

# Syntactic Complexity in Danish Radio News

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## Abstract

The present article documents a diachronic decline in syntactic complexity in manuscript-based radio news on the primary Danish public service channel, DR, from 1946 to 2006. This decline corresponds to a general shift in radio news language from a traditional formal news style to a modern news style based on the principles of natural spoken language. It is, however, hard to assess whether the syntactic changes have had an effect on how easy or difficult it is to understand what is being said on DR – a topic that has been frequently and fervently debated in the Danish press.

**Keywords:** radio news, public service, syntax, cognition, comprehension, discourse

## Introduction

In Denmark, there has been an ongoing debate in recent years on whether or not it is sufficiently easy to understand what is being said on public service radio and TV. Terms like *mumledansk* ('mumbled Danish'), *stavelseskanibalisme* ('syllable cannibalism') and *garnnøglesætninger* (very long and complicated sentences) have been used in the press by linguists to describe some of the more problematic aspects of modern Danish language usage in the public service media (Skyum-Nielsen 2008a, Davidsen-Nielsen 2008, Lund 2008). Furthermore, there has been an increase in complaints against the primary Danish public service channel, DR, made by viewers and listeners who have trouble hearing what is being said (Møllerup 2009).

In order to examine the degree of these comprehension problems, Professor Peder Skyum-Nielsen from Centre for Journalism, SDU, initiated the research project *Media Language Now* in 2006 to assess the intelligibility of journalistic language usage at the Danish public service stations DR and TV 2 (Skyum-Nielsen 2005). As a part of *Media Language Now*, a PhD project was simultaneously launched with the aim of mapping out the synchronic status and diachronic developments of syntactic complexity in Danish public service news broadcasting (Blom 2008).

## Research Questions

On the basis of Blom (2008) and further studies, I will here address the potential problem of high syntactic complexity in manuscript-based radio news on DR. The reason

for this partial focus is two-folded: 1) The project *Media Language Now* could not get access to full TV news material prior to 1986, neither as programmes, nor as news manuscripts<sup>1</sup>; therefore, I had to narrow my diachronic analysis to radio. 2) Interviews, comments and live reports are not particularly common in radio news prior to 1970, and furthermore they are not optimal to compare diachronically due to radical changes in interview norms (see Clayman and Heritage 2002). Therefore, I have chosen to focus on manuscript-based news.<sup>2</sup>

More specifically, I will answer the following three research questions:

I How high is the syntactic complexity in Danish manuscript-based public service radio news?

II Have there been any diachronic changes in the syntactic complexity?

III Do Danish public service radio journalists exceed the recommendations for simple syntax in manuscript-based radio news?

In total the article consists of seven parts: 1) a presentation of previous research on syntax and comprehension in news broadcasting, 2) an outline of my theoretical approach, 3) a description of the methods used to measure sentence complexity, 4) the results of the analysis, 5) examples from the analysis that show high syntactic complexity, 6) a list of possible sources of errors and, finally, 7) a discussion and conclusion.

## Previous Research and Results

In Denmark, there has only been a limited amount of research on syntax and comprehension in news broadcasting. Most noticeably, Poulsen (1988 and 1992) has conducted a series of studies for DR, concluding that syntax is only of secondary relevance to comprehension, compared to textual semantics and discourse.

This conclusion correlates with the theoretical framework of discourse comprehension put forward by van Dijk and Kintsch (1983) and the research results of Findahl and Hoijer (1981, 1984), Gunter (1987), Lutz and Wodak (1987) and van Dijk (1988). Results from this tradition indicate that listeners generally have a low degree of recall of news information from TV and radio – typically lower than 40 % and in some instances even below 5 % (see Bell 1991 and van Dijk 1988 for full summaries). The low percentages, however, are not attributed to any particular syntactic problems.

This is partly in conflict with the frequent assumption made in the prescriptive and rhetoric traditions that syntax *in itself* is a possible source of no or low comprehension in spoken news language. Typical warnings are: use of long sentences, long initial constituents, nested clauses, strings of prepositional phrases, nominalized verbs and passives<sup>3</sup> (see Vinje 1980, Thompson 2005 and Skyum-Nielsen 2008b).

In the late 70s and the 80s, the Swedish project *Eterspråk* based some of its research on similar assumptions, concluding that Swedish news broadcasting was formal and had a higher syntactic complexity than spontaneous spoken language, being more similar in complexity to informative written language (Svensson 1973, Jørgensen and Svensson 1977 and Svensson 1981). These conclusions were primarily based on measurements of sentence length, position plus length of extensive constituents and the number of subordinate clauses.<sup>4</sup> Hohn (1995) has made similar measurements of sentence length

and frequency of subclauses on the BBC, observing complexity variations on BBC Radio 1 and Radio 4 in accordance with differences in narrative style and audience target group.

Interestingly though, when Einarsson (Einarsson and Platzack 1983) investigated the correlation between sentence length and comprehension, he did not find any conclusive proof that short sentences were easier for his test subjects to understand.<sup>5</sup> Nor could Platzack (*ibid.*) confirm that redundant nominalized verb idioms – or ‘noun sickness’, as they are sometimes referred to in the prescriptive tradition – were harder to understand than equivalent active verbs.

As for diachronic approaches, there is – to my knowledge – no available research on syntax and comprehension in news broadcasting. Norwegian style guides document, though, that as early as the late 40s public service radio stations recommended the use of simple and short sentences (see Vestad and Alme 2006: 135), which would promote a low syntactic complexity if followed by the journalists. Concerning *written* news, Roksvold (2005) stated that Norwegian readers find modern news language – based on a 1993 sample – simpler to understand than older news language – samples from 1963, 1933 and 1903.

## Theory

I have chosen the theoretical approach that holds that it is impossible to say anything scientifically valid about syntactic complexity based solely on a formal syntactic analysis. Cognition, context and discourse have to be taken into account too. Therefore, I have expanded my working definition of syntax to include not only the combination of expression constituents, but also their content<sup>6</sup> and discourse reference. By doing so, I place my analysis within the tradition of functional and cognitive discourse research.

I base my theoretical approach on Gibson (1998 and 2000), who argues<sup>7</sup> that dependency constraints and discourse distance between integrated words can increase the complexity of a sentence to a point where it is very difficult or perhaps even impossible for the parser to process. This is best illustrated by the following sentence pair based on Gibson (2000):

1. The reporter who the senator who John met attacked disliked the editor.
2. John met the senator who attacked the reporter who disliked the editor.

Sentence (1) is as long as sentence (2) and has the same amount of subclauses and pieces of information. Yet sentence (1) is still much more difficult to process, due to the complex syntactic nesting structure. The same applies to the less complex versions in (3) and (4):

3. The reporter who the senator attacked disliked the editor.
4. The senator who attacked the reporter disliked the editor.

Prescriptive norms often warn against such nested clauses – but fail to predict the complexity differences between (3) and (4) – with (3) having a higher complexity than (4) due to the object-extraction (see Just et al. 1994 for neurolinguistic evidence).

To explain the difference in complexity, Gibson argues that sentence processing consists of two simultaneous operations: prediction of obligatory syntactic requirements (see also MacWhinney 1987) and integration of syntactic units (see also Hudson 1995). While integrating a new word in a sentence string, the parser at the same time predicts the upcoming presence of syntactic elements that are obligatory. The key word then is distance (see also Hawkins 1994) and is expressed by Gibson himself as:

[...] the longer a predicted category must be kept in memory before the prediction is satisfied, the greater is the cost for maintaining that prediction; and the greater the distance between an incoming word and the most local head or dependent to which it attaches, the greater the integration cost. (Gibson 1998: 1)<sup>8</sup>

Gibson proposes to measure the distance between an incoming word and the most local head or dependent to which it attaches, in processed new discourse referents<sup>9</sup> expressed by full noun phrases (NPs) and tensed verb phrases (VPs) – the idea being that complexity increases radically when integration takes place over new discourse material.<sup>10</sup>

This theory, the Dependency Locality Theory (DLT), thus measures complexity as a sum of a) processing costs: 1 energy unit (EU) is consumed for every processed new discourse referent, b) integration costs: 1 EU is consumed for every new discourse referent intervening between a head and a dependent. The complexity difference between sentences (1) and (2) is then measured in the following way:

	The reporter	who	the senator	who	John	met	attacked	disliked	the editor
NDR	1	0	1	0	1	1	1	1	1
Integration cost	0	0	0	0	0	1	2+3	4	0
Total	1	0	1	0	1	2	6	5	1

	John	met	the senator	who	attacked	the reporter	who	disliked	the editor
NDR	1	1	1	0	1	1	0	1	1
Integration cost	0	0	0	0	0	0	0	0	0
Total	1	1	1	0	1	1	0	1	1

## Method

I have applied DLT as a method in my analysis, but in an altered version due to previous criticism from Wedgwood (2002) who argued that:

Although Gibson refers to the processing burden of new discourse referents, he does not in practice draw a distinction between new and old full NPs. (Wedgwood 2002: 11)

Although Gibson uses the term ‘new discourse referents’, he does not define this notion explicitly, rather seeming to equate ‘new discourse referents’ with full noun phrases as opposed to pronouns. (ibid: 12)

In English (and in Danish), given topics can be expressed not only by using pronouns (*he said*), but also resumed by anaphoric definite NPs (*the minister/that minister*) and

names (*Gordon Brown*). To solve this problem, I have made use of Ariel's accessibility scale (Ariel 1990) in an adapted and altered version, thereby creating a hierarchy of discourse reference and anaphoric contextual reference based on information accessibility in the listener's short- and long-term memory:

**Table 1.** *A Hierarchy of Discourse Reference and Anaphoric Contextual Reference*

Expression	Discourse reference and anaphoric referring	EUs
Tensed VPs, non-definite NPs	Generating a new discourse referent.	1
Definite NPs, names	Generating a discourse referent from socio-cultural news knowledge or a sub-referent/sub-topic (see Dik 1997: 323) belonging to a discourse schemata of a previous discourse referent.	0.8
– Anaphoric definite NPs – Names	Resuming an antecedent adding new discourse information.	0.6
	Resuming an antecedent over long distance (i.e. the antecedent is neither present in the matrix sentence or the preceding sentence).	0.4
	Resuming an antecedent over short distance (i.e. the antecedent is either present in the matrix sentence or the preceding sentence).	0.2
Clitic pronouns	Referring to a focused topic.	0

Table 1 includes differences in energy costs generated by a) new vs. given information, b) socio-cultural vs. contextual information, c) focus vs. background and d) distance between anaphor and antecedent (see Halliday and Hasan 1976).

To sum up, I have measured syntactic complexity as a sum of a) processing costs: between 0.2 and 1 energy unit (EU) is consumed for every processed new and resumed discourse referent, b) integration costs: between 0.2 and 1 EU is consumed for every processed new or resumed discourse referent in the preceding context intervening between a head and dependent.

Furthermore, I have chosen to focus on integration peaks that might cause problems for the listener. I have done so by ignoring complexity sums of 1 EU or less, hypothesizing that low complexity rates do not cause any noticeable parsing problems for the listener.

In order to demonstrate my applied use of DLT, I have picked out an example of a complex integration from the corpus:

5. *Samtidig **agter** man for Odense-området vedkommende, hvor priserne af selskaberne angives at ligge væsentligt over priserne i det øvrige land, **at lade** reparationerne udføre på andre værksteder.* (9.11.1966)

‘At the same time it is **intended** for the Odense area in question, where the prices by the companies are stated to lie significantly above the prices in the rest of the country, **to let** the repairs be done in other repair shops’

In this example, the integration of the infinitive *at lade* (‘to let’) with the finite verb *agter* (‘is intended’) is intervened by:

- a. 1 tensed verb (*angives*) = 1 EU
- b. 1 referent generated from socio-cultural knowledge (*Odense-området*) = 0.8 EU
- c. 1 resumed discourse referent over long distance (*selskaberne*) = 0.4 EU
- d. 2 resumed discourse referents over short distance (*priserne – x2*) = 0.4 EU
- e. 2 sub-referents (*vedkommende, det øvrige land*) = 1.6 EU

The integration peak is thus: processing cost = 0 EU + integration cost = 4.2 EU. In total = **4.2 EU**.

In addition to DLT, I have made use of more traditional measuring methods that do not take discourse into account. By doing so, I have been able to compare my results with former results from Swedish and British studies as well as current prescriptive recommendations for radio news – yet still taking into account that traditional measures, such as sentence length and the number of subclauses, do not necessarily say anything valid about syntactic complexity (see Engebretsen 1996: 56).

A few notes should be taken regarding my measurements. First, I have chosen the sentence as my primary measuring unit, defined as a grammatical unit consisting of at the *minimum* a tensed verb and a subject, and defined by not being a constituent in another sentence or clause. However, it could be argued that a grammatical unit is not the optimal solution for a spoken corpus, and that the individual segments should be divided into verbal phrases instead (see Chafe 1982).<sup>11</sup>

Furthermore, I have analysed verbs in introductory clauses to direct quotes as discourse markers with scope. Normally, they are regarded as transitive constructions with the quote as object. This analysis, however, does not take into account that whole news segments can be objects (... *said our news reporter from Moscow*) thereby in theory generating vast sentences with over hundreds of words. Nor does it take into account that intransitive verbs can fully well be used in introductory clauses: “*It’s funny*”, *he laughed* (see Heltoft 1990 and Blom 2009).

Finally, it should be noted that I have based my syntactic analysis on the principles of dependency grammar, not on generative grammar (see Blom 2008 for further details).

## Data

The project’s diachronic data set consists of radio news broadcasts dating back to 1946 at ten year intervals up to 1996. In every interval, radio news broadcasts with a duration of approximately 30 minutes in total were chosen for annotation, following – as closely as possible – the chosen day and date for the project’s synchronic data set: Wednesday, November 15, 2006. This synchronic fix point was chosen in order to tape a typical news day without any big breaking news that might affect the journalists’ normal language usage.

I have transcribed the chosen diachronic broadcasts when they have been available in sound from the archives.<sup>12</sup> Otherwise, I have obtained manuscripts. In total, the diachronic data set used to measure developments in complexity has amounted to the following numbers and formats:

**Table 2.** *The Data Used for the Annotated Corpus*

Year	Date	Time	Format	Words	Sentences
1946	1.7	18.40-19.00	Manus	3088	170
	13.11	18.45-19.01	Manus		
1956	4.11	18.45-19.03	Sound	3561	216
	7.11	18.45-19.00	Manus		
1966	7.3	18.30-18.45	Sound	2559	149
	9.11	18.30-18.45	Manus		
1976	5.10	18.30-18.45	Manus	1665	92
	10.11	12.02-12.30	Manus		
1986	12.11	12.02-12.30	Sound	2609	169
1996	13.11	12.02-12.30	Sound	2800	166
2006a	15.11	12.00-12.30	Sound	2964	209
		12.00-18.15	Sound		
2006b	15.11	See below	Sound	11.937	877

In the last two rows of Table 2, there are two data sets from 2006. The first, 2006a, consists of the chosen parts for the DLT analysis. They are in turn taken from the total synchronic data set, 2006b, used in the traditional measurements, consisting of 23 radio news broadcasts in total.

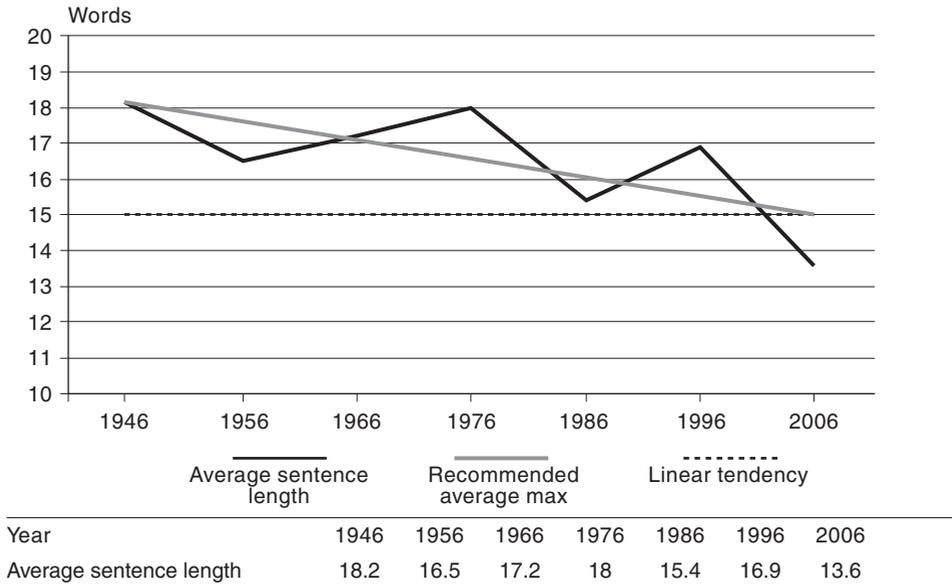
## Results – Traditional Measurements

I have chosen three traditional measures in order to compare my results with Swedish and British studies and prescriptive recommendations for radio news sentences: 1) average sentence length, 2) average number of subclauses and 3) complex subclausal position.

Hohn (1995: 43) reports a variation in sentence length on BBC Radio 1 and Radio 4 ranging from an average of 13.5 words in non-formal news aimed at the 1-29 age group (Radio 1) to 21 words in news aimed at a higher age group (Radio 4); in addition, results from Jørgensen and Svensson (1977: 131) show that Swedish TV and radio news had an average sentence length of about 15 words in the mid-70s, with some minor variations in comments and introductions. This number is identical to Skyum-Nielsen's recommendations for maximum average sentence length on Danish radio (2008: 84). Skyum-Nielsen advises that radio sentences should not exceed 15 words on average, nor should the maximum sentence length go above 25 words.

In 2006, radio news journalists from DR kept within these recommendations, placing the average sentence length at 13.6 words – close to news broadcast on the BBC's Radio 1. Interestingly though, this appears to be a new tendency, as documented by the diachronic results in Figure 1:

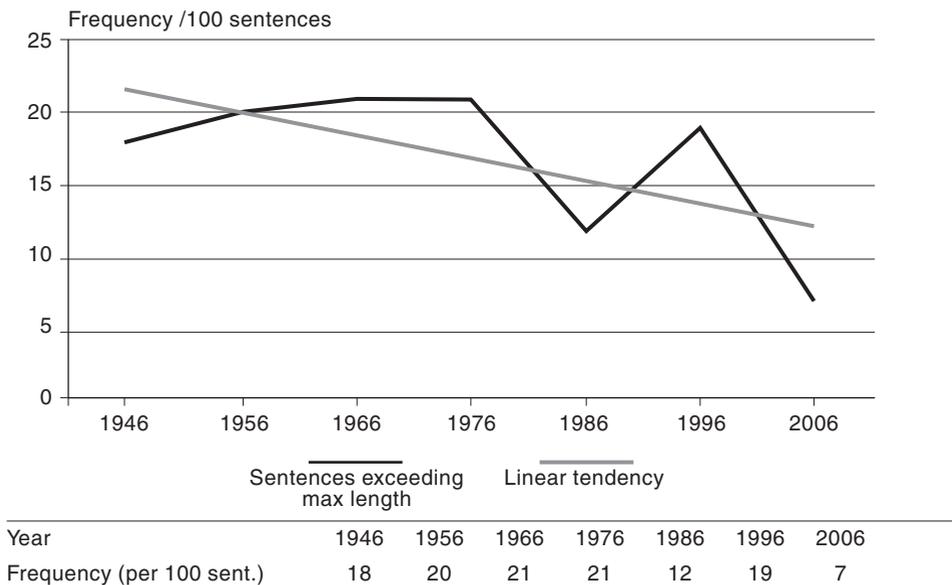
**Figure 1. Developments in Average Sentence Length**



Even though the graph fluctuates, a general decline is apparent. Furthermore, the graph exceeds the recommended average maximum all the way up until 2006. Not until then does the average length drop below 15 words per sentence.

These results are somewhat similar to frequency changes in sentences exceeding the recommended maximum of 25 words per sentence:

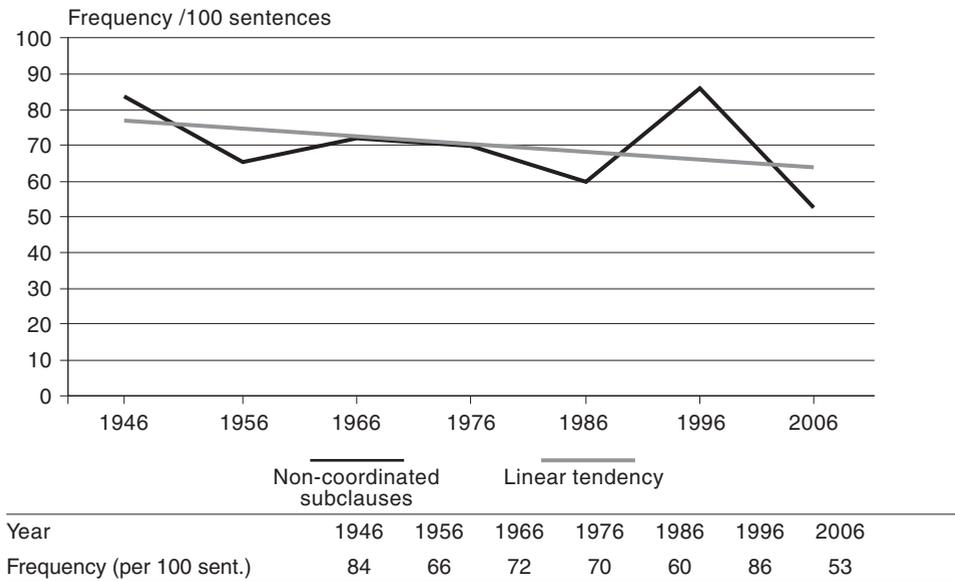
**Figure 2. Developments in the Frequency of Sentences Exceeding Recommended Maximum of 25 Words**



As Table 2 shows, the curve once again ends at its lowest point in 2006; however the numbers vary quite erratically, so we are not looking at a gradual development.

In addition, the 1996 fluctuation is also present in Figure 3, illustrating the results relating to the frequency of non-coordinated subclauses:

**Figure 3.** *Developments in the Frequency of Non-coordinated Subclauses*

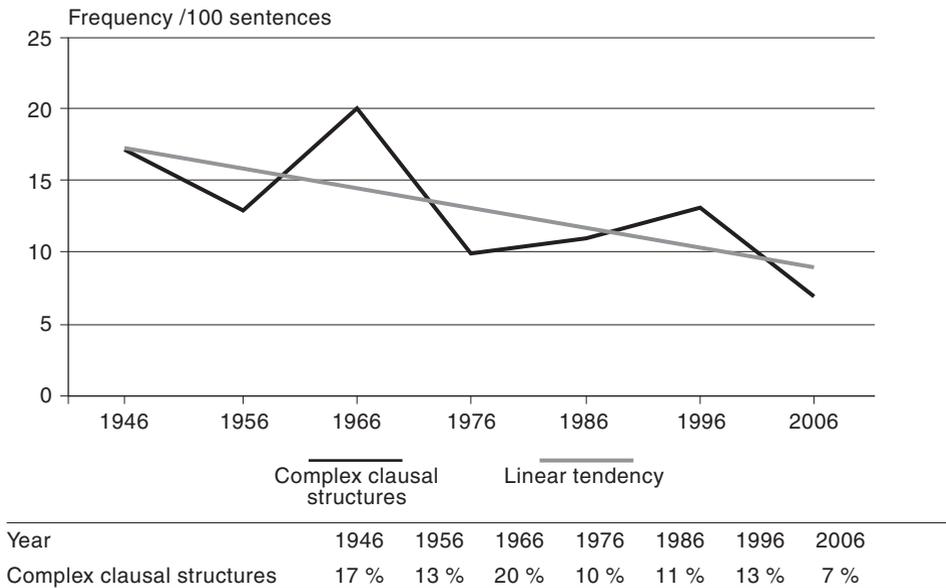


One explanation could be that the 1996 news broadcast has a high rate of reports compared to the other news broadcasts in the corpus. Such alternations in journalistic genres are a potential source of error in the quantitative method applied here (see the discussion further on).

The frequency of subclauses can be compared to Hohn (1995: 31) who counted 51 % of the sentences on BBC Radio 1 as simple (without subclauses), and 34.2 % as simple on BBC Radio 4. In comparison, the synchronic corpus from DR has a total proportion of 57 % simple sentences. Again, Danish radio news sentences seem to have a closer kinship to non-formal news on Radio 1 than the more formal news on Radio 4.

In addition to length and the frequency of subordinated clauses, the prescriptive literature often warns against a) clauses in initial position before the matrix verb, b) parenthetical clauses and c) clausal strings with more than two analytically positioned clauses (see Skyum-Nielsen 2008: 70). I have therefore added up the total number of these complex clausal structures in Figure 4 to compare the recommendations with actual practice. Once again 2006 marks the low point:

**Figure 4.** Developments in the Frequency of Complex Clausal Structures



Although not directly comparable, results from Jörgensen and Svensson (1977: 133) also indicate that Swedish news journalists in the mid-70s used a relatively simple analytical clausal syntax, typically placing subordinate clauses “as late as possible in the sentence or the clause”.

All in all, the results seem to reflect a tendency towards shorter sentences, fewer subordinated clauses and less complex clausal structures in manuscript-based Danish radio news.

### Results – DLT analysis

As noted in the method section, I have chosen to focus my DLT analysis on integration peaks exceeding 1 EU, i.e. complex points in the syntactic string caused by processing and integration across new or resumed discourse referents.

The results from the DLT analysis in Figure 5 support the traditional analyses by indicating a general decline in complexity, with the lowest point in 2006.

A similar tendency can be observed in Figure 6, which depicts the total number of energy units in integration peaks above 1 EU:

These results indicate a general decline both in the frequency of complex syntactic integrations and in the spent energy units of these integrations.

All in all, it can be concluded that syntactic complexity seems to be relatively low in modern Danish manuscript-based radio news compared to former generations of radio news.

### Complexity Issues

The DLT analysis points to particular complex syntactic integrations that may be prevented if journalists are attentive to the potential problems of long distance integration.

Figure 5. *Developments in the Frequency of Integration Peaks > 1 EU*

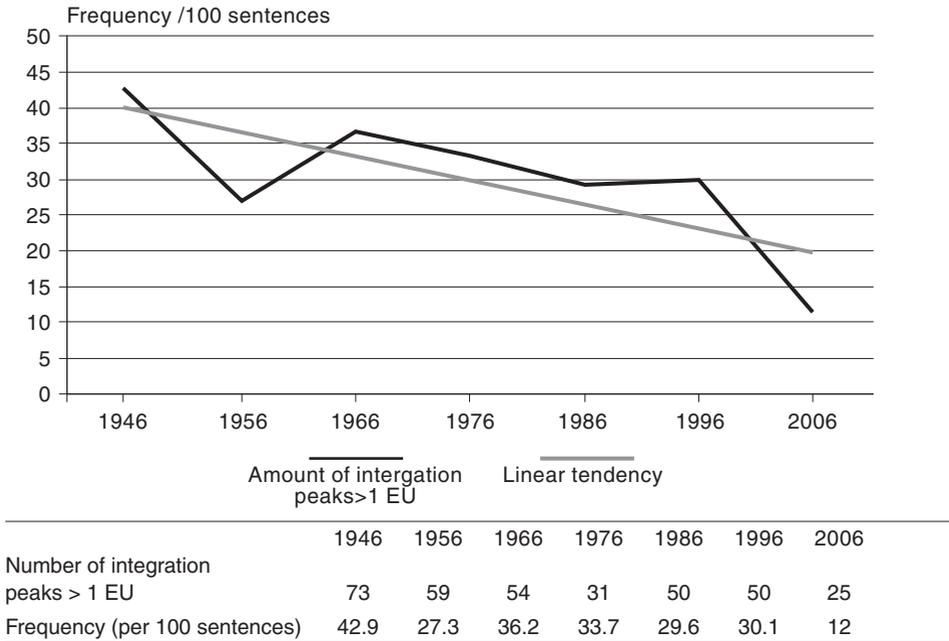
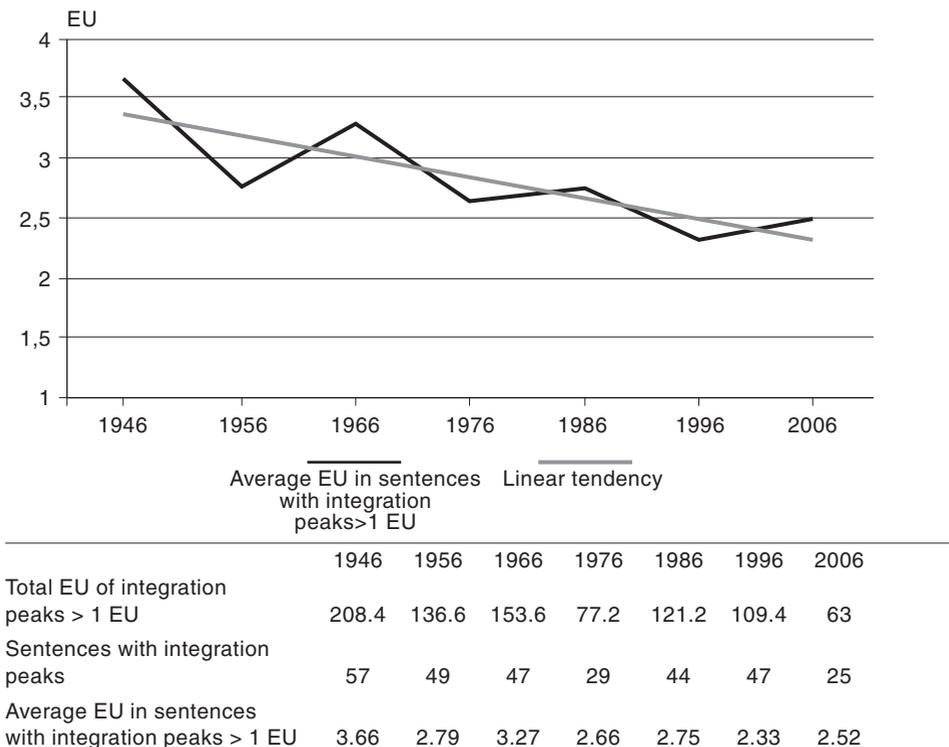


Figure 6. *Developments in Energy Units in Sentences with Integration Peaks*



In principle it is simple: Constituents that belong together should be close to each other. If this is followed, the journalist can prevent high syntactic complexities. Therefore, the head of a subject should be close to its verb and vice versa. The finite verb should be close the infinite verb. The head of the verb phrase should be close to the object, and so on.

If many new or resumed discourse referents block these dependency relations, the journalists risk a high syntactic complexity. As for instance in (6), where a string of prepositional phrases with resumed discourse referents creates a long distance between the head of a subject and its verb:

6. *Årsagen til den britiske modstand mod en nedskrivning af det britiske grønne pund er ...* (5.10.1976)  
'The reason for the British objection against a reduction of the British green pound is' ...

Or even more problematic, when this distance is further increased by embedded clauses – as in example (7) where the integration of the matrix verb (*har* – ‘have’) with the head of the matrix subject (*bestræbelserne* – ‘the efforts’) is intervened by several resumed and new discourse referents in two centre embedded clauses:

7. *Men **bestræbelserne** gennem FN's flygtningehøjkommissariat og andre internationale organer på at hindre, at visse grupper, såsom Sri Lanka-tamilerne, havner i et kredsløb, hvor ingen vil modtage dem, **har** hidtil ikke ført til noget.* (12.11.1986)

'But **the efforts** of the UN's refugee council and other international organizations to prevent certain groups, such as the Sri Lanka refugees, from ending in a cycle where no one will accept them, **have** until now not lead to any conclusions'

Such complex structures are not well suited to verbal news transmissions.

As seen here, the classic recommendation of keeping the initial constituent short before the matrix verb is also of use within a DLT perspective. However, it is not the number of words that is the key, but instead the quantity of new and resumed discourse referents processed between a dependent constituent at the beginning of the sentence and the matrix verb. This is again at stake in example (8), where the listener has to integrate the matrix verb (*vil* – ‘will’) with a subordinate conjunction (*da* – ‘because’) across a long stretch of discourse information:

8. ***Da** der imidlertid, hvis hjemsendt personel skulle deltage, vil medgå forholdsvis lang tid, før man kan få styrken samlet og samarbejdet, **vil** forsvarsministeriet ikke i første omgang kunne tage imod disse tilbud.* (11.7.1956)

'However, **because** it, if demobilized personnel should participate, will take a relatively long time before the troops can be gathered and made to cooperate, the defence minister **will** at first not be able to accept these offers.'

Furthermore, this is an example of a complex integration crossing another complex integration:

Da **der** imidlertid, hvis [...] personel skulle deltage, **vil** medgå [...] tid, før man kan få styrken samlet, vil ...

This type of nested complex integration can quickly cause high levels of complexities and potential comprehension difficulties for listeners.

Similar problems also arise in nested relative clauses with object-extraction:

(9) Forslaget er en indrømmelse til **de betingelser**, England og Frankrig i deres svar til FN **opstillede** ... (4.11.1956)

'The suggestion is an admission to **the conditions** England and France in their answer to the UN yesterday **put forward**'

Such long distance integrations are also typical in clauses expressing indirect questions – as in example (10):

(10) Da kvotaerne, altså grænsen for, **hvor meget** de enkelte landes fiskere inden for EF må **fange**, ligger nogenlunde fast, er der kun én vej for at øge fortjenesten. (12.11.1986)

'Since the quota, in other words the limit for **how much** each country's fishermen within EU may **catch**, is relatively fixed, there is only one way to improve the income.'

All of these examples show that the journalist should take care to place constituents that belong together close to each other if the intervening material constructs new or repeats prior discourse material.

## Sources of Errors

During my work with the data and DLT, I have encountered a number of problems. Some I have solved, others are left unsolved. Here I will account for the most significant problems.

1) The size of the diachronic corpus is relatively small due to the aforementioned problems with collecting older data. In this regard, my diachronic measurements should be considered a pilot project more than a full-scale study.

2) By adding up the syntactic complexity in telegrams and reports, I have ignored that complexity may vary according to different textual genres, news contents, segments, narratives and the journalists' individual differences in language usage (perhaps governed to some degree by gender and age). On the other hand, telegrams and sometimes parts of reports typically consist of mixed language from many different sources (see Bell 1991) and therefore seldom represent the language use of a single journalist. From this perspective, it is defensible to analyse the public service station DR as one single transmitter of news language.

3) My applied version of DLT as a method has several inconsistencies: It does not a) distinguish between complex discourse referents (composite nouns and adjective modifications) and simple referents, b) include temporal and propositional satellites, c) include ambiguity problems generated by one or more competitors for the role of antecedent,

d) take differences between non-focused and focused antecedents into account when the anaphoric expression is a full NP (see Almor 1999), or e) include prosodic features that might play an important role, especially in integrations hinted by prosodic cues.

Furthermore, discourse referents form a continuum of “newness” and “knowness” according not only to the immediate context but also to the individual’s lexical, cultural and social news knowledge (‘how well does the listener know the topic, and how present is it in his mind’). This continuum can only be very roughly calculated within a general social parameter in means of lexical frequency. This in turn is *very* time consuming to measure.

4) Low syntactic complexity does not necessarily mean that what is being said is easy to understand. In fact, I will claim that it is highly speculative that an analysis of syntactic complexity can document how intelligible the news is *in general* for the listener. In order to say anything conclusive about the general comprehension of radio news, it is necessary – at a minimum – also to account for the speaker’s pronunciation, speech rate, intonation and use of pauses (Mills 2004, Uchanski 2004) in addition to the listener’s attention, macrostructures, schemata, scripts, narratives, frames and news values (van Dijk 1988).

Furthermore, it should be noted that strings of short and simple sentences in some instances have a tendency to generate a monotonous syntax, staccato rhythm and non-coherent meaning (Rask 1993 and Clark 2006: 36). By (over)using simple syntax, journalists might risk scattering the news content, thereby undermining the very reason for keeping it simple to begin with.

All in all, the results cannot verify any conclusions regarding the general intelligibility level of Danish radio news. They can only attest to the diachronic changes and the comparatively low level of syntactic complexity in modern Danish radio news.

## Conclusion and Discussion

The analysis and results show that the syntactic complexity in Danish manuscript-based public service radio news seems to be relatively low and less complex today than in prior generations of Danish radio news broadcasting. Furthermore, Danish public service journalists do not exceed the recommendations for simple syntax. This, however, is a new tendency.

These developments could be seen as a sign of Danish public service journalists having become more aware of the importance of making radio news manuscripts suitable for verbal transmission, reflecting a general change in radio news style from a formal to a more natural and oral orientated news style (“write for the ears, not the eyes”), with a focus on keeping sentences short and simple (see Poulsen 1991: 85, Lund 2008, Thompson 2005: 41, Vestad and Alme 2002: 135). However, this tendency may also have given birth to a less formal and thus also a faster and less distinct form of news speak on Danish public service radio and TV, perhaps causing the above-mentioned comprehension problems for Danish listeners and viewers (see Skyum-Nielsen 2008a+b).

With regards to the debate on the intelligibility of Danish public service radio and TV, it can be concluded that the syntactic complexity in manuscript-based radio news does not seem to be high enough to generate any critical problems for the listeners. However, the methods applied here are neither accurate nor comprehensive enough to make any final conclusions regarding the listeners’ comprehension of radio news.

Finally, in a European and Nordic perspective, the results seem to indicate that Danish radio news syntax is relatively similar to non-formal news on the BBC's Radio 1 in the mid-90s and somewhat simpler than Swedish radio news from the mid-70s. Based on these parallels, it would be fruitful to conduct further analyses of radio news syntax from SVT, NRK, BBC and other European public service channels. Larger cross-linguistic corpora could be used to prove or challenge the methods and results presented here and to uncover syntactic (dis)similarities in European radio news syntax. Furthermore, expanded corpora could be divided into different news platforms, formats, genres, topics, segments and narratives – giving way to a more detailed functional discourse analysis.

## Notes

1. Statens Mediesamling and DR do not have full historic archives at their disposal.
2. I have also left out programme presentations and transitions between news segments.
3. Since Mortensen (1973), there has been a general tendency within the prescriptive tradition in the Nordic countries to warn against passives, claiming that they delete important actor-information (see also Fowler 1991: 78) and are more difficult to understand than active verbs (see Grunwald et al. 1997: 101 and Roksvold 1989: 91). However, several linguists have argued against this assumption (see Olson and Filby 1973 and Løj and Wille 1985).
4. Svensson (1981) also pointed to three other factors that might affect the listener's comprehension: 1) the level of abstraction, 2) information density, and 3) the use of passives.
5. Almost half of his test subjects (48%) did not think that telegrams with short sentences – compared to identical telegrams with long sentences – were easier to understand (Einarsson and Platzack 1983: 22).
6. See Engberg-Pedersen et al. (1996) for a detailed account of the notion *content syntax*.
7. Based on neurolinguistic tests and reading times for ambiguous and complex nested constructions (see Gibson 1998 and 2000 for a full account).
8. As an expansion to this definition, Gibson has proposed that integration in itself can largely account for complexity due to a close correlation between prediction and integration. My applied use of Gibson's method is based on this assumption.
9. "A discourse referent is an entity that has a spatio-temporal location so that it can later be referred to with an anaphoric expression, such as a pronoun for NPs, or tense on a verb for events" (Gibson 1998: 12).
10. This hypothesis is supported by results from Gibson and Warren (see Gibson 1998 and 2000) showing that readers rated full noun phrases as more complex than pronouns referring to an immediate context.
11. For a more detailed account of the relation between written and spoken language in radio news, see Vagle (1990).
12. The spreading of dates is due to DR's sparse data archives prior to 1976.

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