

# Effects of Repairing Illegal Argument Structures

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DGfS Workshop *The Syntax of Argument Structure*, 24 February 2016

## 1 Other stories

The meaning of the productively occurring constructions exemplified in (1) to (4) is quite surprising given their form.

- (1) Otto ist zu schwer (um Jockey zu sein).  
 Otto is too heavy (to Jockey to be)  
 'Otto is heavier than he **should** be (to be a Jockey). Exz
- (2) Die Tür öffnet sich.  
 the door opens SICH  
 'The door **changes** from closed to open.' Inch
- (3) Die Tür öffnet sich leicht.  
 the door opens SICH easily  
 '**One can** easily open the door.' Mid
- (4) Otto vertut sich.  
 Otto ver.does SICH  
 'Otto is **wrong**/erring.' Mis

Existing approaches to parts of these patterns heavily rely on construction meanings (CM) or invisible operators (IOP) or homonymy (HOM).<sup>1</sup>

(5)

	CM	IOP	HOM	Slogan
Exz		M03, Schw08	M03, Schw08	Deg <sub>modal</sub>
Inch	CH89, KG09	All (?)	Sch13	V <sub>BECOME</sub>
Mid	C89, D01, L05	C89, L05, St02	Sch13, St02	Pron <sub>GEN</sub>
Mis	(Ku97)			Extension

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<sup>1</sup>C89 = Condoravdi 1989; CH89 = Chierchia 1989; D01 = Dowty 2001; KG09 = Koontz-Garboden 2009; L05 = Lekakou 2005; M03 = Meier 2003; Sch13 = Schäfer 2013; Schw08 = Schwarzschild 2008; St02 = Steinbach 2002 Ku97 = Kunze 1997

We propose and seek to justify an approach along the following lines instead:

- The use of certain grammatical elements or routines in certain environments leads to logical forms that contain formulas of the kind “ $p \wedge \neg p$ ”.
- Certain such violations of the Law of Contradiction (LC) can be repaired by displacing part of the offending meaning.
- Unexpected modal, aspectual-temporal or comparative meaning aspects can be the effect of this type of “repair”.

Parallel cases: privative adjectives like in (6) and constructions violating basic demands of compositional interpretation like the (superficial) contradiction in (7).

- (6) That is a fake/false/forged Rolex.  
'In some sense that is a Rolex and in some sense that is not a Rolex.'
- (7) Computers are the boon and bane of modern life.  $\rightsquigarrow$   
... boon in some respects, bane in other respects.  
... sometimes boon, sometimes bane.  
... can be the boon, can be the bane.

Processing the structure in (6) is costly compared to a baseline condition: in an event-related brain potential study, the noun evoked a late positivity as characteristic of certain cases of referential shift or reconceptualization (Schumacher 2013, 2014, 2015). The structure in (7) becomes interpretable by means of extra quantification.

... that which characterizes and defines an assertion of possibility is its emancipation from the Principle of Contradiction.

C.S. Peirce (MS 678:34, 1910)

## 2 Crude weaker composition

On whatever account we give of *meaning*, the meaning of a sentence has something to do with the meanings of its component vocabulary together with its syntax, even if the connection between the two is a little murky.

R.E. Jennings 2004:670

When we look at actual languages, we observe that certain elements with basic meanings are widely used across domains. E.g., Farsi *digar* 'other':

*Digar* can occur as a free indefinite pronoun, but also in the meaning of “no...more”, “not... anymore”, “still”, “already”. In colloquial speech one says *dige* then.  
Djamtorki (2014:59)

German *ander* overtly supports, used to support or will support many different specifications regarding its domain of application (this excerpt from Grimm’s Wörterbuch):

ander, anderartig, anderer, andergeschwisterkind, anderlei, andermal, andermaszen, andern, andernfalls, anderns, anderntheils, anderorts, anders, andersartig, andersdenkend, anderseitig, anderseits, andersgesinnt, andersgläubig, andersredend, anderst [sup], anderstwo, anderswo, anderswohin, anderte, anderthalt, Änderung, anderwärtig, anderwärtlich [anderweitig?], anderwärtlichen [folgende], anderwärts, anderwege, anderweise, anderweit, anderweitig, anderweits, anderwerbe

Heidolph et al. note that inflectional elements form a tiny set; in isolation, they appear to be highly ambiguous:

§48 For the inflectional formatives, only a very limited **inventory** of phonemic-graphemic units is available, namely:  $\emptyset$ , *-e*, *(e)n*, *-er*, *-(e)s*, *-(e)t*, *-(e)st*, *-(e)ns*, *-(e)n*, *-em*. [...] Individual inflectional affixes must therefore represent several grammatical morphemes or morpheme complexes and are **ambiguous** to a high degree accordingly.

§49 3. **Functional principles.** Given the high degree of ambiguity that inflectional elements exhibit in German, their “functionality” is only guaranteed to the extent that a relatively definite interpretation is ensured. That a relatively small stock of inflectional formatives may represent the entirety of inflectional morphemes and morpheme complexes is possible only on the basis of the special organizational form and functionality of the inflectional system. The inflectional morphemes that are ambiguous when considered in isolation get relatively definite, i.e., settled to a particular meaning of a morpheme or a limited such set, when they convene with particular contextual elements in particular contexts and may thus be **combinatorially interpreted**.

Plausibly, it is exactly because the logical space that inflectional elements cover is strictly limited that it is useful to have them as expressions that introduce highly general, semi-logical and broadly applying meanings or operations.

## 2.1 Difference and the Second Condition

We define a (generalized quantifier) meaning DIFFerence that corresponds just to the I and O corner of the traditional square of opposition:

$$(8) \quad \mathbf{DIFF} = \lambda S \lambda P \exists x S(x) \wedge \mathbf{P}(x) \wedge \exists x S(x) \wedge \neg \mathbf{P}(x)$$

The left hand side of DIFF is foregrounded (asserted), while its right hand side is backgrounded (presupposed). If you existentially quantify twice, you get a weaker reading than if you do not. However, if you do not, you are being contradictory, as you then assert P and  $\neg P$  of the same individual.

- |     |   |  |
|-----|---|--|
| (9) | Some do (and some don't).<br>Otto is big (-ger than Ede).<br>It is possible.<br>It is over. | $\exists x P(x) \wedge \exists x \neg P(x)$<br>$\exists x P(x) \wedge \exists x \neg P(x)$<br>$\exists w p(w) \wedge \exists w \neg p(w)$<br>$\exists t p(t) \wedge \exists t \neg p(t)$ |
|-----|---|--|

In the ordinary individual domain, Difference comes in two main flavors: Plurality and Transitivity. Given two arguments in a relation, the one that is more like an agent must become subject and the other one object. Modulo reflexive marking, SU and OB are disjoint in reference. This principle of “Obviation” (Hellan 1988, Farmer and Harnish 1987) is stated informally in (10).

- (10) Coarguments of transitive relations have disjoint reference.

In NOM-ACC languages, the semantically unmarked argument (patient/theme) gets the morphological marking. We argue transitivity ALWAYS entails difference bound to grammatical functions; we call this the Second Condition:

- (11) Second Condition (argument-structural version):  
The subject (agent) must have a positive property P that the object (patient) lacks.

The Second Condition that implements DIFFERENCE is like the inverse of Kuratowski’s definition of ordered pairs in terms of sets of sets, given in (12).

- (12)  $\langle a,b \rangle =_{def} \{ \{a\}, \{a,b\} \}$

The “second” set  $\{a,b\}$  is defined in (12) as containing next to all members of the first set an additional element. If one stops counting at “two”, nothing speaks against doing it the other way around like the Second Condition does.

In German, another prototypical sign for the DIFFERENCE requirement is the morpheme /er/ which is notorious for its supposed ambiguity.

Comparison gets confused with pluralization as the form often coincides and as pluralization and comparison are conceptually related. We have not assigned this [-er] combination of letters to a group of building blocks because -er occurs in many different contexts.

pronoun	er
endings (comparison)	größ   er
endings (plural)	Häus   er
at the beginning of a word	er   leben

The assignment to a group of building blocks would lead to confusion, whence we only discuss the spelling.

Waldmann 1985: 25, 30

Bittner (1995) identifies 11 different uses of /er/. She argues that /er/ is the prototypical representative of nominal and verbal plural (1995, p.136).

(13)	-er in the plural of non- feminines	<i>das Brett</i> 'board' – <i>die Bretter</i> <i>der Wurm</i> 'worm' – <i>die Würmer</i> <i>das Haus</i> 'house' – <i>die Häuser</i>
	-er in iteratives and intensifications	<i>räub-er-n</i> 'rob' <i>zitt-er-n</i> 'shiver' <i>löch-er-n</i> 'pester with questions'
	-er in the comparative	<i>schön</i> 'beautiful' – <i>schön-er</i> <i>hoch</i> 'high' – <i>höh-er</i> <i>lang</i> 'long' – <i>länger</i>
	-er in nomina agentis	<i>Lehr-er</i> 'teacher', <i>Mörd-er</i> 'murderer' , <i>Text-er</i> 'copywriter'
	-er in nomina instrumenti	<i>Bohr-er</i> 'drill', <i>Hamm-er</i> 'hammer', <i>Comput-er</i> 'computer'
	-er in nomina actionis	<i>Lach-er</i> 'burst of laughter', <i>Treff-er</i> 'hit'
	-er in inchoatives	<i>er-blühen</i> 'blossom', <i>er-wachen</i> , 'wake up', <i>er-leuchten</i> 'lighten'
	-er in prefixed verbs	<i>er-zählen</i> 'tell', <i>erlauben</i> 'allow', <i>er-jagen</i> 'hunt down'
	-er in nominalizations of adjectives	<i>blind</i> 'blind' – <i>ein Blind-er</i> <i>gelehrt</i> 'educated' – <i>ein Gelehrter</i>
	-er as agreement in adjectival inflexion	<i>schön-er Tag</i> 'nice day' (N.Sg.) <i>schön-er Tag-e</i> (G.Pl.)
	-er in pronom. inflexion	<i>der</i> 'the', <i>dies-er</i> 'this', <i>welch-er</i> 'which <i>one</i> '

In a comprehensive corpus study, Kühnhold (1973:342) observes regarding the highly productive verbal use that

*er*<sup>-1</sup> combines nearly without restrictions with transitive as well as intransitive verbs that are thereby **transitivized** and signals that the pertaining verbal process **leads to a certain effect**.

We submit the generalization in (14).

- (14) Generalization (German):  
*er*- prefixed verbs denote a plural at the ordinary individual level or at the phenomenal individual level (or both).

Let us try to falsify (14) on the basis of Kühnholds 73:148 taxonomy of the different functions of verbal prefixal /er/, given in (15).

(15)	Verb	Meaning	Count	%
$er_1$	<i>etw. erarbeiten</i>	Erfolgreicher Abschluß	148	43.5
$er_2$	<i>erblinden, erfrischen</i>	Zielzustand	73	21.5
$er_3$	<i>erdröhnen, erkennen</i>	Beginn	33	9.7
$er_4$	<i>erfolgen, erdulden</i>	Intensivierung	33	9.7
$er_5$	<i>erlöschen, erwürgen</i>	Abschluss	24	7.1
$er_6$	<i>ersprießen, erteilen</i>	Herausnehmen/-gehen	12	3.5
$er_7$	<i>erwachsen, errichten</i>	Aufwärtsbewegung	11	3.5
$er_8$	<i>erschließen</i>	Öffnen	3	0.9
$er_9$	<i>ersetzen</i>	Ersatz	2	0.6
$er_{10}$	<i>sich ermahnen</i>	Zielzustand	1	0.3

The tests show that except for the fourth group, the verbs resulting from *er-* prefixation are change of state.  $Er^{-1}$  and  $er^{-2}$  work as functions from states/processes to achievements. Similarly for  $er^{-3}$  that according to K. codes a beginning (i.e., a change of state from “not p” to “p”) as well as for  $er^{-5}$  to  $er^{-7}$ , coding according to K. completion, egression and upwards movement respectively.  $er^{-8}$  to  $er^{-10}$  form small groups with specialized change of state meanings (opening, substitution and result). The group constituted by  $er^{-4}$  codes intensification according to K.; these cases are not obviously change of state, nor are they all transitive. Kühnhold (1973:354) notes that this group splits into ‘intransitive’ cases that make up 15,6 % ‘transitive/reflexive’ cases that make up 84,4%. The latter group is thus harmless for the generalization formulated in (14) as its instances are transitive (at the ordinary individual level). (16) gives the transitive cases, excluding lexically reflexive uses.<sup>2</sup>

(16)	erdulden, erbringen, erfordern, erheizen, erleiden, ertragen, ernähren, endure render necessitate er.heat suffer bear nourish erretten rescue
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This leaves us with the verbs in (17).

(17)	erfolgen, erscheinen, ermahnen, sich erstrecken take.place appear reprimand extend
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The tests show that *erfolgen* and *erscheinen* are change of state. This goes as well for *ermahnen*, which, in addition, has two argument places, of which one is propositional, and could be counted as transitive after all. The last case that seems problematic then for the generalization in (14) is *sich erstrecken*, which, however, takes a prepositional complement and is lexically reflexive. In sum, the generalization in (14) appears to hold almost absolutely regarding Kühnhold’s corpus.

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<sup>2</sup>Indeed most of the verbs in this group are also change of state, the exceptions being *erfordern*, *ertragen*, *ernähren* and *sich erstrecken*. The cases *erheizen* and *erzeigen* appear to be change of state but are at best peripheral in today’s German. Kühnhold says that *erheizen* is colloquial.

### 3 Privative adjectives and weakening

Most adjectives are intersective (*round*, *blue*) or subsective (*tall*, *heavy*). As modifiers of nouns, they specify (subsets of) the denotation of the head noun:

- (18) a. A round Rolex = A thing that is a Rolex and round.  
b. A heavy Rolex = A thing that is a Rolex and heavy for a watch.

Interpretation of subsective adjectives calls for a comparison class, which is often an abstraction from the nominal restriction like the pertaining kind. Privative adjectives force one to go “outside” the restriction of the head noun or violate the head principle as interpreting  $[[A_{priv} N]]$  involves negating (or maybe ignoring) certain essential properties associated with N.

- (19) a. A fake Rolex  $\neq$  A thing that is a Rolex and that is fake  
b. A fake Rolex = A thing that is a Rolex and that is not a Rolex.  
It looks like a Rolex but was not produced by the Rolex company.  
It feels like a Rolex but does not look like a Rolex.
- (20) privative (nonsubsective) adjectives:  
fake, false, forged, alleged, (bad), former, future, (retired), presumed, supposed, counterfeit...  
falsch, gefälscht, nachgemacht, verkehrt, angeblich, ehemalig, zukünftig, vermeintlich...

Geach (1956:32) writes concerning *bad*:

[...] “bad” is something like an alienans adjective; we cannot safely predicate of a bad A what we predicate of an A, any more than we can predicate of a forged banknote or a putative father what we predicate of a banknote or a father. We actually call forged money “bad”; and we cannot infer e.g. that because food supplies life bad food supports life.

- (21) This is a bad (example of a) student.

Privatism can depend on the context or cotext, as the completely productive animal-for-stature construction in (22) shows as well.

- (22) wooden dove, plastic heart, vegan sausage...

More generally, metaphor appears to involve “stripping” entailments until the meanings fit (Grice 1975:53).

- (23) You are the cream in my coffee  
 $\approx$  you are an important ingredient to my personal joy

Carston 1997 gives rather straightforward examples where weakening (“loosening” in her terms) applies so as to arrive at a meaningful interpretation.<sup>3</sup>

- (24)
- a. France is hexagonal.
  - b. I love bald men.
  - c. This steak is raw.
  - d. Have you eaten my chocolate heart?
  - e. Here is my new flatmate. [referring to a newly acquired cat]

The cases in (24-a) to (24-c) are idealizations or exaggerations respectively. The case in (24-d) (like (24-e)) appears to necessitate the negation of certain properties associated with the head noun (e.g., being organic and alive) or, alternatively, regarding as relevant only certain entailed properties (e.g., being shaped like a heart).

In the repeated use, in the repeated defamation of persons with good intentions with the expression “Gutmensch”, the quality of that which the word “Gutmensch” genuinely means is denied. Words are coined by their use and by those who use words.

Heidrun Kämper, Mannheimer Morgen 03.02.2016 page 3

### 3.1 Evidence from event-related brain potentials

Using the event-related brain potential (ERP) method, Schumacher (2015) compared the online processing of different types of adjective-noun combinations. Subjects read sentences word by word while their EEG was recorded. Processing differences between minimally differing sentences can be detected by distinct ERP signatures. The pattern in (25) illustrates the comparison of privative adjectives to basic adjectives.

- (25)
- a. Sarah legt einen falschen Diamanten auf den Tisch.  
Sarah puts a fake diamond on the table
  - b. Sarah legt einen unreinen Diamanten auf den Tisch.  
Sarah puts a flawed diamond on the table

Unlike the processing of the adjective-noun combination in (25-b), processing of the privative adjective produced a late positivity relative to the onset of the head noun which is similarly found in certain metonymic meaning alternations, including container-for-content (*drinking the bottle* vs. *dropping the bottle*), property-for-person (*the ham sandwich wants to pay*) and animal-for-statue (*wooden dove* vs. *wooden trunk*) alternations that appear to involve referential shifts or reconceptualization. Figure 1 presents the grand averages over participants and items and illustrates the positivity for privatives ((25-a), solid line) vs. the control condition ((25-b), dotted line) time-locked to the head noun (onset at 0 ms).

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<sup>3</sup>Carston comments that “this relaxing of a linguistically encoded meaning has been pretty much ignored outside the relevance-theoretic framework, though a general unease with any process of pragmatic loosening has been expressed”.



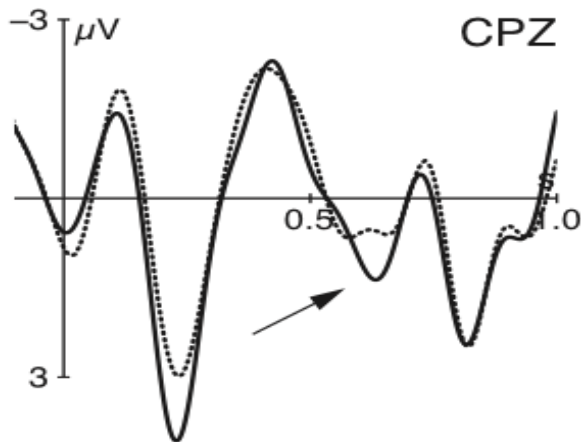


Figure 1: Positivity for privative adjectives (*fake diamond*)

Figure 2 shows the contrast between the combination of a material adjective with an object (*hölzerne Truhe*)/*wooden trunk*, dotted line) and with an animal that requires reconceptualization (*hölzerne Taube*)/*wooden dove*, solid line) time-locked to the head noun (Schumacher 2013).

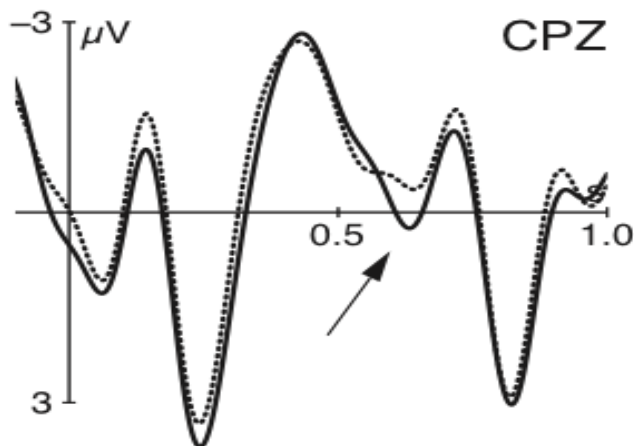


Figure 2: Positivity for reconceptualization (*wooden dove*)

Other types of adjective-noun combinations that do not violate the LC do not show processing costs, e.g., redundant adjectives (*echter Diamant*/real diamond) compared to a control condition (*weißer Diamant*/white diamond). Figure 3 shows that there is no significant difference between the grand averages of the two conditions.

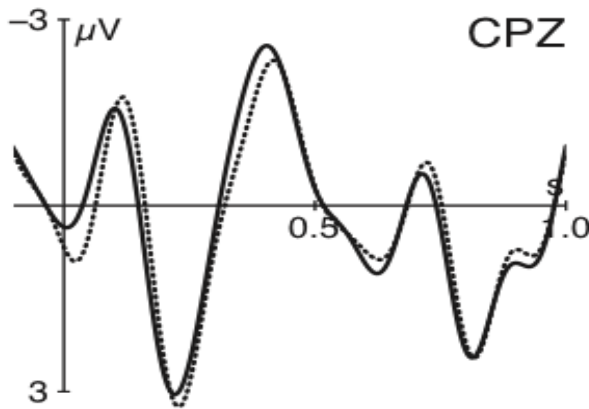


Figure 3: No positivity for redundant adjective (*real diamond*)

## 4 Illegal Reflexivizations

For the most part, reflexive pronouns mark a binding relation with a subject. German *sich* is always accusative and calls upon the Second Condition (repeated).

- (11) Second Condition (argument-structural version):  
 The subject (agent) must have a positive property P that the object (patient) lacks.

*Sich* marks 3<sup>rd</sup> person and is semantically weaker than its antecedent. In (26), *sich* express kind reference, which is independently easily available, cf., e.g., (27).

- (26) Auf der Konferenz der Tiere präsentierten die Wale sich als  
 at the conference of.the animals presented the whales SICH as  
 praktisch ausgestorben.  
 practically extinct.
- (27) You cannot have seen a dinosaur. They are extinct.

We assume that ordinary reflexive structures (SU binds OB) comply with the Second Condition. Also if there is no problem with a first argument, the asymmetry property of certain relations may forbid reflexivization.

- (28) a. Otto folgt Maria = F<O,M>  
 b. ??Otto folgt sich = F<O,O>

We propose that excessive structures are reflexivizations of structures that code asymmetric relations. German excessive *zu* is reflexive comparative *er*.

## 4.1 Excessive structures

Some examples of natural language predicates that pass as symmetric, asymmetric and non-symmetric respectively are given in (29).

- |      |    |  |               |
|------|----|--|---------------|
| (29) | a. | <i>resemble, be next/similar/identical to</i>      | symmetric     |
|      | b. | <i>follow, be to the right of, be greater than</i> | asymmetric    |
|      | c. | <i>love, see, kick</i>                             | non-symmetric |

A relation is asymmetric iff (30) holds.

$$(30) \quad xRy \rightarrow \neg(yRx)$$

$$(31) \quad \text{Otto is heavier than Ede} \rightarrow \text{Ede is not heavier than Otto}$$

We assume with “A not A” theories of comparatives (Lewis 1972, Klein 1980) that (31) comes out meaning “Otto is so-and-so heavy and Ede is not so-and-so heavy” where the value of “so-and-so” is contextually fixed. As a consequence, reflexivized comparatives ascribe contradictory properties to their subjects.

- (32) ??Otto is heavier than himself.  
       ‘Otto is so-and-so heavy and Otto is not so-and-so heavy.’

We see elsewhere that reflexivizing asymmetric relations may lead to novel interpretive possibilities having to do with identity.

- |      |    |  |
|------|----|--|
| (33) | a. | Otto kam zu ihm.<br>‘Otto came to him.’                                      |
|      | b. | Otto kam zu sich.<br>‘Otto became himself (after not being himself before).’ |
| (34) | a. | Sie standen neben ihnen.<br>‘They stood next to them.’                       |
|      | b. | Sie standen neben sich.<br>‘They were not in their right minds/themselves.’  |

As reflexivized comparatives, excessives are illegally symmetrized structures.

- (35) Otto is too heavy.  
       = Otto is heavier than Otto (himself).  
       =  $\not\exists P(\text{Otto}) \wedge \neg P(\text{Otto})$ .

In reaction to the violation of LC, the negative meaning is pushed to the infinitival clause; the negation is prefixed to the predicate projecting the infinitival structure, while the variable predicated over remains an ordinary individual.

- (36) Otto.is.so.heavy  $\wedge \neg$  **Otto.is.so.heavy**  $\wedge \diamond$  Otto.is.jockey  $\implies$   
       Otto.is.so.heavy  $\wedge \neg$  **Otto.is.jockey**  $\wedge \diamond$  Otto.is.jockey

The grammar produces something like an impossible world by reflexivizing an asymmetric relation. The modal interpretation is a reflex of an automatized repair mechanism 'pushing' an offending meaning to the phenomenal domain.

#### 4.1.1 Evidence from event-related brain potentials

Using ERP, we tested sentences as in (37). Sentences were presented word by word and ERPs were time-locked relative to adjective-onset.

- (37) a. Otto ist zu schwer für einen Jockey.  
 Otto is too heavy for a jockey  
 b. Otto ist so schwer wie ein Ringer.  
 Otto is as heavy as a wrestler

Processing an adjective in the excessive structures (37-a) evoked a late positivity compared to the control condition (37-b). See Figure 4 for grand averages of excessive structures (solid line) vs. the control condition (dotted line) time-locked to adjective-onset (onset at 0 ms).

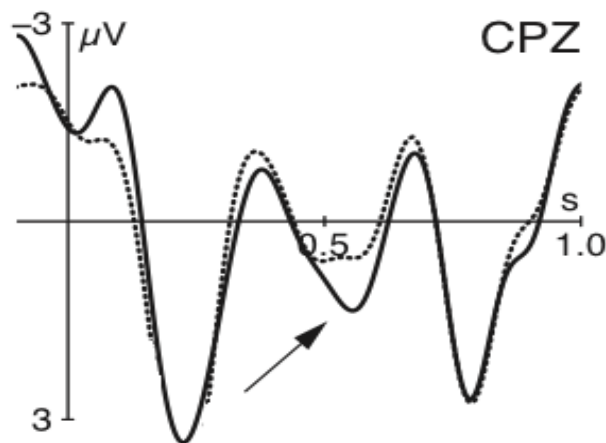


Figure 4: Late positivity for excessive structures

## 4.2 Pseudoreflexive structures

The overlapping of the fields of inactivity (passivity) and reflexivity are the result of a longer historical development. In nearly all indogermanic languages, the corresponding reflexive formative serves to express a reflexive as well as an inactive or passive semantics.

Kotin 1998:164

We propose that in contrast to “ordinary” reflexivization, “pseudo-reflexive” constructions violate the Second Condition: the first argument does not have any positive property that the second argument lacks because the first argument referent is an abstraction from the second argument referent.

### 4.2.1 Inchoatives

We assume that change of state semantics results from negating and turning into a presupposition the asserted VP meaning that encodes the result state (Givon 1972).

- (38) The ball rolled into the garden  
 $\approx$ AT(garden, ball) at t and there is a time where not: AT(garden, ball)

This is how the reference time is moved: the original reference time gets to be associated with the negated property, the new reference time (that is handed to the discourse to follow) gets to be associated with the non-negated property.

Haspelmath's (1993:104) survey of some thirty languages suggests that (reflexive) marking of inchoative structures is the more needed the more an external causer of the change is needed. German is quite well-behaved in that the concepts with the lower numbers are generally reflexive-marked.<sup>4</sup>

(39)	split	0.04	develop	0.33	melt	0.68
	close	0.06	roll	0.35	learn/teach	0.68
	break	0.07	spread	0.35	sink	0.70
	open	0.10	begin	0.38	go/put out	0.71
	gather	0.12	finish	0.38	wake up	0.75
	change	0.12	fill	0.38	dry	0.77
	connect	0.14	(be) destroy(ed)	0.39	freeze	0.86
	rock	0.25	burn	0.42	boil	0.96
	improve	0.26	dissolve	0.42	die/kill	1.00
	rise/raise	0.27	turn	0.48		
	lose/get lost	0.28	stop	0.62		

The widely accepted generalization concerning the causative-inchoative alternation is given in (40) (cf. Levin and Rappoport 1995, Reinhart 2002).

- (40) Only verbs that allow an unspecified cause (i.e., a cause argument that is not an agent) in the transitive version have an inchoative variant.

The existence of the inchoative variant thus depends on a certain leeway regarding the subject (first argument) slot in the transitive structure.

- (41) a. Hans/die Sonne/das Feuer verbrannte die Ernte.  
       Hans/the sun/the fire burnt the harvest  
       b. Die Ernte verbrannte.  
       the harvest burned

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<sup>4</sup>The basic verbal concepts that code change of state in German feature reflexive morphology.

- (i) Verbal concepts expressing 'pure' changes of state in German: *sich verändern*, *sich wandeln*  
 Folli 2002 and Cennamo 2012 claim that "pseudoreflexives" in Italian code changes of state.

- (42) a. Hans/\*die Sonne/\*das Feuer ermordete den Vorsitzenden.  
 Hans/the sun/the fire assassinated the chairman.  
 b. \*Der Vorsitzende ermordete.  
 the chairman assassinated

Following Chierchia, we assume that an abstraction from the object argument fills the first argument slot in inchoatives.<sup>5</sup> But this violates the Second Condition. The negative meaning is realized as the negation of the result state = pre-state.

- (43) repair table: *die Tür öffnet sich*
- |       |                            |     |                |
|-------|----------------------------|-----|----------------|
|       | interpreted                | not | problem&repair |
| vP/VP | offen(die.tür) = I         | O   | ½ SU > OB      |
| CP/TP | (∃t) ¬offen.die.tür(t) = O |     | +t             |

The DIFFerence requirement is thus met at the level of temporal structure as schematically depicted in (44).

- (44) Inchoative: —————> time
- |           |              |
|-----------|--------------|
|           |              |
| pre-state | result state |

In German, verbs that participate in the causative-inchoative alternation without employing reflexive morphology are prefix or particle verbs (e.g., *verbrennen*, *zerreißen*, *zusammenklappen*) or “verbs of cooking”:

- (45) backen ’bake’, braten ’fry’, expandieren ’expand’, garen ’cook’, grillen ’broil’, kochen ’cook’, schmelzen ’melt’, schmoren ’stew’, trocknen ’dry’

Regarding their aspectual properties, the verbs in (45) behave like processes rather than achievements/accomplishments that express a change of state.

Object-experiencer verbs of the ’worry’ type alternate in a fashion almost completely analogous to causative-inchoative verbs in German; we seem to see the functional parallel between prefixes and reflexive marking most clearly here. An example of the alternation is given in (46).

- (46) a. Das Wetter ärgert Maria.  
 the weather annoys Mary  
 b. Maria ärgert sich über das Wetter.  
 Mary annoys REFL about the weather

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<sup>5</sup>Chierchia 89:18ff characterizes his analysis as follows:

The upshot of this proposal, then, is that intransitive members of an unaccusative alternation are related to their transitive counterpart via an operation of reflexivization that has the following two characteristics: (a) the causing factor is understood statively, and (b) the reflexivization operation is an “internalizing” one.

(46-a) features a transitive structure with an external argument that is underspecified in the sense of (40) (viz. a “stimulus”). (46-b) is the corresponding pseudoreflexive structure where superficially, the internal argument has “moved” to external position under reflexivization. That the external argument is a deep object is strongly suggested by the fact that only the adjectival passive variant that clearly identifies the internal argument (cf. e.g. Grewendorf 1989) “inherits” the argument realizational pattern, i.e., the prepositional realization:

- (47) Die über das Wetter verärgerte Maria  
 the about the weather PREF.annoyed Mary

Furthermore, the adjectival passive variant must feature the prefix, i.e., (48) is impossible although no prefix is needed in the transitive realization, cf. (46).

- (48) \*Die über das Wetter geärgerte Mary  
 the about the weather annoyed Mary

More verbs behaving in this way are given in (49).

- (49) (ver-)ängstigen ‘scare’, (er-)freuen ‘rejoice’, (be-)sorgen ‘worry’, (ver-)stören  
 ‘disturb’, (ent-)täuschen ‘disappoint’, (ver-)wundern ‘wonder’

The pattern in (50) captures this behavior of object experiencer verbs in German:

- (50) a. STIM Vs EXP transitive  
 b. EXP Vs REFL STIM pseudoreflexive  
 c. EXP is STIM PREF.Ved adjectival passive

In analogy to the causative-inchoative alternation, “pseudoreflexive” marking appears to be needed in what corresponds to the inchoative realization of the object experiencer construction. Addition of a prefix is largely odd here if not ungrammatical.<sup>6</sup> In the adjectival passive realization where reflexive marking is impossible, adding the prefix becomes obligatory, i.e., (51-a) and (51-b) are ungrammatical.

- (51) a. \*EXP PREF.Vs REFL STIM  
 b. \*EXP is STIM Ved

This pattern is predicted if at the end of the day, pseudoreflexive marking and prefixation fulfill one and the same function in this domain, namely, they furnish a change of state interpretation, viz. DIFF in the phenomenal domain.

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<sup>6</sup>Prefix and reflexive morphology may cooccur if the verb is born with a prefix, as is the case with the verbs in (i).

- (i) empören ‘appall’, erbofen ‘make angry’, entsetzen ‘horrify’, erheitern ‘amuse’, erregen ‘arouse’, erschrecken ‘shock’, erzürnen ‘enrage’, beschäftigen ‘occupy’, bekümmern ‘distress’, sorgen ‘worry’

From (49), *sorgen* and *wundern* allow cooccurrence of the prefix and the reflexive morphology.

## 4.2.2 Middles

The Second Condition is very pertinent to Middles which appear to involve an agent only semantically. Middle formation relies on clearly agentive transitive verbs.

The restrictions on Middle Formation in French appear to involve the notion of transitivity. Verbs that are high in transitivity with respect to the parameters of participants and agency can generally undergo Middle Formation without difficulty; those that are low in transitivity cannot. Verbs that are high in transitivity except for the parameter of agency are fine in middles if they are also punctual or volitional. Fagan 92: 97

The idea that Middles are hidden comparative structures can be found in Dowty 2001, who characterizes the meaning as follows:

The Middle Verb Construction compares one object (implicitly) to other objects indirectly: via comparing the ACTION performed on the first object, to the same action performed on the other objects; the actions are compared with respect to ease, difficulty, time needed, etc. in performing them.

Similar to excessives, middle structures are interpreted in modal terms, cf. (52).

(52) The trakehns ride well, but they are not well ridden.

(52) is not contradictory, as it should be if the middle construction made reference to actual situations only, i.e., were not interpreted modally.

Comparatives say that the comparative object does not meet a threshold that the matrix subject meets or exceeds.<sup>7</sup>

(53) Otto is heavier than Ede.

There is a heaviness threshold that Otto meets but not Ede.

For matrix and comparative object to comparable (i.e., belonging to S), there has to be a threshold that is met or exceeded by both the compared object and the standard of comparison – thus comparatives safely satisfy DIFF. If we compare the actual referents to their kind, we illegally reflexivize as in the case of excessives.

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<sup>7</sup>Klein 1991:683 explains regarding thresholds (“delineations”):

A delineation is intended as a contextual parameter that plays a role in the evaluation of degree predicates. Just as the interpretation of *That is a sock* requires a specification of the object indexically invoked by *that*, so – according to this view – the interpretation of *Sue is tall* requires a specification of the standard according to which something is judged as tall. A delineation for *tall* determines where, according to the dimension of height, the cut-off point between ‘tall’ and ‘not tall’ is to be set, and it is claimed that this point can vary with context.



Introduction of a world variable solves this problem (there is a world where the kind opens less easily).

(54) repair table: *Die Tür öffnet sich leicht*

	interpreted	not	problem&repair
vP/VP	leicht.offen(die.tür,th) = I	O	↯SU>OB
	∃th ¬leicht.offen(TÜR,th) = O		+th, ↯LC
CP/TP	(∃th,w) ¬leicht.offen(TÜR,th) = O		+w

The DIFFERENCE requirement is thus met at the level of degrees of property instantiation in the case of middles as schematically depicted in (55).

(55) Middle: —————> P-instantiation  
                   |  |  
                   kind of object (standard)      object of comparison

Arguably, the generic interpretation is the repair of a new problem: The last line in (54) transports that the instances of the kind talked about differ from the kind in that they better exemplify the property in question. But as the instances belong to the kind, they should have all the properties that define the kind (as the sum total of all instances). This is however what middles deny (cf. Brandt 2009).

#### 4.2.3 *Mis-* construction

(56) Otto vertut sich.  
 Otto ver.does SICH  
 'Otto is wrong/erring.'

(57) Falsche Frau von falschem Arzt verpfuscht.  
 wrong woman by false doctor boobed  
 Banner ad for the Rhein-Neckar BILD newspaper, seen in Mannheim city centre January 2016

Kunze 1997 gives the scheme in (58) and the list of examples in (59) (slightly extended) for what he calls the *mis-* construction.

(58) REFL *ver-*V  
 'V in a wrong way' / 'achieve a wrong result Ving'

(59) verirren 'lose one's way', verfahren 'lose one's way driving', verfliegen 'lose one's way flying', vergaloppieren 'lose one's way galloping', vergeben 'mis-give', vergehen 'offend', vergreifen 'assault', verheben 'mis-lift', verheben 'mishear', verkalkulieren 'miscalculate', verlaufen 'get lost', verlesen 'mis-read', verplanen 'misplan', verplappern 'let slip', verrechnen 'miscalculate', verreden 'mis-speak', verreiten 'mis-ride', verrenken 'contort', verschätzen 'mis-estimate', verschlucken 'choke', verschneiden 'mis-cut', verschreiben 'mis-

write', versehen 'err', verspielen 'mis-play'/'lose', verspekulieren 'mis-speculate', versprechen 'mis-articulate, vertippen 'mis-type', vertun 'err', verwählen 'misdial', erzählen 'miscount', verzeichnen 'mis-draw'

It appears that the verbs participating in the construction are verbs allowing object drop. If the object is incorporated (cf. Hale and Keyser 1992), the slot is no longer available. The reflexive pronoun calls upon the Second Condition though, leading to displacement of the O meaning. It is pushed to the manner or result slot. Pertinent (“reflexive-only”) examples lacking the “wrong” interpretation appear to be reciprocal (versus 'strictly anaphoric):<sup>8</sup>

(60) verlieben 'fall in love', verloben 'become engaged', vermehren 'spawn', versammeln 'gather', verbünden 'confederate', verabreden 'mk. appointment'

A clear albeit frozen counterexample is (61).

(61) *vergewissern* 'make sure'

## 5 Summary

Unexpected meaning aspects such as hidden modality, hidden change or hidden comparativity may stem from “doing it wrong” and ensuingly mending it by displacing offending meanings, specifically, the O-part of DIFFerence (cf. above (8)). Obvious options of wrongdoing are:

- Doing it in the wrong place (excessive, middle, *mis*-construction)
- Doing it the wrong way around (inchoative, middle)

At least some repairs come at a cost. Why do it wrong in the first place? Because we can. Because there are so few structural options that they should all be seized, and because it yields interesting meanings in an economic fashion. What is more:

- The meanings of grammatical elements are very general. A single logical form may give rise to disparate interpretations depending on its environment.
- In tandem with combinatorial interpretation, repairs allow for doing away with much supposed homonymy or silent operators or constructional meanings.
- The syntax-semantics interface cares much about logic.

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<sup>8</sup>Reflexivization symmetrizes a relation by identifying (but cf. above) the first and second argument (anaphoricity) or by summing the arguments' referents and mutually quantifying over the parts (reciprocity).

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