

# Agentivity vs. Auxiliary Choice: Evidence from Pronominal Binding in German AcI-constructions

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Workshop on Cross-linguistic Variation in Auxiliary Selection, UC Davis, May 31, 2003

Goals:

- show that pronominal binding facts in German AcI-constructions provide evidence regarding clause structure
- give a configurational account of agentivity which allows for pronominal binding facts to serve as a probe for unaccusativity

## 1. Introduction to AcIs

- Examples of AcI ('Accusativus cum Infinitivo')-constructions:

- (1) a. Die Studenten hören [<sub>AcI</sub>den Professor reden].  
the students hear the professor (ACC) talk (INF)  
'The students hear the professor talk.'
- b. Der Professor lässt [<sub>AcI</sub>die Studenten den Artikel zusammenfassen].  
the professor lets/has the students (ACC) the article summarize (INF)  
'The professor lets/has the students summarize the article.'
- c. Das Kind lässt [<sub>AcI</sub>den Stein ins Wasser fallen].  
the child lets the rock (ACC) into-the water fall (INF)  
'The child lets the rock fall into the water.'

- AcIs are embedded under *lassen* 'let, make, have', *hören* 'hear', *sehen* 'see', *fühlen* 'feel', etc. and minimally consist of an accusative-marked nominal followed by an infinitive; can be transitive or intransitive.

- AcIs lack infinitive marker *zu* 'to' and cannot be extraposed.

- (2) a. ..., dass die Studenten [<sub>AcI</sub>den Professor reden] hören.  
that the students the professor talk hear  
'...that the students hear the professor talk.'

- b. \*..., dass die Studenten hören [<sub>AcI</sub>den Professor reden].

- (3) a. ...dass die Studenten [den Professor zu verstehen] versuchen.  
that the students the professor to understand (INF) try  
'...that the students try to understand the professor.'

- b. ... dass die Studenten versuchen [den Professor zu verstehen].

- AcIs are subsentential, i.e. smaller than IP, but potentially bigger than a bare VP (see Wurmbrand 2001).

- Claims:

- Transitive, unergative AcI-infinitives: vP-VP
- Unaccusative AcI-infinitives: VP
- Presence of vP correlates with agentivity

## 2. Previous accounts of pronominal binding

(4) Martin<sub>i</sub> hört [<sub>AcI</sub>den Mann<sub>j</sub> über sich<sub>i/j</sub>/ihn<sub>i/\*j</sub> reden].  
Martin hears the man (ACC) about self/ him talk  
'Martin hears the man talk about himself/him.'

- Unlike the reflexive, pronominal *ihn* only has one possible antecedent. It can refer to the matrix subject *Martin* but not to AcI-subject *den Mann*.
- Chomsky (1986)'s Condition B: A pronominal must be free in its minimal governing category, where a governing category of an element  $\alpha$  is a Complete Functional Complex (CFC) containing the governor of  $\alpha$  and a subject.<sup>1</sup>
- CFC: a maximal projection with a lexical head in which all the grammatical functions compatible with that head are assigned (Chomsky 1986).
- Frey (1993) and Haider (1985): A pronominal must be free in the minimal CFC that contains a 'subject'<sup>2</sup>, defined as external argument.
- Consequences:
  - derived subjects (internal arguments) are not 'subjects'
  - in unaccusative AcIs, AcI is not the minimal CFC in which the pronominal must be free
  - when minimal subject-containing CFC is the matrix clause, pronominal cannot be free

(5) a. Hans<sub>i</sub> lässt sich<sub>i</sub>/ihm<sub>\*i</sub> einen Stein auf den Kopf fallen.  
Hans lets self/him (DAT) a rock (ACC) on the head fall  
'Hans lets a rock fall on his head.'  
(Frey 1993: 116)

b. Hans<sub>i</sub> lässt [<sub>AcI</sub>den Stein sich<sub>i</sub>/ihm<sub>\*i</sub> auf den Kopf fallen].  
Hans lets the rock (ACC) self/him (DAT) on the head fall  
'Hans lets a rock fall on his head.'

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<sup>1</sup> To be more exact, Chomsky (1986) states his Condition B in terms of "BT-compatibility". "BT-compatibility is defined as follows: "The indexing I and the pair  $(\alpha, \beta)$  are *compatible* with respect to the binding theory if  $\alpha$  satisfies the binding theory in the local domain under indexing I." Thus, Condition B says "I is BT-compatible with  $(\alpha, \beta)$  if  $\alpha$  is a pronominal and is free in  $\beta$  under I" (Chomsky 1986:171).

<sup>2</sup> Frey's (1993) exact definition of 'subject' is as follows:  
*Unter dem Begriff 'SUBJEKT' werden jene syntaktischen Repräsentanten einer externen Argumentstelle, welche in eine Bindungsbeziehung mit einer DP eintreten können, und Domänen abschließende Elemente zusammengefasst.* 'The cover term 'SUBJECT' stands for domain-closing elements and those syntactic representatives of an external position which can enter into a binding relationship with a DP.'

- Problem:
  - aux-choice is taken to be a reliable diagnostic for unaccusativity
  - all *sein* ‘be’-selecting verbs are considered unaccusative, i.e. predicted to disallow pronominal referring to matrix subject
  - incompatible with (6)<sup>3</sup>.

(6) Der König<sub>i</sub> lässt [<sub>AcI</sub>den Gefangenen<sub>j</sub> vor sich<sub>i</sub>/ihm<sub>i</sub> niederknien].  
 the king has the prisoner before self/him down-kneel  
 ‘The king has the prisoner kneel down before him.’

- Assuming the given judgments, (6) leads to paradox for Frey:
  - pronominal can refer to matrix subject, i.e. is free
  - AcI-subject should be external argument of infinitive
  - infinitive must be unergative
  - BUT: *niederknien* is a *sein*-verb, i.e. predicted to be unaccusative

- Claims:
  - Pronominal binding is a more reliable probe for the unaccusative-unergative distinction than aux-choice.
  - The pronominal binding domain can be defined phrase-structurally without reference to CFC and ‘external argument’.

### 3. Reconsidering the facts

- According to Frey (1993), all pronominals in (7)-(10) should be ungrammatical because the AcI-infinitives (in italics) are all *sein*-verbs.
- The reflexive is generally preferred, but the pronominal in the (b)-sentences is not judged to be impossible; it is clearly more acceptable than in the (a)-sentences.

(7) a. Der kleine Junge<sub>i</sub> lässt [<sub>AcI</sub>den Stein sich<sub>i</sub>/ihm<sub>\*i</sub> auf den Kopf *fallen*].  
 the little boy lets the rock self/him on the head fall  
 ‘The little boy lets the rock fall on his head.’

b. Die Großmutter<sub>i</sub> lässt [<sub>AcI</sub>den Wellensittich sich<sub>i</sub>/ihr<sub>2i</sub> auf den Kopf *fliegen*].  
 the grandmother lets the parakeet self/her on the head fly  
 ‘The grandmother lets the parakeet fly onto her head.’

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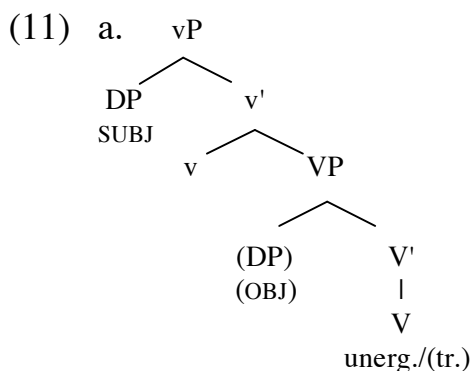
<sup>3</sup> Unlike Frey (1993), who marks the pronominal in this sentence as ungrammatical, I find it acceptable. I verified my own native-speaker judgments with 10 other native speakers (mostly from Northern Germany) by conducting an informal questionnaire-based study. Participants were asked to rate coreference relations between anaphoric elements and their antecedents on a scale from 1 (perfectly grammatical) to 5 (absolutely ungrammatical). Coreference relations shown in this handout that have a question mark were given an average rating of 3 in the questionnaire.

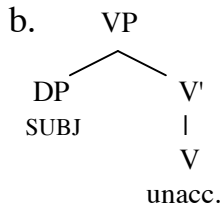
- (8) a. Willi<sub>i</sub> lässt [<sub>AcI</sub>die Chance sich<sub>i</sub>/ihm<sub>\*i</sub> nicht durch die Finger *gleiten*].  
 Willi lets the chance self/him not through the fingers slip  
 ‘Willi doesn’t let the chance slip through his fingers.’
- b. Maja<sub>i</sub> lässt [<sub>AcI</sub>die Katze sich<sub>i</sub>/ihr<sub>γi</sub> nicht ins Haus *kommen*].  
 Maja lets the cat self/her not into-the house come  
 ‘Maja doesn’t let the cat enter her house.’
- (9) a. Der Bauarbeiter<sub>i</sub> sieht [<sub>AcI</sub>das Gerüst auf sich<sub>i</sub>/ihn<sub>γ/\*i</sub> *niederstürzen*].  
 the construction worker sees the scaffolding on self/him down-crash  
 ‘The construction worker sees the scaffolding crash down on him.’
- b. Der König<sub>i</sub> lässt [<sub>AcI</sub>den Gefangenen vor sich<sub>i</sub>/ihm<sub>i</sub> *niederknien*].  
 the king has the prisoner before self/him down-kneel  
 ‘The king has the prisoner kneel down before him.’
- (10) a. Britta<sub>i</sub> ließ [<sub>AcI</sub>den Ball auf sich<sub>i</sub>/sie<sub>\*i</sub> *zurollen*].  
 Britta let the ball on self/her to-roll  
 ‘Britta let the ball roll toward her.’
- b. Die Demonstrantin<sub>i</sub> ließ [<sub>AcI</sub>den Polizisten auf sich<sub>i</sub>/sie<sub>γi</sub> *zukommen*].  
 the demonstrator (f.) let the policeman on self/her to-come  
 ‘The demonstrator let the policeman come toward her.’

- The pronominal binding possibilities are determined by the agentivity of the AcI-subject rather than aux-choice.

#### 4. A phrase-structural account

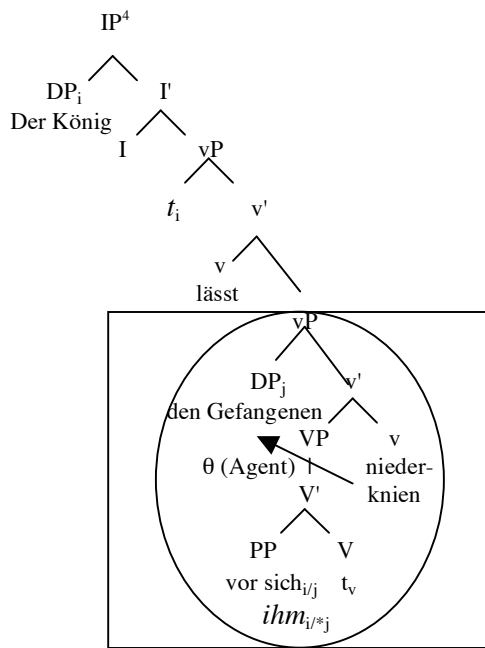
- Maintaining a phrase-structural account while still appealing to agentivity:
  - syntactic correlate of agentivity: presence of little vP
  - v introduces and assigns Agent role to external argument in Spec vP
- Phrase-structural distinction between unergative and unaccusative verbs:
  - unergative (and transitive) verbs project vP (see (11a))
  - unaccusative verbs project a bare VP (see (11b))
 (Hale & Keyser 1993, Chomsky 1995, Kratzer 1996, López 2001)



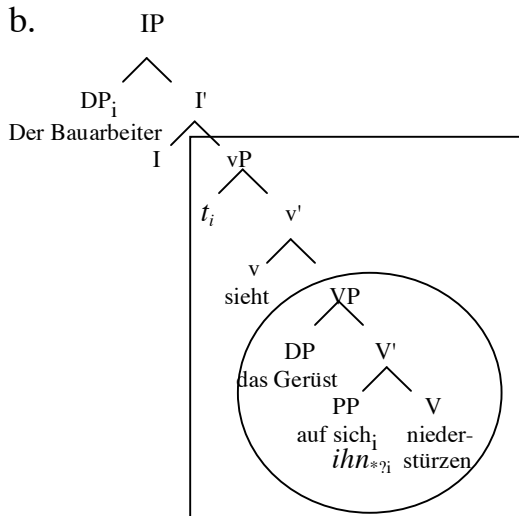


- Both the unergative (vP-VP) structure and the unaccusative (bare VP) structure can be embedded under AcI-introducing verbs like *lassen* (12a) and *sehen* (12b).
- AcI-introducing verbs are analyzed as “semi-functional” little v-heads that are assigned to a functional category but are lexical in that they establish a thematic relation with the argument in their specifier (Wurmbrand 2001).

(12) a.



b.



<sup>4</sup> I am abstracting away from the position of the matrix verb, the position of I, and V-to-I movement. According to Vikner (1995), verbal heads and I are phrase-final, and the verb moves via I to C. The subject then moves via Spec IP to Spec CP (see Haider 1993 for a different view).

- vP as pronominal binding domain:
  - in unergative AcI (12a), pronominal ✓ *ihm* is separated from its antecedent (trace of matrix subject *Der König*) by vP-boundary
  - in unaccusative AcI (12b), pronominal \**ihn* is in same vP as its antecedent (trace of matrix subject *Der Bauarbeiter*)
  - pronominal must be free in minimal vP containing it

- Interim summary:

The pronominal binding domain is defined rigidly as vP. Since unergative and unaccusative AcIs are surface-structurally distinct, there is no need for reference to CFC and argument structure. Thematic relations (agentivity), are encoded in the phrase-structure.

Pronominal binding possibilities in AcIs reflect whether or not the infinitive has an agentive AcI-subject and thus serve as a diagnostic for unaccusativity.

## 5. Agentivity vs. aux-choice

- Prediction: If, as argued in recent work (see overview in Sorace 2000), unergativity vs. unaccusativity of a verb is not lexically fixed, it should be possible to use the same verb as projecting either a double-layer vP-VP or a bare VP structure, depending on the agentivity of the AcI-subject.

(13) a. Der kleine Junge<sub>i</sub> lässt [<sub>AcI</sub>den Stein sich<sub>i</sub>/ihm<sub>\*i</sub> auf den Kopf fallen].  
 the little boy lets the rock self/him on the head fall  
 ‘The little boy lets the rock fall on his head.’

b. James Bond<sub>i</sub> lässt [<sub>AcI</sub>die junge Frau sich<sub>i</sub>/ihm<sub>?i</sub> in die Arme fallen].  
 James Bond lets the young woman self/him in the arms fall  
 ‘James Bond lets the young woman fall into his arms.’

- Sorace (2000):
  - Auxiliary Selection Hierarchy (see (14))
  - addition of CONTROL to CHANGE OF LOCATION verbs like *fallen* ‘fall’ does not change aux-choice (always *sein*) but makes syntactic status of verb unstable
  - presence or absence of aspectual functional head determines unergativity vs. unaccusativity (‘Constructional Model’).

(14) Auxiliary Selection Hierarchy:

CHANGE OF LOCATION	selects BE (least variation)
CHANGE OF STATE	
CONTINUATION OF A PRE-EXISTING STATE	
EXISTENCE OF STATE	
UNCONTROLLED PROCESS	
CONTROLLED PROCESS (MOTIONAL)	
CONTROLLED PROCESS (NONMOTIONAL)	selects HAVE (least variation)

(Sorace 2000: 863)

- aspectual and thematic parameters which define a structural hierarchy of verb types
- aux-choice with monadic nonreflexive intransitive verbs is sensitive to parameters
- further away from extremes means more BE/HAVE variation
- sensitivity to hierarchy differs from language to language as well as within languages, from verb type to verb type (e.g. Dutch vs. German motion verbs)
- Aux-choice vs. agentivity:
  - agentivity (CONTROL) does not line up with aux-choice
  - pronominal binding facts in (13) show that agentivity *does* line up with presence of vP
- Unaccusativity dynamically depends on the subtleties of sentence interpretation rather than on auxiliary-choice.

**6. Word order variation**

- Order of AcI-subject and anaphoric element:
  - anaphoric element can precede AcI-subject in (15) (cf. (7)-(8)).

(15) a. Der kleine Junge<sub>i</sub> lässt [<sub>AcI</sub>sich<sub>i</sub>/ihm<sub>\*i/j</sub> den Stein auf den Kopf fallen].  
the little boy lets self/him the rock on the head fall  
'The little boy lets the rock fall on his head.'

b. Die Großmutter<sub>i</sub> lässt [<sub>AcI</sub>sich<sub>i</sub>/ihr<sub>\*i/j</sub> den Wellensittich auf den Kopf fliegen].  
the grandmother lets self/her the parakeet on the head fly  
'The grandmother lets the parakeet fly onto her head.'

c. Willi<sub>i</sub> lässt [<sub>AcI</sub>sich<sub>i</sub>/ihm<sub>\*i/j</sub> die Chance nicht durch die Finger gleiten].  
Willi lets self/him the chance not through the fingers slip  
'Willi doesn't let the chance slip through his fingers.'

d. Maja<sub>i</sub> lässt [<sub>AcI</sub>sich<sub>i</sub>/ihr<sub>\*i/j</sub> die Katze nicht ins Haus kommen].  
Maja lets self/her the cat not into-the house come  
'Maja doesn't let the cat enter her house.'

- unmarked word order for reflexive
- pronominal is acceptable only if it refers to different person, seemingly regardless of agentivity of AcI-subject
- anaphoric element cannot precede AcI-subject in (16).

(16) a. Maja<sub>i</sub> lässt [<sub>AcI</sub> Willi<sub>j</sub> sich<sub>i/j</sub>/ihr<sub>i</sub> eine Geschichte erzählen].

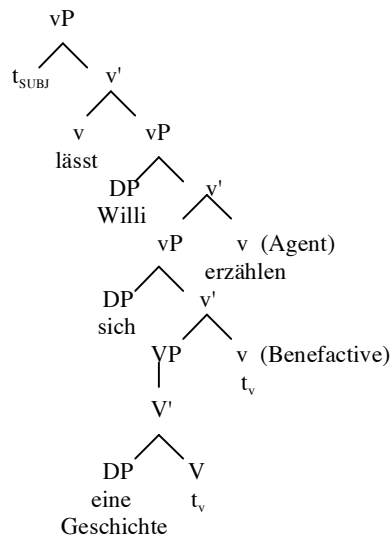
Maja lets Willi self/her a story tell  
 ‘Maja lets Willi tell her/himself a story.’

b. Maja<sub>i</sub> lässt [<sub>AcI</sub> \*sich/?/\*ihr Willi<sub>j</sub> eine Geschichte erzählen].

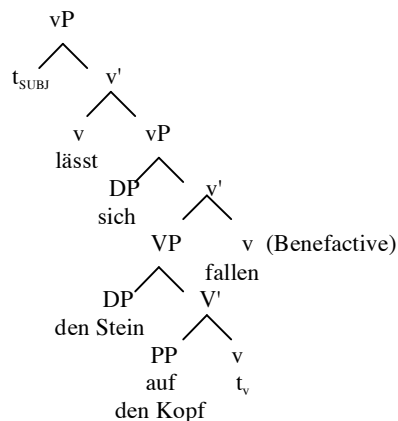
Maja lets self/her Willi a story tell  
 ‘Maja lets Willi tell her a story.’

- The difference between (15) and (16) could stem from:
  - possessor raising: anaphoric elements in (15) are possessors of *Kopf*, *Finger*, *Haus* and possibly move from specifier of possessee to edge of AcI
  - transitivity of AcI-infinitive: only intransitive AcIs allow word order variation

(17) Transitive AcI:



(18) Unaccusative AcI:



- in transitive AcIs, highest Spec vP is occupied by agentive AcI-subject

- Structural ambiguity: The AcIs previously analyzed as unergative (e.g. (15b) and (15d)) must be given an unaccusative (bare VP) structure when the anaphoric element precedes the AcI-subject.
- Unergativity vs. unaccusativity of a verb clearly cannot be lexically fixed.

## 7. Conclusion

- A phrase-structural account of both the unergative-unaccusative distinction and pronominal binding in AcI-constructions:
  - AcIs with vP-VP structure are unergative, i.e. have an agentive subject, and allow for the pronominal to be free.
  - AcIs with bare VP structure are unaccusative, i.e. have a non-agentive subject, and do not allow for the pronominal to be free.
- Determining unergativity vs. unaccusativity:
  - Since aux-choice does not line up with agentivity (or CONTROL), it is not a good diagnostic.
  - Pronominal binding, which depends on agentivity in terms of the presence or absence of vP, is a more reliable probe.

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## 6.1 Pronominal binding in non-AcI contexts

- Cases where pronominals are acceptable but not embedded in vP:

(19) Thorsten<sub>i</sub> hört nicht gern [<sub>DP</sub>Martin<sub>j</sub> Geschichten über sich<sub>i/j</sub>/ihn<sub>i/\*j</sub>].  
 Thorsten hears not with-pleasure Martin's stories about self/him  
 'Thorsten doesn't like to hear Martin's stories about him/himself.'

(20) Er<sub>i</sub> sah das [<sub>DP</sub>Auto [<sub>PP</sub>hinter sich<sub>i</sub>/ihm<sub>i</sub>]], aber nicht  
 he saw the car behind self/him but not  
 [<sub>DP</sub>das Motorrad [<sub>PP</sub>neben sich<sub>i</sub>/ihm<sub>i</sub>]].  
 the motorcycle next to self/him  
 'He saw the car behind him but not the motorcycle next to him.'

- Hypothesis:
  - pronominal must be free in minimal vP *or* DP containing it
  - both vP and DP can be considered phases<sup>5</sup> (Chomsky 2000, McCloskey 2000)
  - disjunction could be eliminated by postulating phase-based binding domain

- Acceptable pronominals in unaccusative AcIs:

(21) Der Pessimist<sub>i</sub> spürte [<sub>AcI</sub>[<sub>DP</sub>den Himmel über sich<sub>i</sub>/ihm<sub>i</sub>]] einstürzen].  
 the pessimist felt the sky above self/him in-crash  
 'The pessimist felt the sky above him crash down.'

(22) Er<sub>i</sub> ließ [<sub>AcI</sub>[<sub>DP</sub>das Boot neben sich<sub>i</sub>/ihm<sub>i</sub>]] untergehen].  
 he let the boat next to self/him under-go  
 'He let the boat next to him sink.'

- pronominal can be free in unaccusative (vP-less) AcI if embedded in DP (assuming [<sub>DP</sub>[<sub>PP</sub> ]]-reading)

- Still a problem:

(23) Welches Boot ließ er<sub>i</sub> [<sub>PP</sub>neben sich<sub>i</sub>/ihm<sub>i</sub>]] untergehen?  
 which boat let he next to self/him under-go  
 'Which boat did he let sink next to him?'

- pronominal embedded in PP that is not part of DP

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<sup>5</sup> Within the framework of minimalism (Chomsky 1995, 2000), the derivation of a sentence proceeds in phases. A phase is a subpart of a derivation whose internal content is closed off to grammatical interaction with external elements.