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## Reportative *sollen* in historical German newspapers (1660–1954)

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This study conducts a quantitative analysis of reportative *sollen* in historical German newspapers (1660–1954). The study shows that, throughout the investigated period, the conditions triggering the possible readings of *sollen* remained stable and are linked to the presence of an information source either in the nearer or broader context of *sollen*. Additionally, the study highlights a steady decrease in *sollen* under impersonal speech report predicates. This could suggest that *sollen* evolved into a reportative marker by taking on the reportative function formerly expressed by its superordinate (impersonal) reporting clause. Further investigations of *sollen* are needed to prove this hypothesis.

**Keywords:** evidentiality, reportative markers, *sollen*, historical linguistics, language of newspapers

**Reportatives *sollen* in historischen deutschen Zeitungen (1660–1954)** – Der Beitrag bietet eine quantitative Analyse des reportativen *sollen* in historischen deutschen Zeitungen (1660–1954). Diese zeigt, dass die Bedingungen, die die möglichen Lesarten von *sollen* auslösen, im Untersuchungszeitraum stabil blieben. Eine Abnahme von eingebettetem *sollen* unter unpersönlichen Sprechaktprädikaten wird außerdem aus der Analyse sichtbar. Dies könnte auf eine Entwicklung von *sollen* zum reportativen Marker durch die Übernahme der reportativen Semantik, die früher vom übergeordneten unpersönlichen reedeinleitenden Satz ausgedrückt wurde, hinweisen. Weitere Untersuchungen sind notwendig, um diese Hypothese zu belegen.

**Schlüsselwörter:** Evidentialität, reportative Marker, *sollen*, historische Linguistik, Zeitungssprache

### 1. Introduction

This contribution focuses on the diachronic evolution of the German verb *sollen* as a reportative verb in the language of newspapers between 1660 and 1954. The analysis was conducted on a corpus compiled by the author containing instances of reportative *sollen* extracted from German newspapers. This examination aims to shed light on the changes in the usage of reportative *sollen* in the language of news media from the periods of Older New High German (1650–1800) and Younger New High German (1800–1950).<sup>1</sup> By comparing the findings of the analysis of historic *sollen* occurrences with data on *sollen* in contemporary newspapers (Vanderbiesen 2018), the study aims to assess how the evolutionary trends of reportative *sollen*, as observed in historical data, have unfolded in contemporary language.

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<sup>1</sup> Periodization according to Riecke (2016).

After a concise overview of the properties of the German modal verb *sollen* as a reportative evidential marker in Section 2 and a description of the examined corpus in Section 3, this paper will present the outcomes of the analysis of historical instances of *sollen* in Section 4. These results will be compared with data on *sollen* in contemporary German. Finally, the key findings of this study will be summarized in Section 5.

## 2. The reportative modal verb *sollen*

Besides being a deontic modal verb, the German verb *sollen* can be used to mark the content of a clause as reported information. This construction can be paraphrased in English by using expressions such as *it is said/reported that*:

- (1)
- a. *Es soll nur acht bis neun Stunden gebraucht haben, bis sie die Legionen an der äußeren Ostfront am Kaspischen Meere erreichten.* („Die Zeit“, 11/10/1951)
  - b. It is said that it took them only eight to nine hours to reach the legions on the outer eastern front on the Caspian Sea.

As can be seen from (1), using reportative *sollen* presupposes the “existence of a third-party source for the information in the proposition” (Vanderbiesen 2018: 174). However, this third-party source needs not to be specified, just as it is not necessary to profile the communication situation in which the reported utterance originated (Smirnova/Diewald 2011: 94). The information source has no place in the argument structure of *sollen* (Mortelmans/Vanderbiesen 2011: 73), and although an information source can be mentioned in a parenthesis or, more frequently, in a prepositional phrase, it is left unmentioned in the majority of cases (see Vanderbiesen 2018: 186 and results in 4.2).

Furthermore, the reported content does not necessarily have to originate from a single communication situation. As Letnes (2011) demonstrated through a small survey, speakers of German typically assume that by using *sollen* speakers summarize different communication situations having similar content (Letnes 2011: 121). The primary function of reportative *sollen* is considered to be that of a hearsay marker: “this rumor reading seems to be the default interpretation of *sollen*<sub>REF</sub>” (Schenner 2010: 166).

In his overview of the research on the relationship between evidentiality and epistemic modality, Wiemer (2018) notes that some scholars consider hearsay markers to be epistemic elements. Hearsay markers are sometimes said to weaken epistemic support, as they disassociate “the source information from the speaker” and, therefore, may be “a means of shifting responsibility for the information and implying that related facts may have a connotation of unreliable information” (Wiemer 2018: 92–93). For instance, Leiss (2008: 35) claims that *sollen* assigns an “intermediate degree of probability” to the proposition. However, in actual language use, this epistemic overtone of *sollen* can arise only in specific contexts through conversational implicature (Diewald 1999: 228), and it “cannot be regarded as dominant” (Mortelmans 2001: 136):

In fact, the analysis of the corpus data revealed that (a) although German *sollen* is compatible with a sceptical interpretation on the part of the speaker, (b) this possibility is in practice not very frequently made use of, and (c) the speaker's scepticism is usually explicitly marked, for example by means of the construction in which *sollen* is embedded or by a contextual indication of the unreliability of the source. (Mortelmans 2001: 136)

In Mortelmans' (2001) corpus, only 5 out of 137 occurrences of *sollen* encode genuine speaker's doubt. This result was later confirmed by Schenner, who concludes that "while *sollen*<sub>REP</sub> is compatible with speaker scepticism, this usage is in practice very rare" (Schenner 2008: 555) and that reportative *sollen* therefore "does not lexically encode speaker doubt", the sceptic overtones being pragmatic effects (Schenner 2010: 168). Vanderbiesen (2018: 190) also argues that *sollen* is "epistemically-modally neutral" and "appears to lack a factuality assessment altogether".

It is, of course, impossible to establish with absolute certainty how readers from earlier centuries interpreted *sollen*. Nonetheless, by reading the instances of *sollen* in my corpus in their broader context, I could find only a handful of passages where it could be confidently stated that *sollen* carries sceptical overtones. In these rare passages, the information is explicitly marked as uncertain, or the information source as unreliable, as in (12). For the most part, sentences containing reportative *sollen* are embedded in longer reported discourse segments in which no element suggests that the writer intends to distance themselves from or cast doubt on what is being reported. For this reason, and following Mortelmans (2001), Schenner (2008, 2010) and Vanderbiesen (2018) among others, I do not consider the reportative *sollen* to be an epistemic verb.

Lastly, whether we can call the reportative *sollen* an evidential marker is a terminological question that depends on one's understanding of evidentiality as a purely grammatical category, as is the case in Aikhenvald (2007: 222) among others, or as a functional one as, for example, in Boye/Harder (2009). In the first case, only fully grammatical, i. e., morpho-syntactic, elements indicating the information source for a proposition may be called evidentials (Aikhenvald 2007; 2018). In the second case, evidentiality is seen as a "conceptual notion, i. e. a substance domain, which refers to 'information source' or 'mode of knowledge'" (Cornillie et al. 2015: 2) and which can be expressed not only by affixes but also by functional extensions of TAM paradigms, auxiliaries, adpositions, complementizers, predicates, sentence adverbs and particles with a conventionalized evidential meaning (Wiemer/Marín-Arrese 2022: 13, see also Diewald/Smirnova 2010b).

In this study, I adopt a functionalist approach following the arguments in Boye/Harder (2009) and, therefore, call *sollen* a marker of *evidentiality*, more specifically of reportative evidentiality, that is an expression that marks information as reported with no reference to the communication situation it originated in (Diewald/Smirnova 2010a: 65; Schenner 2010: 164–165; Mortelmans/Vanderbiesen 2011: 73).<sup>2</sup>

<sup>2</sup> For a comprehensive overview of alternative descriptions of *sollen* in the literature, see Vanderbiesen (2018: 187, note 17).

### 3. Diachrony of *sollen* and corpus selection

Quantitative studies that explore the historical development of reportative *sollen* are yet to be conducted. The literature, however, informs us about its probable origin from the (older) deontic *sollen* (Smirnova/Diewald 2011: 95; 2013: 454–455). Deontic *sollen* presupposes “a bearer of the volition which is distinct from the subject referent and a speech act in which that bearer of [sic!] expresses a wish” (Maché 2019: 131). In other words, by using deontic *sollen*, the speaker indicates that the subject of the sentence is the recipient (or experiencer) of a directive given by an unnamed but presupposed source (Smirnova/Diewald 2013: 454):

- |                              |                                  |
|------------------------------|----------------------------------|
| (2) B soll sich mehr bewegen | A zu B: „Bewegen Sie sich mehr!“ |
| B <i>should move more</i>    | A to B: „ <i>Move more!</i> “    |

The arguments supporting the idea that reportative *sollen* originated from deontic *sollen* differ to some degree. According to Smirnova/Diewald (2013: 455), deontic *sollen* carries the fundamental semantics of ‘being the recipient of a directive from an unspecified speaker’. In the grammaticalization of reportative *sollen*, this meaning evolved into ‘being the recipient of an utterance with factual value assigned by an unspecified speaker’.

Maché (2019) does not explicitly discuss the conventionalization of reportative *sollen*, but highlights a broader trend in which epistemic verbs emerge from circumstantial modal verbs (Maché 2019: 540–541). According to Maché (2019: 533–534), who argues for a unified analysis of epistemic and reportative modality, reportative *sollen* is an epistemic verb.<sup>3</sup> As such, it modifies speech acts and stative predicates, e. g., predicates describing unalterable states (Maché 2019: 138). Deontic *sollen* is a circumstantial modal verb and thus modifies events. However, in exceptional cases, circumstantial modal verbs can embed stative predicates (Maché 2019: 549), typically the domain of epistemic verbs. These contexts, where the circumstantial deontic *sollen* deviates from its expected event predicate, are considered potential settings for reanalysis (Maché 2019: 550) and could thus represent the bridging context for the grammaticalization of reportative *sollen*.

It is worth noting that Maché (2019) does not provide historical examples of such a bridging context. To the best of my knowledge, the earliest historical instances of reportative *sollen* found in the literature do not present a clear-cut choice between deontic and reportative interpretations. For example, Middle High German examples of *sollen* in Diewald (1999: 420–421) could be interpreted as reportative or epistemic but not as deontic. Later ambiguous cases like (3) involve the deontic, the reportative, but also the projective semantics of *sollen*. Consequently, I concur with Maché (2019: 550) that any analysis concerning the grammaticalization of reportative *sollen* should rely, in the future, on more robust empirical foundations.

The conditions for a reportative interpretation of *sollen* seem to have emerged in Middle High German (1050–1350). Diewald (1999: 421) identifies some instances of possibly reportative *sollen* during this period but notes that the reportative reading cannot yet be considered

<sup>3</sup> Whenever I call *sollen* ‘epistemic’ or imply that it is an epistemic modal in this contribution, I do it when referencing work by scholars who adopt other criteria for the distinction between epistemic modality and evidentiality than mine and thus consider *sollen* an epistemic modal.

fully grammaticalized. The instances of *sollen* from this era are often ambiguous, and the reportative reading is mostly contextually secured by a verb of saying in the vicinity of *sollen*. In his analysis of the prose *Lancelot* (ca. 1200), Müller (2001: 244–245) presents a different perspective, contending that reportative *sollen* was already well-established in Middle High German. However, he also provides examples where *sollen* co-occurs with a verb of saying.

What is unequivocal is that reportative *sollen* was firmly established in various text genres in the 15<sup>th</sup> and 16<sup>th</sup> centuries (Gloning 2017: 128–132) and that it was frequent in newspapers from the early 17<sup>th</sup> century (Fritz 1991: 36). After that, we have no information on the evolution of reportative *sollen* until contemporary German, for which we have some corpus-based analyses (e.g., Mortelmans 2001; Smirnova/Diewald 2013; Vanderbiesen 2018; Socka 2021).

The present contribution aims to partially fill the gap in the diachronic quantitative investigation of reportative *sollen* by analyzing its usage between the 17<sup>th</sup> and the 20<sup>th</sup> centuries, leaving the more challenging enterprise of quantifying reportative *sollen* in Middle and Early New High German for a later time. To accomplish this, I collected 200 instances of reportative *sollen* for each of the following 15-year periods: 1660–1674, 1740–1754, 1840–1854, and 1940–1954. The occurrences were extracted from the ‘DWDS Referenz- und Zeitungskorpora’.<sup>4</sup> Since reportative *sollen* appears to be particularly frequent in news reports and may therefore exhibit text-type specific features, only occurrences from the text genre *Zeitung* (‘newspaper’) were selected. As the search in the DWDS-corpora for 1740–1754 yielded less than 200 occurrences of reportative *sollen*, this sub-corpus was supplemented with occurrences from the *Wienerisches Diarium* and the *Berlinische Nachrichten von Staats- und gelehrten Sachen*.

Especially in newspapers from the 17<sup>th</sup> and 18<sup>th</sup> centuries, it is often challenging to determine whether *sollen* is deontic (3).b, reportative (3).c, or whether the projective semantics dominates (3).d.<sup>5</sup> As was often the case in Middle and Early New High German, sometimes all three interpretations appear to be simultaneously possible and cannot be disambiguated from context (Fritz 1991: 34; Diewald 1999: 419):

- (3)
- a. *In Podolien sollen mit dem angehenden Frülینگ 5000. Mann gesammelt werden* („Nordischer Mercurius“, 1673)
  - b. (It was ordered that) with the coming of spring, 5000 men shall be assembled in Podolia
  - c. (It is said that) with the coming of spring, 5000 men will be assembled in Podolia
  - d. With the coming of spring, 5000 men will be assembled in Podolia

These and other ambiguous cases were left out of the quantitative analysis. Only occurrences of *sollen* which can only be interpreted as reportative were used in the present study.

The data from the historical sub-corpora will be compared with the results of the analysis of *sollen* in contemporary newspapers in Vanderbiesen (2018), even though the categories used by Vanderbiesen are not always compatible with the ones used in this study. For instance,

<sup>4</sup> <https://www.dwds.de/d/korpora/public> [12/09/2023].

<sup>5</sup> I speak of a projective semantics of *sollen* instead of *sollen* as an auxiliary verb in future periphrases following Zeman (2013: 337–341).

in Vanderbiesen’s discussion of the syntactic contexts of *sollen*, he only distinguishes between subordinate and relative clauses, while I further subdivide the ‘subordinate’ class into object and adverbial clauses (Table 2). Additionally, Vanderbiesen (2018: 185) considers cases like (4) as instances of embedded *sollen* under a (postponed) speech report predicate, whereas I view them as independent *sollen* clauses with a postponed parenthetical speech reporting expression (Fabricius-Hansen et al. 2018: 137).

- (4)
- a. *Zwischen der Sowjetunion und den Westmächten sollen zur Zeit interne diplomatische Verhandlungen im Gange sein, erklärten politische Kreise in Paris.* („Die Zeit“, 24/11/1949)
  - b. Internal diplomatic negotiations are said to be under way between the Soviet Union and the Western powers, political circles in Paris stated.

However, this construction is not attested in my corpus before the 1940s, so my results and those in Vanderbiesen (2018) should still be comparable.

## 4. Results

### 4.1. Syntactic contexts and readings of reportative *sollen*

After discussing the readings of *sollen* in different syntactic contexts, which seem to have remained constant in the investigated period, I will delve into the first clear diachronic development that can be observed from the corpus analysis, that is the decrease in the frequency of reportative *sollen* in object clauses (Table 2).

In his investigation of the semantics of reportative *sollen* in complement clauses, Schenner (2008, 2010) identifies three readings that *sollen* can adopt in this syntactic context:

Table 1: Readings of *sollen* in embedded contexts (after Schenner 2008: 559–560; Schenner 2010: 175)

assertive reading	= ‘it is said that p’
global reading	= ‘p, as it is alleged’
concord reading	= ‘p’

Although Schenner (2008, 2010) adopts these categories to examine the semantics of *sollen* in complement clauses, I find it useful to extend them to the investigation of the readings of *sollen* in other syntactic contexts as well, including main, adverbial, and attributive clauses. My analysis of the corpus data suggests that the concord reading, in which *sollen* signifies ‘p’ rather than ‘it is reported that p’, can be triggered not only when *sollen* is embedded under a speech report predicate, as noted by Schenner (2008, 2010), Diewald/Smirnova (2013) and Socka (2013), but in all cases where another marker of reporting is present, confirming what was stated in Schenner (2007: 210). This element can be a superordinate reporting clause, a parenthetical reporting clause, or the mention of an information source in the form of a prepositional phrase. In the latter cases, which will be discussed in 4.2., *sollen* may have

a concord reading even though it appears in a main clause. For now, let's focus on the interpretation of *sollen* in different embedded contexts.

As stated above, whenever *sollen* is the sole element marking the proposition as reported, either the assertive or the global reading is activated. This is the case in most non-embedded contexts but also in most attributive (5) and adverbial clauses (6). In attributive and adverbial clauses, *sollen* efficiently marks the information as reported without using other more cumbersome strategies involving further subordination, such as a construction like *man sagt, dass* or *es wird gesagt, dass*. In these contexts, the embedded *sollen*-clause typically carries either the global or, more frequently in the analyzed historical newspapers, the assertive reading (5)–(6). This use of reportative *sollen* in adverbial and attributive clauses remains stable throughout the analyzed timespan (see Table 2).

- (5)
- a. *So traf auch ein Abgeordneter von dem Lord Waldgrave von Paris hier ein, welcher sehr wichtige Briefe mitgebracht haben soll.* („Berlinische Nachrichten“, 27/10/1740)
  - b. A deputy of Lord Waldegrave, who is said to have brought very important letters, also arrived here from Paris.
- (6)
- a. *Die Gemüther sind auf den Freyherrn Gyllenstirna unbeschreiblich verbittert, weil er an einem fremden Minister die wichtigsten Angelegenheiten offenbahret haben soll.* („Hamburgischer Correspondent“, 12/4/1741)
  - b. The spirits are indescribably bitter at Freyherr Gyllenstirna because he is said to have disclosed the most important matters to a foreign minister.

This is also true for object clauses that are not embedded under a speech report predicate, such as (7), where the embedded *sollen*-clause functions as a subject to the negated superordinate predicate *anzunehmen sein* ('having to be assumed') and is the only indication that the proposition is reported. In these cases, the global reading of *sollen* is preferred. However, due to the limited number of occurrences of such cases in the historical corpus, it is not possible to generalize this tendency. Furthermore, this syntactic context of *sollen* is an innovation of contemporary German, as it is not attested before the 1940s (see Table 2).

- (7)
- a. *Eine ebenso dumme wie unglaubwürdige Auslegung, da nicht anzunehmen ist, daß die Befehle [...] dem britischen Kriegsministerium [...] nicht bekannt gewesen sein sollen.* („Archiv der Gegenwart“, 16/10/1942)
  - b. An interpretation as stupid as it is implausible, as it cannot be assumed that the orders [...] were not known to the British War Office [...] (as it is alleged).

The interpretation of embedded *sollen* changes when the superordinate clause contains a speech report predicate, which already signals the proposition as reported. In the 17<sup>th</sup> and 18<sup>th</sup> centuries, reportative *sollen* could be embedded under 'hearsay' predicates, often realized with the impersonal subject pronoun *man* (8), or less frequently with other impersonal pronouns like *etliche* or *einige* ('some'). Other impersonal formulations such as *es verlautet* or *es will verlauten*, which are described as synonyms of *man sagt* in Adelung's

dictionary,<sup>6</sup> were still common in the 17<sup>th</sup> century but gradually disappeared in the late 18<sup>th</sup> and early 19<sup>th</sup> centuries.

These impersonal constructions are themselves reportative evidentials and thus strongly limit the assertive and global readings of *sollen*. An assertive reading, as in (8).b and (9).b, would lead to a redundant hearsay-in-hearsay interpretation. Consequently, when the speech act predicate is impersonal, the concord reading ‘p’ is preferred, in which *sollen* ‘harmonizes’ with the impersonal reporting clause and could be substituted by a *Konjunktiv I* (‘subjunctive I’) without any change in meaning – (8).a’. This is true for historical texts and also holds for contemporary German (Smirnova/Diewald 2013: 459).

(8)

- a. *Man sagt/ daß S. Majest. resolvirt seyn solte/ die Krone seinem Bruder abzutretten/ („Ordinari Postzeitung“, 1668 Nr. 2)*
- a’: Man sagt, dass Seine Majestät resolvirt sei, die Krone seinem Bruder abzutretten.
- b. \*One says that His Majesty is said to be resolved to give up the crown to his brother.
- d. One says that His Majesty is resolved to give up the crown to his brother.

(9)

- a. *Auß Pohlen will verlauten/ ob solten sich die Türcken nunmehr der Ukraina bemächtiget/ und ihren marche auff Reuschlemburg herauff gerichtet haben/ („Ordentliche Wochentliche Post-Zeitung“, 1672 Nr. 40)*
- a’. Aus Polen will verlauten, ob hätten sich die Türken nunmehr der Ukraine bemächtigt und ihren Marche auf Reuschlemburg herauf gerichtet
- b. \*From Poland, it is reported that it is said that the Turks have seized Ukraine and are marching on Reuschlemburg.
- c. From Poland, it is reported that the Turks have seized Ukraine and are marching on Reuschlemburg.

In other cases, the assertive ‘report-in-report’ reading is acceptable but seemingly never obligatory. To know for sure how *sollen* is to be interpreted in a sentence like (10), we should know the content of the mentioned ‘later letters’. If they reported a rumor, the assertive reading in (10).a would be correct. The global reading in (10).b would be appropriate if the letters reported a fact. This ambiguity can be observed in the historical newspapers analyzed in this study and in contemporary ones (Schenner 2008: 559–560, 2010: 174; Smirnova/Diewald 2013: 459, Socka 2013:183).

(10)

- a. *Der Verlurst (sic) belauffet sich an Todten, Blessirten. bey 3000. Mann, spätere Briefe hingegen melden, daß selber Seits kaum auf 1500. Mann belauffen solle.*<sup>7</sup> („Wienerisches Diarium“, 13/10/1745)
- b. The casualties amount to 3000 dead and wounded men. Later letters, however, report that the number of dead and wounded is said to hardly amount to 1500 men.
- c. The casualties amount to 3000 dead and wounded men. Later letters, however, report that the number of dead and wounded hardly amount to 1500 men.

<sup>6</sup> www.woerterbuchnetz.de/Adelung?lemid=V00520 [12/09/2023].

<sup>7</sup> In this time period, *solle* is the standard third person singular present indicative form, this sentence is therefore not in the subjunctive (*Konjunktiv I*).



This last syntactic context of *sollen*, that is embedded *sollen* under a speech report predicate, became increasingly rare as time progressed, going from 30 out of 200 occurrences in 1660–1774 to just one out of 200 in 1940–1954:

Table 2: Syntactic contexts of *sollen*

	1660–1674	1740–1754	1840–1854	1940–1954	2010s <sup>8</sup>
main clause	132	137	154	160	165
attributive clause	28	37	33	29	23
adverbial clause	10	10	11	6	} 12
object clause					
under speech report	30	16	2	1	
other predicates	–	–	–	4	

As we still do not have quantitative investigations of reportative *sollen* in Middle and Early New High German, it is challenging to formulate a hypothesis regarding its evolution. If it holds true that in Middle High German the precursor of reportative *sollen* occurred almost exclusively under a verb of saying or thinking (Diewald 1999: 421), then it could be the case that reportative *sollen* went from being typically embedded under a speech report predicate and having a concord reading to becoming increasingly syntactically independent. In this process, it took on the reportative meaning previously expressed by its superordinate (impersonal) reporting clause. This would align with one of the grammaticalization patterns that were shown to be common in the development of reportative evidentials, the pattern in which “reduced reportative clauses [...] are reanalyzed as markers of hearsay evidentiality” (Jäger 2010: 177). This would not rule out that the reportative meaning possibly emerged from the deontic one but would speak for a convergence of factors in the grammaticalization of *sollen* and should be taken into consideration in future research.

At the same time, a text-type-specific explanation may be at work here. In historical newspapers from the 17<sup>th</sup> and 18<sup>th</sup> centuries, *sollen* clauses were often embedded under ‘hearsay’ speech predicates with impersonal subject pronouns (*man sagt*, *man berichtet*). However, these constructions became progressively less acceptable in the language of newspapers during the late 18<sup>th</sup> century and virtually disappeared in the 19<sup>th</sup> century (Assenzi 2023). Non-embedded *sollen* could have then been used more frequently as a more subtle alternative for marking information as reported without explicitly profiling another communication situation, which had to remain undefined in the case of *man sagt* and similar constructions.

<sup>8</sup> Vanderbiesen (2018: 184) reports twelve cases of *sollen* in subordinate clauses during the 2010s, but he does not distinguish between adverbial and object clauses. Even assuming they all were object clauses, which is probably not the case, a decrease in the use of *sollen* in object clauses would be still visible compared to the mid-19<sup>th</sup> century and earlier.

## 4.2. Information source in *sollen*-constructions

As shown in Table 3, *sollen* was used predominantly without any indication of an information source throughout the analyzed timespan. A comparison of the data from historical newspapers with that in Mortelmans (2001) and Vanderbiesen (2018) reveals that, in recent times, *sollen* has become more compatible with the indication of an information source than it was in the past centuries. Already in the 1940s, we observe an increase in the indication of uniquely identified sources such as institutions, newspapers, news agencies, and individuals. This possibility seems to have remained constant, while the indication of a non-uniquely identifiable source has become notably more frequent in the 2010s than it was in the past.

In *sollen*-clauses, the information source can be expressed clause-internally, for example, in a prepositional phrase (11)–(12), or clause-externally, such as in the reporting clause (10) or a parenthesis (12). This distinction was not taken into consideration in Table 3.

Table 3: Information source in *sollen* constructions

	1660–1674	1740–1754	1840–1854	1940–1954	1980s–1990s <sup>9</sup>	2010s <sup>10</sup>
no source	179 89,5%	168 84%	181 90,5%	175 87,5%	ca. 60%	139 69,5%
rumor, hearsay	5	13	6	2		
non-iden- tifiable source	15	17	11	10		47
report(s), letter(s)	14	16	8	6		
news media	–	–	1	2		
group of people	–	1	–	1		
person	1	–	2	1		
identified source	1	2	2	13		14
institution				1		
newspa- per, news agency			1	8		
individual	1	2	1	4		

<sup>9</sup> Mortelmans (2001: 135).

<sup>10</sup> Vanderbiesen (2018: 186). Note that Vanderbiesen (2018) uses different categories for the information source, so my results could not be fully comparable with his.

As stated above, the presence of an information source can activate the concord reading ‘p’, but the assertive reading is also possible in these contexts, just as it was under non-impersonal speech report predicates. This holds true regardless of the type of source, which can be uniquely identifiable (13), non-uniquely identifiable (11), or even described as a rumor (12). In the latter case, the assertive reading appears to be slightly more acceptable. These findings are consistent across contemporary and historical newspapers.

(11)

- a. *Vermöge Turiner Briefen, soll sich der Spanische Verlust bey Oneglia auf 5. bis 6000. Mann erstrecken.* („Der allerneuesten Europäischen Welt- und Staats-Geschichte“, 24/07/1744)
- b. According to letters from Turin, the Spanish loss at Oneglia is said to be between 5000 and 6000 men.
- c. According to letters from Turin, the Spanish loss at Oneglia ranges between 5000 and 6000 men.

(12)

- a. *Einem unter den Deputirten umlaufenden (jedoch sehr unwahrscheinlichen) Gerüchte zufolge soll die Regierung beabsichtigen, einen Gesetzworschlag einzubringen, der einen Credit von 100 Millionen begehrt [...]* („Allgemeine Zeitung“, 30/01/1840)
- b. According to a (very unlikely) rumor circulating among the deputies, the government is said to intend to introduce a bill seeking a credit of 100 million.
- c. According to a (very unlikely) rumor circulating among the deputies, the government intends to introduce a bill seeking a credit of 100 million.

Schenner (2007: 208) affirms that “[i]f multiple evidential expressions occur in one clause [...] a concord interpretation is not only possible but usually more prominent” than the assertive one. I argue here that the assertive reading can never be ruled out entirely in examples like (11). These sentences remain ambiguous, especially if we focus on the isolated *sollen*-clauses without considering their broader context. As seen in the discussion of (10), in most cases where *sollen* co-occurs with another marker of reporting, only knowledge of the content of the original utterance being reported could help us decide whether the concord or the assertive reading is correct. In (11), for example, the assertive reading (11).b might be adequate if the ‘letters from Turin’ reported a rumor about the number of casualties in Oneglia. The global reading in (11).c would be appropriate if the letters registered the number of casualties. Unfortunately, for historical newspapers, reconstructing the content of the quoted sources is often impossible, as they are mostly lost to time.

Sometimes, however, the surrounding linguistic context of the *sollen* clause and its positioning in longer sections of reported discourse can help us disambiguate between the two readings. If we only consider the first sentence in (13), the assertive reading of *sollen* in (13).b could be acceptable. In this case, we interpret the sentence as Adenauer reporting a rumor about Count Schwerin having exceeded the limits set for his mission. If we read further, however, we see that the next sentence is in the *Konjunktiv I*, indicating that it continues the indirect report of Adenauer’s words. Taking the context into account, *sollen* in the first sentence tends to be interpreted as harmonic with the *Konjunktiv I*, resulting in a concord reading as in (13).c.

(13)

- a. *Wie Dr. Adenauer mitteilte, soll Graf Schwerin „in seinem Auftrag über die gesetzten Grenzen hinausgegangen“ sein. Graf Schwerin habe um seine Entlassung gebeten und er habe diesem Gesuch entsprochen.* („Die Zeit“, 2/11/1950)
- b. <sup>\*/2</sup> As Dr. Adenauer stated, Count Schwerin is said to have “gone beyond the set limits” in his mission. Count Schwerin had asked to be dismissed, and he had granted this request.
- c. As Dr. Adenauer stated, Count Schwerin had “gone beyond the set limits” in his mission. Count Schwerin had asked to be dismissed, and he had granted this request.

Many such cases are present in the corpus. Therefore, it is crucial that future analyses of reportative *sollen* consider the context in which it occurs, as, in actual language usage, *sollen* never appears in isolation but in a complex linguistic and extra-linguistic environment. Furthermore, it would be interesting to explore *sollen* not only from the perspective of the semantic interpretation given to it by readers, as has been done until now, but also from the viewpoint of writers who compose *sollen*-clauses. For contemporary newspapers, it might be feasible to evaluate whether writers genuinely use *sollen* for reports-in-reports or if they use it with a concord reading in place of the subjunctive I in contexts in which *sollen* occurs with other markers of reporting. This could be accomplished by comparing the original quoted text with the reported one, and would provide important data on possible further evolutions of *sollen*.

## 5. Conclusions

The present study conducted a quantitative analysis of corpus data from historical German newspapers from the 17<sup>th</sup> to the 20<sup>th</sup> century, revealing constant traits and evolutions of reportative *sollen*.

The study determined that the conditions determining the three different readings of reportative *sollen* remained stable over time. The assertive reading (‘it is said that p’) and/or the global reading (‘p, as it is alleged’) are activated when *sollen* is the only marker of reporting. This occurs in most main, attributive, and adverbial clauses, as well as in object clauses not embedded under a speech report predicate, as long as no information source is indicated.

When other signals already mark the information as reported, the concord reading ‘p’ of *sollen* can be activated. In historical and contemporary newspapers, the concord reading ‘p’ is preferred under impersonal speech report predicates, as the assertive reading would lead to a redundant hearsay-in-hearsay scenario. When *sollen* is embedded under non-impersonal speech report predicates, the assertive reading is possible alongside the concord one, and often only the broader context can help us disambiguate between the two.

Lastly, the concord reading ‘p’ is possible in non-embedded contexts whenever *sollen* is combined with a clause-internal indication of an information source, such as a prepositional phrase, or with a clause-external one, such as a parenthesis. Thus, the interpretation of *sollen* is highly dependent not only on its syntactical context but also, and even most importantly, on the presence of an information source or of other markers of reporting. This characteristic remains consistent over time.

One notable development of reportative *sollen* in diachrony concerns its use with an indication of an information source, which has become increasingly frequent in contemporary language. Until the 1940s, nearly 90% of *sollen* occurrences lacked any indication of a source, whereas from the 1980s onwards this value decreased to 60–70%. Furthermore, we can observe a noticeable decrease in the use of embedded *sollen* under a speech report predicate. This decline could be due to the fact that, in the 17<sup>th</sup> and 18<sup>th</sup> centuries, *sollen* was often embedded under impersonal reporting clauses such as *man sagt*, *dass*. These, however, became increasingly less acceptable in newspapers between the 18<sup>th</sup> and 19<sup>th</sup> centuries. On the other hand, hints in the literature suggest that reportative *sollen* may have originated in Middle High German in object clauses under a speech report predicate. Hence, the decrease in the use of *sollen* in embedded contexts could be the result of a longer historical trend that gradually made *sollen* more syntactically independent by taking over the reportative meaning previously expressed by the superordinate reporting clause.

A comprehensive quantitative analysis of reportative *sollen* in earlier language stages of Middle and Early New High German would be necessary to substantiate this hypothesis. Due to the context-sensitive nature of *sollen*, it is crucial that such quantitative analysis is accompanied by a qualitative analysis that considers the broader reporting context in which *sollen*-clauses are situated.

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