the object NP as *the inclusion of just a little bit of jewellery* represents new information in the given context: *inclusion* contrasts with *lighting* while *jewellery* arguably contrasts with *face*, *cheeks* and *hair*. Unlike in (9) however, the new information in (25) is included in a single NP, which would usually be either preceded or followed by the additive particle ([28] and [29] respectively).

(28) *I also like the inclusion of just a little bit of jewellery, not too much.*

(29) a. *I like the inclusion of just a little bit of jewellery, not too much, too.*
b. *I like the inclusion of just a little bit of jewellery, too, not too much.*

Judging whether (25) is in breach of I_1 is first of all a question of whether the whole object NP, including the complement *of . . . jewellery*, can be defined as a constituent or not. Simple ways of testing this are usual constituency test such as substitution (but: *I like the inclusion of it* vs. *I like it*) or clefting/pseudo-clefting (*It is the inclusion of jewellery that I like* vs. *It is the jewellery, the inclusion of which I like*). The clefting/pseudo-clefting test confirms the constituency of the NP, thus also implicitly ruling out the possibility of a contrastive topic structure. The example breaches I_1.

The information structure of (25) as defined by Doherty (2005) can be represented as shown in (30).

(30) And [$_3$ I like] [$_1$ the inclusion] TOO, [$_1$ of just a little bit of jewellery], [$_2$ not too much].

Both the object itself and its complement can clearly be regarded as 'contrastive information'. Yet, another interpretation of *inclusion* would see the contextual *lighting of hair* especially, and *lighting* of a photograph more generally, as part of the concept of *inclusion*, which would in this case have the meaning "adding to the visual effects of a photograph". Although this is a valid point, this rather wide definition notion seems too abstract for an explanation of *inclusion* in (25). Here, the meaning of *inclusion* encompasses "allowing or 'putting' an object in the space that will make up the image section of the photograph after it has been taken". This concept is not part of the preceding context of the sentence and therefore 'contrasting' information, which is why (25) must be regarded as a breach of I_1.

Another point of view could be that the use of *too* in (25) is merely a performance error. Given the context and the preceding sentences, it could easily be assumed this is the case, as several instances of performance errors are found in the preceding and following sentences. Notwithstanding, in contrast to the other sentences in the context, no stammering (*er*), stuttering, repetition or similar "speech errors" are transcribed in the item. In addition, the combination of ART - N - *too* - *of* is rare but not unknown in English, as a corpus analysis shows. There are eight occurrences of the combination in the BNC, and one occurrence in the Singapore section of the "International Corpus of English" (ICE, 1m words, after 1990) which was also the only example from the spoken medium. All occurrences are from a rather formal context, and all occurrences feature *too* in the rare *M* position.

There seem to be two factors that influence the position of *too* in (25). The avoidance of close proximity to the homonymous intensifier certainly plays a role. Querying the BNC for a pattern of `too , * too` returns six results, half of them performance errors, the other half accentuating repetition. `too * too` returns 119 results, with the majority of the occurrences being specific uses of the intensifier, such as *too much too young*, and the remainders are, again, performance errors or artefacts in the BNC transcription. This shows that close proximity of the additive particle to the intensifier is avoided by the speaker.

The second factor influencing the position of *too* in this case would in fact be that, following the principle of S_{2a}, the complexity of the CRD of a sentence or

phrase will be kept minimal. While a version of (25) following I_1, such as (29b), requires the processing of eleven words before the VP is fully recognized, the CRD of (25) contains only five words (*like . . . of*). This would mean that the sensitivity of additive particles to the length of the AC overrules their tendency to occur only to one side of the AC, and implies an implicit hierarchy of the regulatory instances for the use of, at least, *too*. The specific hierarchy in the case of (25) is not applicable to *also*, since *also* does not have a homonym of the same degree that the additive particle *too* has with the intensifier *too*.

Turning to another example, the information structure of (26) defines both the subject NP and the object NP of the sentence as new information. *The BBC* is in contrast to *ITV*, *Blankety-Blank and EastEnders* is in contrast to *Opportunity knocks, The Golden Shot, Crossroads and Emmerdale Farm* (the latter all being television series produced by ITV). However, on a scale of novelty, the BBC could be regarded as 'resumed' information (although not from the preceding sentence, as required by the exact definition of 'resumed information' in Doherty (2005)), as the topic was focused earlier on in the context. This would make *Blankety-Blank and EastEnders* the actual AC_1 and (26) thus compliant with at least I_{1a}.

In another, less probable, setup of the AC, the object NP would assume the role of placeholder for soap operas in general, a topic touched upon in detail in the context of (26). The object NP would obviously be 'resumed information', and thus the example would comply to I_{1a}.

The last example, (27), also seems to breach I_1 prima facie. The expected use of the additive particle *also* within this sentence would be as in (31) below.

(31) *Cleaning costs and the risk of lineside fires would also be reduced.*

Cleaning costs and *the risk of lineside fires* contrast with what has been said about the smoking ban in the preceding sentence. If the assignment of the AC status held true, (27) would indeed challenge I_1. However, another interpretation of the sentence's syntactic structure is more valid, namely that the critical sentence in (27) is actually a compound sentence, and *the risk of lineside fires* is the subject of the second clause, the VP of which is simply omitted. In addition, a second ellipsis omits what Reis & Rosengren call ID, 'identical information', namely the

VP *another reason for the smoking band was (that).* (32) resolves both ellipses and gives the actual AC of the sentence.

(32) *Another reason for the ban was that* [*cleaning costs would*]$_{\text{AC}}$ *also* [*be reduced*]$_{\text{AC}}$*, and the risk of lineside fires would be reduced as well.*

The same sentence with a position of *also* that is in compliance with I_1 would read:

(33) *Another reason for the ban was also that* [*cleaning costs would be reduced*]$_{\text{AC}}$, and the risk of lineside fires would be reduced as well.

This strict interpretation of of the AC ultimately leads to a dismissal of (27). But again, an alternative interpretation of the information structure of the sentence allows for compliance with I_{1a}. *Reduction* can be regarded as part of the topic "probable outcome of a smoking ban for train carriages". In this case, the VP of the critical part of (27) has to be classified as AC_2 rather than AC_1, because the topic has been discussed implicitly in the preceding sentence: (34).[39]

(34) *The main reason for the ban was the problem of non-smoking coaches becoming crowded with people standing, while seats remained empty in smoking carriages*{*, and the ban will probably solve this problem*}*.*

Another reason for the ban was that [cleaning costs]$_{\text{AC}_1}$ would also [be reduced]$_{\text{AC}_2}$, and the risk of lineside fires would be reduced as well.

$\therefore$ [Cleaning costs]$_{\text{AC}_1}$ would also [be reduced]$_{\text{AC}_2}$ and the risk of lineside fires, he said.

5.4.2 I_1: Data elicitation by online questionnaires

The results for the questionnaires testing I_1 are presented in Figure 7 and Tables 15 and 16.

The total C/NC ratio over both questionnaires is 154:186 = 0.83 (76:124 = 0.61 for the primary, 78:62 = 1.26 for the complementary questionnaire). Substracting

[39] The implicit proposition is marked by braces.

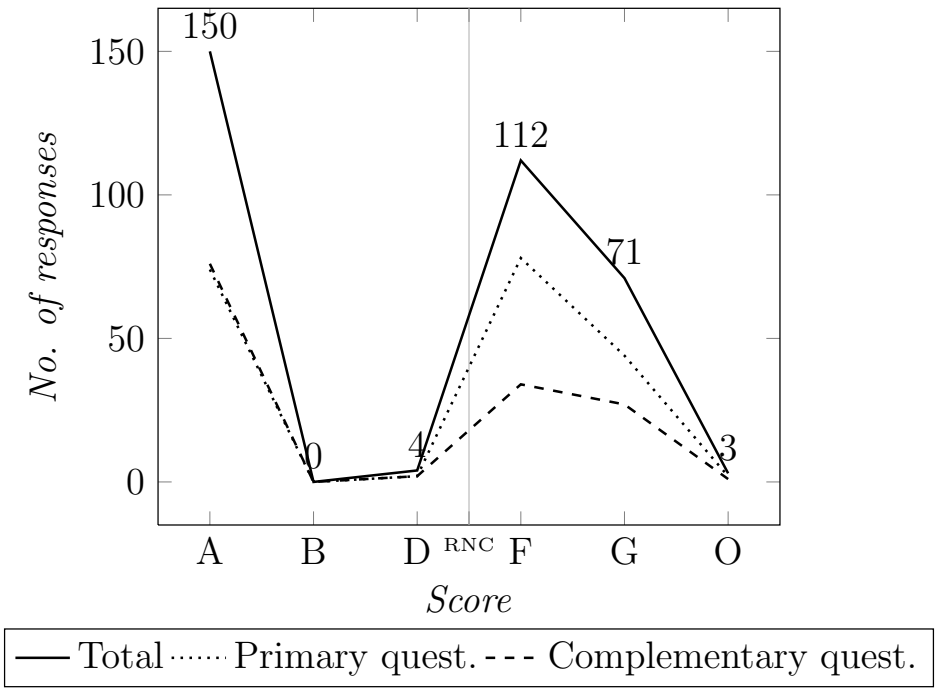

Figure 7: Score results for I_1 questionnaires.

Item ID	Expected response	Score					
		A	B	D	F	G	O
I1_PER_TJ2_ND	too	5			5		
I1_PER_GI3_ND	too	1			9		
I1_PER_HO3_D	too	1			9		
I1_PER_TJ5_D	too	10					
I1_EVAL_TJ3_ND	normal	7				3	
I1_EVAL_HO4_D	unnormal	1		1	4	4	
I1_EVAL_GI1_D	unnormal	1			5	4	
I1_EVAL_HO1_D	unnormal				6	4	
I1_RANK_GI3_D	too				8		2
I1_RANK_TJ1_ND	too	10					
I1_RANK_HO2_ND	too	5		1	1	3	
I1_RANK_GI2_D	too	1			9		
I1_EVAL_aud_TJ1_D	unnormal	5			1	4	
I1_EVAL_aud_HO3_ND	normal	4			1	5	
I1_EVAL_aud_HO2_D	unnormal				5	5	
I1_EVAL_aud_GI2_ND	normal	2			4	4	
I1_RANK_aud_TJ5_ND	too	9				1	
I1_RANK_aud_TJ4_D	too	6			1	3	
I1_RANK_aud_HO1_ND	too	6			2	2	
I1_RANK_aud_GI1_D	too				8	2	

Table 15: I_1 *primary* questionnaire: Expected responses and score results per item.

Item ID	Expected response	Score					
		A	B	D	F	G	O
I2_PER_TJ3_D	too	4			3		
I2_PER_HO4_ND	too	3			4		
I2_PER_TJ1_D	too	7					
I2_PER_GI2_D	too	7					
I2_EVAL_TJ3_D	unnormal			1	3	3	
I2_EVAL_GI1_ND	normal				4	3	
I2_EVAL_HO1_ND	normal	5			1	1	
I2_EVAL_HO4_ND	normal	5				2	
I2_RANK_GI3_ND	too	2			4	1	
I2_RANK_HO2_D	too	5			1	1	
I2_RANK_GI2_ND	too	1			4	2	
I2_RANK_TJ1_D	too	5		1	1		
I2_EVAL_aud_HO2_ND	normal	6				1	
I2_EVAL_aud_HO3_D	unnormal	1				6	
I2_EVAL_aud_GI2_D	normal	2			3	2	
I2_EVAL_aud_TJ1_ND	unnormal	7					
I2_RANK_aud_HO1_D	too	5			1	1	
I2_RANK_aud_TJ4_ND	too	4				3	
I2_RANK_aud_TJ5_D	too	7					
I2_RANK_aud_GI1_ND	too				5	1	1

Table 16: I_1 *complementary* questionnaire: Expected responses and score results per item.

the G and O scores, the ratio is 154:112 = 1.38, a significant result as it proves that the G and O scores are important in the overall figures (cf. below). Converted into percentages, this means that in contrast to the S questionnaires, 42% of responses are in deviance from the expected response, again a very high quota but nevertheless closer to the expected outcome than the S questionnaires. This result was also tested with the χ^2 test with Yates' correction for continuity. The result is $\chi^2 = 253.287, df = 1, p =< 0.0001$, which means that it is extremely statistically significant.

The relation between use of the additive particles and attitude towards their use is as follows. The C/NC ratio for use of *also* and *too* is 1.27, the C/NC ratio for attitude towards use of *also* and *too* is 0.74. That means that while the majority of subjects still use the additive particles in compliance to I_1, they fail to acknowledge compliant use of them.

5.4.3 I_1: Discussion

The results for the I_1 questionnaire display a high non-compliance rate as well. It is noteworthy, however, that a substraction of G scores results in a C/NC score that is in favour of I_1. All in all, 71 out of 320 responses, 22%, were 'Somewhere between'. Figure 8 shows the distribution of G scores for HRIs in the evaluation or ranking sections of both questionnaires. An explanation of this phenomenon is suggested by the comments subjects give for deviant HRIs: "*also* could be replaced with *too* at the end of the sentence", "It makes sense, but the *also* sounds awkward there.", "better to use *too*", etc. While the comments suggest that there is something unnormal with the sentences in question, they still choose the more neutral response of 'Somewhere between'. This is true even for the most obvious examples, e.g. I1_EVAL_aud_TJ1_D, where subjects were asked to evaluate the second sentence of an audio recording of the following.

(35) *I love you.* ***I also love you.***

Five subjects considered the sentence unnormal (the expected response), one thought it normal, and four subjects chose the option represented by G score, of whom one subject added the comment "I love you *too* would be more natural". Interestingly, subjects were less hesitant with F scores in the ranking sections, where a direct comparison between two sentences was possible: 45 F scores were given in the ranking sections, 37 in the evaluation sections. This compares with 20 G scores in the ranking section, and 45 in the evaluation section. The Pearson product-moment correlation coefficient is exactly -1, showing consummate correlation between these two variables. These considerations strongly support my hypothesis that general rules of conversation, such as the proposed 'Maxim of Agreement' (cf. section 4.2.1.1) have an impact of subjects choice of responses, even in online questionnaires, a fact that should be taken into account for future research and can be expressed as in hypothesis F below.

(36) F: Observed F scores for evaluation tasks in online questionnaires will differ from the expected F scores for the same, in that they will be adjusted downwards due to the interference of a tendency on the side of the subjects to seek agreement with the item to be evaluated.

The high rate of 'Somewhere between' responses for the evaluation and ranking sections also shows that subjects likely have had a sense of the problems an unclassified AC proves for the information structure of a sentence (cf. discussion in section 4.1.4.1). In the comments for the HRIs, analog statements such as "It makes sense, but the *also* sounds awkward *there*" [my italics] are found as well as avoidance strategies ("*also* could be replaced with *too* at the end of the sentence"). This lends further support to the need for an update of I_1, such as undertaken above in I_{1a}.

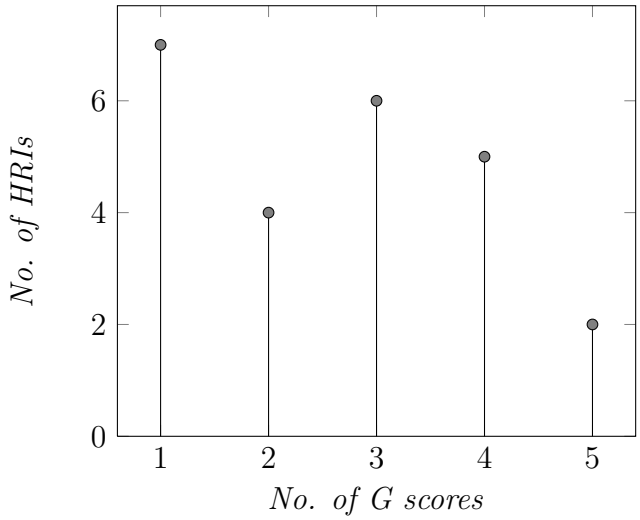

Figure 8: Distribution of G scores over the ranking and evaluation sections of both I_1 questionnaires.

Lastly, another factor likely to skew overall results is the extreme length of some of the HRIs. Comparing the C/NC ratios for the three groups of examples (modelled largely on the respective examples in Gast (2006)) with the mean for number of words gives a correlation coefficient of -0.85, verifying a very strong negative relationship between the length of the example text and the C/NC ratio (cf. Figure 9 below).

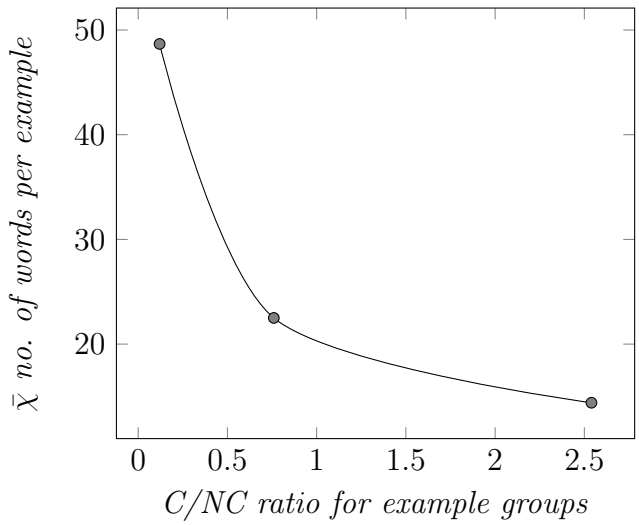

Figure 9: Correlation between length of item texts in the I_1 questionnaires and the no. of G scores.

6 Conclusion

6.1 Methodology for data elicitation in English linguistics

This study has shown that in addition to corpus research, online questionnaires provide a valuable tool in the elicitation of data for linguistic research. Whereas corpus samples must be extracted with the utmost care in order not to risk interference from unwanted variables, the use of questionnaires enables researchers to gain optimal control over what kind of data is elicited. Furthermore, online questionnaires can elicit negative evidence in research environments where such data is highly eligible. Yet other factors have to be taken into account with online questionnaires: The experimental environment itself is not controllable as subjects are spatially remote from the researcher. Additionally, yet unaccounted for variables might still interfere with the results, as clearly shown in the results sections for the single hypotheses, e.g., the tendency of subjects to agree with deviant items due to the artificial conversation structure of a questionnaire (questions are asked, answers are given). Also, it is difficult to test an isolated variable for research sub-

jects such as the distribution of *also* and *too* – which are influenced by more than one variable – as one or more of the other variables may interfere with the results. This was shown to happen with questionnaire results for S_1, where a derivative of S_2, S_{2a} interfered by overruling compliance with S_1.

Moreover, future research of the kind presented in this study should incorporate some methodological fine-tuning. For the present study, the questionnaires were constructed before corpus research was concluded. This prevented the inclusion of the items discussed in section 5.4.1 into the questionnaire. Ideally, questionnaires would play a complementary role, in addition to any autonomous purpose, to corpus research. Their construction should necessarily follow the conclusion of the corpus analysis on the timeline of the research project.

All in all I must nevertheless conclude that with the diverse opportunities of online data elicitation and possibilities to recruit subjects, online questionnaires are a tool that should be employed wherever possible for its customisability, ease of access, and cost-efficiency. Such questionnaires are, if sensibly employed, capable of creating a considerable database of highly specialized and valid linguistic data, albeit with some restrictions.

6.2 The distribution of *also* and *too*

The corpus data elicited for this study lent significant support to the hypotheses concerned with the additive particles' sensitivity to the structural properties of the added constituent. The test of I_1 against corpus data from the BNC, on the other hand, proved to be less straightforward, as three items from the corpus sample seemed to falsify the hypothesis. However, the hypothesis itself was found to be sub-optimal, because it did not take into account different possibilities for the assignment of information-structural properties to the AC. Hence an alternative version of I_1, I_{1a}, was defined to make up for the shortcomings of the original hypothesis. This version, in turn, held true when tested against the deviant item which could not be otherwise analysed as compliant to I_1, or not at all deviant in the first place.

The data elicited via the online questionnaires proved difficult to analyse as it was skewed in most cases. The cause for this was found to always be interference of other variables. Nevertheless the data, which could not have been won through use of other means of elicitation, yielded results in that it defined a hierarchy within the S hypotheses, where S_2 was found to overrule S_1. In the case of I_1, significant support was found for its alternative version I_{1a} which in itself is a favourable result.

In summary, apart from a basic acknowledgement of all hypotheses' validity in terms of their core propositions, no final statement about the factors influencing the distribution of *also* and *too* can be made on the basis of the elicited data. However, insights on other levels gained from the experiment will potentially be of good use for future research into the subject.

References

Ardila, J. A. G (2003). "(Non-Deictic, Socio-Expressive) T-/V-Pronoun Distinction in Spanish/English Formal Locutionary Acts." *Forum for Modern Language Studies* 39, 74–86.

Biber, Douglas (2004). *Longman grammar of spoken and written English.* Harlow: Longman.

Bothe, Stephan (2006). *The distribution of 'also' and 'too'.* Term paper, Free University Berlin, Berlin.

Carter, Roland & McCarthy, Michael (2006). *Cambridge grammar of English: a comprehensive guide ; spoken and written English grammar and usage.* Cambridge: Cambridge Univ. Press.

Davies, Mark (2004). "BYU-BNC: The British National Corpus." http://corpus.byu.edu/bnc.

Doherty, Monika (2005). "Topic-Worthiness in German and English." *Linguistics* 43, 181–206.

DuBois, John W. (1987). "The Discourse Basis of Ergativity." *Language* 63, 805–855.

Evert, Stefan (2006). "How random is a corpus? The library metaphor." *Zeitschrift für Anglistik und Amerikanistik* 54, 177–190.

Fjelkestam-Nilsson, Brita (1983). *"Also" and "too" - A corpus based study of their frequency and use in modern English.* Stockholm studies in English ; 58, Stockholm: Almqvist & Wiksell.

Fodor, Jerry A. (1983). *The modularity of mind: an essay on faculty psychology.* Cambridge, Mass.: MIT Press.

Gast, Volker (2006). "The distribution of also and too: A preliminary corpus study." *Zeitschrift für Anglistik und Amerikanistik* 54, 163–76.

Greenbaum, Sidney & Quirk, Randolph (1970). *Elicitation experiments in English: linguistic studies in use and attitude*. Longman linguistics library, London: Longman.

Hawkins, John A. (1994). *A performance theory of order and constituency*. Cambridge studies in linguistics ; 73, Cambridge: Cambridge Univ. Press.

Hoffmann, Sebastian & Evert, Stefan (2008). "BNCweb (CQP-Edition) 4.2." http://bncweb.lancs.ac.uk/.

Huddleston, Rodney D. & Pullum, Geoffrey K. (2005). *The Cambridge grammar of the English language*. Cambridge: Cambridge Univ. Press.

Jacobson, Sven (1964). *Adverbial positions in English*. Stockholm: Studentbok.

Lee, David YW (2001). "Genres, register, text types, domains, and styles: Clarifying the concepts and navigating a path through the BNC jungle." *Language Learning & Technology* 5, 37–72.

Levin, Harry & Garrett, Peter (1990). "Sentence structure and formality." *Language in Society* 19, 511–520.

Marcus, Mitchell P. (1980). *A theory of syntactic recognition for natural language*. The MIT Press series in artificial intelligence, Cambridge, Mass.: MIT Press.

Quirk, Randolph & Greenbaum, Sidney (1973). *A university grammar of English: based on A grammar of contemporary English by Randolph Quirk*. London: Longman.

Quirk, Randolph, Greenbaum, Sidney, Leech, Geoffrey & Svartvik, Jan (1974). *A grammar of contemporary English*. London: Longman.

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

Reis, Marga & Rosengren, Inger (1997). "A Modular Approach to the Grammar of Additive Particles: The Case of German Auch." *Journal of Semantics* 14, 237–309. 3; 237.

Roget, Peter Mark (1986). *Roget's thesaurus of English words and phrases*. Harlow: Longman.

Seymour-Ure, Colin (1996). *The British press and broadcasting since 1945*. Making contemporary Britain series, Oxford: Blackwell.

A List of HRIs

Table 17: List of HRIs from all questionnaires, including internal ID.

S1		AC	ID
	There is a dual benefit to the consumer: because there is less wastage, the genetically engineered tomatoes ought to be cheaper; and they ought to taste better too .	P	T2
	This seems a splendid book –; excellent text, and as usual faultless on the production side. The photos are extraordinarily clear, too .	S	T4
	They aid by agricultural research, thus improving irrigation, fertilisers, etc. They also intend to increase yields by providing tractors, pumps and other machinery with their project aid.	P	A3
	Hutchence was rushed to hospital suffering from shock. But the star, who also had a number of bruises, later discharged himself.	OC	A5
	The Khmers Rouges are the leading merchants of chaos. But the Phnom Penh government also has its reasons for favouring instability.	S	A1
	But Koresh didn't just take Davidians wives. He demanded their young daughters too , and most parents consented.	OC	T6
	The officer corps was reduced by 50%, with many officers retiring on full pay. The overall size of the army was also cut.	S	A2

	The vast majority of patients suffered much less pain than with conventional surgery. They also recovered more quickly and left the hospital on the day following the operation.	P	A4
	We're giving away thousands of pounds and lots of dazzling diamonds too .	OC	T5
	As well as using dyes, wood can also be coloured using varnish stains.	OC	A6
	Father had a lot of Gaelic words. Mother had a lot of good words too .	S	T3
	You write a very pretty hand and spell tolerably too .	P	T1
S2	Birmingham's museums hold a wealth of artistic treasures, with the finest Pre-Raphaelite collection in the country and a marvellous Impressionist one too.	3+w	A1
	All of the gases present in the atmosphere are also present in surface waters.	2w	A2
	Hutchence was rushed to hospital suffering from shock. But the star, who also had a number of bruises, later discharged himself.	3+w	A3
	A Surform, which is a general purpose plane/rasp, is ideal for working with wood and man-made boards, and can tackle metal and plastic too .	3+w	A4
	As well as using dyes, wood can also be coloured using varnish stains.	2w	A5
	A caution doesn't mean a criminal record but it does mean the police can solve crime with the minimum of fuss. Research also suggests it discourages some people from re-offending.	3+w	A6
	Father had a lot of Gaelic words. Mother had a lot of good words too .	1w	T1
	There is a dual benefit to the consumer: because there is less wastage, the genetically engineered tomatoes ought to be cheaper; and they ought to taste better too .	2w	T2
	We plan to go and visit Bordeaux. We also plan to visit Paris.	1w	T3

	Sue has bought a new skin for her snare drum, and she has also bought sticks.	1w	T4
	But Koresh didn't just take Davidians wives. He demanded their young daughters too , and most parents consented.	2w	T5
	Wetherall, I think, has a first in Chemistry from Sheff. Utd. University. On the other hand, Newsome too could have a degree.	1w	T6
I1	A: Come on in, John and Terry are discussing the new rehearsal times just now. B: Thanks. By the way, what Gillian and I were also discussing yesterday was how we can get paid more for gigs.		GI1
	A: Don't get all worked up, the four of us are merely having a brief chat about how to solve this problem. B: Okay, by the way, what Spencer and myself were also saying the other day - the problem isn't actually such a big issue anymore. A lot has changed for the better, you know.		GI2
	A: So, all in all, gentlemen, I think Peter has made us familiar with most of the important points. But what you, Jones, and Professor Harlow here were also discussing in May - you think that the Fisheries department should merge with the Oceanography department? What for? If you please elaborate a little what your major ideas were then...		GI3
	A: Why are you so sad? B: My house has burnt down, and my wife has also left me.		HO1
	A: What's been happening at the shop then? B: Oh, the boss sacked old Bingham, and the cash register was also stolen from. What a day!		HO2
	A: So you must be thinking, why is this old man crying... B: Not really, I mean, the money is gone for good and your car has also been broken into.		HO3
	A: Come on, have another one! B: Better not, I'm seeing double already and my car also needs someone to drive it.		HO4
	A: I love you B: I also love you		TJ1

A: Paula said she hates being a bus driver. B: John said he also hates being a postman.	TJ2
A: I trust you with this deal, okay? B: Well, I also trust you with it.	TJ3
A: Mum wanted to speak to you about your allowance. B: Well, I also want to speak to Mum about my allowance.	TJ4
A: Sorry, I always seem to misunderstand you. B: Well, I also always seem to misunderstand you.	TJ5

B Zusammenfassung

Diese Arbeit hat einen dualen Charakter, da es ihr Ziel ist, eine praktikable Methodologie für Datenerhebungsexperimente in der anglistischen Linguistik zu entwickeln, während sie gleichzeitig die vorgeschlagenen Methoden anwendet, um eine tatsächliche Fragestellung zu untersuchen: die Verteilung der additiven Partikeln *also* und *too* im Englischen. Traditionell werden Daten für linguistische Forschung per Datenerhebung aus natursprachlichen Korpora erhoben. Obwohl diese Herangehensweise valide ist und in der Tat auch in dieser Arbeit angewandt wird, können Datenerhebungsexperimente an Validität und Informationsgehalt gewinnen, indem sie zusätzlich zur Korpusanalyse Fragebögen hinzuziehen. Besonders Online-Fragebögen sind kosteneffektive und hochgradig anpassbare Werkzeuge um eine linguistische Datenbasis zu schaffen, auf deren Grundlage der Vergleich mit bereits erhobenen Daten durchgeführt werden kann. Für diese Arbeit habe ich sechs Fragebögen erstellt, mit denen drei Hypothesen zur Veteilung von *also* und *too* getestet werden. Zwei interdependente Hypothesen nehmen einen Einfluss von strukturellen Eigenschaften des hinzugefügten Konstituenten auf den Gebrauch der beiden Partikeln an, während die dritte, die Informationsstruktur-Hypothese, davon ausgeht, dass der Gebrauch von *also* und *too* durch die Informationsstruktur des Satzes kontrolliert wird.

Weiterhin wurde eine ausgewogene Stichprobe dem "British National Corpus" entnommen und sowohl mit den Daten anderer Korpusstudien als auch mit den per Online-Fragebögen erhobenen Daten verglichen.

Im Rahmen dieser Arbeit werden die additiven Partikeln definiert in Hinblick auf ihre strukturellen Eigenschaften, und die Hypothesen über ihren Gebrauch eingeführt und dargelegt. Weiterhin wird der Prozess der Datenerhebung expliziert und Ergebnisse aus anderen Studien werden hinzugezogen. Im Anschluss werden die Hypothesen mit Hilfe der durch Korpuserhebung und Fragebögen gewonnenen Daten auf Validität überprüft und die Ergebnisse diskutiert.

Abschliessend betrachte ich sowohl die Ergebnisse der Verteilungsanalyse als auch die methodologischen Mittel und ihren Gebrauch im Kontext der überprüfung der Hypothesen unter Zuhilfenahme der empirischen Daten.