An empirical perspective on linguistic classification:

Unaccusatives meet the adjectival passives

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Adjectival Passive in English

Adjectival/Verbal Passive: **to be** + *Past Participle*

(1) The door **was** *opened*.

Verbal/Eventive Passive: **to be** + *Past Participle*

(2a) The door **was** slowly *opened* by the housekeeper.

Adjectival/Stative Passive: **to be** + *Past Participle*

(2b) When he came back, the door **was** still *opened*.

Adjectival Passive in German

Verbal/Eventive Passive: Auxiliary **werden** + *Part II*

(3) Die Tür **wurde** *geöffnet.*
    The door became opened
    The door was opened.

Adjectival/Stative Passive: **sein** + *Part II*

(4) Die Tür **war** *geöffnet.*
    The door was opened.

Adjectival Passive in German

(3) Die Tür **wurde** *geöffnet*.   **Verbal/Eventive Passive**

(4) Die Tür **war** geöffnet.   **Adjectival/Stative Passive**

a. Die Tür   **wurde/*war**   langsam von der Haushälterin *geöffnet*.
   The door became/was   slowly   by   the housekeeper opened.

b. Als er   zurückkam, ***wurde/war** die Tür immer noch weit *geöffnet*.

    When he came back   became/was the door   still   wide opened.

Adjectival Passive in German

Verbal Analysis: e.g., Helbig (1982), Lenz (1994)

Adjectival Analysis: e.g., Rapp (1998), Kratzer (2000), Maienborn (2007)

(4) Die Tür **war** *geöffnet.*

The door was opened

(5) Die Tür **war** *offen*.

The door was open

→ **Adjectival Passive = Copula *sein* + adjectivized Part II**

Adjectival Analysis: Evidence

➢ **Adjectival Negation**

➢ **Adjectival Comparison**

➢ **Coordination with APs**

➢ **Adjectival Composition**

➢ **Modification by Temporal Adverbials**

Adjectival Analysis: Evidence I

Adjectival Negation: NEG-affix *un-*

(6) Der Brief ist **un-geöffnet**

    The letter is un-opened

Adjectival Comparison

(7) …Autor, der […] weitaus **gelesen-er** war als   Goethe

    …author who   far   read-COMP was than Goethe

    '…author who was far more read than Goethe'

Adjectival Analysis: Evidence II

Coordination

(8) Ihre Schuhe waren sauber und **poliert**.

    Her shoes were clean and polished.

Adjectival Composition

(9) Dieses Geschäft ist **videoüberwacht**.

    This shop is video-monitored.

    This shop is under video surveillance.

Adjectival Analysis: Evidence III

Modification by Temporal Adverbials

(10a) Das Fenster ist/#wurde **seit   zwei Stunden** geöffnet.
The window is/became since two   hours   opened

(10b) Das Fenster *ist/wurde **vor   zwei Stunden** geöffnet.
The window is/became before two   hours   opened

(11a) Der Laden ist **seit   zwei Stunden** offen.
The shop is   since two   hours   open

(11b) *Der Laden ist **vor   zwei Stunden** offen.
The shop   is before two   hours   open

Open Issues

➢ **Psycholinguistic evidence for adjectival conversion process?**

➢ **Which verbs allow adjectival conversion?**

- transitive (resultative) verbs

? unaccusative verbs?

? Adjectival "Passive"

→ **Adjectival Resultative**

Outline of the Talk

1. Empirical evidence for adjectival conversion

Experiment 1: self-paced reading

2. Empirical evidence for copula-adjective construction with unaccusative verbs

Corpus data

Experiment 2: acceptability judgments

Adjectival Conversion – Experiment 1

Hypothesis

Adjectival conversion causes processing costs

(SeinPart) Die Milch **war**   verschüttet und ...
(WerdPart) Die Milch **wurde** verschüttet und ...
          The milk was/became spilled and ...

(SeinAdj)   Die Milch **war**   sauer   und ...
(WerdAdj)   Die Milch **wurde** sauer   und ...
          The milk was/became sour and ...

➢ longer RTs for participle in (SeinPart) compared to (WerdPart)
➢ no RT difference on the adjective in (SeinAdj) and (WerdAdj)

Adjectival Conversion – Experiment 1

Materials

24 x 4 experimental sentences and 72 filler sentences. Each participant saw one version of the experimental items.

Participants

48 students of Tübingen University. All were German native speakers.

Independent Variables

PreTarget: *sein (Sein)* vs. *werden (Werd)*
Target: *participle* (Part) vs. *adjective* (Adj)

Adjectival Conversion – Experiment 1

Procedure: self-paced reading

```
--- ----- --- ---------- --- ---- ---- ---------. Region0
Die Milch --- ---------- --- ---- ---- ---------. Region1
--- ----- war ---------- --- ---- ---- ---------. Region2
--- ----- --- verschüttet --- ---- ---- ---------. Region3
--- ----- --- ---------- und ---- ---- ---------. Region4
. . .
```
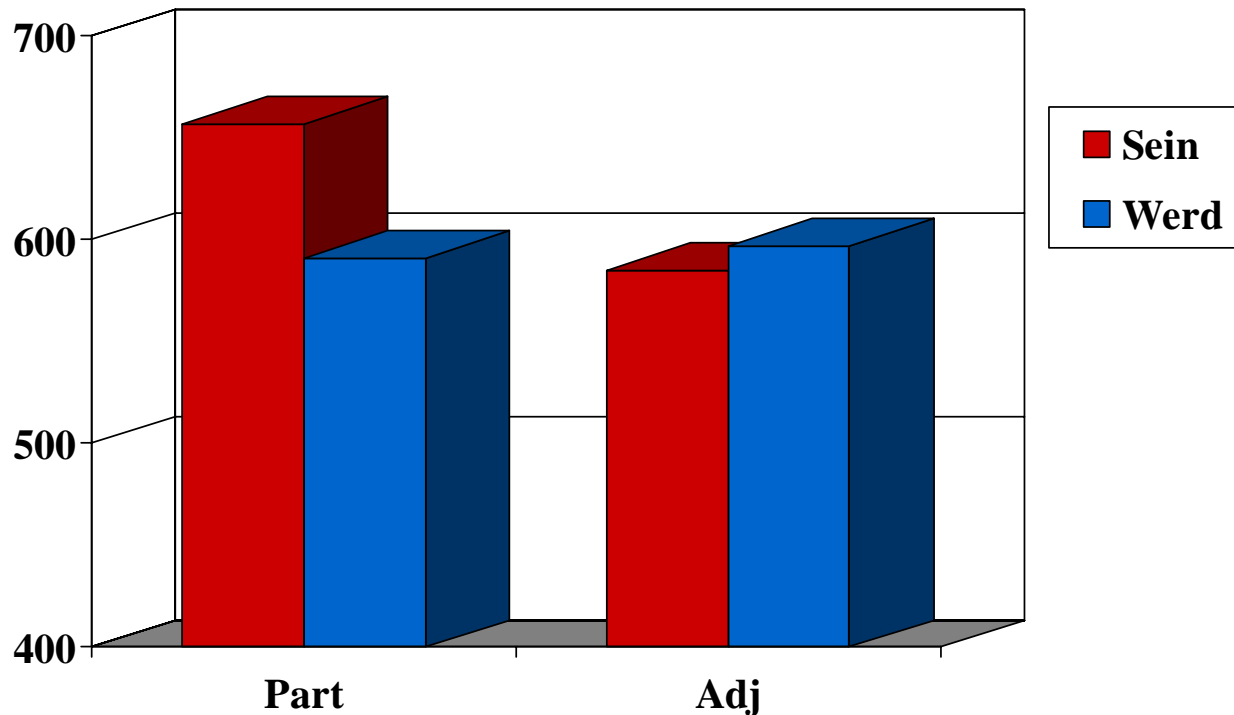
Task
comprehension question after 25% of trials (99% correct resp.)

Adjectival Conversion – Experiment 1

Results reading times Region 3 *(participle/adjective)*

PreTarget x Target
$F_1(1,47)=4.58$, **p1≤.05**
$F_2(1,23)=1.95$, p2=.18

SeinPart-WerdPart
$F_1(1,47)=4.58$, **p1≤.04**
$F_2(1,23)=3.86$, **p2 ≤.05**
SeinAdj-WerdAdj
Fs < 1

Adjectival Conversion – Experiment 1

Summary and Discussion

➢ longer RTs for participle following *sein* compared to *werden*

➢ no RT difference on the adjective
  → **evidence for additional process**

➢ **adjectival conversion in processing adjectival resultatives**

Adjectival Resultative with Unaccusatives

Which verbs build the adjectival resultative?

transitive resultative verbs √ Der Computer ist repariert.
The computer is repaired

process verbs **?** Die Katze ist gestreichelt.
The cat   is   petted

unaccusative verbs **?** Die Blumen sind verwelkt.
The flowers are withered

Adjectival Resultative with Unaccusatives

The case of unaccusatives

    (12) Anna ist eingeschlafen.
          Anna is in-slept ('fallen asleep')

      $\rightarrow$ ***sein*-perfect** = perfect-auxiliary + verbal participle II

? **adjectival resultative reading?**

Unaccusatives – Corpus Evidence I

Adjectival Negation: NEG-affix *un-*

(13) Nur was erinnert   wird,   ist **unvergangen**.
Only what remembered become, is un-passed

'Only that which is remembered is not departed.'

(Droysen, J. G., Ley P. (Hg.): Historik, 1977, S. 69)

Unaccusatives – Corpus Evidence II

Adjectival Comparison

(14) Nur wenig **gelungener** als *Tödliche Nähe* ist Herbert Ross'
    Only little felicitous-COMP as Striking Distance is H. Ross'

    Versuch, Figuren wie Tom Hardy bis zur Lächerlichkeit zu
    attempt   figures like   Tom Hardy up to   ridiculousness to

    überzeichnen.
    oversubscribe

  'Only a little less successful than *Striking Distance* is Herbert Ross' attempt to exaggerate figures such as Tom Hardy into ridicule.'

(COSMAS P94/JAN.02572 Die Presse, 25.01.1994)

Unaccusatives – Corpus Evidence III

Coordination

(15) Ein roter Kater ist in Hall verschwunden. Er ist im Brustbereich
  A red tom cat is in Hall disappeared. He is in the chest area

  weiß, das rechte Auge ist **geschwollen** und trüb.
  white, the right   eye   is   swollen   and cloudy.

  'A red tom cat disappeared in Hall. He has a white chest, his right eye is swollen and cloudy.'

  (COSMAS O00/MAR.37576 Neue Kronen-Zeitung, 29.03.2000)

Unaccusatives – Corpus Evidence IV

Adjectival Composition

(16) So würde z.B. eine Treibhaustomate den Ansprüchen nicht

So would i.e. a green house tomato   the requirements not

genügen: **sonnengereift** muss sie sein.

fulfill   sun-ripened   must she be

'So a green house tomato for instance would not fulfil the
requirements: it must be sun-ripened.'
(COSMAS A99/AUG.57731 St. Galler Tagblatt, 24.08.1999)

Unaccusatives – Corpus Evidence V

Modification by Temporal Adverbials

Der berühmteste   Dissident Wei Jingsheng ist

The famous-COMP dissident Wei Jingsheng is

seit über   einem Jahr **verschwunden**.

since above one   year disappeared

'The most famous dissident Wei Jingsheng has been missing for more than a year.'

(*COSMAS MMM/506.01508: Mannheimer Morgen, 03.06.1995*)

Unaccusatives – Experiment 2

(18a) Die Blumen sind **vor** Tagen   **verwelkt**.
(18b) Die Blumen sind **seit** Tagen   **verwelkt**.
     The flowers are since/before days withered
     The flowers withered days ago.

(19a) Der Junge ist **vor** zwei Minuten   **ausgerutscht**.
(19b) *Der Junge ist **seit** zwei Minuten   **ausgerutscht**.
     The boy is since/before two minutes slipped
     The boy slipped two minutes ago.

? Two groups of unaccusatives?

Unaccusatives – Experiment 2

Materials

20 x 2 experimental sentences per unaccusative group: COSMAS occurence with durational adverbial (unacc1) vs. no COSMAS occurence with durational adverbial (unacc2). Each participant saw only one version of the experimental sentences (durational vs. positional adverb) and 40 filler sentences.

Participants

40 undergraduate students of the University of Tübingen who participated for course credit. All were native German speakers.

Unaccusatives – Experiment 2

Independent Variables

ADVERBIAL: *durational* (dur) vs. *positional* (pos)

GROUP: *occcurence with dur* (unacc1) vs. *no occurence with dur* (unacc2)

Procedure
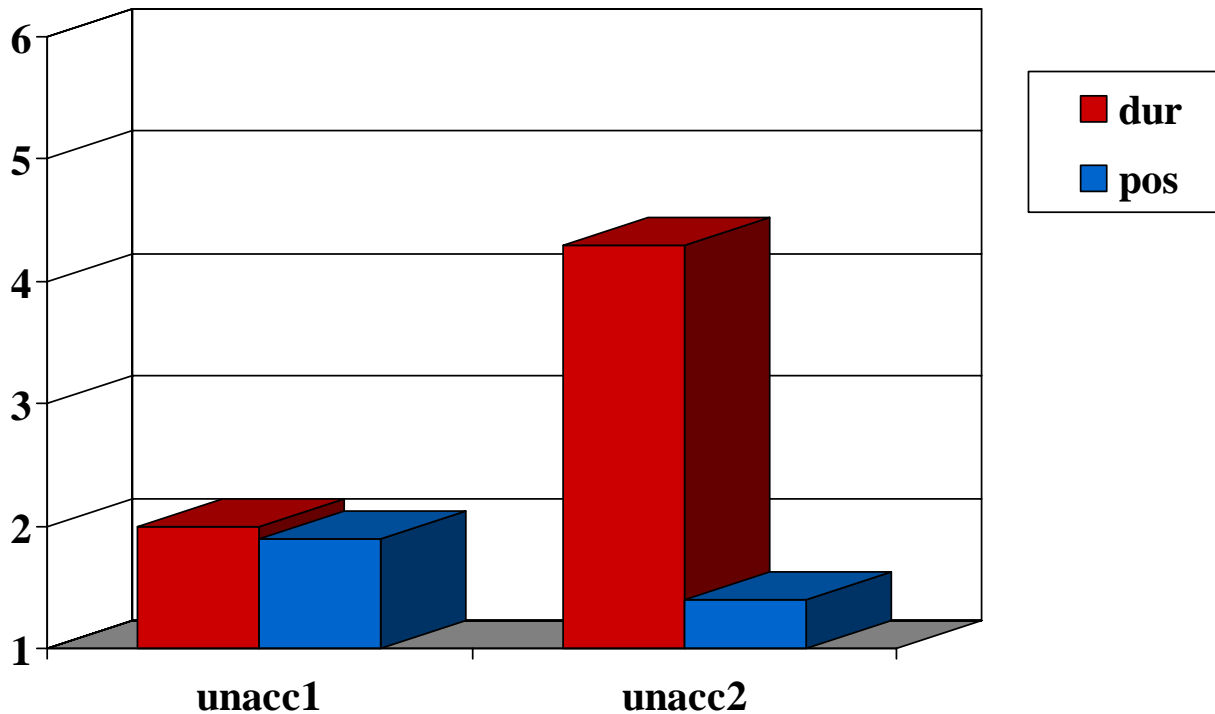
Rating Study – Acceptability Judgments

6-point-scale: 1 = *very good, ...,* 6 = *not acceptable*

Unaccusatives – Experiment 2

Results   ratings

ADVERB x GROUP
F1(1,39)=256.18, **p1≤.001**
F2(1,19)=69.29, **p2≤.001**

dur_unacc1-pos_unacc1
F1(1,39)=1.00, p1=.17
F2(1,19)=.12, p2=.73
dur_unacc2-pos_unacc2
F1(1,39)=374.14, **p1≤.001**
F2(1,19)=291.74, **p1≤.001**

Unaccusatives – Experiment 2

Summary

Ratings

➢ GROUP1: no rating difference for sentences with durational adverbial *c*ompared to sentences with positional adverbial

➢ GROUP 2: clear rating difference for sentences with durational adverbial compared to sentences with positional adverbial

Unaccusatives – Experiment 2

Discussion

➢ **Preliminary evidence for two groups of unaccusatives**

? **What are the characteristics of these two groups?**

Group 1
*verwelkt, verschwunden, gewichen,
geschwollen, entbrannt, gewachsen,
gesunken, verstummt, vergangen
(...)*

Group 2
*erschienen, ausgerutscht, erfolgt,
geplatzt, explodiert, gestiegen,
entstanden, geschehen, passiert
(...)*

Unaccusatives – Discussion

➢ **Context dependency**

Acceptability dependent on subject

(20) *Der Luftballon   ist seit   fünf Minuten **geplatzt**.
    The air balloon is since five minutes burst

(21) Die Aktienblase   ist seit   Anfang   Januar   **geplatzt**.
    The stock bubble is since beginning January burst

Unaccusatives – Discussion

➢ **Context dependency**

Acceptability dependent on contextual information

(22) This year the opening of the festival will be signaled by a bursting balloon.

A visitor asks: "Is the festival opened already?"

- „Ja, der Ballon   ist seit fünf Minuten **geplatzt**."

Yes the balloon is since five minutes burst

Unaccusatives – Discussion

Acceptability dependent on verb class

(23)   Das Fenster ist **geöffnet.**
           The window is opened

(24) ??Die Katze ist **gestreichelt.**
           The cat   is petted

Acceptability dependent on contextual information

(25) Anna hat ihre Nachbarspflichten erfüllt: Die Katze ist **gestreichelt**.
      Anna has her neighbour duties fullfilled: The cat   is petted

➢ **better ratings for (25) compared to (24)**

Unaccusatives – Discussion

➢ **The admissibility of adjectival resultatives is not constrained by a specific verb class but it highly depends on contextual factors.**

Summary and Conclusions

➢ **Empirical evidence for adjectival conversion**

Experiment 1: longer reading times for adjectival resultative compared to eventive passive

➢ **Empirical evidence for copula-adjective construction with unaccusative verbs**

Corpus evidence for copula-adjective construction
Experiment 2: Two groups of unaccusatives

group 1: sein-perfect + copula-adjective

group 2: sein-perfect only

Summary and Conclusions

➢ **No verb class difference**

Admissibility of adjectival resultative seems to be highly sensitive to contextual factors

➢ **"Adjectival Passive" is a misnomer! A more adequate term would be "Adjectival Resultative"**

Summary and Conclusions

Theory and empirical methods

➢ **Corpus and psycholinguistic data question generally accepted theoretical assumptions**

➢ **Corpus and psycholinguistic data provide evidence for specific linguistic analyses**

Different empirical methods

➢ **Converging results from different sources**

➢ **Different methods can answer different types of questions**
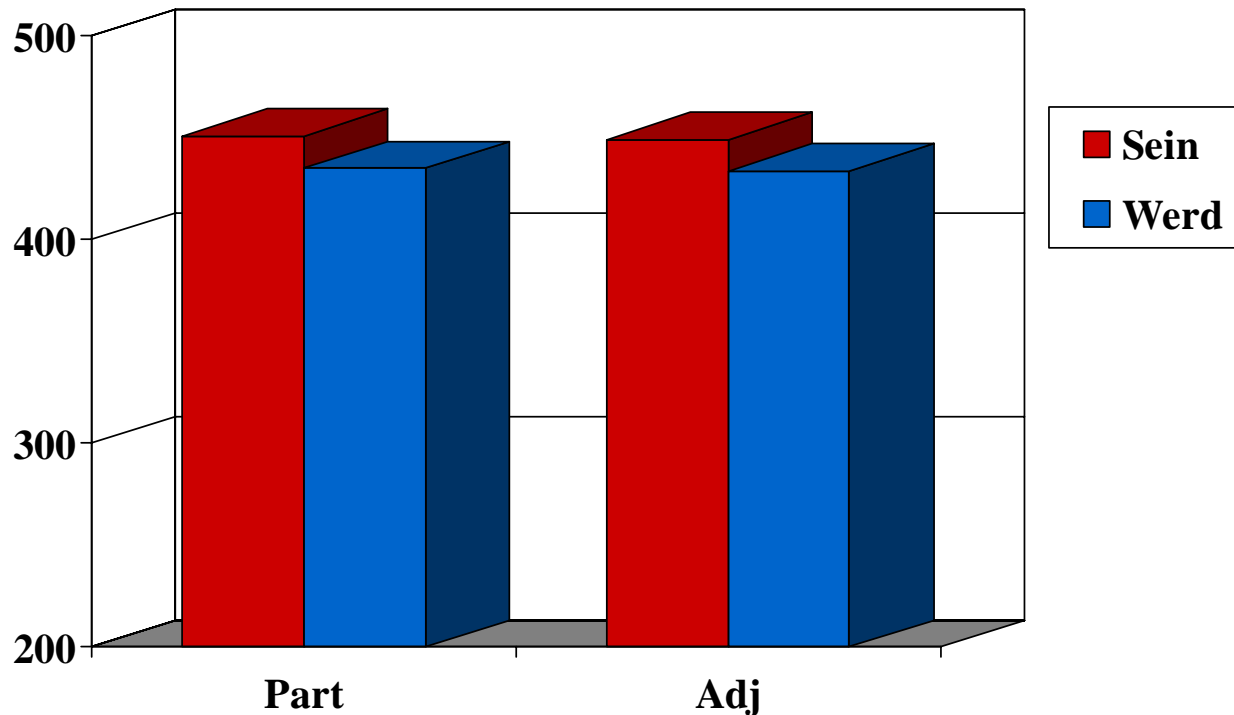
Thanks to
Simone Alex and **Nadja Choeb**
for their help with collecting the data ...

... and to **you** for your attention!

Adjectival Conversion – Experiment 1

Results reading times Region 4 *(und)*

PreTarget
$F_1(1,47)=3.86$, **p1$\leq$.05**
$F_2(1,23)=1.02$, p2$=$.07