



On the grammaticalization of not-at-issue content. The case of mirative *um-zu*-clauses in German

Łukasz Jędrzejowski (Universität zu Köln)
l.jedrzejowski@uni-koeln.de

Formal Diachronic Semantics 7
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What is this talk about?

Consider [1]:

[1] Sie raubten Handtaschen, klauten im Krankenhaus und
they rob.3PL.PST handbags swipe.3PL.PST in:the hospital and
Altenheim, **um** sich ihre Drogensucht **zu** finanzieren.
retirement:house COMP REFL their drug:addiction to fund.INF
'They robbed handbags, swiped in the hospital and retirement house to fund
their drug addiction.'

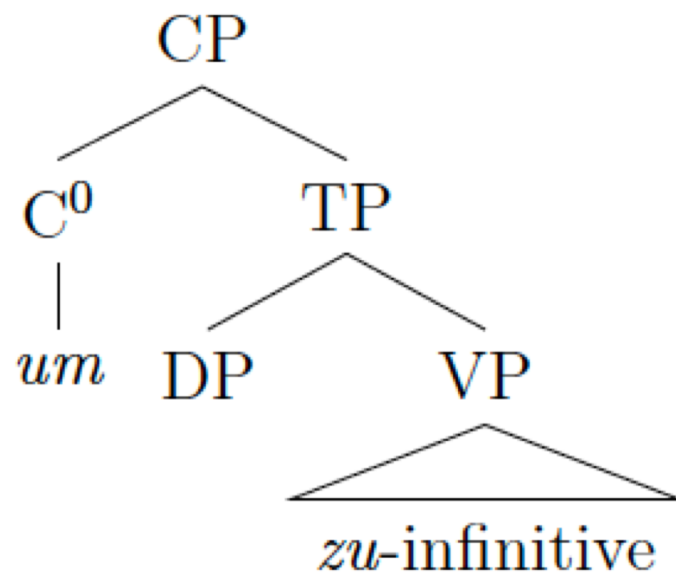
(DeReKo, *Rhein-Zeitung*, 10/9/2004)

Focus: *um-zu*-clauses in German

What is this talk about?

Um-zu-clauses have a rather simple internal structure:

[2]



Question: What is special about *um-zu*-clauses?

What is this talk about?

Answer: Their variation

[1] Sie raubten Handtaschen, klauten im Krankenhaus und
they rob.3PL.PST handbags swipe.3PL.PST in:the hospital and
Altenheim, **um** sich ihre Drogensucht **zu** finanzieren.
retirement:house COMP REFL their drug:addiction to fund.INF
'They robbed handbags, swiped in the hospital and retirement house to fund
their drug addiction.'

(DeReKo, *Rhein-Zeitung*, 10/9/2004)

[1]: **purpose** / goal-oriented / rationale / teleological clause

(cf. Huettner 1989; Jones 1991; Nissenbaum 2005; Schmidtke-Bode 2009; Grosz 2014;)

What is this talk about?

Answer: Their variation

- [3] Jan trainiert jeden Tag, **um** dann doch einen Herzinfarkt **zu**
Jan train.3SG every day COMP then DISC.PART a.ACC heart:attack to
bekommen.
get.INF
'Jan is working out every day, only to then contract a heart disease anyway.'

[3]: prospective / result / **mirative** clause

(cf. Johnston 1994; Whelpton 1995, 2001, 2002; Pauly 2013, 2014; Jędrzejowski 2022)

What is this talk about?

Answer: Their variation

- [4] **Um** ein wenig **zu** übertreiben, vor zwei Jahren in Salzburg
COMP a bit to exaggerate.INF, before two years in Salzburg
hatte ich 49 Grad Fieber.
have.1SG.PST I 49 degree fever
'To exaggerate a bit: two years ago in Salzburg I had a fever of 49 degrees.'
(DeReKo, *Die Südosstschweiz*, 29/5/2010; slightly modified by author: LJ)

[4]: **speech act** clause (with a purpose interpretation)

(cf. Jędrzejowski 2022, to appear)

What is this talk not about?

- [5] Dieses Paket ist **zu schwer** **um** es hoch**zu**heben.
this parcel is too heavy COMP it.ACC to.lift:up.INF
'This parcel is too heavy to lift it up.'

(Meier 2000: 224, ex. 19a)

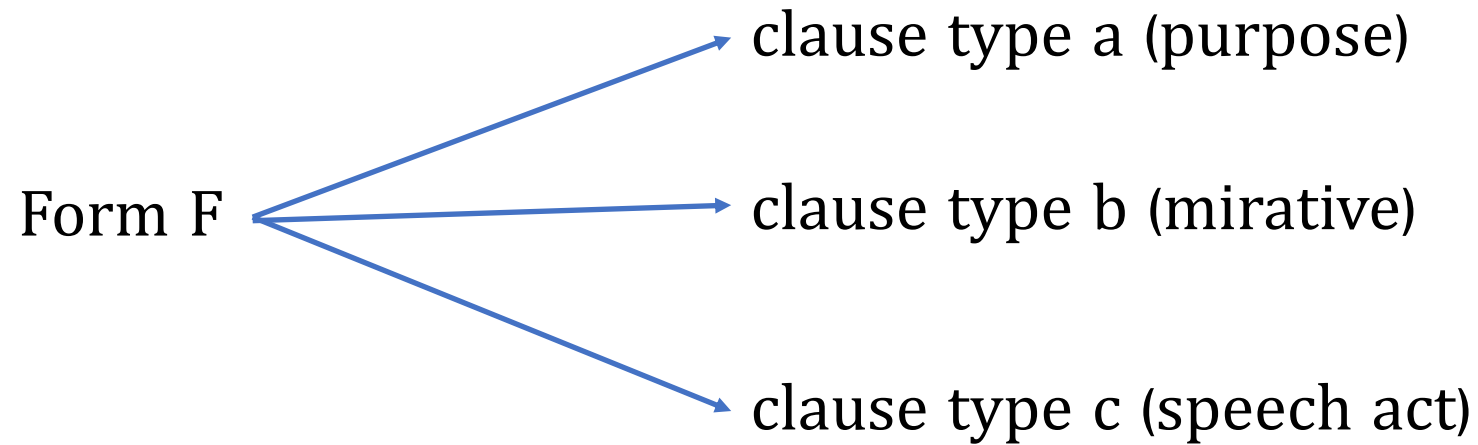
Paraphrase: If one were able to lift up the parcel, it would not be as heavy as it is.

[5]: **contrafactive** clause

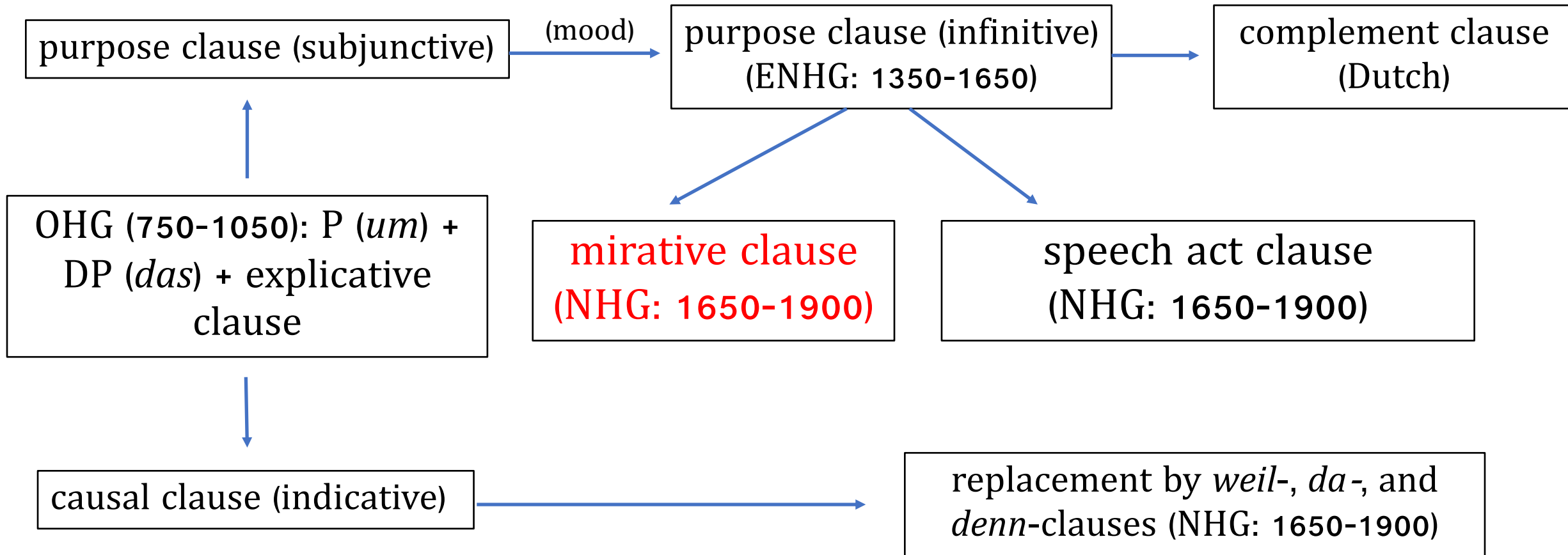
(cf. von Stechow 1984; Meier 2002, 2003; Hacquard 2006; and Nissenbaum & Schwarz 2008, 2011)

What is this talk about?

We end up with:



Diachrony



- a) To what extent do the (purpose and mirative) *um-zu*-clauses differ?
- b) How did the mirative clause type develop?

Main hypotheses

- H1: The complementizer *um* can introduce three distinct subordinate clause types: i) **purpose** clauses, ii) **mirative** clauses, iii) speech act (purpose) clauses.
- H2: i)-iii) differ at the syntax-semantics interface.
- H3: The **mirative** *um*-*zu*-clauses emerged out of **purpose** *um*-*zu*-clauses.
- H4: The complementizer *um* grammaticalized into a mirative complementizer conveying a not-at-issue content.

1. Introduction
2. Purpose vs. mirative *um-zu*-clauses
3. Synchronic analysis
4. Diachronic analysis
5. Conclusion
6. References



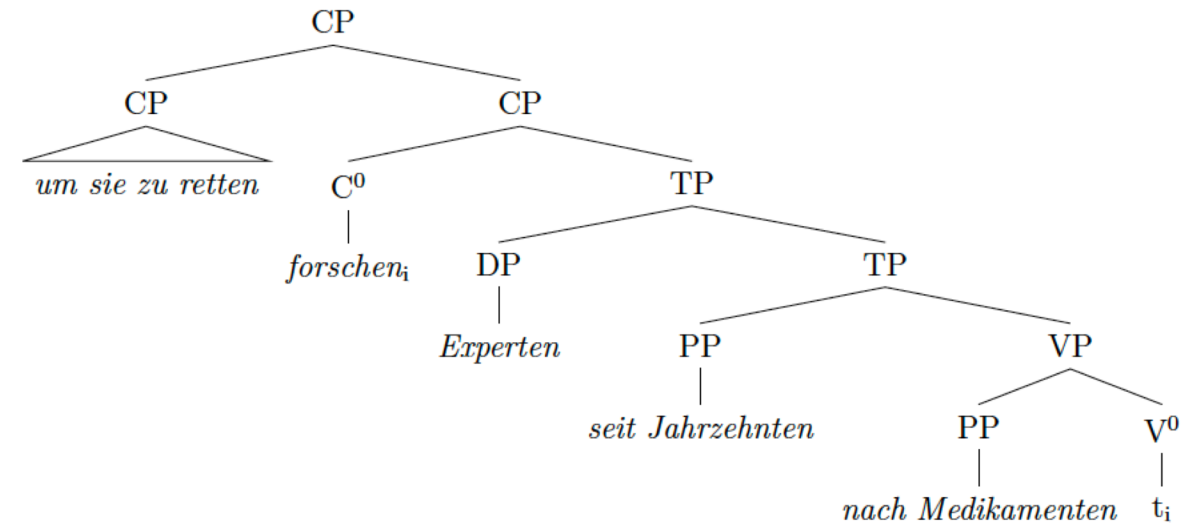
2. *Um-zu*-clauses in German

2. *Um-zu*-clauses in German: Spec,CP position

Purpose clauses can appear in Spec,CP:

- [6] Der Kampf gegen die Krankheit endet weltweit jedes Jahr für
 the battle against the disease end.3SG worldwide every year for
 750000 Menschen mit dem Tod. **Um** sie **zu** retten,
 750000 people with the death COMP them.ACC to rescue.INF
forschen Experten seit Jahrzehnten nach Medikamenten.
 research.3PL experts since decades after medications
 ‘For 750.000 people worldwide each year, the battle against the illness
 ends in death. To be able to save them, experts have been searching for
 medications for decades.’

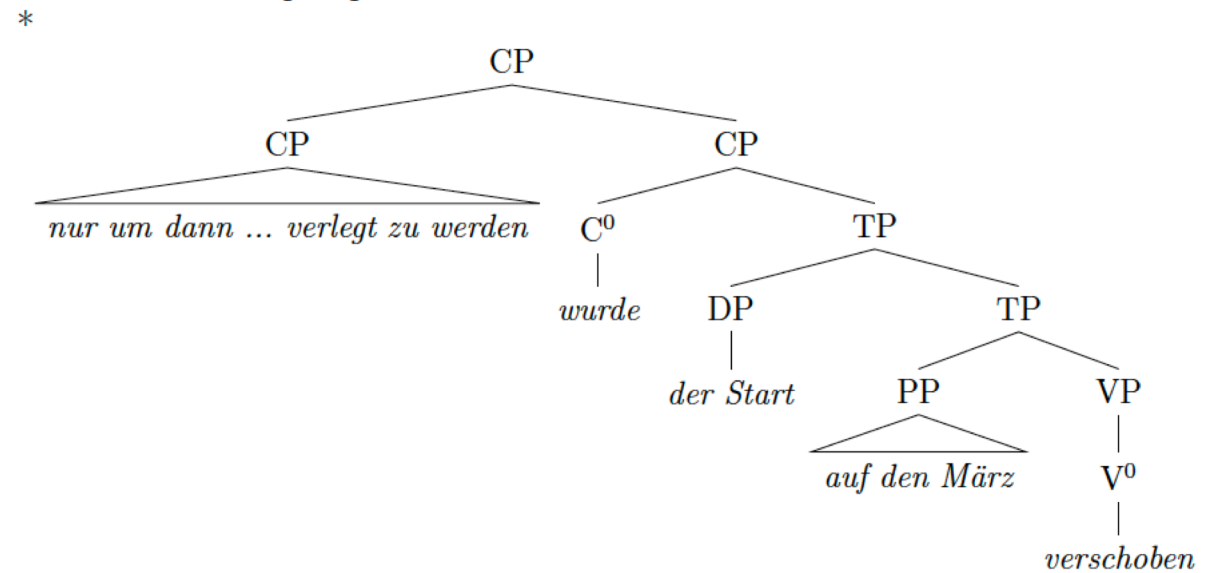
(DeReKo, *Hamburger Morgenpost*, 29/2/2008)



2. *Um-zu*-clauses in German: Spec,CP position

Mirative clauses cannot appear in Spec,CP:

- [7] *Nur **um** dann doch wieder auf Mitte Januar
 only COMP then DISC.PART again on middle January
 verlegt **zu** werden, wurde der Start auf
 reschedule.PTCP to PASS.AUX.INF PASS.AUX.3SG.PST the start on
 den März verschoben.
 the.ACC March postpone.PTCP



2. *Um-zu*-clauses in German: postfield position

Purpose clauses can occur in the postfield position of the matrix clause:

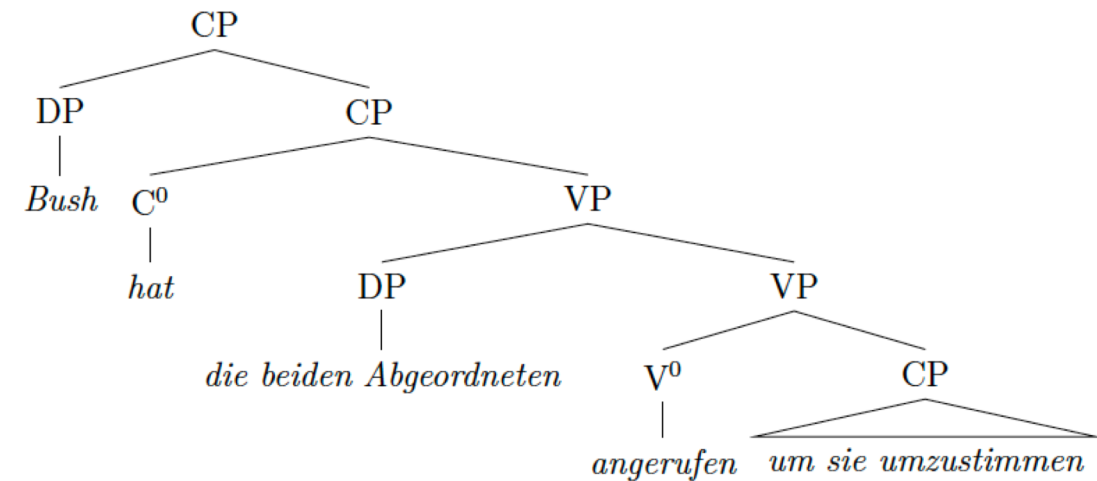
[8] Bush hat die beiden Abgeordneten angerufen um sie
 Bush have.3SG the both representatives call.PTCP COMP them.ACC
 unzustimmen.

to:sway.INF

‘Bush called both representatives in order to sway them.’

(DeReKo, *Süddeutsche Zeitung*, 25/11/2004; slightly modified by

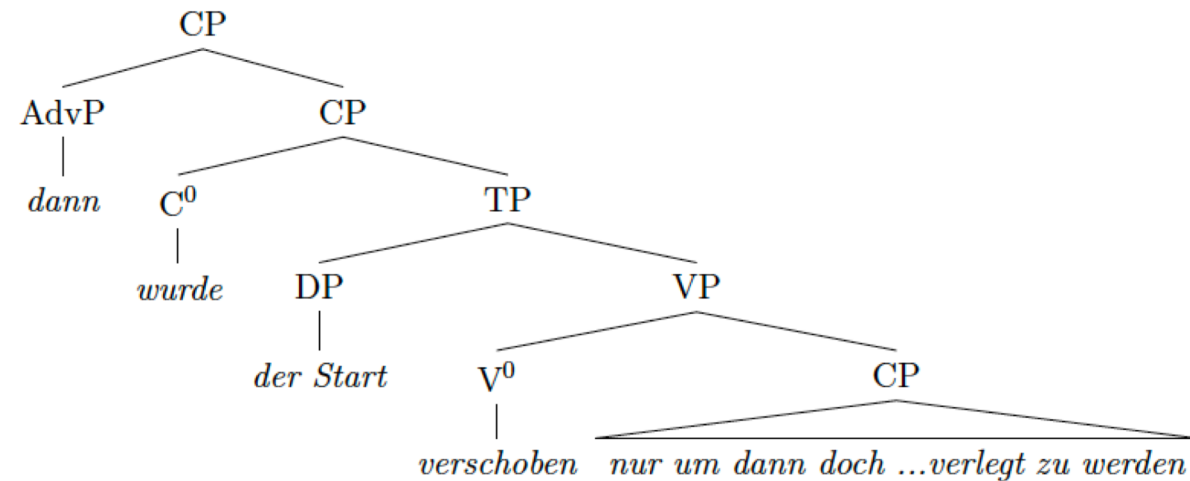
author: ŁJ)



2. *Um-zu*-clauses in German: postfield position

Mirative clauses pattern with purpose clauses:

- [9] Dann wurde der Start auf den März verschoben, nur
 then PASS.AUX.3SG.PST the start on the March postpone.PTCP only
um dann doch wieder auf Mitte Januar verlegt **zu**
 COMP then DISC.PART again on middle January reschedule.PTCP to
 werden.
 PASS.AUX.INF
 ‘Then the start was postponed to March only to be rescheduled again
 to the middle of January.’



2. *Um-zu*-clauses in German: variable binding

It is well-known that a quantifier can bind an agreeing pronoun occurring in the subordinate clause only if the quantifier c-commands the pronoun. Otherwise, binding into the subordinate clause is not possible, cf. Chomsky (1981, 1986) and Buring (2005):

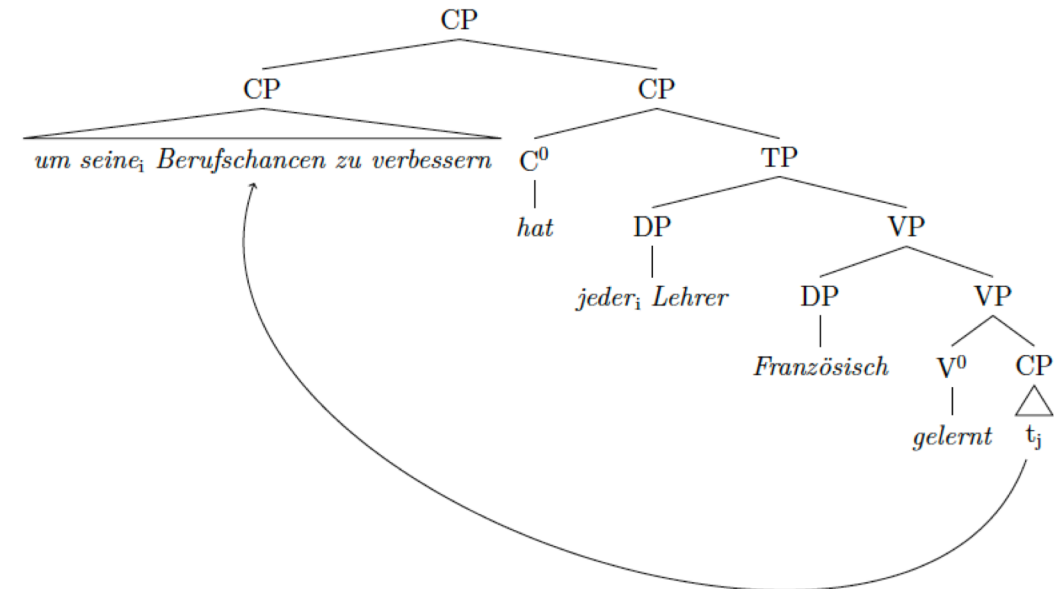
[10] α is X -bound by β if and only if α and β are coindexed, β c-commands α , and β is in an X -position.

(Chomsky 1981: 184, ex. 5)

2. *Um-zu*-clauses in German: variable binding

Purpose clauses allow variable binding:

- [11] **Um** seine_i Berufschancen **zu** verbessern, hat jeder_i
 COMP his occupational:outlook to improve.INF have.3SG each
 Lehrer Französisch gelernt.
 teacher French learn.PTCP
 ‘To improve his occupational outlook, every teacher used to learn French.’



2. *Um-zu*-clauses in German: variable binding

Likewise, variable binding into mirative clauses is also possible:

- [12] Ungewollt verschlimmert er jede_i Situation, um sie_i schließlich
unwillingly worsen.3SG he every situation COMP her.ACC finally
doch ebenso ungewollt zu meistern.
DISC.PART equally unwillingly to master.INF
'Involuntarily, he makes every situation worse, only to eventually overcome
it equally involuntarily.'

(Pauly 2013: 178, ex. 19b)

2. *Um-zu*-clauses in German: negation

Purpose clauses can be negated:

- [13] Ich bin nicht hergekommen, **um** in den Schlagzeilen **zu**
I be.1.SG NEG come.PTCP COMP in the.DAT headlines to
stehen, sondern **um** gut Tennis **zu** spielen.
stand.INF but COMP well tennis to play.INF
'I didn't come here to hit the headlines, but to play some good tennis.'

(Pauly 2013: 177, ex. 15a, 16)

2. *Um*-zu-clauses in German: negation

Mirative clauses can be negated too:

- [14] In diesem Fall steigt das Fieber nicht, um gegen Abend
in this.DAT case go:up.3SG the temperature NEG COMP against evening
allmählich wieder abzuklingen, sondern um erst dann einen
gradually again to:go:down.INF but COMP first then a.ACC
kritischen Gipfel zu erreichen.
critical height to reach.INF
'In this case, the temperature does not go up, only to gradually go down
again around the evening, but to reach a critical height then.'

(Leys 1991: 18)

2. *Um-zu*-clauses in German: correlative elements

Purpose clauses can refer to a correlative element in the matrix clause:

- [15] Die Kategorie Unterhaltung muß es natürlich darum_i geben,
the category entertainment must.3SG it of:course CORREL give.INF
um zu wissen]_i, daß man ihr möglichst aus dem Wege
COMP to know.INF that one her.DAT preferably from the.DAT way
gehen sollte.
go.INF should.3SG
'The category *entertainment* must of course exist so that everyone knows
they should avoid it.'
(DeReKo, *Frankfurter Rundschau*, 24/10/1998; slightly modified by
author: ŁJ)

2. *Um-zu*-clauses in German: correlative elements

Mirative clauses cannot be picked up by a correlative element:

- [16] *Bereits zwei Mal wurde die Veranstaltung darum /
already twice PASS.AUX.3SG.PST the event CORREL /
deshalb eingestellt, **um** dann doch wieder aufgenommen **zu**
CORREL cancel.PTCP COMP then DISC.PART again resume.PTCP to
werden.
PASS.AUX.INF
Intended: ‘The event has been cancelled twice, only to be resumed
again.’

(Pauly 2013: 176, ex. 13b)

2. *Um-zu*-clauses in German: subject sensitivity

Usually, purpose clauses require an agentive subject:

- [17] a. #Die Vase ist zerbrochen, **um** das Publikum **zu** erschrecken.
the vase be.3SG break.PTCP COMP the audience to scare.INF
Intended: 'The vase broke in order to scare the audience.'
- b. Die Vase wurde zerbrochen, **um** das Publikum **zu**
the vase PASS.AUX.3SG.PST break.PTCP COMP the audience to
erschrecken.
scare.INF
'The vase was broken in order to to scare the audience.'

See Landau (2000) for more details.

2. *Um-zu*-clauses in German: subject sensitivity

Mirative clauses do not exhibit any subject restrictions:

- [18] Die Vase ist eine Minute vor der Aufführung zerbrochen,
the vase be.3SG one minute before the.DAT performance break.PTCP
um dann doch noch geklebt worden **zu** sein.
COMP then DISC.PART still glue.PTCP PASS.AUX.PTCP to be.INF
'The vase broke one minute prior to the performance, only to be glued
together again anyway.'

2. *Um-zu*-clauses in German: interim summary

		purpose	mirative
1.	prefield position	+	—
2.	postfield position	+	+
3.	variable binding	+	+
4.	negation	+	+
5.	correlative element	+	—
6.	subject sensitivity	+	—

Table 1: Selected properties of adverbial *um-zu*-clauses in German

2. *Um-zu*-clauses in German: prediction

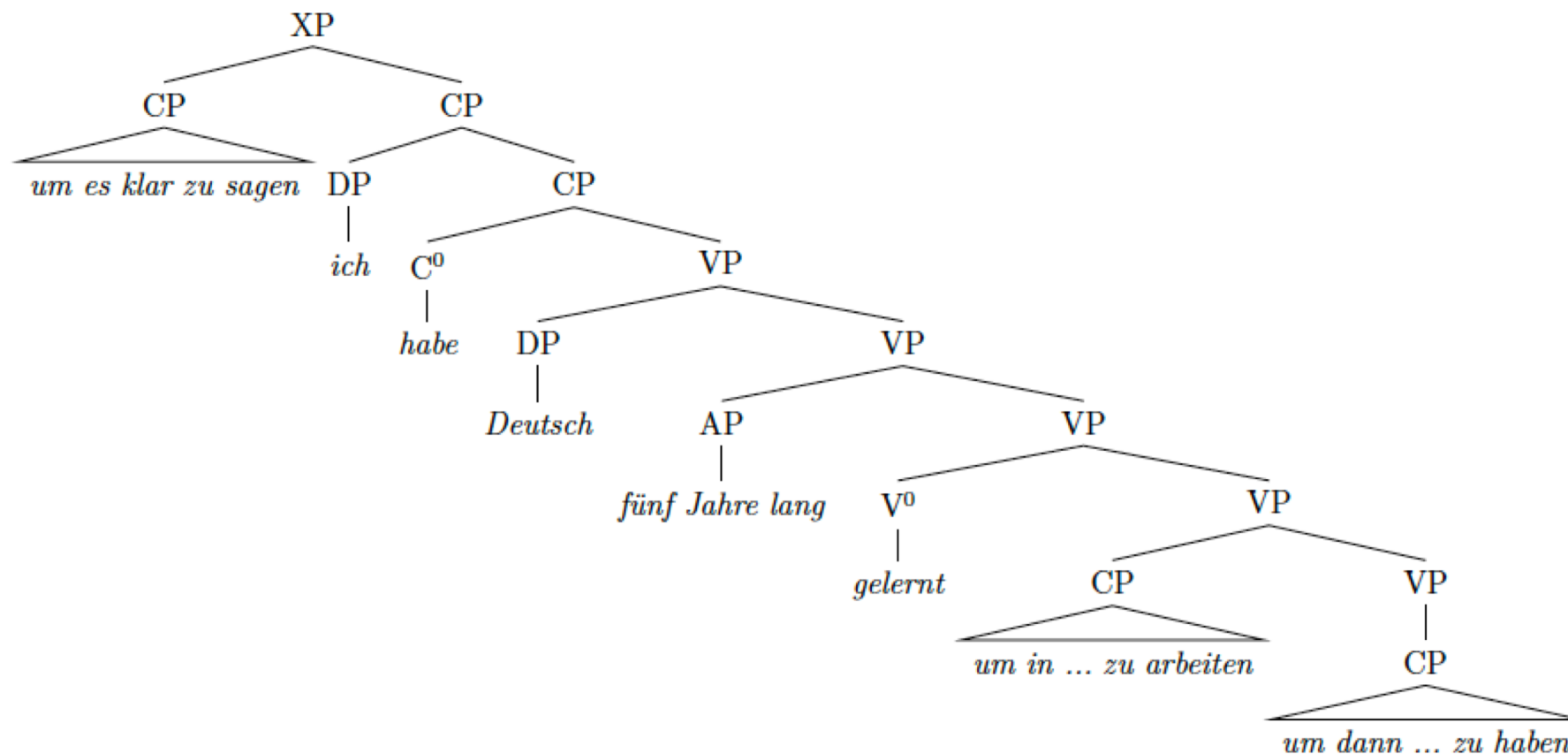
Both clause types can be combined:

- [19] Um es klar zu sagen: ich habe Deutsch fünf Jahre lang
COMP it.ACC clearly to say.INF I have.1SG German five years long
gelernt, **um** in einer deutschen Firma **zu** arbeiten, **um**
learn.PTCP COMP in a.DAT German company to work.INF COMP
dann doch alles vergessen **zu** haben.
then DISC.PART everything forget.PTCP to have.INF
'To say it clearly: I learned German for five years in order to work in a
German company, only to then forget it all anyway.'

2. *Um-zu*-clauses in German: prediction

Both clause types can be combined:

[20]



2. *Um-zu*-clauses in German: prediction

Question: Where do these differences come from?

Answer:

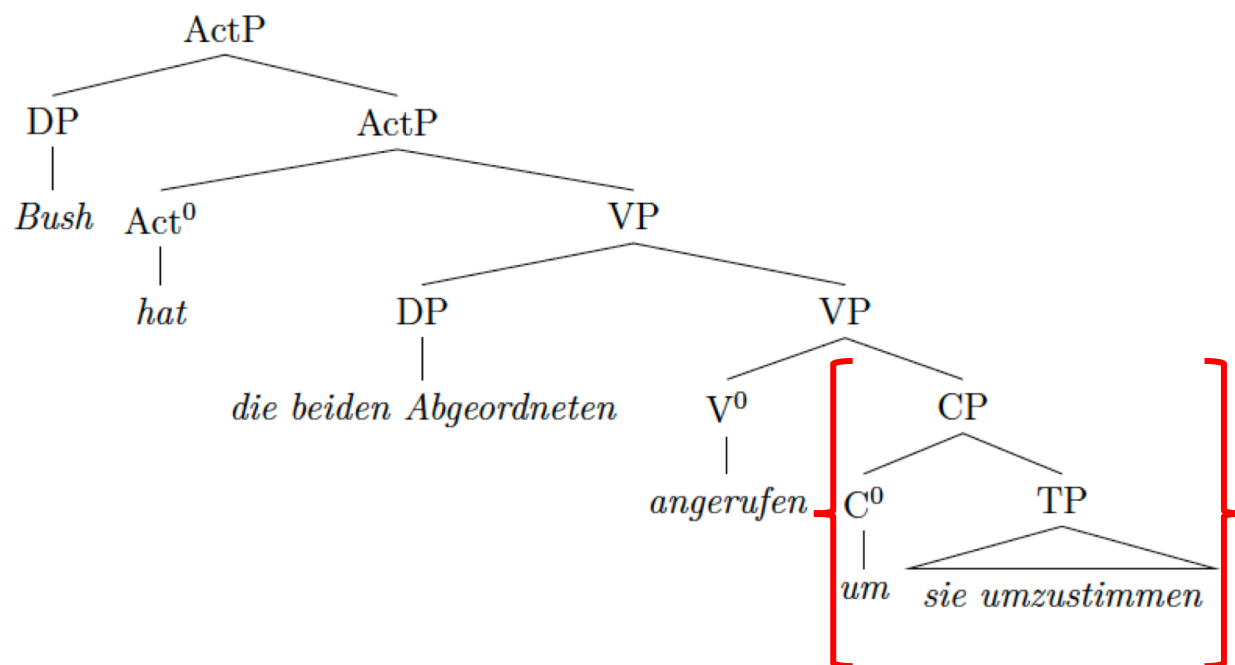
- a) from their syntax
- b) from their semantics



3. Synchronic analysis

3. Analysis: syntax

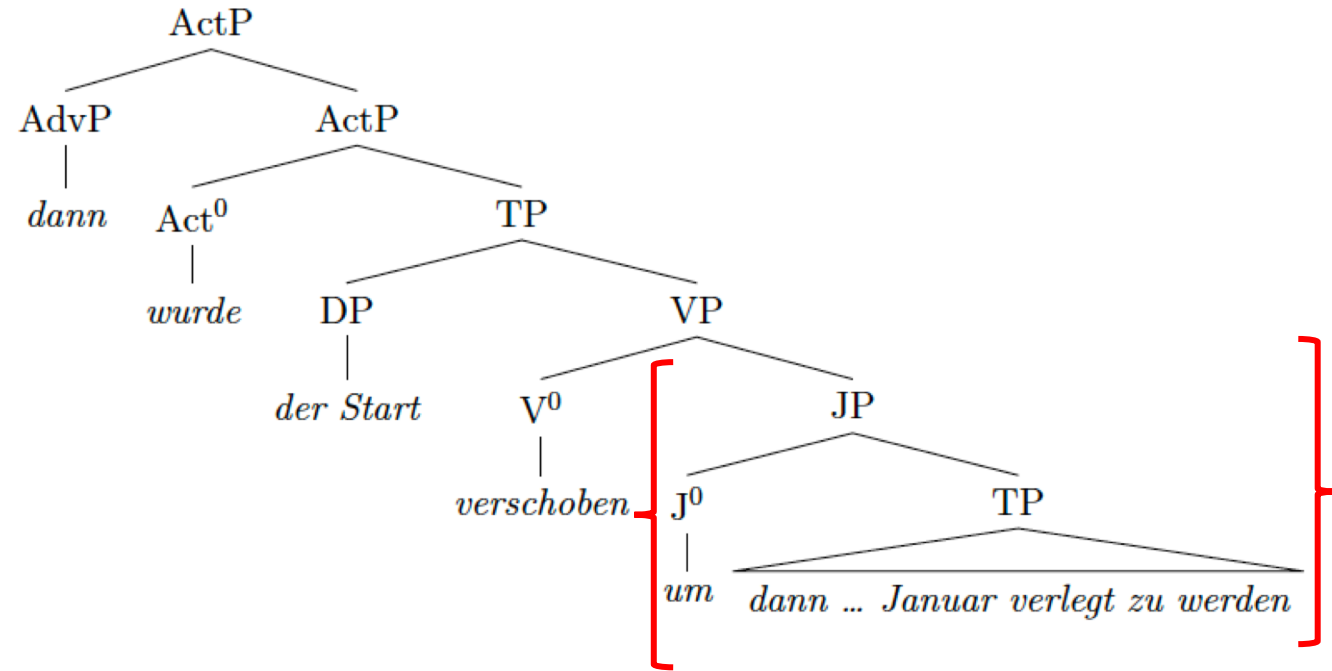
Purpose clauses are base-generated in the postfield position:



		purpose
1.	<u>pre</u> field position	+
2.	<u>post</u> field position	+
3.	variable binding	+
4.	negation	+
5.	correlative element	+
6.	subject sensitivity	+

3. Analysis: syntax

Mirative clauses are base-generated in the postfield position:



		mirative
1.	<u>prefield</u> position	–
2.	<u>postfield</u> position	+
3.	variable binding	+
4.	negation	+
5.	correlative element	–
6.	subject sensitivity	–

The syntactic differences between both clause types
come from (not-)at-issueness:

- a) purpose clauses are at-issue
- b) mirative clauses are not-at-issue.

3. Analysis: semantics

First, at-issue content can be directly assented or dissented with:

- [21] A: Inzwischen kommen schon Leute_i, um PRO_i zu spionieren.
meanwhile come.3PL already people COMP to spy.INF
'Meanwhile, people come by to spy.'
- B: Das stimmt (nicht).
that be:true.3SG NEG
'That's (not) true.'

3. Analysis: semantics

Second, at-issue content addresses the question under discussion:

- [22] A: Wozu kommen die Leute?
what:for come.3.PL the people
‘For what reason do the people come?’
- B: Die Leute kommen, um zu spionieren.
the people come.3PL COMP to spy.INF
‘The people come by to spy.’

3. Analysis: semantics

Finally, at-issue content determines the relevant set of alternatives:

[23] A: Kommen die Leute, um zu spionieren?

come.3PL the people COMP to spy.INF

‘Do the people come by to spy?’

B: Ja, sie kommen, um zu spionieren.

yes they come.3PL COMP to spy.INF

‘Yes, they come by to spy,’

3. Analysis: semantics

Mirative clauses convey not-at-issue meaning:

[24] Given a set of alternatives C to the at-issue proposition p ,

$[[\text{um}]] = \lambda p.p \bullet \exists p' \in C$ such that p' is better than p with respect to the speaker's expectations

(based on Salanova & Carol 2017)

different is better (many thanks to one of the anonymous reviewers)

3. Analysis: semantics

Mirative clauses convey not-at-issue meaning:

[25] Das alte Plexiglas hatte 15 Jahre durchgehalten, **um** dann
the old plexiglass have.3SG.PST 15 years preserve.PTCP COMP then
doch immer unstabiler **zu** werden.
DISC.PART more unstable to become.INF
'The old plexiglass has preserved for 15 years, only to then become more and
more brittle.'

(DeReKo, *Mannheimer Morgen*, 19/7/1995)

3. Analysis: semantics

Mirative clauses convey not-at-issue meaning:

[26] Das alte Plexiglas hatte 15 Jahre durchgehalten, um dann doch immer unstabiler zu werden:

$$C = \begin{cases} P_1 = & \lambda w. \text{plexiglas remains stable in } w, \\ P_2 = & \lambda w. \text{plexiglas remains stable for 20 years } w, \\ P_3 = & \lambda w. \text{plexiglas remains stable for 50 years in } w, \\ P_x = & \lambda w. \dots \text{ in } w. \end{cases}$$

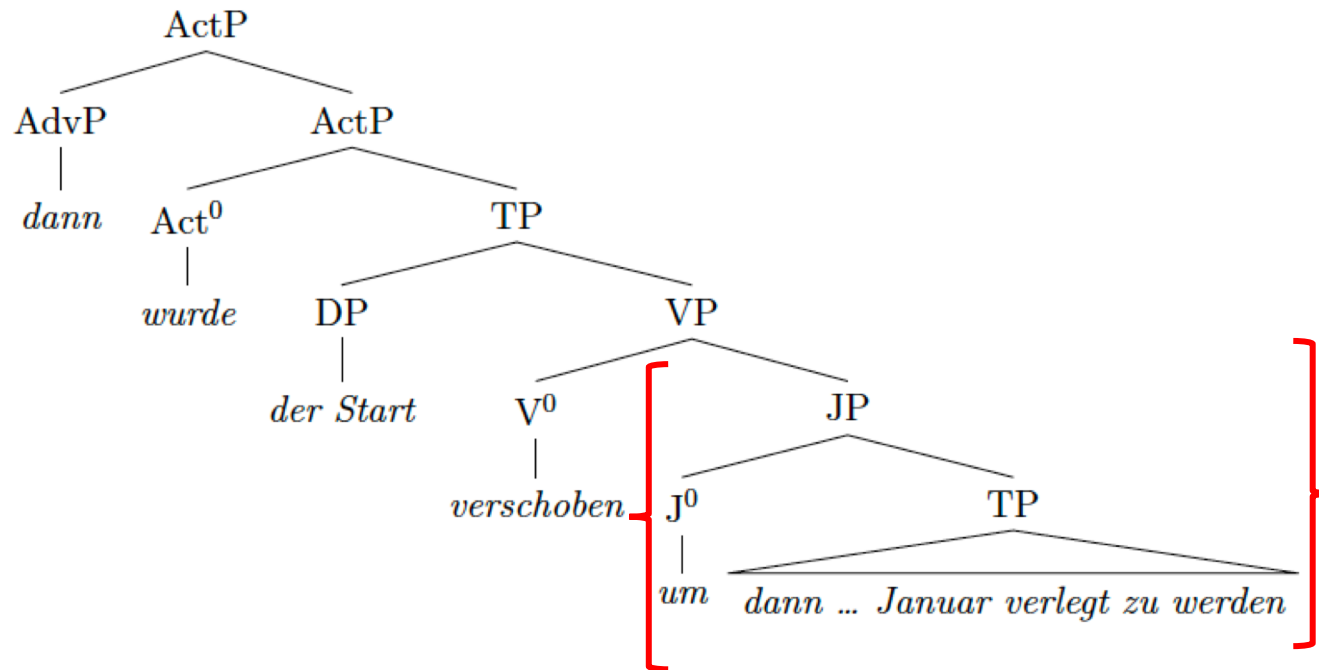
3. Analysis: semantics

The not-at-issue content (= the silent set of expectations) cannot be directly assented or dissented with :

- [27] A: Das alte Plexiglas hatte 15 Jahre durchgehalten, um
the old plexiglass have.3SG.PST 15 years preserve.PTCP COMP
dann doch immer unstabiler zu werden.
then DISC.PART more unstable to become.INF
'The old plexiglass has preserved for 15 years, only to then become more
and more brittle.'
- B: Das stimmt aber nicht.
that be:true.3SG but NEG
'But that is not true.'

3. Analysis: syntax

The not-at-issue content accounts for the syntactic behavior of mirative clauses:



		mirative
1.	<u>prefield</u> position	–
2.	<u>postfield</u> position	+
3.	variable binding	+
4.	negation	+
5.	correlative element	–
6.	subject sensitivity	–



4. Diachronic analysis

4. Diachronic analysis

Both clause types do not differ on the surface.

[28] a) Er ist nur auf das Fest gegangen, **um** dort die Grippe **zu** bekommen.
'His only goal when he went to the party was to get the flu there.'



b) Er ist auf das Fest gegangen, (nur) **um** dort die Grippe **zu** bekommen.
'He went to the party and ended up getting the flu there.'

(anonymous reviewer)

4. Diachronic analysis

Step I: The event embedded in the subordinate clause is hypothetical/irrealis:

[28] a) Er ist nur auf das Fest gegangen, **um** dort die Grippe **zu** bekommen.
'His only goal when he went to the party was to get the flu there.'

Speaker's expectations in
terms of a GOAL-relation

... **um** dort Tango **zu** tanzen.
'to tango there.'

... **um** dort **zu** trinken.
'to drink there.'

4. Diachronic analysis

Step II: There is a proposition that does not belong to the set of speaker's expectations:

[28] a) Er ist nur auf das Fest gegangen, **um** dort die Grippe **zu** bekommen.
'His only goal when he went to the party was to get the flu there.'

Speaker's expectations in
terms of a GOAL-relation

... **um** dort Tango **zu** tanzen.
'to tango there.'

... **um** dort **zu** trinken.
'to drink there.'

... (nur) **um** dort **zu** schlafen.
'only to sleep there'

4. Diachronic analysis

Step III: We know that he slept at the party all the time. The unexpected proposition is factive. It is asserted by the speaker, who wants to add it to the Common Ground.

[28] a) Er ist nur auf das Fest gegangen, **um** dort die Grippe **zu** bekommen.
'His only goal when he went to the party was to get the flu there.'

Speaker's expectations in
terms of a GOAL-relation

...

... (nur) **um** dort **zu** schlafen.
'only to sleep there'

4. Diachronic analysis

Both clause types do not differ on the surface.

[28] a) Er ist nur auf das Fest gegangen, **um** dort die Grippe **zu** bekommen.
‘His only goal when he went to the party was to get the flu there.’



Only if a proposition did not belong to the set of speaker's expectations and is factive.

b) Er ist auf das Fest gegangen, (nur) **um** dort die Grippe **zu** bekommen.
‘He went to the party and ended up getting the flu there.’

(anonymous reviewer)

4. Diachronic analysis

Step IV: The speaker presents the factive proposition as unexpected to the hearer. S/He often uses the particle *nur* ‘only’ to signal that s/he picked out one of the propositions.

- [28] b) Er ist auf das Fest gegangen, (nur) **um** dort die Grippe **zu** bekommen.
 ‘He went to the party and ended up getting the flu there.’

The contrast between the asserted proposition and what the speaker used to expect gets grammaticalized and is stored in the lexicon entry of *um*.

4. Diachronic analysis

Step IV: The speaker uses the discourse particle *doch* to signal that asserted proposition is in contrast with what s/he expected.

- [3] Jan trainiert jeden Tag, **um** dann doch einen Herzinfarkt **zu**
Jan train.3SG every day COMP then DISC.PART a.ACC heart:attack to
bekommen.
get.INF
'Jan is working out every day, only to then contract a heart disease anyway.'



5. Conclusion

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Um-zu-clauses in German do not constitute a uniform class of adverbial clauses, as they differ at the syntax-semantics interface.

Mirative *um-zu*-clauses developed out of the purpose *um-zu*-clauses.

Adverbial clauses conveying a not-at-issue content seem to be syntactically more restricted.



Thank you for your attention!

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