

THE ROLE OF THE DEVELOPMENT OF DISCOURSE MARKERS IN A THEORY OF GRAMMATICALIZATION

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1. Introduction¹

This paper concerns some interactions between syntax, pragmatics, and semantics exemplified by the development of the Discourse Markers indeed, in fact, besides, and what role they might play in a theory of grammaticalization, especially of the unidirectionality of grammaticalization.

Nominal clines (nominal adposition > case) and verbal clines (main verb > tense, aspect, mood marker) are staples of grammaticalization theory. I will argue that a further cline: Clause-internal Adverbial > Sentence Adverbial > Discourse Particle (of which Discourse Markers are a subtype) should be added to the inventory. In some languages like English this cline involves increased syntactic freedom and scope, and therefore violates the principles of bonding and reduced scope frequently associated with grammaticalization. It nevertheless illustrates a cluster of other long-attested structural characteristics of early grammaticalization, specifically decategorialization, phonological reduction, and generalization; it also illustrates a number of more recently recognized characteristics, especially pragmatic strengthening and subjectification. I will suggest that these characteristics should be considered salient to grammaticalization, but decrease in syntactic freedom and scope should not

Furthermore, I will argue that grammaticalization is the process whereby lexical material in highly constrained pragmatic and morphosyntactic contexts becomes grammatical, in other words that lexical material in specifiable syntactic functions comes to participate in the structural texture of the language, especially its morphosyntactic constructions. The mechanism that brings about particular instances of grammaticalization is local reanalysis. How we should think of this local reanalysis and its relation to analogy and extension has been the topic of much recent research (e.g. Hopper and Traugott 1993: Chap. 3, Roberts 1993, Tabor 1994, Harris and Campbell 1995: Chap. 4, Vincent 1997). My interest here is not in mechanisms but primarily in the processes--the interactions of syntax with semantics, of structure with use--that sow the seeds for reanalysis and analogy in the first place.

"Grammaticalization is the process whereby lexical material in highly constrained pragmatic and morphosyntactic contexts becomes grammatical" is a unidirectional statement, in so far as it predicts that grammatical material will not become lexical. So are other formulations in different traditions from the functional one adopted here. For example, in his study of the history of the habere auxiliary in Romance within a GB framework, Roberts subsumes grammaticalization under optimization of grammars:

Diachronic Reanalysis [of a lexical head as a functional head] is driven by the operation of the Least Effort Strategy in acquisition. There is a real sense then in which Diachronic Reanalysis leads to a local simplification in a grammar

(Roberts 1993:251)).

Indeed, unidirectionality in various forms has been one of the strongest hypotheses associated with grammaticalization theory. Like any good hypothesis, unidirectionality has been used as a gatekeeper to assess whether some change X is or is not a case of grammaticalization. Some

researchers would exclude the development of discourse markers (DMs) from grammaticalization in part because of it (and in some cases in part because they are not considered to be components of grammar). Like any good hypothesis, unidirectionality has also rightly been challenged. I will argue that there are not only compelling reasons to include the development of DMs in a theory of grammaticalization, but there are also compelling reasons to maintain a hypothesis of unidirectionality, albeit a richer and rather different one from the standard hypothesis.

The structure of the paper is as follows. Section 2 outlines the relevant issues in unidirectionality, Section 3 defines DMs and illustrates their development, Section 4 evaluates the evidence from DMs for a theory of unidirectionality, and Section 5 discusses what they suggest for a definition of grammaticalization.

2. Unidirectionality

The hypothesis of unidirectionality has a long history going back to Gabelentz and before. In 1912 Meillet wrote of grammaticalization as le passage d'un mot autonome au rôle d'élément grammatical "the passage of an autonomous word into the role of grammatical element" (Meillet 1912:131). Givón's slogan: "Today's morphology is yesterday's syntax" (Givón 1971:413) became the catalyst for a number of studies in the '70's and early '80's that correlated and sometimes even equated grammaticalization with structural changes such as ossification, idiomatization, attrition and loss. In particular, Lehmann (1995[1982], 1985 and passim), Bybee (1985 and passim) and others have tended to define grammaticalization in terms of increased morphosyntactic fusion and loss of syntactic freedom. It is exemplified (ad nauseam perhaps) by the well-known development of the future in Romance languages, as in Late Lat. cantare habeo 'sing-INF have-1Sg 'I have to sing' > Fr. je chanterai, Sp. cantaré, It. canterò 'I will sing'.²

A more recent hypothesis associated with the work of Bybee, Heine, Sweetser, myself and many others is that there is a parallel semantic change from concrete to abstract (e. g. locative adposition > tense marker). Here much of the metalanguage correlates semantic loss or bleaching with grammaticalization.³ The morphosyntactic and pragmatic-semantic hypotheses were combined in an early definition by Heine and Reh that reads:

With the term "grammaticalization" we refer essentially to an evolution whereby linguistic units lose in semantic complexity, pragmatic significance, syntactic freedom, and phonetic substance

(Heine and Reh 1984:15)

This is a model of attrition, a "sink" model where everything reduces ultimately to zero. Many arguments have been leveled in the last decade against the claim about loss of pragmatic significance. I have proposed that pragmatic strengthening, not weakening, occurs in the early stages of grammaticalization (e.g. Traugott 1988, Traugott and König 1991, Hopper and Traugott 1993: Chap. 4; see also Sweetser 1988).⁴ For example when go-verbs become future markers, even though the semantics of motion may be weakened or "bleached", the original invited inferences and conversational implicatures of intention and futurity are strengthened.⁵ Arguments have also been put forward that meanings tend to shift toward greater subjectivity, that is, they become increasingly associated with speaker attitude, especially metatextual⁶ attitude toward discourse flow (e.g. Traugott 1989, 1995). It now appears to be quite widely agreed by those who study grammaticalization from a semantic-pragmatic perspective that, in early stages of grammaticalization, pragmatic significance and subjective expressiveness increase (e.g. Heine, Claudi, Hünemeyer 1991, Andersen 1993, Pagliuca 1994, and several papers at this conference).

Another aspect of the Heine and Reh definition that has come under attack is the alleged loss of syntactic freedom. In the context of a more elaborate discussion of several "parameters and processes" of grammaticalization, Lehmann (1985:309, 1995:164[1982]; see Table I) identifies "scope", "bondedness", and "syntagmatic variability" as three "parameters" that shift during grammaticalization from relative freedom to relative lack of it:

parameter	weak GR	process	strong GR
scope	item relates to constituent of arbitrary complexity	<i>condensation</i>	item modifies word or stem
bondedness	item independently juxtaposed	<i>coalescence</i>	item = affix, phonol, feature or carrier
syntagmic variability	item can be shifted around freely	<i>fixation</i>	item occupies fixed slot

Table I
Lehmann (1995:164[1982])
Correlation of grammaticalization processes (excerpt)

Similarly, Bybee, Pagliuca and Perkins (1991) argue that degrees of dependence, fusion (or coalescence) and shortness are correlated in grammaticalization of grams (or morphemes). Several counterexamples to reduction in scope and increase in bonding have been adduced. Arguments against scope reduction will be discussed in Section 4 below. Particularly important with respect to bonding are Jeffers and Zwicky (1980), in which the decliticization of Indo-European relative/indefinite/interrogative clitics into independent, isolated words is discussed.⁷ Likewise Campbell (1991) and Harris and Campbell (1995) point to the decliticization into adverb particles of Estonian *ep* 'yes, indeed, just so, then', and of the question particle *es*.

Particularly startling are cases in Japanese where an earlier clause-final clitic is "ripped off" from its host and adjoined to a main clause. Matsumoto (1988) documented the detaching of the concessive subordinate clause-final *-ga* in Japanese and its development as a clause-initial weakly adversative conjunction. More detailed investigations by Onodera (1993, 1995) show that this kind of change involving clause-final subordinators > main clause initial discourse-marking elements, which I will call "discourse particles", occurred several times in Japanese. E.g. *V-te mo* (*-te* 'gerund' + *mo* 'but') > *demo*:

Stage I from 11th century on; adversative, within one turn:

- (1) Akekure, mitate matsurite mo,
Morning:evening see:off HUM-GER but
'Although morning and evening I bid farewell to (Ukifune)
akazu oboe tamai
dear seem HON
she remains so dear in my mind'

(c. 1008 Tale of Genji; Nurse lamenting Lady Ukifune's
death [Onodera 1995: 403])

Stage II from 16th century; discourse particle used by Speaker B to refute interlocutor (Speaker A)'s claim:

- (2) A. Shikashi, aitsu o
But, that DO

'But, if/although (the thief)
 motte itte mo, nan
 bring-GER go-GER but, any
 robs it the purse), it
 no yaku ni tatsu mai
 be of use NEG
 will be of no use'

B. Demo omee, kane ga
 But you, money SB
 'But there's money in it,
 haitte iru jaa nee kai
 is TAG
 isn't there, man?'

(1775 Edo humorous story [Ibid.: 406])

Note the coexistence of the old -te mo ('even if') alongside of the new demo. Such coexistence is an example of "layering" (Hopper 1991), a characteristic, though not criterial, property of grammaticalization.⁸

Stage III contemporary; discourse particle used to claim floor and change sub-topic:

(3) Demo, nihon ni kaettara tanoshimi desu ne
 But, Japan to go:back fun COP FOCPART
 'But, it will be fun, won't it, when you go back to Japan?'

(Onodera's friend talking after a pause [Ibid.: 409])

Note the overall development illustrates not only increased structural freedom, but also increased subjectification from an already weakly subjective concessive to an interpersonal (addressee-oriented) marker and finally to a marker of the speaker's self-oriented attitude to her turn.

The Japanese examples challenge the force of both bonding and scope since they illustrate both detachment and also relation to constituents of increasing complexity. At Stage III, demo comes to be adjoined to a main clause, thereby acquiring larger syntactic scope than at Stage I or II.

The examples also raise larger questions, such as:

a) whether there are cross-linguistic generalizations to be made about the development of discourse particles in terms of both their likely syntactic sources and their semantic-pragmatic paths,

and, of particular interest to us here,

b) what status should be assigned to the changes.

Four answers have been proposed with respect to the status of the changes, all with attendant problems. The first three appear to presuppose a theory of grammar that does not include pragmatics, and a theory of grammaticalization that assumes loss of morphosyntactic freedom is criterial to grammaticalization:

a) Lexicalization: Campbell (1991) says the development of Estonian ep and es is lexicalization. This captures the univerbation and syntactic independence of many of the items under discussion, but has significant problems. For one, the types of items under discussion do not acquire the status of major categories. Many of the examples under discussion, including those Campbell cites, are syntactically and prosodically quite constrained. Although in English, Japanese and some other languages like Yucatec Maya (Solomon 1995), discourse particles tend to be clause-initial adjuncts, cross-linguistically we find that many of them, including Campbell's es and ep appear in Wackernagel's position (Campbell 1991:292). Others may be clause-final clitics; for example, Brody (1989) discusses sentence-final clitics meaning 'anyway', in Tojolabal Mayan.

b) Pragmaticalization. This is the term widely used in Sweden with reference to the development of various particles with discourse function, e.g. Erman and Kotsinas (1993) and Aijmer (1994) speak of "pragmaticalization" of y'know, I think. The term captures the fact that the items in their stages as discourse particles have major pragmatic functions. They express speaker attitude to what has gone before, what follows, the discourse situation, and so forth. However, the grounds for claiming that grammaticalization is not at issue are questionable. For example, Aijmer claims that some elements like I think are pragmaticalized, but tense, aspect, and mood are not. In the linguistic literature, tense, aspect and mood are often treated as syntactic or semantic categories, and may not appear to be as obviously pragmatic as discourse particles, but they have pragmatic functions in most, may be all, languages. We need only think of the English pragmatic use of past for politeness as in What was your name?, the well-known backgrounding and foregrounding functions of aspect (e.g. Hopper 1979), uses of the narrative present (Schiffrin 1981, Wolfson 1982), or of tense and modality in free indirect discourse (e.g. Banfield 1982, Fludernik 1993).

c) Postgrammaticalization. This is a term suggested by Vincent, Votre, LaForest (1993) in their synchronic study of French discourse particles and back-channelers, e.g. Quebec Fr. là, Port. né. Despite the diachronic sound of the term, no prior historically more grammatical stage seems to be posited by the authors. Rather, it seems to mean pragmaticalization, and migration to an "extra-grammatical" level.

d) Grammaticalization. This is how Onodera (1993, 1995) has analyzed the development of demo and other discourse particles in Japanese. Similarly, Brinton (1990, 1996) has claimed grammaticalization for a diverse group of English discourse particles like hwæt, anon, bifel, I gesse, and Lehti-Eklund (1990) for adverbials in Swedish. If it is grammaticalization, then we have to rethink not only the criteriality of morphosyntactic coalescence and fixation, but also the nature of grammar.

The view of grammar adopted here is that it structures cognitive *and* communicative aspects of language. It encompasses not only phonology, morphosyntax and semantics but also inferences that arise out of linguistic form, in other words, linguistic pragmatics such as topicalization, deixis. On this view, other kinds of pragmatics including encyclopedic knowledge are not part of grammar, but are important in the speaker-addressee negotiation that motivates change.

3. Discourse Markers

DMs are a category widely recognized since Schiffrin's groundbreaking book (1987) on the subject. This book has served as the impetus for a large number of studies of items the prime function of which is to "bracket discourse", that is, to mark relations between sequentially dependent units of discourse. These items are all primarily pragmatic, or at least non-truth-functional, which may account for why they have been largely ignored until the last few years.⁹ Without question they also fill a syntactic slot, and have highly constrained syntactic as well as intonational properties. They are therefore "part of the grammar of a language" (Fraser 1988:32), even though they are pragmatic in function.

Schiffrin discussed a fairly wide range of items under "Discourse Markers". I will take a more restrictive view of Discourse Markers, following Fraser (1988¹⁰ and 1990), and treat as DMs the subset that Schiffrin (1987, 1990) calls "discourse deictics", the prime purpose of which is to:

signal a comment specifying the type of sequential discourse relationship that holds between the current utterance ... and the prior discourse
(Fraser 1988:21-22).¹¹

The "current utterance" may be minimal--one breath unit (in speech) or one sentence (in written language) or relatively long. "Prior discourse" may be an actual utterance or one that can be contextually reconstructed. An example is so, as in "So it is my privilege to introduce ..." (used as the first utterance in an introduction to a colloquium); so links the speech to the audience's expectation of an introduction in the wider discourse context of "a colloquium". As the definitions suggest:

the absence of the Discourse Marker does not render a sentence ungrammatical and/or unintelligible. It does, however, remove a powerful clue about what commitment the speaker makes regarding the relationship between the current utterance and the prior discourse

(Fraser 1988:22).

What DMs do is allow speakers to display their evaluation not of the content of what is said, but of the way it is put together, in other words, they do metatextual work.

In Present Day-English (PDE), DMs can and often do occur as disjuncts in initial position. It has frequently been pointed out that what meanings an adverb may have is highly correlated with possible positions in a sentence (see Jackendoff 1972, Ernst 1984, Quirk et al. 1985 on English; Ducrot 1980 on French; Kroon 1995 on Latin), as in:

- (4) a. She spoke well
b. Well, she spoke
- (5) a. Many people hated it indeed
b. Indeed, many people hated it

(Ernst 1984:202)

Three positions are of special interest to us:

- a) toward the end of the clause, where the adverb is often an oblique argument; in this function I will call it a verbal adverbial (VAdv)
- b) following the tensed verb, or immediately following Comp; if it occurs in these positions, I will call it a sentential adverb (IPAdv)
- c) on the left periphery of the sentence, where it is often disjunct (termed "adjunct", "disjunct", or "adjoined", but in any case, often in an independent breath unit carrying a special intonation and stress pattern (see Allerton and Cruttendon 1974)); in this position I will call it a DM.

Most analyses of adverbials and pragmatic markers conflate the IPAdv and DM functions. For example, Biber and Finegan in their seminal (1988) paper on "stance adverbs" conflate them as IPAdv, Fraser (1988, 1990) conflates them as DMs. However, they are different syntactically, semantically, pragmatically, and intonationally (see Ferrara 1997 on anyway).

3.1. A contemporary example

Contemporary examples of the functional and positional distinctions can be illustrated with in fact. In (6), fact is an abstract mass noun contrasted with sensationalism:

- (6) "Many of my friends have urged me to issue a point-by-point denial of the book's many outrages. To do so would, I feel, provide legitimacy to a book that has no basis in fact and serves no decent purpose," the former president said.

"I have an abiding faith that the American people will judge this book for what it really is: sensationalism whose sole purpose is enriching its author and its publisher," said Reagan.

(8 April 1991, United Press International (UPI))

In (7) in fact asserts the truth of what follows, despite contrary expectations:

- (7) In terms of discourse structure, we might expect there to be

radical differences between messages and dialogue, but in fact there are interesting similarities

(1989 Ball et al., Answers and Questions, p. 60)¹²

In (8) it confirms a preceding formulation (i.e. is anaphoric) and promises to elaborate (i.e. is cataphoric); more particularly, it introduces an explanation of not ... the oldest in the preceding clause:

(8) Polling isn't The World's Oldest Profession, although around election time it might seem like it. In fact, once upon a time, way back in the first third of this benighted century, modern polling wasn't yet even a gleam in the eye of a small-town Iowa kid named George Gallup.

(Oct. 8 1990, UPI)

The English disjunct position illustrated in (8) is very old, dating back to Proto Germanic, and indeed to Indo-European. There are "two left-peripheral operator positions" (Kiparsky 1995:141), an inner one that hosted focal elements, and an outer which "can be preceded by a topicalized/left dislocated element adjoined to CP" (ibid:140).¹³ In OE many adverbs trigger V2, most especially þa 'then', her 'in this year', ne 'not', and Kiparsky analyses these as focused elements that behave exactly like wh-elements with respect to placement of finite verbs and subject clitics (ibid.:147). Most other adverbs can be "fronted" into topic position, including many that are manner adverbs such as soðlice 'truly', witodlice 'assuredly', gewislice 'certainly' (Swan 1988, 1994).¹⁴ Over the centuries, the number of adverbs functioning as pragmatic markers, including DMs in Fraser's sense, has increased, but the position and the functions appear to have existed for millennia.

In PDE the three DMs that we will be looking at (indeed, in fact, anyway) "signal that the current utterance constitutes an elaboration of an earlier one" (Fraser 1988:31).¹⁵ They may be register related, specifically related to expository discourse, but such constraints can not be entered into here.

Indeed, which developed in the Middle English (ME) period, and in fact, which developed in the Early Modern English (EMdE) period, have remarkably similar histories.¹⁶ They are of particular interest because deed (originally 'doing, act(ion)') is etymologically a Germanic term, while fact (originally 'doing', 'act(ion)') was borrowed from Latin. Both derive from a verb meaning 'do'; both came in prepositional constructions to have epistemic and metatextual meanings concerned with factuality and certainty; and both came to be DMs, but several hundred years apart (in fact is a classic case of "renewal", see Meillet (1915-16)).

3.3. Indeed

A short sketch of indeed shows that deed was originally (and continues to be) a lexical noun (9):

Stage 0: Full Lexical N

(9) nis hare nan þe ne ... gulted ilome oðer i
NEG:is they:GEN NEG:one that not ... sins much either in
fol semblant oder in vuel dede
foolish display or in evil deed

'there is none of them that does not ... sin greatly either in foolish display or evil action'

(c. 1225 Sawles Warde, p. 167 [HC])

By the early Middle English period it was routinely used in bare PPs meaning 'in action', many of them formulaic, as in:

(10) Al þat þou hauest her bifore I-do, In þohut, in speche,

All that thou hast here before done, in thought, in speech,
 and in dede. In euiche operes kunnes quede, Ich þe forzeue
 and in action, in each other kind's evil, I thee forgive
 'I forgive thee for all that you have done heretofore, in thought, in speech, in action,
 and in evils of every other kind'

(c. 1300 Fox&Wolf, p. 34 [HC])

Stage I: Adverbial Phrase

In such formulae in dede 'in action' could invite the inference that the event was observable. In this bare PP construction in dede came to be endowed with evidential (i.e. epistemic) modal meanings ('in action/practice' > 'in actuality, certainly'). It was often used contrastively (in (11a) actuality vs. opinion, in (11b) actuality vs. untruth). As König (1991a) has observed in connection with markers of precision (precisely, verily), '[a]n emphatic assertion that something is truly ('verily') the case is only called for in problematic contexts, i.e. in those cases in which the focused expression is a remarkable and thus highly unlikely value for a propositional schema' (1991a:138; see also 1991b):

(11) a. ofte in storial mateer scripture rehersith the comune
 often in historical matters scripture repeats the common
 opynoun of men, and affirmeth not, that it was so in dede
 opinion of men, and affirms not, that it was so in fact
 'often where matters of history are concerned, scripture repeats men's common
 opinion, but does not affirm that it was so in actuality [rather than opinion]'

(c. 1388 Purvey Wycliffe Prol I, 56 [HC])

b. and sworn vpon a bok to sey the playn trouth and
 and sworn on a book to say the plain truth and
 nouzt to mene it with eny ontrouth for hate or
 not to mingle it with any untruth for hate or
 euel will neiþer for loue ner fauour but plainly
 evil will neither for love nor favor but plainly
 report as it was in dede nouzt sparing for no persone
 report as it was in fact not sparing for no person
 'and was sworn on a book to say the plain truth and not mix it with any untruth
 because of hate, evil will, love, or favor, but plainly report it as was in actuality,
 not sparing anyone'

(1437 Doc. Chancery, p.168 [HC])

Stage II: Sentential adverb

As a fixed adverbial phrase in dede appears to have had pragmatically ambiguous wide (sentential) as well as narrow (clause-internal) scope (for pragmatic ambiguity, see Horn 1985, Sweetser 1990). By the beginning of the EMdE period indeed in the evidential/epistemic sense illustrated in (11) begins to be found in clause-initial position (see (12)), where it has unambiguous syntactic sentential scope. Early examples in the Helsinki Corpus occur primarily in the context of but, or though, and suggest that indeed with its invited inferences of contrast as in (11) could be fronted in discourse use to highlight and strengthen an already well established adversative conjunction. In this contrastive function it could be used to refute either an earlier argument, or one presupposed to be in the hearer's mind. For example, (12) is about teachers attempting to balance the self-esteem of those 'noble' children who are not as knowledgeable as the 'inferior' children. Since the 'inferior' children are better educated they might be expected to 'vanquish' (succeed, get the prizes). The teachers deliberately set up contests:

(12) somtyme purposely suffring [allowing] the more noble children to vainquysse, and, as it were, gyuying to them place and soueraintie, thoughe in dede the inferiour chyldren haue more lernyng.

(1531 Governor, p 21 [HC])

Over time the overt adversative marker ceased to be required to license fronting, and indeed alone serves to carry the pragmatic weight of adversative. As a sentential adverb it invokes scalarity:¹⁷

(13) Kenney, the son of a career foreign service officer, said the administration is failing to see that the mayhem in Bosnia-Herzegovina will spread to neighboring regions and perhaps all of Europe.

"It wasn't clear to people within the State Department until mid-April that indeed Bosnia was going to be engulfed in fighting," he said. "It should have been clear a month or two months earlier that this was likely."

(3 Sept. 1992, UPI)

Stage III: Discourse Marker

By the seventeenth century we begin also to find clause-initial meanings involving elaboration, clarification of discourse intent, in other words full DM function. As a DM, indeed retains some contrastive function, especially in the earlier examples, where it confirms and elaborates in face of some question or possible doubt; this elaboration is an extension into the discourse domain of the scalar function, introducing as it does a fuller and more informative rendering than was available before:

(14) a. *Dan.* Is it any trouble of conscience for sinne? If it be, that may turne to good.

Sam. O, no, no. I know no cause why.

Dan. Why, what is it then, if I maybe so bold, I pray you tell me. I thinke you take me for your friend.

Sam. In deede I haue alwaies found you my very good friend, and I am sure you will giue me the best counseil you can

(1593 Witches, p. A4V [HC])

b. any a one that is not well, comes farre and neere in hope to be made well: indeed I did heare that it had done much good, and that it hath a rare operation to expell or kill diuers maladies

(1630 PennilessPilgrimage, p. 131.C1 [HC])

c. thereby [the flea is] inabled to walk very securely both on the skin and hair; and indeed this contrivance of the feet is very curious, for performing both these requisite motions

(1665 Micrographia, p. 212 [HC])¹⁸

3.2. In fact

Quite similar stages are evidenced for in fact.¹⁹ The first examples of fact show that it was a noun with the meaning 'deed':

Stage 0: Full Lexical N

(15) For the whiche noble facte, the kynge created hym afterwarde duke of Norfolke

(1543 Grafton Contn. Harding 603 [OED])

Stage I: Adverbial Phrase

The first instances of fact in the in-construction in the Helsinki Corpus already have abstract evidential/epistemic meanings related to 'reality, truth'; like indeed at Stage I, they are used formulaically, typically as adverbials of respect, answering the question "in what respect":

(16) But it is evident in fact and experience that there is no such universal Judge,

appointed by God over the whole World, to decide all Cases of temporal Right
(1671 Sermons Tillotson. p. 445 [HC])

This in fact becomes frozen as a bare PP construction by the mid-eighteenth century. An interesting example is provided by (17a) where the context is contrastive (the custom is not a laughing matter):

(17) a. You were pleased before to make some reflections on this custom, and laugh at the irresolution of our free-thinkers: but I can aver for matter of fact, that they have often recommended it by their example as well as arguments... In whatever light you may consider it, this is in fact a solid benefit: but the best effect of our principles is that light and truth so visibly spread abroad in the world.

(1732 Berkeley, Alciph. ii. sect.24)

In (17b) the phrase immediately follows another adverbial with similar meaning and, like it, appears to have pragmatic wide scope.

(17) b. We only find, that the one does actually, in fact, follow the other.
(1748 Hume, Enq. Hum. Und. 7 Pt, p.63)

Stage II: Sentence Adverbial

As in the case of indeed, in fact comes to be fronted where it is used primarily either in the context of but, or in contrast to some expectation:

(18) a. ... arriving at a concluding idea. The number of fractions bring it no nearer the last division than the first idea it formed. Every particle eludes the grasp by a new fraction, like quicksilver, when we endeavour to seize it. But as in fact there must be something which terminates the idea of every finite quantity ...

(1739-40 Hume, Treatise Hum. Nat. Bk. 1 p. 44)

b. why may we not expect ... greater benevolence and moderation, from persons who are set apart for religion, who are continually inculcating it upon others, and who must themselves imbibe a greater share of it? Whence comes it then, that, in fact, the utmost a wise magistrate can propose with regard to popular religions, is, as far as possible, to make a saving game of it ...?

(publ. 1779 Hume Dial. Nat. Relig. Pt.12, p. 223)

The rapid development of the IPAdv use of in fact may be due to analogy with indeed.

Stage III: Discourse Marker

In fact is found as an adjunct and is primarily elaborative in function, at the beginning of the nineteenth century:

(19) a. I should not have used the expression. In fact, it does not concern you--- it concerns only myself

(1815 Austen, Emma, Vol. 3, Chap. 10, p. 393)

b. [Of Request-Response pairs] Between the request and the response a special type of cohesive relation (Schiffrin 87) exists, similar to that which binds question-answer pairs. In fact, we claim that at the level of discourse interpretation, the request and response form a discontinuous predicate-argument structure

(1989 Ball, Analyzing discourses, p. 268)²⁰

3.4. Besides

My last example, besides, has its origins in a locative phrase derived by grammaticalization of an adposition (literally 'by side of') to a preposition/adverb. In early Middle English the form is

beside/besides in both uses (the -es is a genitive adverbial affix, as in twice < twi-es, betimes). Besides was later selected as the form for the IPAdv. Once the VAdv of extent came into being it illustrates the same kind of development as in deed and in fact.

Stage 0: Full Lexical N

(20) & þonne licge on ða swiðran sidan gode hwile
& then lie on the right side good while
'and then lie on your right side for a good while'

(850-950 Lacnunga Magic&Med., p. 120 [HC])

Early examples of the locative adverbial meaning 'at the side, near' are:

(21) a. His pic he heold bi-siden

'He held his staff at his side'

(1225 Lay. Brut 30784 [MED])

b. þe barons astunte wipoute toun biside & vaire sende in to þe toun to þe king
hor sonde

'the barons stood outside the town nearby and duly sent in to the town to the
king their messenger'

(c. 1300 Robert of Gloucester, p. 748 [HC])

According to the Middle English Dictionary, the adverb and the preposition are occasionally found in non-locative contexts, with a meaning of extension or addition, for example:

(22) a. Heo letten forð bi-siden an oþer folc riden, ten þusend kempen

'They sent another army forth in addition, 10,000 warriors'

(1225 Lay Brut 5498 [MED])

However, they do not appear in the ME part of the Helsinki Corpus until the middle of the fifteenth century, and even then only rarely.

One of the earliest examples in the Helsinki Corpus of besides in the meaning of extension is prepositional. The significance of colors is being discussed:

(22) b. alle maner off colourys representyng; but in specyal a fatyd blw, and a fatyd blak,
that in specyal this cercyl ['circle'] stondyth by; and be-syde thise ther be in that
cercyl pale spottys, or yewlu ...

'representing all kinds of colors; but especially a faded blue, and a
faded black, by which in particular this circle signifies; and in addition
to this there are in that circle spots that are pale, or yellow...'

(bef. 1450 Metham, p.127 [HC])

Stage I: Adverbial of extension

In the earliest part of the EMdE period, the situation has changed and beside(s) is used as an adverbial of extension as well as of location:

(23) a. In whiche albeit thei ment as muche honor to hys grace as wealthe to al the
realm beside, yet were they not sure howe hys grace woulde take it, whom they
would in no wyse offende.

(1514-18 More, History of Richard III, p. 78)

Sometimes this adverb of extension in the physical world is used in contexts which implicate a metatextual extension in the discourse world. In this case the extension is pragmatically implicated to be marginal, an "aside". This meaning derives directly from the original locative: what is at the side is typically not central (at the center) or on the front-back axis that is the default schema for the "grammar of space" (see Svorou 1993). In (23b) beside contrasts with chiefly, and so extends the description with what is construed as an additional, minor detail:

(23) b. The toun of Chester is chiefly one streate of very meane building yn lenght:
ther is beside a smaull streat or 2. about the chirch; that is collegiatid, and hath a

dene and prebendaries, but it is of a very meane building

(1535-43 Leland, Itinerary I p. 74 [HC])

In the following example note also the uses of indeed in its epistemic adverbial (Stage I) sense:

- c. for they tolde me faithfully that you were their vncler:but, in fayth, are you not so indeed? for, by my trouth, they are straungers to me. I neuer saw them before." "O, out vponthem!" quoth the parson; "they be false theues, and this night thei compelled me to geue them al the money in my house." "Benedicite!" quoth this good wife, "and haue they so indeed? as I shall aunswere before god, one of them told me besides that you were godfather to him, and that he trusted to haue blessinge before he departed."

(1567 Harman Caveat p. 40 [HC])

Stage II: Sentential Adverb

The VAdv signaling extension of a list of referents illustrated in (23b,c) is presumably the source of the clause-initial, focused IPAdv, which extends the propositional content with additional, non-central material:

- (24) *Bailiff* ...when the end is knowen, all wil turne to a iape ['trick, deceit'], Tolde he not you that besides she stole your Cocke that tyde?

Gammer. No master no indeed, for then he shuld haue lyed, My cocke is I thanke Christ, safe and wel a fine.

(1552-63 Gammer Gurton, p. 61 [HC])

Stage III: DM

In the mid sixteenth century we find the first example of a use of besides that appears to be a discourse marker use. The speaker, Throckmorton, a defendant in a treason trial, is giving arguments why the prosecution's reasoning is faulty. One argument is that he rejected Wyatt's suggestion that they attack the Tower of London; Throckmorton quotes the reasons he allegedly gave to another defendant, Winter, against Wyatt's proposal. Then he moves to a different argument, which is that he would not plot against the father of his sister-in-law. Perhaps this besides was intended as an IPAdv serving to enumerate arguments. If so, it also serves to refocus attention on the purposes of the discourse. The passage is long but worth quoting to illustrate the sorts of contexts in which changes from IPAdv to DM status are likely to have occurred:

- (25) what maner of reasoning or prooffe is this, Wyatt woulde haue taken the Tower, ergo Throckmorton is a Traitor? ... And because you shall the better understand that I did alwayes not alow these Master Wyatt's Deuises, I had these Words to Winter ... Moreouer, to accompte the taking of the Tower is uery dangerous by the Law. These were my Wordes to Winter. And besides, it is very unlike, that I of all Men woulde confederate in such a matter against the Lieutenant of the Tower, whose Daughter my Brother hath married.

(bef. 1554 Trial Throckmorton I,66.C1 [HC])

The pragmatic function, which serves primarily to extend the discourse with afterthoughts, and is sometimes paraphrased with the PP besides all this, soon after became a predominant use of beside(s), and continues to be its main use:

- (26) a. Alas quoth mistresse Winchcombe, hauing neuer beene vsed to such attyre, I shall not know where I am, nor how to behaue my selfe in it: and beside, my complexion is so blacke, that I shall carry but an ill fauoured countenance vnder a hood

(1619 Deloney, Jack of Newbury, p.70 [HC])

- b. The whooping cough seems to be a providential arrangement to force you to come, as the expense will be little greater than going anywhere else; besides if you put a trusty female at Ravenscroft we save the Williamses' wages as long as they are away
(1872 Amberley Ltrs, p. 513 [CLME])

4. Unidirectionality revisited

In sum, all three DMs have arisen from IPAdv, and ultimately from VAdv with relatively concrete meanings ('action', 'side'). In all cases a meaning change in the clause-internal PP was required before the form could become an IPAdv. Indeed and in fact acquired evidential/epistemic modal meanings, scalar and contrastive meanings. Besides acquired the meaning of extension in a non-central way. These were prerequisites enabling (but of course not causing) the subsequent changes to occur. In other words, a meaning had to arise that was conducive to recruitment for the rhetorical purposes of contrast and finally explication before the morphosyntactic changes could take place (see e.g. Fleischman 1982 for a similar argument with respect to the development of future morphosyntax in Romance languages²¹).

The developments suggest that there is a diachronic path along an adverbial cline of the type:

VAdv > IPAdv > DM

or, more generally,

VAdv > IPAdv > Discourse Particle (DPart)

The hypothesis is that an adverbial, say a manner adverb, will be dislocated from its typical clause-internal position within the predicate, where it has syntactic narrow scope and pragmatically evaluates the predicated event, to whatever position is the site for wide-scope sentential adverbs. As an IPAdv it pragmatically and semantically evaluates the content of the proposition (see Hanson 1987 on the development of sentential adverbs like probably, possibly from manner adverbs in English, and Powell 1992 on the development of stance adverbs like actually, roughly also from manner adverbs).²² Whatever its syntactic site, a IPAdv that has the appropriate semantics and pragmatics may acquire new pragmatic functions and polysemies that give it the potential to become a DM. Over time these functions may be semanticized either in this position or in a further dislocated position resulting in the new DM function. This stage involves the acquisition not only of new polysemies and morphosyntactic constraints, but also of new prosodic characteristics.²³ The form in this new function serves pragmatically to evaluate the relation of the up-coming text to that which precedes, and does not evaluate the proposition itself.

How then should we think of the development of DMs? The syntactic adjunct slot has, as mentioned in the previous section, a very long history, and cannot be ignored or treated as extra-sentential.²⁴ Even if the items that may occur in this adjunct position are primarily pragmatic in function, nevertheless they must be considered elements of the grammar of a language. I have argued that, at least in the case of the adverbs discussed, the forms that may occur in this position originate in indubitably syntactic constructions (see also Brinton 1996 on a wider range of pragmatic markers). We therefore have most of the ingredients necessary for a change to count as grammaticalization: an original construction of which a lexical item is a constituent, and a later stage in which fixed forms serve grammatical functions (IPAdv, DM).

In fact, the development of the DMs discussed in Section 3 is typical of several of the correlated structural and pragmatic unidirectional shifts normally associated with grammaticalization:

- i) Decategorialization. As has been emphasized, the lexical nouns deed, fact, side, become fixed in bare PPs with in, by. This is a process similar to the well-known decategorialization of locative lexical nouns in the development of case.
- ii) Bonding within the phrase. The fixation that accompanies decategorialization leads to bonding of in with deed and fact, of by with side (the spellings indeed and besides crudely reflect this).
- iii) Phonological reduction. Even though DMs become syntactically disjunct, and thereby may be used with special stress, they may be segmentally reduced (/ndid, nfækt, bsaidz/). This too is a process typical of grammaticalization (cf. reduction of have to > hafta).
- iv) Generalization of meaning (see Bybee, Perkins and Pagliuca 1994). The meaning generalizes in the sense that more and more domains (polysemies) become available for the adverbial phrase, in ways similar to the generalization from progressive to imperfect aspect.
- v) Increase in pragmatic function. In deed, in fact, besides acquire pragmatic meanings, but bleach semantically. In particular, they move along a cline of referential > non-referential functions, and illustrate "unidirectional movement away from [their] original specific and concrete reference and toward increasingly general and abstract reference" (Pagliuca 1994:ix) (e.g. concrete 'action' > evidential/epistemic > metatextual elaborator). In other words, they originally "encode elements of the referenced event independently of the speech event", and as DMs "encode features of the speech event independently of the referenced event" (Dasher 1995:266-71).²⁵ In this regard again they are like case markers and auxiliaries (cf. be going to in its shift from concrete motion verb in a purposive construction to the more abstract tense marker that can be realized as be gonna).
- vi) Subjectification. They become increasingly associated with speaker attitude, in this case especially attitude to discourse flow (cf. be gonna again, as well as the development of epistemic modals in English).

The only two areas in which the development of DMs violates some recently-accepted criteria for grammaticalization are syntactic increase in scope and disjunction. Lehmann defines structural scope as "the structural size of the construction which it helps to form" and goes on to say that "[t]he structural scope of a sign decreases with increasing grammaticalization" (1995:143[1982]). Nevertheless, many instances of syntactic increase in scope have been identified in the extensive literature on the development of clause connectives (for summaries see Hopper and Traugott 1993: Chapter 7 "Grammaticalization across clauses", and Harris and Campbell 1995: Chapters 7, 10). Particular examples include the development of prepositions into complementizers (e.g. Wiegand 1987, Dubinsky and Williams 1995²⁶), of verbs into complementizers (e.g. Lord 1993), and, in ongoing changes, the development of like, go, be all, etc. into markers of indirect quotation (e.g. Romaine and Lange 1991). Developments of lexical verbs into auxiliaries can also be regarded as involving increase in syntactic scope (a shift from V > I, or reanalysis of a lexical as a functional head, see Roberts 1993). The large number of changes of this type suggests that syntactic scope increases must be allowed for in a theory of grammaticalization.²⁷

This leaves us with the problem of disjunction. As mentioned at the end of Section 2, disjunction appears to occur in very specific syntactic and pragmatic domains--that of elements the prime purpose of which is metatextual. It presumably does not occur in all languages. In Germanic languages the middle field may be the typical syntactic site for discourse particles; see for example Lehti-Eklund (1990) on adverbs > discourse particles (or "markers of text") in Swedish, and Abraham 1991, König 1991a on German.²⁸ If a language has a disjunct slot with a specific syntactic-pragmatic function, the data discussed in this paper suggest that items can migrate there provided they have the appropriate semantics.

This claim would seem to run directly counter to Givón's well-known cline (1979:209):
discourse > syntax > morphology > morphophonemics > zero

a cline about which there seems to have been a lot of confusion. It was articulated as part of a research program that questioned the notion of structure as an autonomous pre-existent entity, and explored the question of the extent to which grammar could be thought to be always "emergent" (for a fuller treatment, see Hopper 1988). Givón's examples were designed to characterize such phenomena as: topic clause > relative clause; finite clause > non-finite complementation; topic > subject; serial verbs > case markers; lexical verb > auxiliary > tense-aspect-modality inflection. This is a disparate set of phenomena, operating at different levels of syntactic structure. Givón's interest was primarily in the question of how structures come to be innovated, or how speakers or languages come to have more complex (or different) syntaxes over time, as exemplified by child vs. adult language, pidgin vs. creole. The challenge with which he presented the community of researchers in historical syntax was whether isomorphism could be established between internal language development, language acquisition, and the development of contact languages (see also Slobin 1977). Although the answer initially appeared to be positive (e.g. Shepherd 1981), it has turned out to be largely negative (Slobin 1994). Except in the case of early language acquisition and changes from radical pidgins to creoles--developmental points in time when arguably there is little or no structure--what we find in language change as attested in the historical record is that there is in fact plenty of structure that is used in different ways for discourse purposes (narrative, backgrounding-foregrounding, turn-taking and so forth).

In some instances a whole new structure may be innovated as a result of discourse practices operating on extant structures, e.g. articles developed in Romance, numeral classifiers in Persian (Lehmann 1993), complementizers in Germanic (Kiparsky 1995), but such innovations are relatively infrequent. In most cases of grammaticalization, what we have is extant lexical items in extant syntactic constructions undergoing local changes as a result of discourse practices by which they are recruited as members of already existent categories. The product of such changes is almost always layering of older meanings with newer ones, crucially in different syntactic environments (as in the case of the coexistence of the old and new meanings of deed, fact and side). As Lichtenberk has said, "Grammars shape discourse, and discourse, in turn, shapes grammars" (Lichtenberk 1991:78)--the order here is crucial: grammar first, shaped by discourse.

In sum, the development of DMs is consistent with prototypical grammaticalization in its early stages, except that in some languages and in some subareas of the grammar it involves increased syntactic complexity and even freedom, as well as the morphosyntactic bonding within a construction with which we are so familiar. To treat it as a case of something other than grammaticalization would be to obscure its similarities with the more canonical clines.

5. Conclusion

In this paper I have argued that the adverbial cline VAdv > IPAdv > DP should be added to the inventory of clines that are the subject of grammaticalization. I have also argued that grammaticalization should not be thought of as necessarily entailing syntactic decrease in scope and bonding.

In the case of the development of DMs, what we have is the development of highly specific constructions via strategic use in discourse to a sentential adverbial and ultimately a DM. Here there is no discourse > syntax > morphology, but syntax via pragmatic strengthening in discourse > syntax with different function. The data investigated therefore suggest that grammaticalization should be defined as:

the process whereby lexical material in highly constrained pragmatic and morphosyntactic contexts becomes grammatical, and already grammatical material become more grammatical.

Indeed, in fact, besides all originate in adverbial phrases, in other words, in constructions. Nevertheless, "construction" is not part of this definition. Hopper and Traugott define grammaticalization as affecting "lexical items and constructions" (1993:xv), Pagliuca "as the evolution of grammatical form and meaning from lexical and phrasal antecedents" (1994:ix), and Bybee, Perkins and Pagliuca note in connection with meaning constraints on grammaticalization: "It is the entire construction, and not simply the lexical meaning of the stem, which is the precursor" (1994:11). The prototype example of grammaticalization, Lat. cantare habet > Fr. chantera 'sing-3SG:FUT' illustrates exactly this point. To what extent a particular sequence or collocation that eventually becomes a phrase or construction always has the latter status in its antecedent phase is, however, not yet clear, and so the terms "phrase" and "construction" are not regarded as criterial.²⁹ For example, be going to is not a syntactic construction in its original phase (though it may have been given an intonational unity, see Chafe 1994 on the relation of intonation units to information flow and interpretation).

I have argued, as indeed many have done before, that grammaticalization and the hypothesis of unidirectionality require us to look beyond morphosyntax to the relation between syntax and discourse pragmatics, between cognition and communication. To focus on loss of syntactic freedom and counterexamples to it severely underestimates the forces to which we must pay attention in language change. Different parts of the grammar have different purposes. Attitude markers and focalizers typically do different work than case and tense markers. We should not be surprised if different clines lead to different morphosyntactic results. They operate after all in different parts of the grammar. The regularity with which different parts of the grammar develop in different languages continues to challenge us and to expand our horizons. The optimal theory is not the one that accounts for simplification alone, but the one that accounts for the bi-modal unidirectionality I have discussed: structural decategorialization, which may lead to increased bonding locally within the grammaticalizing construction, and at the same time increased pragmatic force and semantic abstraction, which may lead to freer syntactic scope of the resultant new construction.

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ENDNOTES

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Dasher, Lisbeth Lipari, and Julie Solomon. My greatest debt is to Norma Mendoza-Denton, whose research on concerning NP constructions (Mendoza-Denton 1994) started me thinking about migration of adverbials to the left margin of the clause in English, and to Scott Schwenter, for whose inspiration, bibliographical suggestions, and unflagging interest in the pragmatics of grammaticalization I am extremely grateful.

My main data bases are:

- a) The Helsinki Corpus of the English Language (see e.g. Rissanen et al. 1993) (HC)
- b) The on-line Oxford English Dictionary (OED)
- c) The Middle English Dictionary (MED)
- d) A Corpus of Late Modern English Prose. Department of English, University of Manchester, 1994 (CLME). Compiled by David Denison with Graeme Trousdale and Linda van Bergen. Stanford Academic Text Services made access to these and a variety of other computerized corpora possible.

The main periods of English are:

Old English (OE) 700-1150

Middle English (ME) 1150-1500

Early Modern English (EMdE) 1500-1750

Modern English (MdE) 1750-

Present Day English (PDE) contemporary English.

²Fleischman (1982) provides a detailed study of the patterned interconnections of semantics, syntax, and morphology of this construction in the Romance languages.

³A strong, more structural statement is "Grammaticalization rips off the lexical features until only the grammatical features are left" (Lehmann 1982:129[1982]).

⁴Heine and Reh mention this possibility: "There is evidence to suggest that ... syntactic structures may form the input to pragmatic structures ... [e.g.] the growth of completive focus marking in some African languages" (1984:109).

⁵The idea that invited inferences and conversational implicatures become semanticized over time was advanced briefly in Geis and Zwicky (1972), Grice (1975) and Levinson (1983). Pragmatic strengthening may occur in later stages of grammaticalization as well. It seems to be a necessary feature of grammaticalization in its early stages; what motivates or fails to motivate it in later stages is a topic for future research.

⁶As indicated by Dancygier (1992), since "metalinguistic" is an overused term, "metatextual" is preferable in reference to those properties of language that comment on interpretation of text. This leaves the term "metalinguistic" for comments on the form of the text (see Horn 1985).

⁷See also the reanalysis in Irish of the first person plural suffix -mid/-muid as an independent pronoun, cited in Bybee, Perkins and Pagliuca (1994:13-14).

⁸Layering or coexistence of variants is a characteristic of all change.

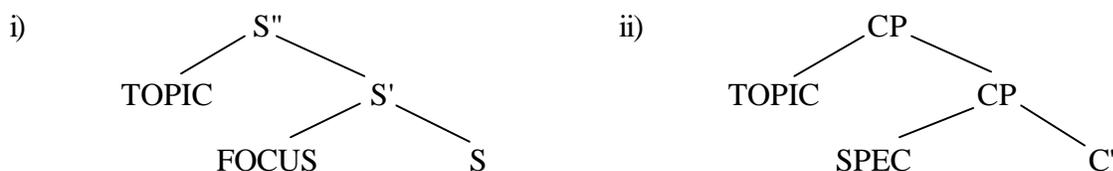
⁹A further reason no doubt is that Greek and Roman grammars did not have a useful term for them. Neither "adverb", which was associated with verbs (i.e. CAdv), nor "interjection", a class including items like Oh!, adequately categorized DMs with their function of commenting on textual relationships.

¹⁰Despite the dates, Fraser (1988) is actually later than Fraser (1990); Fraser (1988) is the more fully argued and exemplified version.

¹¹Schiffrin uses similar language, but not all her examples actually conform to this definition, e.g. Oh, y'know.

¹²Ball, C. N., D. Dahl, L. Norton, L. Hirschman, C. Weir, M. Linebarger. 1989. Answers and Questions: Processing messages and queries. Proceedings of the DARPA Language Workshop, San Mateo, CA: Morgan Kaufman.

¹³Kiparsky (1995:153) posits an IE stage without CP as in i) which was reanalyzed in Germanic as ii); in the latter, the Specifier of CP is the host for focused elements (ibid.: 140):



Kiparsky (1995) shows that even subordinate clauses can occur in this position in IE (see also Kortmann (1991) for a study of non-grammaticalized free adjunct and absolute phrases and clauses occurring in positions similar to those of Discourse Markers). Aissen (1992) discusses the syntactic analysis of similar left-peripheral topic and focus slots in Mayan, while King (1995) investigates the syntactic, semantic, and discourse functions of topic and focus in Russian, and clarifies the terminology.

¹⁴Swan (1994) calls them Discourse Markers since they "function pragmatically as speaker comments". More strictly speaking, they are stance adverbs (Powell 1990), or, in Fraser's terms, "commentary pragmatic markers".

¹⁵Although indeed is included among DMs in Fraser (1988) he has more recently queried whether it really is a DM (e-mail message dated July 27th 1995, distributed to recipients of SIG-MARK list). The data presented here show that it is unquestionably a DM in some of its uses.

¹⁶The question might be asked whether they are calques of Latin vero (see Kroon 1995 for a synchronic discourse analysis of this and other discourse particles in Latin, showing partially similar uses to those illustrated for in fact in (6-8) above). Although some influence of Latin cannot be excluded and indeed is likely, the fact that the various uses developed in English rather than all appearing simultaneously in the English texts suggest they had their own development.

¹⁷Horn cites indeed as a scalar term (1985:139, 168), as do König and Stark (1991:314). Strictly speaking, however, it is not scalar in the sense that e.g. <all, some> are; rather, it implicates a scale. This is also true of the intensifier use (not discussed here) as in Thank you very much indeed.

¹⁸Note this is scientific writing. Despite wide-spread assumptions to the contrary, scientific and academic writing frequently includes discourse markers as they serve to mark expository strategies.

¹⁹I am indebted to Lisbeth Lipari for many insights into the development of in fact (see Lipari 1994).

²⁰Ball, C. N. 1989. Analyzing explicitly-structured discourse in a limited domain: Trouble and failure reports. Proceedings of the DARPA Language Workshop. San Mateo, CA: Kaufman.

²¹Contrast the position held by formal syntacticians that semantic change follows from syntactic properties at least in some domains (e.g. Warner 1993 on changes in the English modals). Changes in the adverbial domain of the kind discussed in this paper cannot be accounted for by a theory that "formal criteria are prior in establishing the membership of language-particular classes" (Warner 1993:197).

²²Schreiber (1972:345) proposes the following as a synchronic derivation for stance adverbs in English: Adj > Man Adv > Style Disjunct, an analysis that exactly reflects the historical development.

²³See Schwenter and Traugott (1995) for further discussion and Traugott (In press) for a model of the semantic changes outlined here.

²⁴For example, Lehmann says that "topic and focus as they appear in left-dislocation and clefting [in Burmese and Japanese], are completely free and wild, as it were, since they transcend the bounds of the simple sentence" (Lehmann 1995:119[1982]).

²⁵Dasher (1995) discusses the shift from referential > non-referential with respect to the development of Japanese predicate honorifics, and suggests that it is uniquely criterial of grammaticalization. In the present analysis, referential > non-referential is regarded as one of several correlated criteria.

²⁶Dubinsky and Williams (1995) discuss a related development, that of temporal prepositions after, before, while in terms of the development of a temporal operator. Changes resulting in operator status are typical of grammaticalization. For example: "grammaticalization produces grammatical formatives ... this means it transforms operands into operators" (Lehmann 1993:328).

²⁷See Tabor and Traugott (In press) for fuller arguments.)

²⁸The literature on German and Swedish, like the literature on English, tends to conflate IPADv and DM uses; there is evidence, however, that this is erroneous and that German, for example, does have DM uses of pragmatic markers such as *schon* in clause-initial position (see \$).

²⁹For a detailed study of grammaticalization of constructions in terms of connectionist theory, see Tabor (1994). A fuller analysis of the question of whether to define grammaticalization in terms of "constructions" is the topic of Traugott (In press).