

RUHR-UNIVERSITÄT BOCHUM

Das geht nicht zu ändern – the origin and structure of the German modal *gehen*-passive

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Introduction

- Basic properties of passive constructions:
 - demotion of the external argument (which can be optionally realized as an prepositional/oblique DP), leading to absorption of accusative case (Burzio's generalization)
 - promotion of an internal argument (which is realized as the subject of the clause)

(1) Anna repariert den Wagen. >>> Der Wagen **wird** (von Anna) **repariert**.
Anne repairs the.acc car the.nom car becomes by Anna repaired
'The car is repaired by Anna.'

- German canonical passive:
 - auxiliary **werden** + past participle of a lexical verb

Introduction

- German exhibits a set of peculiar constructions in which an apparently active infinitival complement (with *zu*) is used to express passive voice.
- Widely discussed in the literature: cases with *sein* ‘to be’ (cf. e.g. Brinkmann 1962, Gelhaus 1977, Höhle 1978, Haider 1984, 2010, Toman 1986, Demske-Neumann 1994, Wurmbrand 2001, Haiden 2005, Holl 2010, Abraham 2020):

(2) *Die Probleme sind zu lösen.* → *die Probleme*: internal argument + subject
 the problems are to solve
 a. ‘The problems can be solved.’
 b. ‘The problems must be solved.’

- Since (2) conveys a modal interpretation (with *sein*: possibility or obligation), relevant constructions have been labeled “**modal infinitives**” (Brinkmann 1962) or “**modal passives**” (Höhle 1978)

Introduction

- In addition to the copula/auxiliary *sein* ‘to be’, there is a small set of **lexical verbs** that appear in the modal passive as the selecting/higher element (cf. e.g. Behaghel 1923: 339, Höhle 1978, Holl 2010, Gaeta 2018, Müller 2019, Abraham 2020).
- Of these, especially ***bleiben*** ‘to remain’ and ***stehen*** ‘to stand’ have received some attention in the literature (see in particular Höhle 1978 for some pertinent observations and remarks on *bleiben*; examples taken from Duden 2022: 386):

- (3)
- a. *Das Ergebnis **bleibt** abzuwarten.*
The result remains *off-to-wait*
‘The result must be waited for.’
- b. *Genau das **stand** zu befürchten.*
Exactly that stood to fear
‘Exactly that had to be feared.’

Introduction

- There's a related construction that combines a (finite) form of *gehen* 'to go' with a *zu*-infinitive, about which nothing much is known (see Behaghel 1923: 339, Holl 2010, Gaeta 2018, Müller 2019, Abraham 2020, Demske 2022, Duden 2022: 386 for some very brief remarks) – the **modal *gehen*-passive**:

(4) *Aber jetzt **geht** es nicht mehr **zu ändern**.*

but now goes it not more to change

'But now it cannot be changed anymore.'

(DeReKo, WDD19/G0037.15336 Diskussion:Game Developer)

- basic passive character (demotion of external argument + promotion of internal argument)
- modal interpretation ((im)possibility)

Introduction

- In the present-day language, the *gehen*-passive has a decidedly colloquial ring to it (cf. Duden 2022: 385); as a result, it is quite rare in corpora of the written language:
 - A search for the string “nicht zu ändern geht” produced 5 relevant examples in the German Reference Corpus (DeReKo, > 50B tokens)
 - A search ((zu MORPH(V INF) %w1 ,) (geht or gehen)) in the morphologically annotated Connexor subcorpus of DeReKo (C1 & C2, 2.9B tokens) yielded 14 relevant examples.
 - The majority of these are (free) relative clauses (12 of 14), often quasi-formulaic chunks and expressions as in (5):

(5) *man bemüht sich, zu retten, **was zu retten geht***

One strives self to rescue what to rescue goes

‘One tries hard to rescue what can be rescued.’

(DeReKo, NON12/DEZ.05000 Niederösterreichische Nachrichten, 13.12.2012; Die Sanierung läuft)

Introduction

- However, it seems that the *gehen*-passive was more widely used in earlier (19th century) German, cf. the following examples (see below for details):

(6) *sie machen selbst diesen entschiedenen Gegensatz, welcher sichtbar und empfindbar ist und*

They make self this decided difference which visible and perceptible is and

der nicht aufzuheben geht

that.nom not up-to-cancel goes

‘they themselves make this decided contrast, which is visible and perceptible and **which cannot be eliminated**’ (Goethes *Farbenlehre*, 1810, DWDS corpus)

(7) *Was einmal geschehen, das geht nicht zu ändern.*

what once happened that goes not to change

‘What happened once cannot be changed.’

(Deutsches Sprichwörter-Lexikon. Bd. 1, 1867, S. 1585; DWDS corpus)

Introduction

- Some properties of the modal *gehen*-passive (preliminary):
 - basic similarities with other, more common passive constructions:
 - The logical subject/external argument of the infinitive is not expressed;
 - The internal argument of the embedded *zu*-infinitive appears as the subject of *gehen*.
- However...

Introduction

- Non-passive-like properties of the modal *gehen*-passive (based on introspection/corpus data, see below for details):

- Logical subject cannot be expressed in a *von*-phrase:

(8) ??*Das geht von der Regierung nicht zu ändern.*

that goes by the government not to change

‘That cannot be changed by the government.’

- Infinitive seems to be restricted to certain verb classes:

(9) a. ??*Das Ziel geht nicht zu erreichen.*

the goal goes not to reach

‘The goal cannot be reached.’

b. ??*Es geht nicht zu arbeiten.*

It goes not to work

Introduction

- Non-passive-like properties of the modal *gehen*-passive II:
 - It does not occur with periphrastic verb forms (in contrast to e.g. the modal *sein*-passive)
- (10) *Die Situation sei leider nicht zu ändern gewesen/??gegangen.*
the situation be.pres.sbj unfortunately not to change been gone
'Unfortunately, the situation couldn't be changed.'
(DeReKo, BRZ09/NOV.04568 Braunschweiger Zeitung, 10.11.2009)
- It seems to be facilitated by negation and certain adverbials such as *leicht* 'easily', *gut* 'well', *noch* 'still', *kaum* 'barely'; examples without negation/adverbials are rare and seem to be quite marginal.

Introduction

- Some constructions that look similar on the surface, but have a different structure:

(11) [Tabus abzuschaffen] geht gar nicht so einfach.
taboos to-abolish goes really not so easy
'It is really not easy to abolish taboos.' (Der Tagesspiegel, 30.11.1999, DWDS)

(12) [Den Schaden anzurichten] ging schnell [...]
the.acc damage on-to-wreak went fast
'The damage could be done quickly.' (Die Zeit, 17.09.2015 (online), DWDS)

- Internal argument is still contained in the fronted infinitival clause
- (11): No agr. between *geht* (sg) and *Tabus* (pl) (cf. *Tabus gehen_{pl} gar nicht so einfach abzuschaffen.*)
- (12): direct object marked with accusative (cf. *Der_{nom} Schaden ging schnell anzurichten.*)
→ Control structures, infinitival clause as subject of *geht*

Introduction

- Similarities with raising structures:
 - Obligatorily coherent structure (no extraposition of the infinitival part)
 - In the modal passive, *gehen* does not seem to assign a thematic role to its subject, in contrast to a semantically similar verb like *funktionieren* ‘to work, function’, which can also be used to express (im)possibility in German:
- (13) a. *Das geht/funktioniert nicht.* ‘That does not work.’
b. *Es funktioniert/geht nicht, den Wagen zu reparieren.* ‘It is not possible to repair the car.’
c. *Der Wagen geht/*funktioniert nicht zu reparieren.* ‘The car cannot be repaired.’
- (a-b): Both *gehen* and *funktionieren* are lexical verbs that assign a thematic role to their subject;
 - (c): In the modal passive, only the desemanticized form of *gehen* can be used, which does not any longer assign a thematic role to the subject.
 - Prediction: At least to some extent compatible with idioms: *?Das Pferd geht nicht von hinten aufzuzäumen.* ‘One should not put the cart before the horse.’

Roadmap

1. Synchronic characteristics of *gehen*
2. A synchronic formal analysis of *gehen*
3. Earliest attestations and potential diachronic sources
4. A diachronic analysis
5. Conclusion

1. Synchronic characteristics

Empirical implications for classification

Characteristics of *gehen* + *zu* + INF

- We collected synchronic data via a combination of corpus searches, consultant judgments and introspection, and an online experimental pilot study.
- We draw on the pilot study in some but not all instances for reasons of time and space, where explicitly necessary for forming an analysis
 - Online experiment consisted of 50 stimuli
 - Acceptability judgement study using scale 1-5
 - Order of questions was randomized
 - Tested multiple conditions for *gehen* as well as parallel constructions and controls.
 - 72 participants
- Most speakers have clear judgements, yet some appear to reject it totally (c.11%, 8/72)
- The general picture is that [*gehen* + *zu* + INF] is functionally and lexically more restricted than other passives and modal (*zu*) infinitival passives.
- The construction shows properties typical of middles, yet these are not 100% consistent.

Characteristics: Case, tense, and structure I

- As established, the internal argument patient/theme of transitive lexical verb is promoted and receives nominative Case.

(14) *Der/*Den Tisch geht leicht abzuwischen.*
the.nom/*acc table goes easy off-to-wipe
'The table wipes easily/can be easily wiped (clean)'

- Like raising *scheinen* 'seem' in that both are incompatible with periphrastic forms in the matrix clause:

(15) a. **Die Journalistin hat gut informiert zu sein geschienen.*
The journalist has well informed to be seemed

b. *Die Journalistin schien gut informiert zu sein.*
The journalist seemed well informed to be

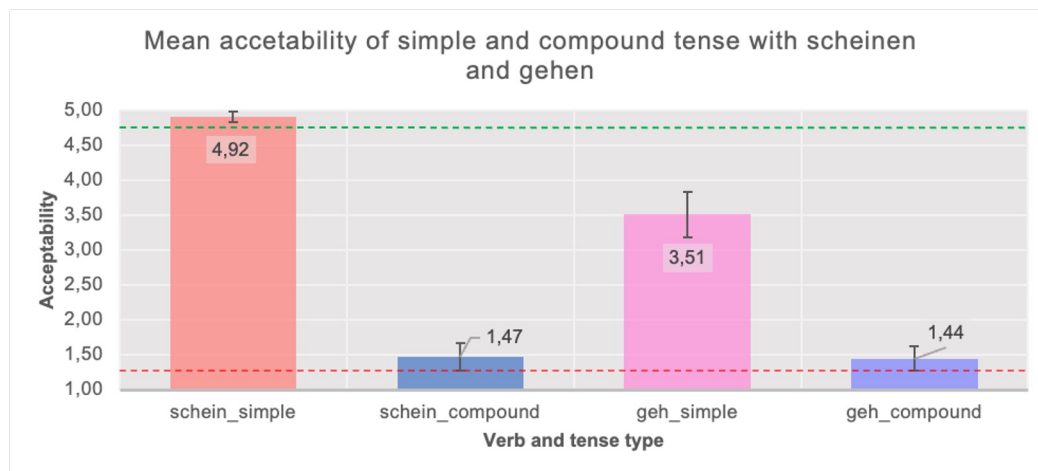
(16) a. **Der Wagen ist nicht zu reparieren gegangen* (potential garden path with sein+zu+INF?)
The car is not to repair gone

b. **Der Wagen ging nicht zu reparieren*
The car went not to repair

Experimental results →

Characteristics: Case, tense, and structure II

- As non standard, mean of best *gehen* constructions consistently lower than ceiling (4.71 = mean of known grammatical fillers: green line, floor = mean of known ungrammatical fillers 1.28: red line)
- Clear effect in both for both *scheinen* and *gehen*, that compound tenses are essentially ungrammatical in raising contexts with *zu* infinitives
- Difference for tense forms of *gehen* highly significant under paired sample t-test ($p = < 0.001$)



Characteristics: Case, tense, and structure III

- The zu-infinitive cannot be extraposed (also *scheinen*/long passives)

(17) *Louisa ist sehr glücklich...*

Louisa is very happy

a. **dass das Spiel endlich geht zu installieren.*
that the game finally goes to install

b. *dass das Spiel endlich zu installieren geht.*
that the game finally to install goes

‘Louisa is very happy that the game can finally be installed.’

- In control structures, extraposition of entire infinitival domain is fine.

(18) a. ...*dass vergessen wurde, die Kinder abzuholen*

That forgotten was the children up-to-pick

b. ...*dass die Kinder abzuholen vergessen wurde*

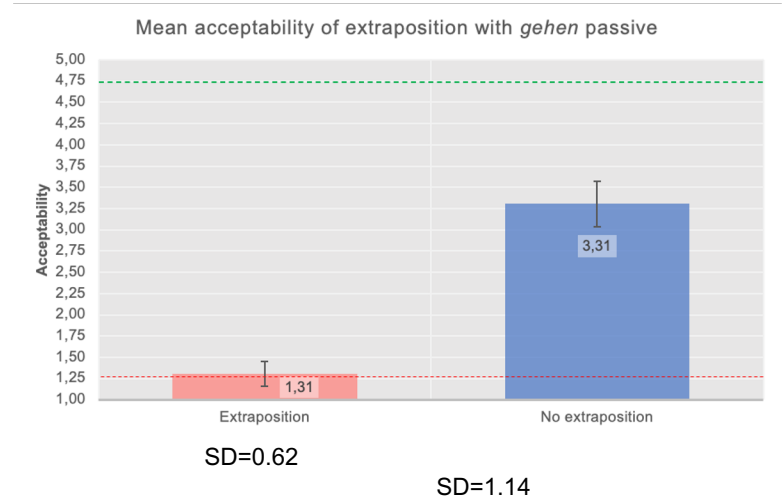
- But *gehen* like *sein* + *zu* is incompatible with compound tense in the infinitive, but *scheinen* is compatible (cf. Holl 2010:49)

(19) *Der Tischler scheint ... den Tisch repariert zu haben / sehr fähig zu sein*

The carpenter seems ... the.ACC table repaired to have / very competent to be

(20) ** *Der Tisch ist/geht leicht repariert zu sein/haben/werden* *(impossible to make parsable example for testing)

The Table is/goes easy repaired to be/have/become



Characteristics: Case, tense, and structure IV

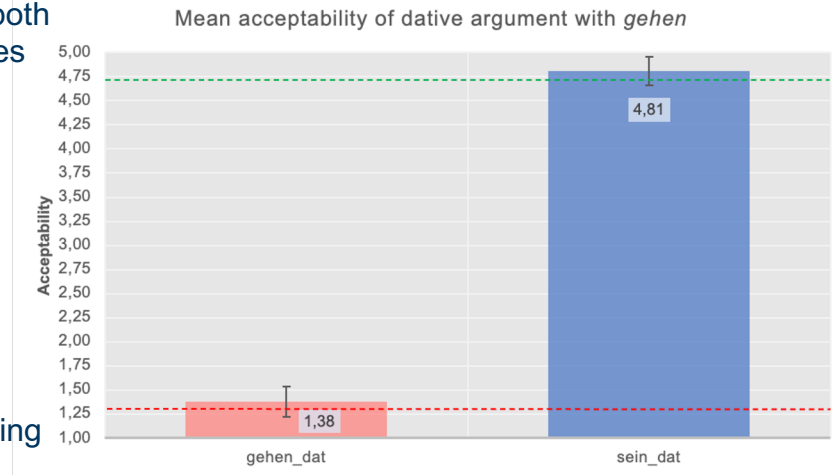
- *gehen* is ungrammatical with dative arguments and ditransitives - both are fine with *canonical passive*, dative arguments of monotransitives are also fine with *sein* + *zu*

(21) **Die Email geht ihm/Peter nicht zu schicken.*
The email goes him/Peter not to send
(mean 1.17, SD=0.5)

(22) *ihm ist/*geht nicht zu helfen*
(mean 4.81, SD 0.68 vs 1.38, SD 0.64)

- *sein+zu_INF* more marginal with ditransitives but variability depending on verb and context.

(23) a. ??*Diese Email ist ihm/Peter nicht zu schicken*
this Email is him/Peter not to send
'This email cannot/should not be sent to him/Peter'
b. *Das Buch ist dem Eigentümer zurückzugeben/auszuhändigen.*
the book is the.DAT owner back-to-give /hand-to-over
'The book must be given/handed over to the owner.'



Characteristics: no agents / no external arguments

- Unlike canonical passives, by-phrases seem incompatible with *gehen*, but are attested with *sein* + *zu* although preferably generic and more marginal than with canonical passives:

(25) **Das Fahrrad geht von Peter leicht zu reparieren*
The bike goes by Peter easy to repair

(26) *das Ergebnis eines demokratischen Prozesses sei von allen zu respektieren*
the result a.GEN democratic process.GEN is by all to respect
(DWDS, BZ_2004_283_1004108086_te; Berliner Zeitung 02.12.2004: Schröder kann nur Putinsch)

- No agent-oriented adverbs with *gehen*, but possible with *sein* + *zu* and other passives (cf. Pitteroff 2014:198f)

(27) **das Fahrrad geht (nicht) sorgfältig zu reparieren*
The bike goes (nott) carefully to repair

(28) *Das Material in der Sammelprobe ist sorgfältig zu mischen*
The Material in the sample is carefully to mix
(VERORDNUNG (EU) Nr. 691/2013 DER KOMMISSION vom 19. Juli 2013)

- A syntactically active covert agent enables by-phrases and agent-oriented adverbs, if they are impossible then an AGENT θ -role is absent in the syntax. We tested by-phrases and for-phrases, as the latter need only a semantic implicit agent and are compatible with middles (cf. e.g. Lekakou 2005, Pitteroff 2014)

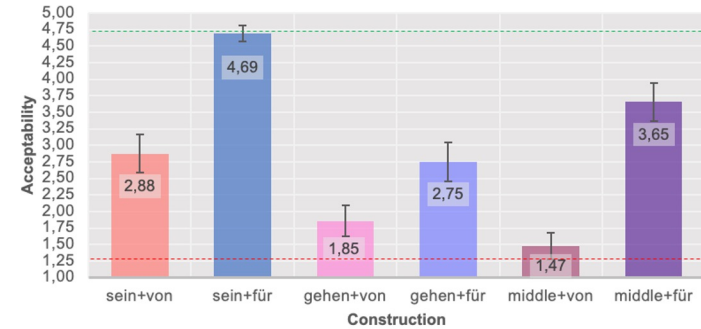
Experiment: by and for phrases

- We tested three verbs with *gehen+von*, *abwischen*, *reparieren*, *aufschließen*, but only one each for *sein* and *middles* due to corpus attestation and established literature.
- *gehen* is incompatible with a *by*-phrase and *sein + zu* was marginal. (top right): *?sein+von > *gehen+von > *middle+von*
- All worse than canonically *von*-friendly passives (bottom right)
- *For*-phrases acceptable with *sein* and *middle* (although lower rated here), but more marginal with *gehen*
 - We expect *gehen* rate lower overall as non standard
 - Much interspeaker variation (avg. mean 2.75, avg. SD 1.29)
 - Paired sample t-tests finds a significant difference between *von* and *für* with *gehen* in every instance ($p < 0.001$)
- Middle compatible instrumental adjuncts also acceptable with *gehen*, again with some notable interspeaker variation (3.25, sd=1.34)

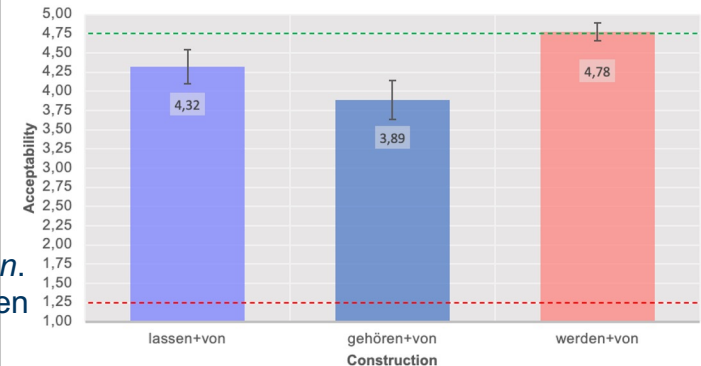
(29) *Die Schraube geht mit einem besonderen Schraubenzieher leicht zu lösen.*
The screw goes with a special screwdriver easy to loosen

N.B. We did not test acceptability of *von* with *sein* in different modal contexts, e.g. deontic vs possibility

Mean acceptability with *von* and *für* phrases with *sein*, *gehen*, and *middles*



Mean acceptability of *von* with *by*-phrase friendly passives



More arguments against a syntactic agent

- Syntactically active agents should permit control into purpose clauses (Roeper 1987, Baker et al 1989, Bhatt & Pancheva 2006, among others), e.g. known to be fine with passives!

(30) *Das Schiff wurde versenkt, um die Versicherungsgelder zu kassieren.* **Passive**
The ship was sunk for the insurance-money to collect
'The ship was sunk in order to collect the insurance.'

- Following data are based on consultant judgements; still require testing in an expanded study.
- Control into purpose clauses is pretty bad with *gehen*

(31) a. *Der Müllcontainer geht leicht aufzuschließen, ?*um den Hausmüll hineinzuworfen.*
The dumpster goes easy open-to-lock for the.acc trash therein-to-throw

b. *Das Auto geht nicht schnell zu reparieren, ?*um morgen schon fahren zu können*
The car goes not quick to repair for tomorrow already drive to can.INF

c. *Die Software geht leicht zu installieren, ?*um Zeit für den Nutzer zu sparen.*
The software goes easy to install for time for the.ACC user to save

Characteristics: Lexical Semantics

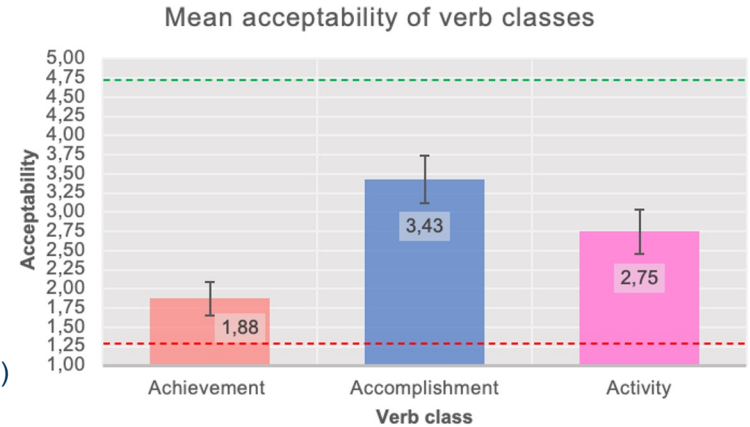
- Accomplishments are good (32), some activities are marginal (33) and others are ok-ish (34), achievements are out (35).

(32) *Die Tür geht leicht/nicht aufzuschließen.* (avg. 3.76, SD 1.23)
the door ges easy/not open-to-lock

(33) ??*Der gefrorene Apfel geht nicht zu essen.* (avg. 2.61, SD 1.93)
the frozen apple geht not to eat

(34) *Jimmys Gitarre geht leicht zu spielen* (avg. 3.39, SD 1.33)
Jimmy's guitar goes easy to play

(35)**Der Schaffner geht nicht/leicht zu überzeugen.* (avg. 1.75, SD 0.9)
the conductor goes not/leasy to convince



- Ban on achievements resembles middles (See e.g. Fagan 1992, Lekakou 2005, Pitteroff 2014) but *gehen*-(medio)passive appears more strongly associated with accomplishments than middles.
- Not clear why some activities better than others
- Achievement-like accomplishments are also degraded, e.g. *kill/töten*, i.e. ungradable and poor with adverbs of attention (see Martin 2011).

(36) ??*Superman geht nicht zu töten.* (mean = 2.13, SD = 1.97)
Superman goes not to kill

Characteristics: *gehen*, modality and adverbs

- Other modal (infinitive) passives, e.g. 'have' and 'be' [*haben/sein+zu+INF*] and [*gehören + PST.PTCPL*] express deontic modality, although *be* can also express (im)possibility as well as other idiomatic readings (cf. Gelhaus 1977).
- *gehen* passive Resembles a common (im)possibility modal interpretation of middles crosslinguistically (cf. Fagan 1992, Ackema & Schoorlemmer 2005, Lekakou 2005, Schäfer 2008, Pitteroff 2014)
(24) The book reads easily/*das Buch liest sich leicht* = the book can be read with little effort
- Involves ascription of a **dispositional property to the promoted subject** and which 'holds in virtue of some inherent contextually defined property of the subject' (see Lekakou 2005, Pitteroff 2014:§2.2.4)
- **Theoretical question: What is the source of the modality in *gehen + zu*?**
 - purely semantic at C/I interface (Lekakou 2005; Schäfer 2008; Pitteroff 2014:§2.2.4) → probably not due to established modal content of *gehen* (Abraham 2021), but may contribute
 - from *zu* (cf. Holl 2010) → overly broad; requires large taxonomy of multiple infinitive *zu*
 - from *gehen* → most likely as it already encodes (im)possibility in German (but double source is possible)
- In middles, specific adverbs (*easy, simply, not* etc.) identify implicit agent (cf. Roberts 1987, Lekakou 2005), which is then linked to modal interpretation, but if modality comes at least partially from *gehen*, we expect more flexibility

Characteristics: Adverbs

- Like middles (cf. Schäfer 2008:§6), the *gehen*-passive seems to be facilitated by negation and certain adverbials, e.g. *leicht* 'easy', *einfach* 'simply';
- Clearly linked to modal interpretation of possibility
- However, we find examples in corpora/online with other adverbs, e.g. *noch* 'still', *wieder* 'again', *kaum*, or even without.

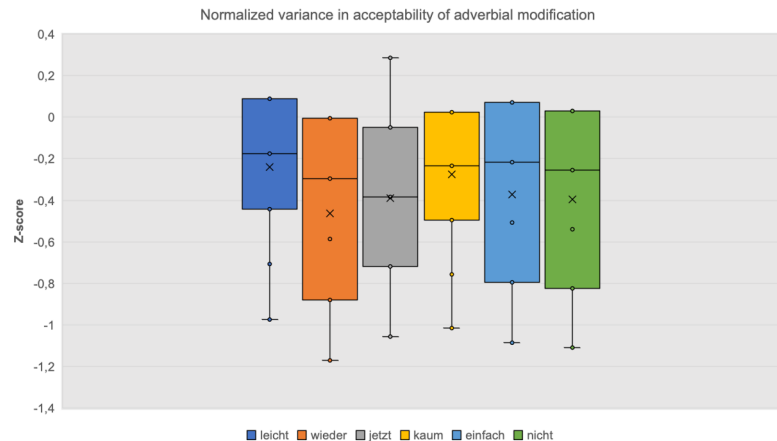
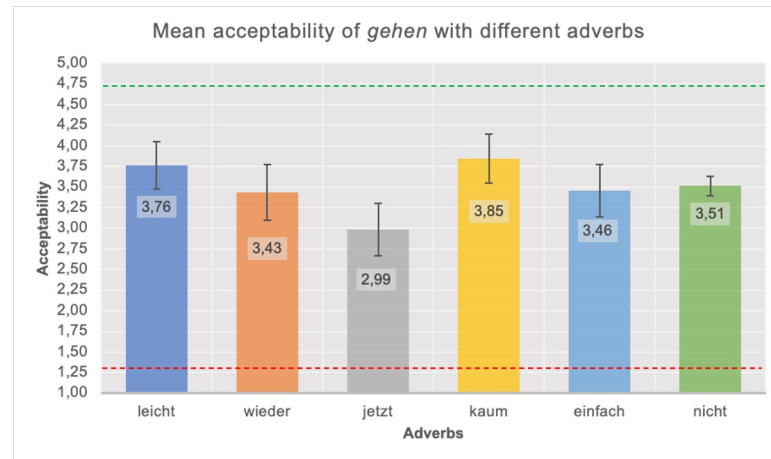
(37) *das geht noch zu reparieren**
That goes still to repair

- We tested different adverbs that are and aren't possible with middles
 - Some adverbs help more, lone *jetzt* was more marginal (top)
 - Considerable interspeaker variation "marmite effects" (bottom)
 - More careful testing with more conditions, larger Likert scale needed, e.g. 7-point; perhaps exclusion of speakers who do not accept construction at all.

Looks like something slightly different is happening in terms of modality and agent identification, but it's not a free for all.

*<https://www.drwindows.de/xf/threads/nach-crash-problem-beim-hochfahren.77088/>

N.B. we tested one condition with *noch* but it was a confound with a poorly rated activity verb, hence we leave it out here.



Consequences of adverb compatibility: middle vs RMA

- Schäfer (2008) claims that middles and *reflexively marked anticausatives* (RMA), e.g. *sich öffnen* share the same syntax but have different properties at the C/I interface, i.e. presence/absence of an implicit semantic agent.
 - Anticausative reading = at the slightest provocation → no implicit agent
 - Middle reading = possible (with very little effort) (Fellbaum 1986) → implicit agent in the semantics

(38) *Die Tür öffnet sich leicht* = both readings possible lit. ‘the door opens (itself) easily’

(39) *Die Tür geht leicht zu öffnen* = only possibility reading with implicit agent

- Middles are generally incompatible with lone adverbs like *kaum, wieder, jetzt* (40), but RMAs are fine because they don’t obligatorily identify a semantic agent (41); *sich öffnen* allows both behaviours but not *sich lesen*

(40) *Das Buch liest sich gut/schwer/nicht /leicht/*kaum/*wieder/*jetzt*
the book reads (itself) well/hard/not/easy/*hardly/*again/*now

(41) *Die Tür öffnet sich [gut/schwer/nicht /leicht]_{middle}[kaum/wieder/?jetzt]_{RMA}* ‘the door opens (itself) ….’

- [*Gehen zu* INF] like a halfway house; implicit-agent-identifying adverbs are well liked but not mandatory, yet *gehen* is only compatible with the “possibility” reading and never gets an anticausative reading.
- The increased flexibility of adverb types but necessarily agentive reading indicates that **the adverb is not always necessary to identify the implicit agent in the semantics**. The implicit agent comes for free with [*gehen + zu +INF*].

Summary of syntactic characteristics:

- **No auxiliaries in the infinitival domain** →
 - *gehen* cannot select any functional structure outside/above the extended verbal projection
 - Resembles other modal *zu*-infinitive passives (Holl 2010) but different to *scheinen* or lexical restructuring predicates, e.g. *glauben* ‘believe’, *vergessen* ‘forgot’ (cf. Bobaljik & Wurmbrand 2005)
- **No ditransitives (or indeed any inherent dative arguments):** not the case with *scheinen* or other passives →
 - *gehen* cannot select an extended verbal projection involving applicative heads
 - Incompatibility of ditransitives and middles is a known phenomenon (cf. Ackema & Schoorlemmer 2005)
- **No accusative DP arguments in infinitival domain / no syntactic agentive properties** →
 - Indicates that *gehen* can only select *extended* verbal projections lacking external arguments
 - Notably, lexical unaccusative/passivized matrix restructuring predicates are also incompatible with accusative DPs in the restructured infinitive’s domain (Haider 1993, 2010; Bobaljik & Wurmbrand 2005)
 - Agent still present in the semantics
- **No extraposition of *zu* infinitive** →
 - [*zu* + iNF + *gehen*] forms a cluster which is incompatible with extraposition (see e.g. Salzmann 2013, 2019)
- **No matrix compound tenses** →
 - Tense information encoded on *gehen*, a property shared with functional raising head *scheinen* ‘seem’
 - Other modal *zu*-infinitive passives can take part in compound tense

2. Synchronic analysis

Between passives, middles, and
marked anticausatives

Some puzzles to solve in the syntax

- Where and how is the passive character reflected in the syntax, e.g. subject demotion and implicit agentivity?
- If a generally middle-reading is present, why can't *sich* and *gehen* co-occur?
(42) Die Tür geht (*sich) leicht/kaum zu öffnen / das Fahrrad geht (*sich) leicht/kaum zu reparieren
the door goes (self) easy/hard to open the bike goes (self) easy/hard to repair
- What is the role and syntax of *zu*?
- What is the status of *gehen* regarding raising, tense and modality?

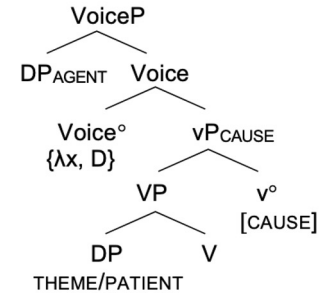
PROPOSALS IN A NUTSHELL

- gehen* is a modal raising verb that selects a bare but causative vP lacking any syntactic transitive component
- zu* is superfluous in terms of semantic interpretation or syntactic effect
- gehen* values all features associated with tense and modality in the matrix clause

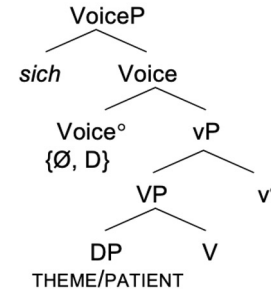
Transitivity, VoiceP and vP: Basic assumptions

- In transitives, VoiceP introduces external arguments and AGENT or CAUSER Θ -roles (cf. Kratzer 1996) This is thematic-active Voice (Schäfer 2008, 2017; Alexiadou et al. 2006, 2015, among others) (top right).
- *v* is an event introducer and V merges the lexical root and selects THEME/PATIENT DP.
 - Transitives: *v* introduces a CAUSE event orthogonal to Voice/ EA (cf. von Stechow 1996, Alexiadou et al. 2006, Pylkkänen 2008, Schäfer 2008)
 - Anticausative *v* introduces a BECOME event (von Stechow 1996, Pylkkänen 2008).
 - Statives require a non-eventive *v* (cf. Arad 2002, Alexiadou et al. 2015).
- If VoiceP is present but does not introduce an Agent, a middle/reflexively marked anticausative emerges (cf. Schäfer 2008, Alexiadou et al. 2015): *sich* is expletive D-element in Spec, Voice (no Case, No Θ -theta role) (bottom left)
- If VoiceP is absent, the structure is semantically/syntactically intransitive, e.g. a pure unaccusative is just a vP (also unmarked anticausatives, e.g. *brechen*) (bottom right)

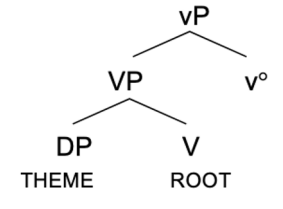
Transitive (agentive) structure



RMA/Middle structure



'pure' unaccusative



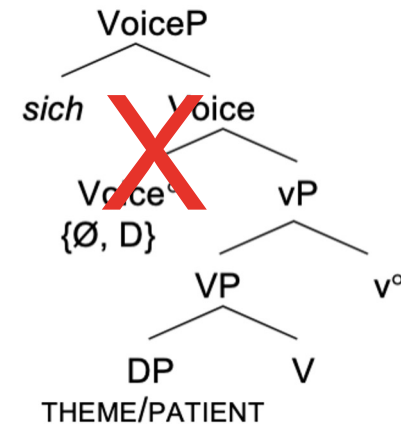
How do passives work?

- A canonical passive involves a thematic non-active Voice layer (Alexiadou et al. 2006, 2015; Schäfer 2008, 2017)
[VoiceP Voice_{λx,∅} [VP v_{CAUSE} [VP V_{ROOT} DP_{THEME/PATIENT}]]]
- Voice introduces an Agent in the syntax but does not build a specifier position for an external argument.
- Alexiadou et al (2015:128) understand theta-roles in terms of predicates' semantic functions: AGENT is either saturated via the DP in the *by*-phrase or via existential binding by a higher functional Passive head (cf. Bruening 2012)
- We don't rule out *a priori* an agent absorbing/bearing PRO in Spec,TP, but Case must be blind to it.
- A syntactically active agent permits the behaviour impossible with agentless unaccusatives and middles
 - By-phrases
 - Agent-oriented adverbs
 - Control into purpose clauses

Conclusion: Passive analysis inappropriate for *gehen + zu + INF* so on we go.

Gehen, middles, RMAs

- We have established that *gehen* has similar interpretational properties to Middles
 - No syntactic Agent
 - ‘Possibility/effort’ reading applies to middles and *gehen*-passive, while ‘slightest provocation’ reading applies only to RMA.
- Since Middle and RMA structures are structurally ambiguous, the agent-identifying adverb is needed to identify the implicit Agent at the C/I interface and force a agentive/ causative interpretation at Spell-out.
- Under a Pylkkänen (2008) type analysis, a difference between middles and RMAs might relate to selection of v-CAUSE for middles and v-BECOME for RMAs
(n.b. Not argumentation pursued by Schäfer 2008 and Alexiadou et al. 2015).
- It’s tempting to analyse *gehen*-passives in terms of agentless middles, i.e. non-thematic/active VoiceP, but
 - no *sich* + no syntactic agent = no evidence for VoiceP whatsoever
 - Fewer restrictions on adverbs = agent identification is easier because implicit agent is more retrievable due to some other property of the *gehen*-passive, but what?



The argument structure of the *gehen zu* infinitive

Claim 1: *gehen* selects only a causative vP and no Voice layer, i.e. forced unaccusativity of transitive verbs (see also Abraham 2020 for similar arguments for *sein/haben+zu* infinitives).

- Unaccusative syntax gives rise to passive interpretation (*pace* Abraham 2020)

Question: What reliably triggers the implicit agent in the semantics and rules out the RMA “slightest provocation” reading?

Claim 2: *v* is explicitly CAUSE (and not BECOME) (cf. von Stechow 1996, Pylkkänen 2008) and entails an implicit agent as causer (see Dowty 1991 on proto agents) due to ‘encyclopedic knowledge about the root or verb-Theme combination’ (Schäfer 2008:220 for middles; see also Condoravdi 1989:19), but AGENT doesn’t project.

- No “slightest provocation” reading because *sich* cannot cause ambiguity between CAUSE/BECOME readings.
 - Weaker limitations on adverbs because not only means to identify the agent; adverbs appear instead to relate to modality, i.e. the disposition of the IA or the depicted event, e.g. *wieder*, *noch*, without placing a burden of explicit agent identification.
 - No adverb whatsoever, however, weakens modal/agentive reading and more contextual work is needed = suggests some compositionality between adverbs, *gehen*, and predicate.
 - **Suggestion:** Explicit expression of modality is key to establishing the implicit agent at C/I interface; perhaps *gehen* does need a little support.
- **More testing needed**

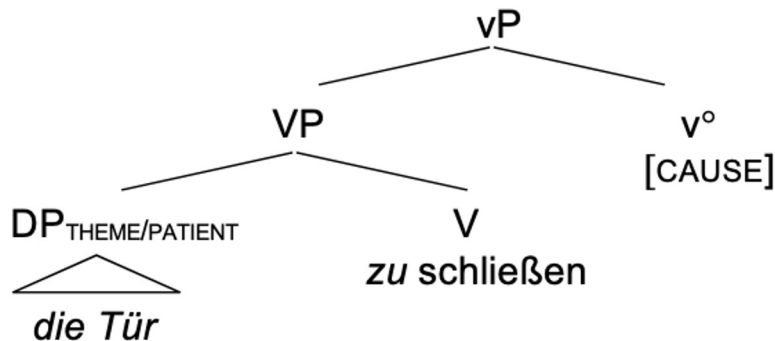
What to do with *zu*? (two tribes) I

- **Inflectional prefix/complex v head:**
 - Haider (1984, 1993, 2010), Demske (1994), Wurmbrand (2001) *et seq*, Haiden (2005), and Abraham (2020) say it is a verbal prefix.
 - Haiden (2005) and Abraham (2020) consider *zu* to be a prepositional passivizer which merges with *sein* + V_{IN} + INF (some complex P+V head) - doesn't work for *gehen*
 - Abraham (2020) notes that *zu* + V_{INF} forces bieventive interpretation and thus always perfective (result oriented)
- **Independent head**
 - Salzmann (2013, 2019): *zu* is head of a VP-dominating FP morphologically realizing non-finite categories with subsequent local dislocation and affixation of *zu* to the left of the closest adjacent infinitive.
 - Holl (2010) views *zu* as a verbal participle passivizer head of a vP-dominating PartP, associated with eventive properties of the predicate (see also Travis' (1994) EventP for *to*-infinitives); requires a taxonomy of modal infinitive *zu*-types.
- **Claiming *zu* as a passivizer wins us nothing; status as head or prefix doesn't make a big difference for us.**
 - non-active interpretation comes for free as there is no Agent/VoiceP
 - The problem is real for *sein* and *haben* modal infinitives, but *gehen* passive is not really passive!

What to do with *zu*? II

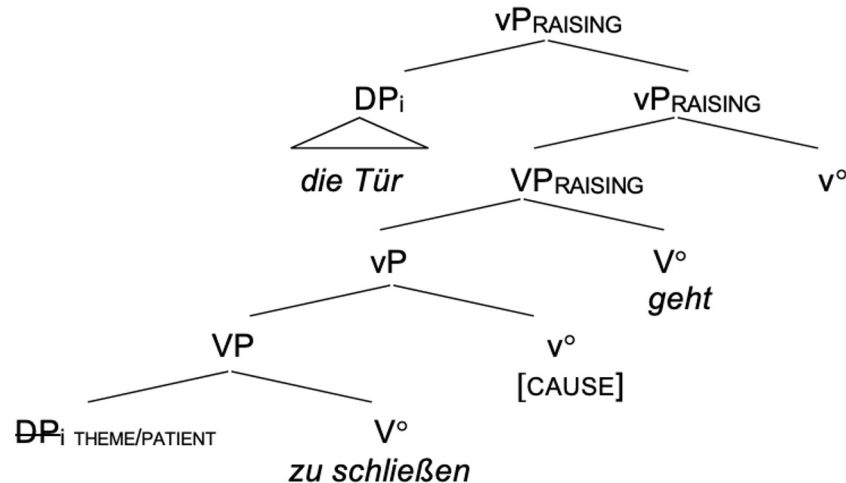
- For simplicity, we assume a prefix account
 - Accounts for V-adjacency with particle verbs, with Theme and particle in a small clause
 - *zu* inserted because the lexical verb cannot move to/or agree with a higher tensed/finite head
 - Agree with lexical verb impossible because it's not in the same domain of agreement as matrix T/C (Bobaljik & Wurmbrand 2005) (can also be understood as transferred within a Phase - ask later for possibilities)
 - Raising verb *gehen* will always agree with [u:T/φ] on T/C first: raising verbs agree with arguments.
- A head-analysis of *zu* is conceptually more attractive but time is short and it's not key for us.
- Abraham's assertion is notable that $zu + V_{\text{INF}}$ gives rise to a bi-eventivity and thus always result oriented.
- This Chimes with a clear preference for explicitly bi-eventive accomplishments and is not particularly surprising if *zu* is indeed a special instance of P (Haiden 2005:233), given that *zu* is a goal denoting P.
 - Lexical unaccusative *gehen* is naturally telic, gradable, and can select P *zu*
 - An intuitive link between goals and telicity and the content of *gehen*
 - Modal/raising *gehen* appears to retain a level of telicity, while it has been bleached of motion content

Infinitive vP



- We leave out low movement, e.g. V-to-v for simplicity

gehen + Infinitive vP

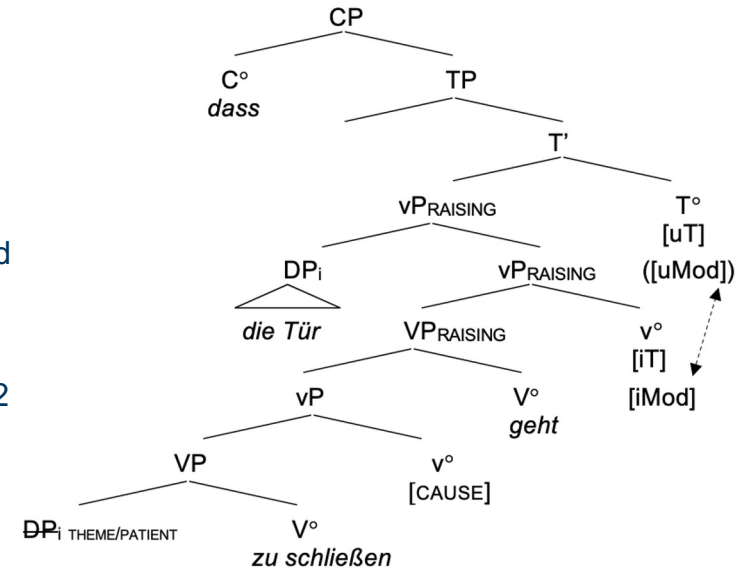


- We assume that a non-theta related Spec position (an escape hatch of sorts) for DP raising, but it is not crucial
- We remain agnostic on the mechanism of DP-raising, e.g. if it is related to some EPP or necessary evacuation for Case assignment (cf. Bobaljik & Wurmbrand 2005)

No auxiliaries with *gehen*

- Recall that both *gehen* and *scheinen* are incompatible with compound Tenses
- We assume that these raising verbs must come fully specified for Tense (and modality in the case of *gehen*)
 - Gehen* = [iMOD, iT]
- This bleeds generation of higher auxiliaries in T because T's [uF:_] automatically enter into an Agree relation with their locally C-commanded goals on [_{VPRAISING} *gehen*]
- We don't posit V-to-T movement, as German lacks it (cf. Vikner 2005, Biberauer & Roberts 2010, Haider 2010); V-to-C movement as part of V2 is uncontroversially possible.
- DP may (need not) raise further into middle field (perhaps Spec,TP) in embedded contexts or go to Spec,CP in V2 matrix clause.
 - Further raising necessary in Negation contexts (e.g. TP NegP vP)
- We leave vP-level adverbs and negation out of the derivation for simplicity.

Simple embedded derivation



3. Diachronic data

A flash in the pan?

Diachronic aspects – introduction

- Much literature on the history of modal infinitives (Behaghel 1923, Ebert 1976, Boon 1981, Demske-Neumann 1994), but basically nothing about the *gehen*-passive
- **Research questions:**
 - Historical Origin (earliest attestations, potential sources)
 - Trajectory of its historical development (changes affecting the distribution across verb classes, text types, syntactic contexts (root/embedded) etc.)
 - Factors that governed its emergence and further development
- **Basic idea:** The modal *gehen*-passive evolved from a reanalysis of (arbitrary) control structures linked to the expression of possibility (after ‘go’ had developed a relevant meaning):
(43) possibility reading of ‘to go’ → control structures → raising structures (structural simplification)

Diachronic aspects – corpus study

- Corpus study (DWDS – historical corpora, c. 294MM tokens):
 - Extraction of all cases
 - (i) where an infinitive (VVINF/VVIZU) precedes a form of ‘to go’
 - (ii) where a form of ‘to go’ precedes an infinitive (VVINF/VVIZU; max. distance 5 words, with the infinitive at the end of the clause)
 - 3900 hits, manually narrowed down to **95 relevant examples** (in a time interval between 1715 and 1931)
 - More hits than in DeReKo, despite the fact that the historical corpus is much smaller!
 - (A search in the reference corpora of Middle and Early New High German yielded no relevant results.)

Diachronic aspects– corpus study

- Earliest examples from the 18th century (1715):

(44) a. *Heisset ein [...] Tüchlein, brennend in das Wein-Faß hängen, **welches zu zapffen gehet, oder nicht voll gefüllet ist, [...]***

‘Put a burning handkerchief in the wine barrel, **which can be tapped** or is not entirely full’
(Corvinus, Gottlieb Siegmund: Nutzbares, galantes und curiöses Frauenzimmer-Lexicon. Leipzig, 1715.)

b. *so bald nun Adversarius pariret haben wird/ und **von der Kling die Quart zu stossen gehe/ drehet man den Leib in Geschwindigkeit herum [...]***

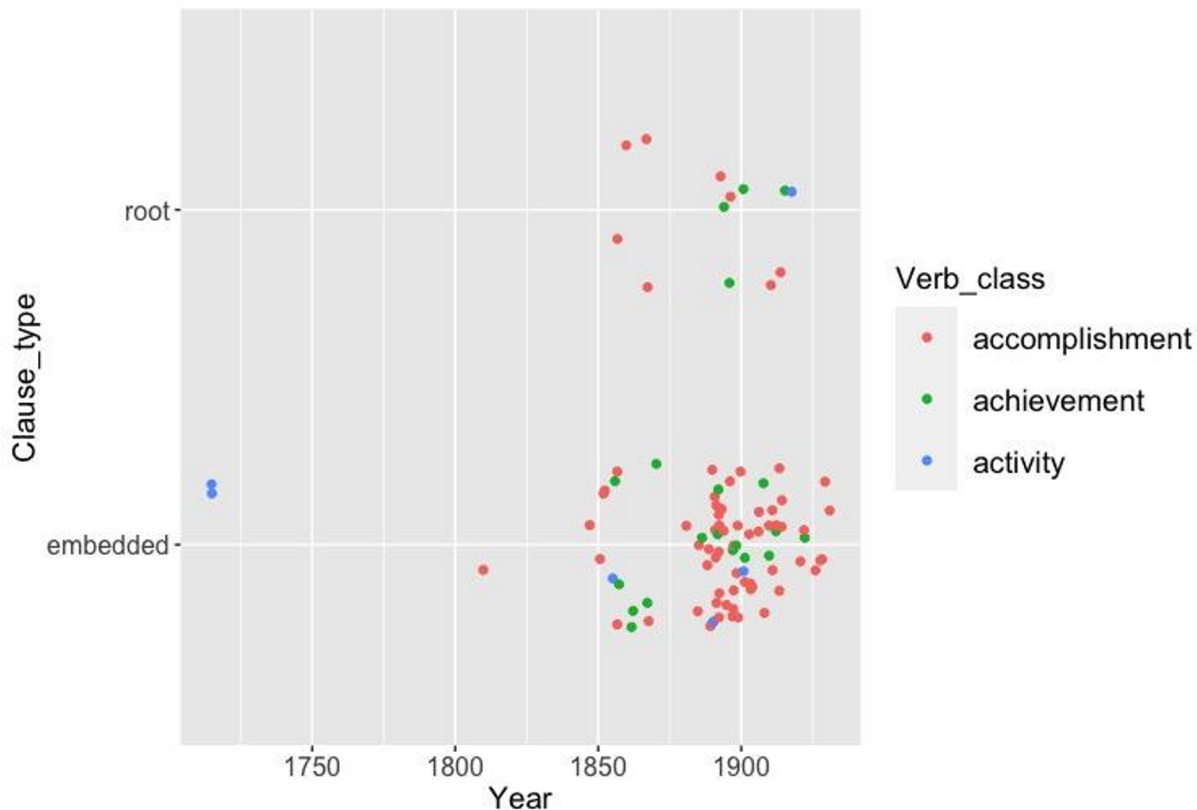
‘As soon as the opponent has parried and **the quarte can be thrust with the blade**, the body should be turned with pace...’

(Doyle, Alexander: Neu Alamodische Ritterliche Fecht- und Schirm-Kunst. Nürnberg u. a., 1715.)

- The bulk of all cases comes from the (late) 19th cent.: gap of c. 100 years between (44) and later cases.

Diachronic aspects

- Distribution/factors:
 - Time: most examples in the late 19th c.; thereafter, the construction seems to be on its way out;
 - Clause type: 83 of 95 cases are embedded clauses
 - Verb class: mostly accomplishments, but **more variation** than in PDG



Diachronic aspects – corpus study

(45) root clause, periphrastic verb form

[...] er **sei** aber nicht auszuheben **gegangen**
he be.pres.sbj however not out-to-lift gone

‘However, it [the shutter] couldn’t be taken off its hinges’

(Die Ermordung der Witwe Dellbrück, geb. Hahnemann. In: Der neue Pitaval, Bd. 28. Leipzig, 1860)

(46) embedded clause, achievement

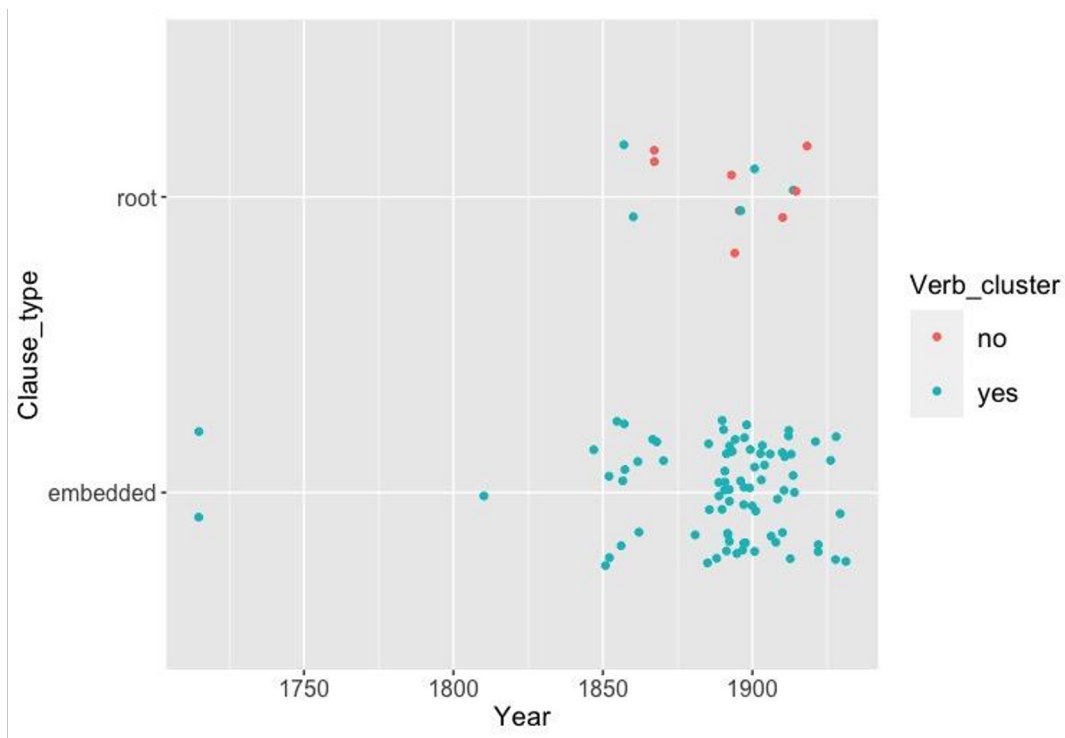
der [...] *Marketender versorgte uns mit Allem, was nur zu kaufen geht.*
the sutler provided us with everything what only to buy goes

‘the sutler provided us with everything that could be bought’

(Stolle, Ferdinand (Hrsg.); Diezmann, August (Hrsg.): Die Gartenlaube. Jg. 4 (1856).)

Diachronic aspects – corpus study

- strong preference for *gehen* to be adjacent to the *zu*-infinitive:
 - No extraposition of the infinitival part;
 - root clauses: 5 cases of fronting of the infinitive or periphrastic verb forms
- This suggests that at least diachronically, the availability of the *gehen*-passive is linked to verb cluster formation...



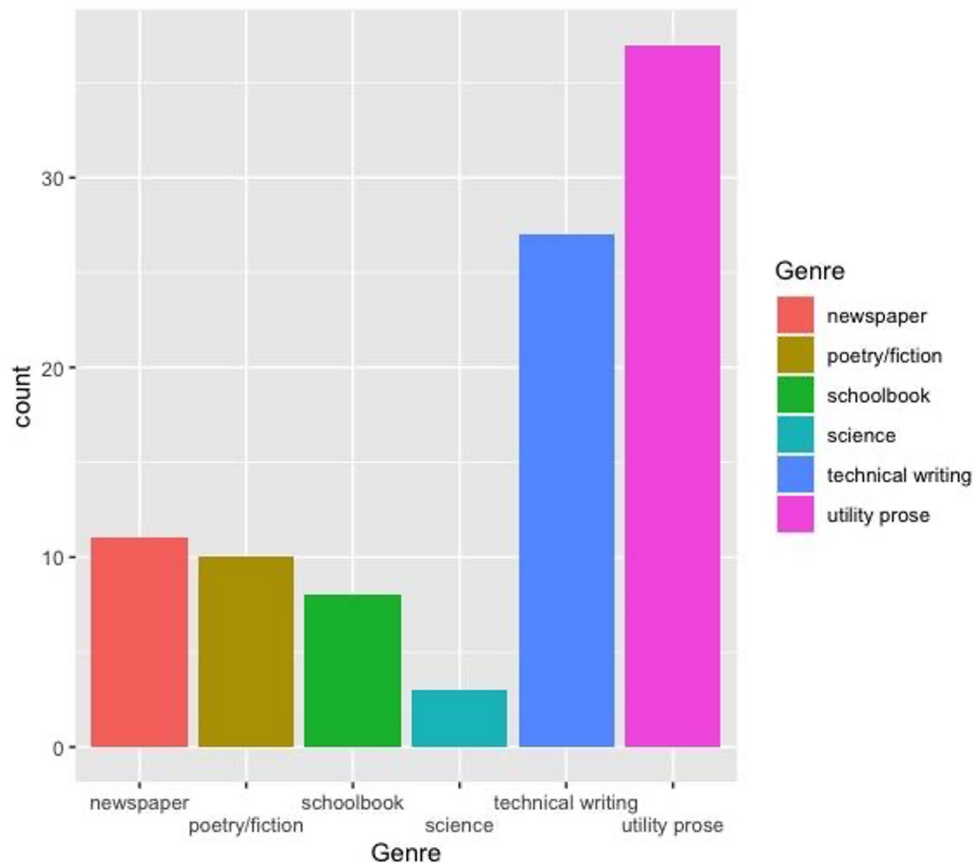
Diachronic aspects – corpus study

- Further observations on grammatical factors:
 - Tense: The vast majority of examples (73 of 95, 77%) is in the present tense (possibly linked to the generic flavour of the construction);
 - Presence of adverbs: Modification by adverbs (in particular: negation) is the most frequent pattern, but there also 26 cases (27%) without adverbs or negation:

(47) *die [...] einen Schwiegersohn wünschte, der zu lenken und leiten [...] ging*
Who.FEM a son-in-law wished who.NOM.MASK to steer and lead went
'who wished for a son-in-law who could be steered and led'
(Keil, Ernst (Hrsg.): Die Gartenlaube. Jg. 3 (1855).)

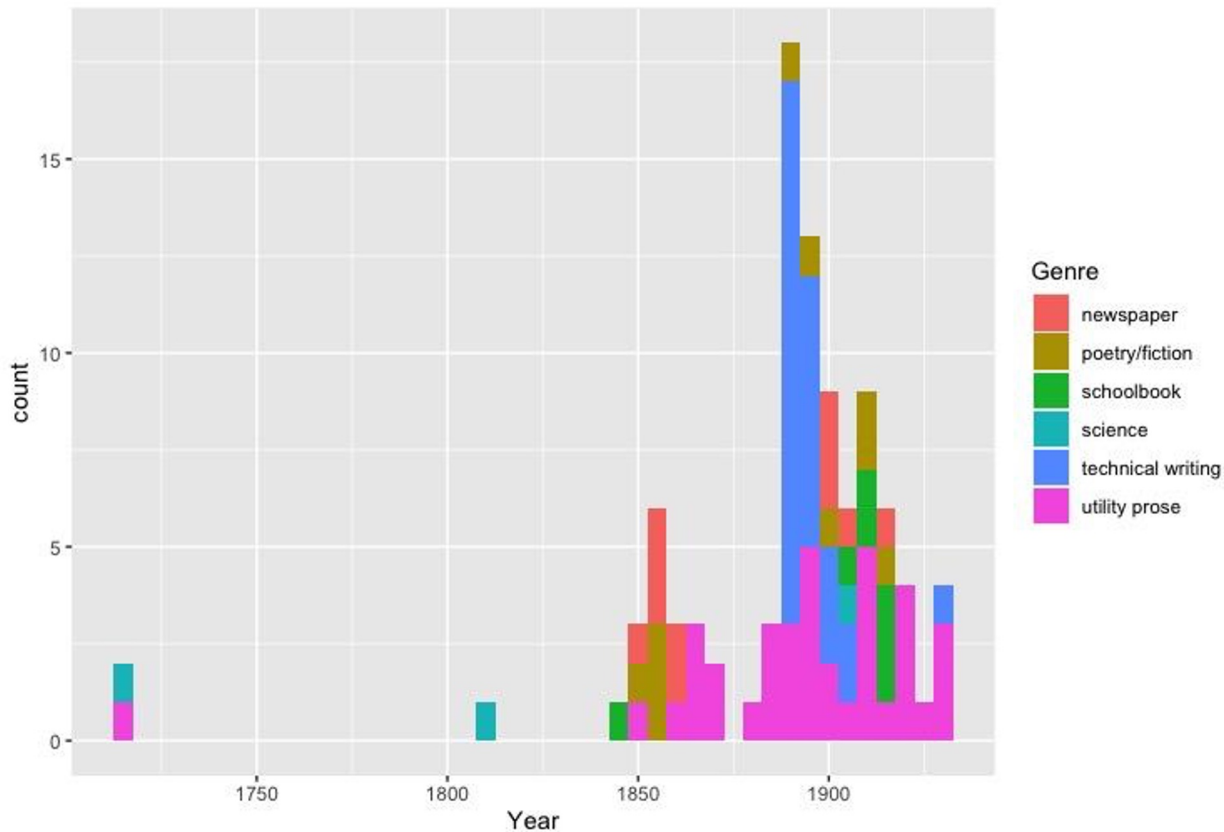
Diachronic aspects

- Impact of genre/text type I: The vast majority of all occurrences appear in utility prose and technical writing (subgroups according to the DWDS corpus; manually added: technical writing).



Diachronic aspects

- Impact of text type II: There's a noteworthy spike in texts linked to technical writing in the late 19th century (while the examples in other types of utility prose are more evenly distributed).



Diachronic aspects – corpus study

- (48) *so dass die mit äusserem Schraubengewinde versehene Bohrspindel*
so that the with external screw-thread provided drill-spindle
*leicht **einzubringen und herauszunehmen geht***
easy to-insert and to-remove goes
'so that the drill spindle, which is provided with an external screw thread, can be easily inserted and removed'

(Neuerungen in der Tiefbohrtechnik von E. Gad in Darmstadt. In: Dinglers Polytechnisches Journal (Hg. A. Hollenberg), Jg. 1890/278, S. ad-156. Stuttgart, 1890.)

Diachronic aspects – corpus study

- Major empirical results:
 - The *gehen*-passive seems to have evolved quite rapidly between the 18th and 19th century.
 - It reached its prime in the late 19th century (in certain text types); at that time, the *gehen*-passive had a wider distribution across verb classes and verb forms. Afterwards, the construction seems to be in decline (at least in the written language).
 - Even then, there's strong bias towards embedded clauses; this suggests that verb clustering plays an important role in the licensing and, perhaps, historical development of the construction.

4. A diachronic analysis

Getting creative with control

Diachronic aspects – on the origin of the *gehen*-passive

- ‘go’ as a passive auxiliary – typological observations:
 - In a number of languages, passive auxiliaries go back to lexical verbs expressing inchoative/change-of-state meanings (Haspelmath 1990, Wiemer 2011), e.g. ‘get/receive’ (English, ancient Chinese), ‘become’ (German), ‘give’ (West Slavic)...
 - Motion verbs as a subgroup, in particular: ‘come’ (in the ‘Alpine passive’, Ramat 1998, Gaeta 2018) and ‘go’ (Urdu, Quechua, Scottish Gaelic, Alpine and coll. varieties of German)
 - N.B.: In German, auxiliary uses of ‘go’ and ‘become’ seem to fulfil similar functions: passive formation and expression of future (see e.g. Demske 2020 on ‘go’ in ENHG)

Diachronic aspects – on the origin of the *gehen*-passive

- Ingredients for the historical development of the *gehen*-passive:
 - Semantic change: ‘to go’ turns into an element expressing possibility
 - ‘go’ expressing possibility combines with a clausal infinitive (a control structure, with final clauses as a potential model/facilitating factor);
 - The control infinitive is reanalyzed as a raising structure (necessarily linked to the availability of ambiguous bridging contexts and another semantic change in which semi-modal ‘go’ loses its capability to assign a thematic role to its subject).

Diachronic aspects – on the origin of the *gehen*-passive

- Step 1: semantic change
 - ‘go’ is a massively polyfunctional/polysemic lexical element (cf. the huge entry in Grimm’s German Dictionary (DWB), including a large set of figurative meanings)
 - The DWB notes that from the 16th century on, ‘go’ came to be used to express possibility/feasibility. It mentions two potential sources...

Diachronic aspects – on the origin of the *gehen*-passive

- Step 1: semantic change
 - Particle verb *angehen* ‘on-go’, which originally expressed an inchoative meaning (‘to start’), also in connection with plant growth (‘to take roots, sprout’). From this, a possibility reading was derived (often in control structures, with the infinitival clause as the subject):

(49) [den Bibliothekfonds einfach mehr zu belasten] **ging** allerdings nicht **an**, [...]
The.acc library fund simply more to strain went however not on
‘However, simply putting more strain on the library fund was not an option.’
([N. N.]: Verhandlungen des Reichstages. Berlin, 1895.)

Diachronic aspects – on the origin of the *gehen*-passive

- **Step 1: semantic change**

- ‘go’ in connection with directional adverbials, expressing that two things/workpieces potentially fit together:

(50) [...] das man einen eisern ring daran schieben kan, der geheb daran gehet.
That one an iron ring there-on slide can that exactly there-on goes
‘that you can slide an iron ring on it that fits exactly’
(DWB citing Erker 8^a Frankfurt/M., 1580)

Diachronic aspects – on the origin of the *gehen*-passive

- **Step 2: combination with control infinitives**

- Probably via analogy with *angehen* ‘on-go’, simple ‘go’ came to select a control infinitive (realized as its subject; cf. Haspelmath 1989 on the grammaticalization of the *zu*-infinitive and its compatibility with matrix predicates expressing possibility):

(51) [...] um zu hören, ob es ginge, [mit ihr zusammen zu reisen].

In order to hear if it went.sbj with her together to travel

‘...to hear if it would be possible to travel with her’

(Varnhagen von Ense, Rahel: Rahel. Ein Buch des Andenkens für ihre Freunde. Bd. 2. Berlin, 1834.)

Diachronic aspects – on the origin of the *gehen*-passive

- **Step 3: reanalysis of control infinitives as raising structures**
 - At some point, ambiguous control infinitives were reanalyzed as raising structures, accompanied (or facilitated) by further semantic bleaching of (then semi-modal) ‘go’, which lost its capability to assign a thematic role to its subject.
 - This transition was possibly fuelled by independent changes that led to the auxiliarization of ‘go’ in ENHG (cf. e.g. Demske 2020).
 - Potential bridging contexts: arbitrary control infinitives, where case marking of the internal argument was not distinctive (due to common nom/acc syncretism in German)...

Diachronic aspects – on the origin of the *gehen*-passive

(52) [...] *daß das Glas bis auf den Grund auszutrinken geht*
 that the glass to on the bottom to-drink goes
 ‘... that the glass can be drunk to the bottom’

(Pechner, Fr.: Handbuch für Lehrer beim Gebrauche des Preussischen Kinderfreundes. Der gesammte deutsche Sprachunterricht in Volksschulen oder die Uebungen im Lesen, der Grammatik, Orthographie und dem mündlichen und schriftlichen Gedankenausdrucke [...]. Königsberg, 1847)

daß [_{TP} [_{CP} PRO_{arb} *das Glas bis auf den Grund auszutrinken*] [_{T'} [_{VP} [_{V'} [_{VP} t_{CP} t_{geht}] *geht+v*]] T]]

daß [_{TP} [_{DP} *das Glas*] [_{T'} [_{vPraising} [_{V'raising} [_{VP} [_{v2P} *bis auf den Grund* t_{DP} *auszutrinken*] t_{geht}] *geht+v_{raising}*]] T]]

- The ambiguity is confined to embedded clauses where the (coherent) infinitive is part of the middle field (see also (44) above) → bias towards embedded clauses which we've observed above.
- Result of the reanalysis: loss of (active) transitive structures in the infinitival complement of 'go' (= loss of functional structure)

Concluding summary

- The modal *gehen*-passive in German: between passive and middle constructions
- Structural analysis: semi-modal *gehen* is a raising verb that selects a minimal verbal projection (vP) as its complement.
- Historical origin: most likely in the 18th/19th century, via a reanalysis of control infinitives
- Speakers employ existing syntactic patterns (here: control infinitives) in combination with lexical elements that underwent semantic change/desemanticization to create new utterances that are more expressive or convey meanings that formerly could be expressed only with more effort.
- Over time, these may undergo further structural simplification (reanalysis of ambiguous surface strings) → in our case: giving rise to a new semi-modal/raising verb
- However, the change does not need to catch on; in the case at hand, the new pattern has never lost its colloquial character (which initially might have contributed to its attractivity), which ultimately led to its demise in the written language.

Thank you for listening!

Thank you also to Florian Schäfer and Fabienne Martin for extensive discussion of this pattern. Also for various consultant judgments from friends and family.

Extra Slides

Discussion points

No extraposition and *zu*

Proposal:

- *gehen* forms a verb cluster in embedded contexts with [zu INF].
- *zu* and infinitive must be adjacent and [zu + infinitive] must be adjacent to finite *gehen*
- The *zu*+infinitive cannot be extraposed out of a cluster as this bleeds cluster formation at PF which crashes the derivation (see Salzmann 2013, 2019).

Problem? Why can *gehen* take part in V2 or why can the *zu* infinitive topicalise post extraction?

(53) *die Fenster gehen nicht zu öffnen*

(54) *Zu öffnen gehen die Fenster leicht*

(55) *die Fenster zu öffnen geht/*gehen leicht* → full vP can only be topicalized in a control structure

- Assumption: lower copies in the right places will not cause a violation at PF, as long as there is no extraposition to crash at PF.
- Example C is bad because *die Fenster* cannot value/receive Case while still embedded in the infinitive

Characteristics of *gehen* + *zu* + INF: Case and Tense II

- Italian possesses a deontic passive with *andare* and a passive-typical past participle which is also incompatible with compound tense (Remberger 2006)

(56) *la melanzana va* /[*è andata] *fritta!*
The aubergine **goes** / is gone fried
'The aubergine must be fried.'

- In Italian, Remberger concludes it is a grammaticalized modal auxiliary in T, but this is not the case for *gehen* which is a raising verb.
- Andare*-passives are known to be sensitive to verb classes
- Two different type; the modal variant is somewhat compatible with by-phrases, all a bit funny.

(57) *I risparmi andarono spesi per la casa.* **non-modal resultative passive structure**
the savings went spent.ptcp for the house

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Electronic corpora

DeReKo = Deutsches Referenzkorpus (<https://www.ids-mannheim.de/digspra/kl/projekte/korpora/>)

DWDS = Digitales Wörterbuch der deutschen Sprache, Berlin-Brandenburgische Akademie der Wissenschaften, <https://www.dwds.de/d/wb-dwdswb>.