

## German *wie*-phrases in equative comparison

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### 1 Introduction

#### 1.1 Equative comparison

- (1) a. Anna ist so groß wie Berta.  
'Anna is as tall as Berta.'  
b. Anna hat so ein Auto wie Berta.  
'Anna has the same a car as Berta.'  
c. Anna ist so nach Prag gefahren wie Berta.  
'Anna took the same route to Prag as Berta.'

"comparison object + *so* + feature of comparison + *wie* + comparison base

Comparison object	(a-c) <i>Anna</i>
Comparison base	(a-c) <i>Berta</i>
Feature of comparison	(a) <i>groß (sein)</i> , (b) <i>ein Auto (haben)</i> , (c) <i>nach Prag fahren</i>
	gradable: scalar comparison
	non-gradable: non-scalar comparison

#### 1.2 Deictic and anaphoric usage of *so*

German *so* is a demonstrative expression, → deictic as well as anaphoric usages (Ehlich 1986, König et al. 1990, Zifonoun et al. 1997, ...)

scalar:	<i>so</i> refers to a degree
non-scalar:	<i>so</i> refers to property/manner

##### deictic

- (2) a. (speaker demonstrating a certain size:) Anna ist so groß.  
'Anna is that tall.'  
b. (pointing to Berta's car:) So ein Auto hat Anna (auch).  
'Anna (also) has a car like this.'

##### anaphoric

- (3) a. 'Berta ist 1,80<sub>1</sub> groß. Anna ist auch so<sub>1</sub> groß.  
'Berta is 1,80 tall. Anna is that tall, too.'  
b. Berta hat ein Auto [mit Heckklappe]<sub>1</sub>. Anna hat auch so<sub>1</sub> ein Auto.  
'Berta has a car with a hatch. Anna has such a car, too.'

- In the deictic cases the referent of *so* (degree or property/manner) has to be inferred from the demonstration gesture – by comparing the demonstration gesture to the comparison object.
- In the anaphoric cases the referent of *so* is (explicitly or implicitly) given by the preceding discourse.
- In both cases *so* functions as a modifier (degree modifier, nominal modifier).
- When used anaphorically, the antecedent of *so* is a modifier.

Side remark:

There are out-of-the-blue usages of *so*, which can be regarded as a special case of deixis (Bühler: Deixis am Phantasma)

'out-of-the-blue' – no preceding discourse, no demonstration

- (4) a. Anna ist so groß. (intensifying / downgrading)  
'Anna is so tall.'  
b. Anna hat so einen Laster. (hedging)  
'Anna has some kind of a truck'

German *so* is also used, e.g., in resultative clauses (Meier 2001), as a connective, as a discourse particle (Ehlich 1986), and introducing a comment (Pittner 1993). In this talk I will focus on its usage in equative comparison and on the anaphoric usage.

#### Hypotheses

- (i) *So* in equative comparison is a demonstrative expression and is used cataphorically referring to a property/degree given by the comparison base.  
→ uniform analysis of (1) and (2)/(3), transparent analysis of equative comparison)
- (ii) *wie*-phrases establish a similarity relation between the object of comparison and the comparison base, and thereby provide a modifier (degree/property) which combines with the feature of comparison.  
→ "classification by similarity" *Anna hat so ein Auto wie Berta.*  
'A. has a similar car as B.'  
vs. "classification by predication" *Anna hat einen BMW Cabrio .*  
'A. has a BMW Cabrio.'

- Overview: 2 Anaphoric *so* (skip deictic / out-of the blue uses)  
2.1 Possible antecedents  
2.2 Degree modifier *so*  
3 *So* and *wie* in equative comparison  
3.1 *Wie*-phrases as elliptical interrogative clauses ?  
3.2 *Wie*-phrases as restrictive / non-restrictive modifiers  
3.3 The interaction of *so* and *wie* in equative comparison  
4 Conclusion

## 2 Anaphoric *so*

### 2.1 Possible antecedents

- *So* functions as a modifier of, e.g., nominal descriptions, event types, adjectives/adverbs.
- The antecedent must also be a modifier (in a broad sense – including 'modification' on the discourse level, cf. Katz&Umbach 2006), cf. (6)
- There are further constraints on the antecedent (which are not yet fully understood)

- (6) a. Berta hat ein Auto [mit Ladeklappe]<sub>1</sub>. Anna hat auch *so*<sub>1</sub> ein Auto.  
'Berta has a car with a hatch' 'Anna has such a car, too.'
- b. Berta ist [über Wien]<sub>1</sub> nach Prag fahren. Anna ist auch *so*<sub>1</sub> nach Prag gefahren.  
'Berta drove to Prag via Vienna' 'Anna went that way, too.'
- c. Berta hat eine italienische<sub>1</sub> Kaffeemaschine. Anna hat auch *so*<sub>1</sub> eine Kaffeemaschine.  
'Berta has an italian coffee machine' 'Anna has such a coffee machine, too.'
- d. Berta ist 180<sub>1</sub> groß ... Anna ist auch *so*<sub>1</sub> groß.  
'Berta is 180 tall.' 'Anna is also that tall.'
- e. Berta ist Oberarzt<sub>1</sub> 'senior physician'  
ist dreiunddreißig<sub>1</sub> 'thirty three'  
ist hundmüde<sub>1</sub> 'dead tired'  
ist betrogen worden<sub>1</sub> 'has been cheated'
- f. Berta [behält immer die Nerven]<sub>1</sub>. Anna ist auch *so*<sub>1</sub>.  
'Berta always keeps her nerves.' 'Anna is like this, too.'
- \*Anna ist auch *so*<sub>1</sub>. 'Anna is like this, too.'

- The entity modified by the antecedent has to be of the same semantic type as the entity modified by *so*, but it need not be identical, cf. (7)

- (7) a. Berta hat ein Auto [mit Alarmsystem]<sub>1</sub>. Anna hat *so*<sub>1</sub> ein Motorrad.  
'Berta has a car with an alarm. Anna has a bike like this.'
- b. Berta ist [über Wien]<sub>1</sub> nach Prag gefahren. Anna ist *so*<sub>1</sub> nach Bratislava gefahren.  
'Berta went to Prag via Vienna. Anna went to Bratislava that way.'

- *So* itself may be modified, e.g., by *genau* / *mindestens* ('exactly / at least'), cf. (8).

- (8) 'Berta ist 1,80<sub>1</sub> groß. Anna ist (auch / nicht) *so*<sub>1</sub> / *genauso*<sub>1</sub> / *mindestens so*<sub>1</sub> groß.  
'Berta is 1,80 tall. Anna is also/not that tall / exactly as / at least as tall as Berta.'

### 2.2 Degree modifier *so*

If *so* relates to an unmodified positive form, the adjective has to be repeated:

- (9) a. # Berta ist groß<sub>1</sub>. Anna ist auch *so*<sub>1</sub>.  
b. Berta ist groß<sub>1</sub>. Anna ist auch *so*<sub>1</sub> groß.  
'Berta is tall. Anna is tall, too.'

- (10) a. # Berta hat ein schönes<sub>1</sub> Haus. Anna hat auch *so*<sub>1</sub> ein Haus.  
b. Berta hat ein schönes<sub>1</sub> Haus. Anna hat auch *so*<sub>1</sub> ein schönes Haus.  
'Berta has a beautiful house. Anna has a beautiful one, too.'
- (11) a. # Berta hat laut<sub>1</sub> gesungen. Anna hat auch *so*<sub>1</sub> gesungen.  
b. Berta hat laut<sub>1</sub> gesungen. Anna hat auch *so*<sub>1</sub> laut gesungen.  
'Berta sang loudly. Anna did, too.'

What does the anaphor *so* in the (b)-sentences refer to?

- Two options: (i) Berta's actual degree of height / loudness ...  
(ii) the standard of comparison ('Norm') given by the comparison class

Evidence for (ii):

- (13) Berta ist groß<sub>1</sub>. Anna ist auch *so*<sub>1</sub> groß. Berta ist 1,80 und Anna sogar 1,85 / immerhin 1,75.  
'Berta is tall. Anna is like this, too. Berta is 1,80 and Anna even 1,85 / at least 1,75.'

The use of *genauso* instead of plain *so* excludes (ii):

- (14) Berta ist groß<sub>1</sub>. Anna ist *genauso*<sub>1</sub> groß. # Berta ist 1,80 und Anna sogar 1,85.  
'Berta is tall. Anna is like this, too. Berta is 1,80 and Anna even 1,85.'

### Gradable adjectives (Kennedy & McNally 2005)

- Gradable adjectives denote relations between individuals and degrees, and are associated with measure functions:  $[[ [A \text{ groß} ] ] ] = \lambda d \lambda x. \text{tall}(x) \geq d$
- The unmodified positive form includes a null degree morpheme *pos* providing a context-dependent standard  $\mathbf{d}_C$ :  $[[ [pos] ] ] = \lambda G \lambda x. \exists \mathbf{d}_C. G(\mathbf{d}_C)(x)$   
 $[[ [AP \text{ pos groß} ] ] ] = \lambda x. \exists \mathbf{d}_C. \text{tall}(x) \geq \mathbf{d}_C$
- Degree modifiers denote functions from gradable adjectives to properties of individuals, restricting the value of the degree argument  
 $[[ [very] ] ] = \lambda G \lambda x. \exists d. G(d)(x) \wedge \mathbf{high}(d)$  (simplified)

➔ *So* is a degree modifier with an anaphoric restriction.

Possible antecedents are

– measure phrases

– the context-dependent standard ('norm') coming with the unmodified positive form

$[[ [so_{\text{ana\_degree}} ] ] ] = \lambda G \lambda x. G(\mathbf{d}^*)(x)$

$\mathbf{d}^*$  anaphoric degree variable

presupposition: dimensions are compatible





(21b) Anna hat so ein Auto wie Berta. feature of comparison: *car*  
 feature value: *Berta's type of car*

(25b) \*Anna ist so 180 groß wie Berta. feature of comparison: *180 tall*  
 feature value: *??? (true/false)*

(26b) \*Anna ist so schwanger wie Berta. feature of comparison: *pregnant*  
 feature value: *??? (true/false)*

### Semantics of restrictive *wie*-phrases

(27)  $[[wie\ Berta]] = \lambda f\ \lambda x\ \exists v.\ f(v)(berta) \ \&\ f(v)(x)$   
 where *f* is a feature and *v* is a value (of that feature) such that  
 $f(v)$  is a predicate applying to individuals

How to combine a feature and its value? It is clearly no intersection, like  $feature(x) \ \&\ value(x)$ .  
 Is a feature like a second order property, that is:  $feature(value)(x)$ ?

$f:v \rightarrow f(v)$

(28) a.  $[[wie]] = \lambda x\ \lambda f\ \lambda y\ \exists v.\ f(v)(x) \ \&\ f(v)(y)$   
 b.  $[[wie\ Berta]] = \lambda f\ \lambda y\ \exists v.\ f(v)(berta) \ \&\ f(v)(y)$

c. *so* refers cataphorically to *wie Berta*:

$[[so\ groß\ wie\ Berta]] = [[wie\ Berta]] ([[groß]])$

d.  $[[groß]] = \lambda d\ \lambda z.\ tall(z) \geq d$

e.  $[[wie\ Berta]] ([[groß]]) = \lambda f\ \lambda y\ \exists v.\ f(v)(berta) \ \&\ f(v)(y) (\lambda d\ \lambda z.\ tall(z) \geq d)$   
 $= \lambda y\ \exists v.\ tall(berta) \geq v \ \&\ tall(y) \geq v$

### Problems:

- the combination of feature and value by functional application would be inadequate for values which are subtypes, cf. (21b).

car:BMW Cabrio cannot mean car(BMW Cabrio)

- The analysis of cataphoric *so* differs from the analysis suggested for anaphoric *so*:

$[[so_{cata}]] = [[wie\ x]] = \lambda f\ \lambda y\ \exists v.\ f(v)(x) \ \&\ f(v)(y)$  2. order prop.  $\rightarrow$  1. order property

$[[so_{ana\_degree}]] = \lambda G\ \lambda x.\ G(d^*)(x)$

**d\*** anaphoric degree

2-place rel.  $\rightarrow$  1. order property

even worse:

$[[so_{ana\_manner}]] = \lambda Q\ \lambda e.\ Q(e) \wedge P^*(e)$

**P\*** anaphoric property of events

This analysis amounts to assuming an intersective interpretation of feature and value.

$\rightarrow$  To do:

Revise the anaphoric analysis such that it accounts for the fact that *so* picks up a property modifier (or: a value to be combined with a shared feature)

## 4 Conclusion

Starting point: Equative comparison constrictions – scalar and non-scalar

There is some evidence for the initial hypotheses:

- So* in equative comparison can be regarded as a demonstrative expression cataphorically referring to a property/degree provided by the comparison base.
- wie*-phrases establish a similarity relation between the object of comparison and the comparison base with respect to the feature of comparison, where "Similarity with respect to the feature of comparison" means "identical feature values"

Open questions:

- How to interpret the combination of feature and value?
- Which predicates qualify as a feature?
  - gradables (*tall*), but not non-gradables (*pregnant*)
  - properties that allow for subtypes (*car*), but not "fully specified ones" (*BMW Cabrio*)
- What about predicates that are gradable but license the entailments in (30). Do they exclude a restrictive interpretation?

(30) A ist so bemerkenswert wie B  $\implies$  A ist bemerkenswert & B ist bemerkenswert  
 'A is as remarkable as B'

- What about *wie* phrases with 'prototypes'?

(31) a. Anna ist so stark wie ein Bär / mein Bruder restrictive  
 'Anna is as strong as a bear/my brother'  
 b. Anna ist stark wie ein Bär / \*mein Bruder. non-restrictive  
 'Anna is as strong as a bear / my brother'

- Why is *so* obligatory with restrictive *wie*-phrases when the feature of comparison is gradable (*groß*) but not when it is non-gradable (*nach Prag fahren*), cf. (23) vs. (22)?

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