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A corpus-based study of modal adverbs in English from the viewpoint of grammaticalization[*]

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ABSTRACT

This study sheds light on modal adverbs in present-day English with respect to certain processes of linguistic change, paying particular attention to two groups of synonymic expressions: *no doubt*, *doubtless*, *undoubtedly* and *certainly*, *surely*, *definitely*. After extracting data regarding these adverbs from the British National Corpus, the study aims to determine two factors regarding their patterns of occurrences: (i) whether they occur in initial, medial or final position, and (ii) which pronouns fill the Subject slot in their clauses. The results of this analysis show that the modal adverbs differ in the part that they play in fulfilling the communicative function; that is, at a discourse-pragmatic level. Moreover, I suggest that *no doubt* and *surely* are further advanced than the others in the processes of intersubjectification.

1. Introduction

The synonymic expressions *no doubt*, *doubtless*, *undoubtedly* and *certainly*, *surely*, *definitely* are nearly equivalent in meaning to the others of each group, and are thus classified in the same semantic category. As demonstrated by Examples (1a-c) and (2a-c), these six adverbs are used to express a speaker's judgment regarding the certainty or probability of a proposition:

(1)   a. It was *no doubt* clever of him to offer his resignation at that point in
          the proceedings. (Quirk et al. 1985: 622)
      b. You have *doubtless* or *no doubt* heard the news. (Fowler 1998: 230)
      c. During the action the person will *undoubtedly* have certain feelings
          towards it and gain satisfaction from achievement. (ACAD) (Biber
          et al. 1999: 854)

(2)   a. It will *certainly* rain this evening. (Swan 2005: 20)
      b. He has *surely* made a mistake. (Huddleston – Pullum 2002: 767)
      c. Ruth was *definitely* at Goosehill School. (CONV) (Biber et al. 1999: 853)

Despite their similarity in form and meaning, as Biber et al. (1998) mention,
investigating the use and distribution of synonyms in a corpus allows us
to determine their contextual preferences. To conduct the detailed analysis
required to distinguish among them, I investigated corpus data to consider
the functions and patterns of usage of each adverb. Thus, I could identify
the factors significant in predicting each adverb's usage and the way some
differs from the other adverbs.

2. Previous studies

Before commencing the actual study, this section examines the previous
findings regarding the usage of *no doubt*, *doubtless*, and *undoubtedly*. Based
on their research, Huddleston – Pullum (2002: 768) propose that modal
adverbs express one of four levels of strength according to the speaker's
commitment: (i) strong, (ii) quasi-strong, (iii) medium, and (iv) weak. They
place *undoubtedly* into the strong category and *doubtless* into the quasi-strong
category. Biber et al. (1999) classify *no doubt* and *undoubtedly* as doubt and
certainty adverbials, which show the speaker's certainty or doubt about
propositions. In addition, Simon-Vandenbergen – Aijmer (2007: 134) indicate
that in terms of the degree of probability, the meaning of *undoubtedly* is in-
between *certainly* and *no doubt*, and in terms of subjectivity, *undoubtedly*
seems to have a more objective reading than either *certainly* or *no doubt*.
        However, Quirk et al. (1985: 623) mention that similar to *no doubt*,
doubtless implies some doubt and is synonymous with "very probably," while
undoubtedly expresses conviction. In addition, Konishi (2006: 420) points out
that *no doubt* and *doubtless* convey nearly the same meaning, whereas *no
doubt* is a little stronger in meaning than *doubtless*.

Focusing on *no doubt*, Simon-Vandenbergen and Aijmer (2007) reveal the semantics and pragmatics of *no doubt* in various contexts such as expressing a high degree of probability and concessive meaning, and its ability to function as a discourse marker as illustrated in Examples (3a, b):

(3)   a. *No doubt*, money played its part in this (ICE-GB:W2C-007/64)

        b. Britain and Germany will *no doubt* continue to disagree on particular policy issues *but* Chancellor Kohl and John Major clearly feel that the important thing is to have the kind of ongoing relationship … (ICE-GB:S2B-002/105)

Moreover, they show the possibility of the following development of *no doubt* from the viewpoint of grammaticalization:

(4)   Existential   >   *no doubt about it*   >   *no doubt*

        + certain   + certain   + probable

        + objective   ± subjective   + subjective

        (Simon-Vandenbergen – Aijmer 2007: 127)

Turning to the usage of *certainly*, *surely*, and *definitely*, which are all classified into the strong category in Huddleston – Pullum's (2002: 768) classification, the works of Hoye (1997) and Simon-Vandenbergen – Aijmer (2007) reveal some syntagmatic behaviours of the adverbs. Hoye (1997) indicates that *certainly* collocates with all modals, although restrictions apply in the case of combinations with epistemic modals of possibility, as shown by Example (5a). It is also pointed out that *definitely* remains too lexically loaded to occur in the environment of epistemic *must*, where *certainly* may be a more natural choice, as in Example (5b), and it is probably more emphatic in non-epistemic contexts, as in Example (5c):

(5)   a. *He *certainly* might/may be there. (Hoye 1997: 162)

        b. His behavior must *certainly/?definitely* bring him to grief sooner or later. (Ibid.: 163)

        c. I *definitely* won't do it and let that be an end to the discussion! (Ibid.: 163)

Focusing on *surely*, Hoye (1997: 191) states that "regardless of its syntactic position, *surely* functions to seek agreement in anticipation of some opposition

and is not purely used for the reinforcement of truth-value; it also tends to precede a question"[1]. Examples (6a, b) illustrate this point:

(6)   a. *Surely* they couldn't have expected you to complete the project so
           soon (could they)? (Ibid.: 191)
        b. *Surely* the run must be nearly over now. (W. 11.2.203)

In this respect, Simon-Vandenbergen – Aijmer (2007: 119) maintain that "*certainly* expresses certainty based on the speaker's subjective assessment, while *definitely* expresses certainty based on the permanent nature of a state of affairs". With regard to *surely*, they also argue that its functions depend on its position in the clause as well as the context. According to them, when *surely* is in initial position, where it frequently collocates with a modal verb, the speaker very clearly expresses an opinion on what is possible/likely or what is desirable (pp.135-137). On the other hand, when it is in medial position, *surely* is considered to lose its epistemic meaning and functions as an emphasizer or intensifier (pp.138-139).

        Although the existing literature interprets variously the employment of the two groups of synonymic expressions *no doubt*, *doubtless*, *undoubtedly* and *certainly*, *surely*, *definitely*, it offers no clear-cut usage determinant for them. To fill this research gap, this paper proposes some new, clear guidelines for their use from the viewpoint of intersubjectification. The following sections embark upon a further interpretation of the functions of the six modal adverbs, based on the analysis of a large body of language.

3. Data and method

This corpus-based investigation offers the total numbers of occurrences of the two groups of synonymic modal adverbs *no doubt*, *doubtless*, *undoubtedly* and *certainly*, *surely*, *definitely*, which enable us to use quantitative analysis. As the source of the data for analysis, I selected the British National Corpus (BNC) because of its large scale and wide range, and thus ability to provide many instances of the use of the six modal adverbs for various purposes within various contexts[2]. To prepare the data for analysis, I first extracted all

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[1]   A similar view is expressed by Aijmer (2009) and Downing (2001), who consider *surely*
       as mainly challenge and seeking agreement.
[2]   I made use of Mark Davies' freely available on-line interface (http://corpus.byu.edu/
       bnc/).

occurrences of the adverbs from the corpus and identified 5,955 occurrences of *no doubt*, 844 of *doubtless*, and 2,343 of *undoubtedly*; 18,118 of *certainly*, 6,032 of *surely*, and 3,056 of *definitely*. I then examined each occurrence to identify those in which one of the six adverbs functioned as a sentence adverb[3] and identified **2,701** instances of *no doubt*, **731** of *doubtless*, **2,202** of *undoubtedly*; **15,718** of *certainly*, **5,369** of *surely*, and **2,350** of *definitely*. I further conducted quantitative analysis on these in terms of frequency as described in the following sections.

In my analysis of *no doubt*, *doubtless*, *undoubtedly* and *certainly*, *surely*, *definitely*, I focused attention on information provided by the larger context in which those expressions occur, so my primary consideration was investigating the two factors regarding their patterns of occurrence: (i) whether they occur in initial, medial or final position[4], and (ii) which pronouns fill the Subject slot in their clauses. I therefore first determined the number of instances in which each adverb occurred in each position, as well as the number of instances in which it occurred with pronouns, to calculate the frequency of its occurrence in terms of positioning and function. In order to illuminate their functions in detail, I then examined the percentage of occurrences of these adverbs with each of the pronouns in the BNC.

In this study, I attempt to account for the developments of *no doubt* and *surely* as pragmatic markers in terms of (inter)subjectification as in the following:

(7)　　a.　(clause-internal) adverb > conjunction/sentential adverb > pragmatic marker (Brinton 2008: 27)

3　For this analysis, I excluded all the examples of such idiomatic phrases as "slowly but surely" regarding those of *surely*, and excluded those of the modal adverbs modifying not a clause but a phrase in which a comma (,) intensifies the expressed meaning, as in the following:

i　Given the political will, a primitive nationalism can be generated by governments in a remarkably short space of time, *certainly* in less than a generation. (AE8)

ii　…, and that a group of glaucous and ivory gulls were standing around, *no doubt* waiting in the hope of leftovers. (CRJ)

4　In Hoye (1997) and Quirk et al. (1985), the positions in which they appear are presented as follows:

I	(initial)	*Possibly* they may have been sent to London.
iM	(initial-medial)	They *possibly* may have been sent to London.
M	(medial)	They may *possibly* have been sent to London.
mM	(medial-medial)	They may have *possibly* been sent to London.
eM	(end-medial)	They may have been *possibly* sent to London.
iE	(initial-end)	They may have been sent *possibly* to London.
E	(end)	They may have been sent to London *possibly*. (Hoye 1997: 148)

    b. non-/less subjective > subjective > intersubjective (Traugott
       2010: 35; Traugott and Dasher 2002: 225)

In characterizing (inter)subjectivity, we see several notions of subjectivity in cognitive and functional linguistic literature, including Lyons' (1977), Traugott's (1989, 2010), Langacker's (1990, 1999), and Nuyts' (2001, 2012). Focusing on functions of language and its semantic change, I draw on Traugott's stand, which involves synchronic as well as diachronic clines, so subjective meanings can also be intersubjective on the basis of the ambient context.

4. Results and discussion

In this section, I describe the means by which I elucidated the functions of *no doubt*, *doubtless*, *undoubtedly* and *certainly*, *surely*, *definitely* from the perspective of discourse and conversation. First, I determined the frequency with which each adverb occurs in terms of positioning. As shown in Table 1, Biber et al. (1999: 872) identify a tendency for stance adverbials to be positioned in medial positions[5]:

Table 1. Positioning of stance adverbials across registers (Based on Biber et al. [1999: 872])

	Initial position (%)	Medial position (%)	Final position (%)
CONVERSATION	• • •	• • • • • • • • •	• • • • • • •
FICTION	• • • • •	• • • • • • • • • •	• • • •
NEWSPAPER	• • • • • • •	• • • • • • • • • •	• •
ACADEMIC	• • • • • •	• • • • • • • • • • •	•

each • represents 5%

Figs. 1 and 2 illustrate the percentage of total occurrences in which the six adverbs are positioned in the initial, medial, and final position[6], with such

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5   According to Biber et al. (1999), stance adverbials can be classified into three categories: epistemic, attitude, and style adverbials. Epistemic adverbials contain *probably*, *I think*, *in fact*, *really*, *according to*, *mainly*, *generally*, *in my opinion*, *kind of*, *so to speak*, in addition to *no doubt*, *undoubtedly*, *certainly*, and *definitely*; attitude adverbials include *unfortunately*, *to my surprise*, and *hopefully*; and style adverbials include *frankly*, *honestly*, *truthfully*, and *in short*.

6   The data of Figs. 1 and 2 are given in the appendix.

positioning linguistically illustrated in Examples (8a-i) and (9a-i). Despite the tendency for stance adverbials to be positioned in medial positions, we can observe that *no doubt* and *surely* are positioned in the clause-initial position relatively frequently in the BNC. As Halliday – Matthiessen (2004), Hoye (1997), and Halliday (1970) observe, a modal adverb positioned initially expresses the topic or theme of modality[7], so that there is a strong tendency for *no doubt* and *surely* to function as markers of topics in discourse.
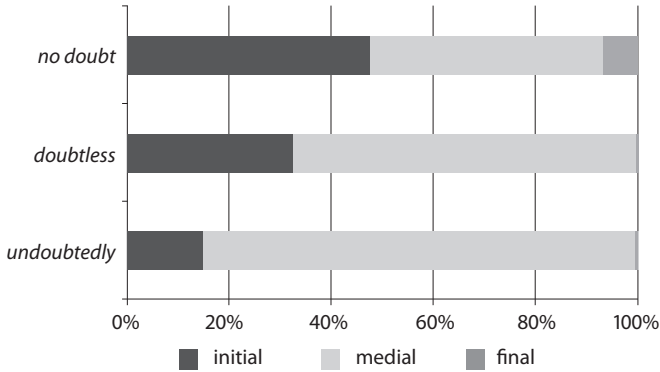

Figure 1. Proportions of the positions of *no doubt*, *doubtless*, and *undoubtedly* (BNC)
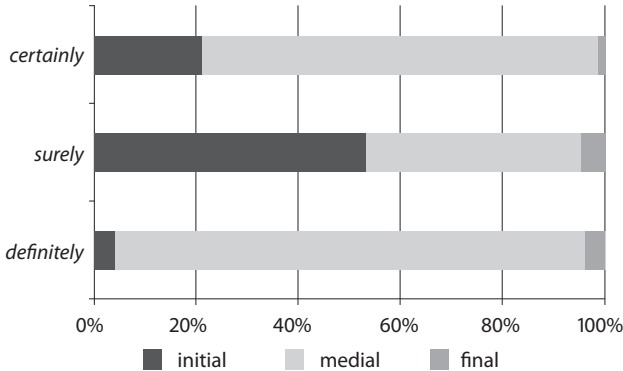
Figure 2. Proportions of the positions of *certainly*, *surely*, and *definitely* (BNC)

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[7]   As Halliday – Matthiessen (2004), Hoye (1997), and Halliday (1970) argue, Examples (i, ii) convey the same meaning in terms of probability, but the use of *possibly* in Example (i) serves the discourse function of expressing the topic or theme.

    i   **Possibly** it was Wren.

   ii   It **may** have been Wren. (Halliday 1970: 335)

Table 2. Frequencies of *no doubt*, *doubtless*, and *undoubtedly* with clause subject pronouns (BNC)[8]

	no doubt		*doubtless*		*undoubtedly*	
	Freq.	Per 1,000	Freq.	Per 1,000	Freq.	Per 1,000
I	49	18.14	9	12.31	9	4.09
you	182	**67.38**	27	36.94	29	13.17
he	209	77.38	49	67.03	90	40.87
she	88	32.58	11	15.05	21	9.54
it	187	69.23	52	71.14	182	82.65
we	55	20.36	4	5.47	13	5.90
they	120	44.43	30	41.04	72	32.70
this	92	34.06	18	24.62	92	41.78
that	28	10.37	9	12.31	24	10.90
these	3	1.11	2	2.74	5	2.27
those	1	0.37	0	0.00	0	0.00

Table 3. Frequencies of *certainly*, *surely*, and *definitely* with clause subject pronouns (BNC)

	certainly		*surely*		*definitely*	
	Freq.	Per 1,000	Freq.	Per 1,000	Freq.	Per 1,000
I	1.413	89.9	110	20.5	272	115.7
you	517	32.9	412	**76.7**	136	57.9
he	928	59.0	303	56.4	139	59.1
she	388	24.7	167	31.1	99	42.1
it	2.531	161.0	672	125.2	270	114.9
we	671	42.7	198	36.9	115	48.9
they	771	49.1	224	41.7	115	48.9
this	380	24.2	245	45.6	57	24.3
that	336	21.4	255	47.5	93	39.6
these	36	2.3	9	1.7	12	5.1
those	13	0.8	2	0.4	1	0.4

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8   In Tables 2 and 3, the raw frequencies of pronouns are given for each form, followed by the normalized figure of the number of occurrences per 1,000 instances.

(8)   a. *No doubt* some of them volunteered for war service a year later. (B1P)

       b. Quarterback Stan Gelbaugh was *no doubt* harbouring similar thoughts. (AKE)

       c. We shall be a bit cold for that reason *no doubt*. (KCN)

       d. *Doubtless* he was trying to convince himself as much as us. (FS0)

       e. The ascent was *doubtless* relatively easy. (EFR)

       f. Other factors contributed to the Tory revival, Scottish hard-headedness about matters of the pocket *doubtless* among them. (AK9)

       g. *Undoubtedly* the product that set the pace was Aldus PageMaker. (G00)

       h. The primary cause was *undoubtedly* a thermal plume. (CKC)

       i. It had its effect on our lives *undoubtedly*, particularly mine. (C8T)

(9)   a. *Certainly* he has never given a hint that he knows anything. (ASN)

       b. He's *certainly* got something to shout about. (K23)

       c. That's usual, *certainly*. (G3E)

       d. *Surely* there are more testing comparisons to be made. (FS8)

       e. Egypt is *surely* the motif of the year. (G06)

       f. That sounds odd though, *surely*. (KPV)

       g. *Definitely* I have some ideas. (CK4)

       h. He is *definitely* in contention. (CH7)

       i. So it's a mapping *definitely*. (GYX)

To support this analysis of *no doubt* and *surely* in interpersonal contexts explicitly, the quantitative distribution of the instances of the six adverbials among the clause subjects is presented in Tables 2 and 3. It is shown that *no doubt* and *surely* display a tendency toward a higher frequency of co-occurrence with clause subject pronoun *you*, in contrast with the other four expressions: *doubtless*, *undoubtedly*, *certainly*, and *definitely*.

This point is linguistically illustrated in Examples (10a, b) and (11a, b), in which as clearly shown by co-occurrence with second-person pronouns (and in interrogatives), we can observe the intersubjective uses of *no doubt* and *surely* occur:

(10)   a. "It means that any office development or commercial of this kind in this I twelve policy that was to occur in Harrogate would not be

counted off the sixty hectares of em erm of I five allocation, it would be in addition to it, and that may be a very important breakthrough for us. Well yes. *No doubt* **you**'ll want to return to that. Thank you very much." (JAD)

b. "… should it ever become necessary to activate this device, I assure you that both I and my staff will be well clear of its effects. *No doubt* **you** are disappointed to hear that." "You're right, Nate." (HJD)

(11) a. Not so very. Not so very. You know her. I think you know her. Anyway you know all about her, for I have told you. And you have seen her. *Surely* **you** remember her? They say she is very clever and will keep my house well. This is more important than a long nose, don't you think? (CDX)

b. Obviously, you're fond of him, but *surely* **you** can see? His accent, Edouard. You'll never eliminate it altogether, you know. (C8S)

Moreover, the marked pattern of the use in interrogative contexts can be observed in the BNC. The following are examples of *no doubt* and *surely* used as metalinguistic devices to confirm or emphasize information and understanding between the speaker and hearer; that is, to fulfill interpersonal functions:

(12) a. **You** have heard different versions, *no doubt*? (G1A)
b. And then **you** called in the Royal Oxford, *no doubt*? (HWM)
c. **You** have read it, *no doubt*? (GVP)
d. **You** have heard of Vechey's death, *no doubt*? (H98)

(13) a. **You** don't have to eat the skin, *surely*? (KBW)
b. **You** can wait until then, *surely*? (EVC)
c. **You** wouldn't destroy it, *surely*? (HNJ)
d. Oh **you** can grate the cheese *surely*? (KD5)

In a nutshell, *no doubt* and *surely* evolve from modal adverbs to pragmatic markers, and come to serve interpersonal functions. Thus, the two adverbs have undergone the changes identified with intersubjectification, as shown in Table 4:

Table 4. Summary of the six modal adverbs

no doubt, surely		
doubtless, undoubtedly, certainly, definitely		
adverb	>	**pragmatic marker**
epistemic	>	**interpersonal**
subjective	>	**intersubjective**
intersubjectification		

5. Conclusion

This study examined the modal sub-systems of *no doubt*, *doubtless*, *undoubtedly* and *certainly*, *surely*, *definitely* from a functional perspective. In particular, examining the functions of the six adverbs from the viewpoints of discourse and conversation, I demonstrated that *no doubt* and *surely* differ in the parts that they play at the discourse-pragmatic level.

I also elucidated that intersubjectification; that is, focus on the addressee, motivates the semantic changes affecting no doubt and surely. It follows that the evolutions of the modal adverbs are best understood as the processes of intersubjectification, and that Traugott's stand on (inter) subjectification is generally valid in analyzing the use of modal adverbs, such as those examined in this study.

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APPENDIX

Data for Figs. 1 and 2

Form	Initial	Medial	Final	Total
no doubt	1,288	1,237	176	2,701
doubtless	237	492	2	731
undoubtedly	325	1,873	4	2,202

Form	Initial	Medial	Final	Total
certainly	3,261	12,218	239	15,718
surely	2,863	2,275	231	5,369
definitely	89	2,183	78	2,350