

Patrick Brandt:

Verboten reflexivization and hidden meaning in German reflexive inchoative, zu-excessive and particle verb structures

Argumentum 20 (2024), 389–405

Debreceni Egyetemi Kiadó

DOI: 10.34103/ARGUMENTUM/2024/23

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Abstract

The paper presents a compact yet comprehensive analysis of the systematically arising change of state or modal meanings of reflexive inchoative constructions, *zu*-excessive constructions and particle verb constructions in German (Brandt 2019). Verboten reflexivization links a lower thematic role to a higher grammatical function and associated lesser marking illegally. As a consequence, the negation (complement) of a property that is independently coded in the verbal projection cannot be locally interpreted. The corresponding logical form banks off the interface and is interpreted in the structurally next higher syntactic-semantic cycle where indexical information regarding anchoring to times, worlds or thresholds is dealt with. The intransparent semantics of the constructions under discussion is thus the effect of literally recycling a logical form the *ex situ* interpretation of which provides an economical alternative to a more transparent coding.

Keywords: reflexivization, DIFFERENCE, logical form, recycling

1 Introduction

This paper bears witness to the continuous struggle to extend the range of compositional semantics also to constructions that have so far resisted a reductionist analysis. Specifically, the change of state or modal interpretations that are associated with German pseudoreflexive (inchoative) constructions like *sich öffnen* ‘open’, *zu*-excessive constructions like *zu schwer* ‘too heavy’ or particle verb constructions like *einfahren in* ‘pull into’ are unexpected as they do not appear to be traceable to the superficial syntactic properties of these structures or other established principles operative at the syntax semantics interface.¹ We propose here that the surprising semantics is an effect of reflexivization applying in an illegal or “verboten” fashion, as we will seek to explain presently.

¹ As laid out in some detail in Brandt (2019: 197f), existing analyses of the syntax and semantics of the constructions dealt with here either rely on invisible (and unconfirmed) functional structure hosting operators that yield the required semantics (generative grammar) or on holistic construction meaning (construction grammar). In contrast, our analysis reduces the meaning of the structures in question to the meaning of their parts and the way they are put together, explicitly encompassing grammatical remedies for antecedent misconstruals.

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What follows is based on a poster presented at the First International Workshop on Theoretical and Experimental Linguistics at Károli Gáspár University of the Reformed Church in Hungary, Budapest, in October 2023. Indeed, the poster format suits the phenomena under investigation here particularly well. This is because a poster features a horizontal and a vertical dimension, allowing to present relations or properties holding within a particular level of representation (horizontal dimension) but also between different levels of representation (vertical dimension) very neatly. A challenge to be met here consists in transferring the different dimensions into necessarily linear and one-dimensional text.

Here is the essence of our analysis. We argue that the syntax of the constructions discussed bears a constructional feature *DIFFERENCE* associated with e.g. transitive structures that usually works in a horizontal dimension: it requires that the referents of e.g. the standard *AGENT* and *THEME* roles be properly distinct, or, more generally, that the argument realizing a hierarchically higher role bear properties that an argument realizing a lower role does not have (but not necessarily the other way around). However, the lexical semantics of the building blocks of the constructions – in particular: the prepositions or reflexive markers involved – may contradict the *DIFFERENCE* requirement as they associate an anaphoric element with a higher role than that of its antecedent or code spatiotemporal or thematic inclusion of the structurally higher argument in the structurally lower argument. The grammar may now evade the offense in turning to the vertical dimension by interpreting the problematic part of the logical form of *DIFFERENCE* at a different level of semantic representation that is usually associated with structure “higher up” that talks about the coordinates with respect to which ordinary thematic relations are interpreted, namely, times or worlds (or thresholds). It is for this reason that the structures bring about specific temporal-aspectual or modal semantics that is not transparently linked to features of the structures and therefore unexpected.

As we were lucky enough to be able to publish much of the background material behind the analysis in various places (in particular, Brandt 2019), here we will try again to explicate with new metaphoric means the backbones of the analysis. New data supportive of the analysis are presented in the sections on reflexive inchoatives (4.1) and particle verbs (4.3) in particular.

2 Banking off and keeping or recycling material

Pondering about useful metaphors to convey the spirit of the analysis, my mind kept returning to pool billiard where it is often advantageous or even necessary to play a ball not directly but via the banks of the table in order to eventually pot it. Further exploring the use of the concept of banking off, I came across a video presenting a historic Harley Davidson motorcycle featuring what has come to be called a “banked off twin”.

2.1 V2 and Len Andres’ banked-off twin

Californian Leonard Andres was a well-known racer and esteemed tuner of Harley Davidson motorcycles in the first half of the 20th century. Harley Davidson motorcycles famously feature large V2 engines, so named because the two cylinders are arranged in the shape of a V (so V2 has nothing to do with verb second here). When Len Andres wanted to participate in races of lower classes with smaller engines, he took a V2 engine and sawed off one of the cylinders in such a way he now had a one cylinder bike with only half of the cubic capacity that no longer

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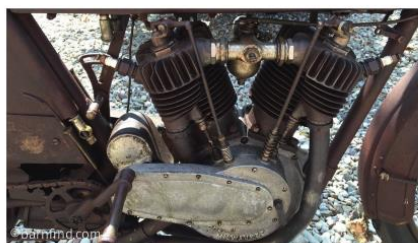
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banked off the regulations. It is not passed down to us what happened to the left over sawn off cylinder. Quite possibly, it ended up on some shelf gathering dust.



(1) Harley Davidson V2 motorcycle engine (1913)



(2) Len Andres' HD "banked off twin" (1930s)



(3) lonely single cylinder

2.2 *Verboten Reflexivization*

The most versatile and transformable natural language configuration is very arguably the transitive structure. Prototypically, the subject and the direct object in a transitive configuration realize the central thematic relation between AGENT and THEME, defining something like a syntactically-semantically ideal prototype. Other linking configurations decline in that they are prototypically expressed by more marked means that only make for structures far less manipulable in terms of diatheses. Indeed, passivization or reflexivization can be regarded as natural language means to turn expressions coding two place relations into expressions interpretable as one place properties, similar to sawing off a cylinder from a V2 engine – both passivization and reflexivization adjust transitive grammatical structures to the actually intended real semantics that does not feature an AGENT or CAUSE. However, in natural language, unlike in motorcycle tuning, it is impossible to just saw off structure and put it somewhere for it to be forgotten. Instead, all syntactic structure that is present must be interpreted, i.e., represented in independent semantic and phonological terms, cf. the principle of Full Interpretation of Chomsky (1986). Reflexivization is a suspicious operation especially under the traditional view that different semantic roles are defined by features that may contradict each other. Typically, e.g., the AGENT role is defined by CONTROL and CAUSATION (causative force), and the THEME role is defined by the absence of CONTROL or CAUSATION (Dowty 1991). If we take this absence of properties to complement their presence as would seem natural, then we do indeed arrive we arrive at a contradiction if we seek to understand reflexivization as the identification or “bundling” (Reinhart 2002) of thematic roles.

If, however, we use a weaker semantics for reflexivization that does not rely on (symmetric) identity but instead on (possibly asymmetric (non-symmetric)) non-differentiation – as appears useful and fitting for independent reasons, cf. Brandt (2019) – then we can distinguish between “legal” and “illegal” or verboten reflexivization where legal reflexivization subsumes a lower role under a higher role, whereas illegal reflexivization subsumes a higher role under a lower role. This is because legal reflexivization is in line with independent conditions linking thematic roles, grammatical functions and grammatical formatives that represent the case system. In particular, higher roles (AGENT, CAUSE) are tied to higher grammatical functions (subject) and these are tied to formatives (if any) with lesser marking capacity. In a nutshell, then, the argument goes that in our cases, a higher role (AGENT or CAUSE in reflexive inchoative and THEME in particle verb constructions) is coupled with an expression that is unable to carry the properties

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distinguishing it from a lower role (THEME in reflexive inchoative and GOAL in particle verb constructions).² Illustrating with the reflexive case, the weak German reflexive pronoun *sich* must be a direct object as it cannot carry nominative case. At the same time, and adopting ideas of Chierchia (2004), it is construed in reflexive inchoatives as carrying a role with causative force that must be tied to a higher grammatical function.

We thus argue in this paper that the surprising semantics of a range of syntactic constructions is the result of reflexivization “gone wrong” in that it delivers a result that is in conflict with other principles of the syntax-semantics interface, notably the alignment of thematic and grammatical function hierarchies and the principle of non-contradictoriness, i.e., the requirement that $P(x)$ and $\text{not} : P(x)$ cannot hold at the same time. The cases we discuss are illustrated by the corpus examples in (4) to (6) with paraphrases indicating the semantics.

- (4) Gedanken ordnen sich (mühsam). (Hamburger Morgenpost, 13 March 2008)
 thoughts order SICH (painfully).
 ‘Thoughts are not ordered at t_0 and they are (more) ordered at t_1 ’ (inchoative)
 ‘It is (more) painful to order thoughts (than other comparable stuff)’. (middle)
- (5) Das Ding war zu schwer um abzuheben. (SZ, 15 July 2003 (edited))
 the thing was too heavy in.order.to take.off.’
 ‘The thing was so heavy in w_0 that it couldn’t take off in w_0 .’
- (6) Hugo fuhr in [die Grube]_{ACC} ein. (Rhein-Zeitung, 13 May 2000 (edited))
 Hugo pulled into the mine PRT.
 ‘Hugo is not in the mine at t_0 and he is in the mine at t_1 ’ (inchoative)

To repeat, the change of state (“inchoative”) or modal-comparative (“middle”) semantics of *sich*-reflexives as in (4), the modal semantics of *zu*-excessives as in (5) and the change of state semantics of particle verb constructions as in (6) are not transparently marked or derivable from known compositional principles. We argue that, each time, the unexpected semantics is an effect of reflexivization happening in a “verboten” manner. In particular:

- * a higher thematic role is reflexively bound (4,6) or an asymmetric relation reflexivized (5),
- * the negation $\text{not} : P(x)$ of an independently coded property banks off the interface, and
- * it recycles into a (function of) a time (t), threshold (t_h) or world (w).

To keep things simple for present purposes, we will not formally stick to the letter of the threshold analysis of comparative constructions but presuppose the associated “A not A” analysis of comparatives (Lewis 1972), according to which a comparative expresses that, given a certain threshold t_h , the comparandum is in the positive extension (P) and the comparatum in the negative extension ($\text{not} : P$) of the property P with regard to which comparison takes place (cf. Brandt 2019: chapter 3.2 and references given there for more details).

² Chierchia (2004) proposes that in ergative reflexives, the CAUSE corresponds to a property of the THEME such that *la barca é affondata* ‘the ship has sunk’ is interpreted as “a property of the boat caused it to sink”.

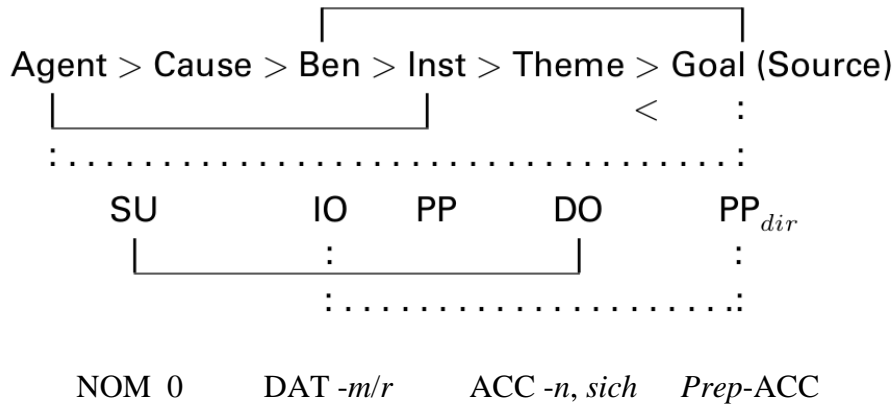
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3 Asymmetry among grammatical functions and asymmetry in binding

Linking concerns the relation between thematic roles and grammatical functions. Most commonly, thematic roles are ordered in a semantic hierarchy that aligns, *ceteris paribus*, with a hierarchy of grammatical functions as in (7), where solid lines indicate designated relations between thematic roles (e.g., the expression of an INSTRUMENT implies the presence of an AGENT) or grammatical functions (e.g., subject and direct object are related by diatheses like passivization or reflexivization) and dotted lines indicate looser relations (e.g., a similarity between AGENT and SOURCE or indirect objects and directional prepositional complements, cf. Brandt 2003). Marking is indicated below the grammatical function dimension.

(7)



The presumably most robust generalization regarding the linking of thematic roles and syntactic functions across languages says that if an AGENT and a THEME are semantically represented, then the AGENT will be realized as the subject and the THEME will be realized as the object. These links between subject and object in particular are regulated by diatheses and prominently exemplified by causative-inchoative alternations. In Dowty (1991) and much work since, AGENT really decomposes into an array of properties like CONTROL, CAUSATION, MOVEMENT etc. and THEME – essentially – into the absence of these properties. More generally, if more disputably, we assume that the hierarchy of thematic roles is based on the principle in (8).

- (8) $X > Y$ iff $\exists P \square P(x_X) \wedge \neg \exists P(y_Y)$
 ‘A role X is higher on the thematic dimension than a role Y iff the referent of X necessarily has a certain property that the referent of Y need not necessarily have.’

A pair of roles from the thematic hierarchy will satisfy Brandt’s (2019) more general second condition for two-place relations, given in its argument-structural version in (9).

- (9) Second condition (argument-structural version)
 The second member of a thematic relation lacks semantic properties that the first member has.

The second condition is but an instantiation of the still more general relation of DIFF(erence), defined as the generalized quantifier meaning in (10).

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- (10) $\text{DIFF} = \lambda S \lambda P \exists x (S(x) \wedge P(x)) \wedge \exists y (S(y) \wedge \neg P(y))$
 ‘The sets S and P such that there is an element of S that
 is in P and there is an element of S that is not in P.’

DIFF(erence) appears as the counterpart of identity. It is important to realize, however, that DIFF is possibly asymmetric, i.e., x may be different from y without y being different from x . This will be the case if and only if there is no property of y that is not as well a property of x , i.e., if and only if all y ’s properties are also properties of x . We call this state of affairs indifferent binding, formalized in (11).

- (11) x indifferently binds y ($= y$ is indifferent from x)
 iff $\neg \exists P (P(y) \wedge \neg P(x))$
 ($= P(y) \rightarrow P(x)$)
 ‘ x indifferently binds y iff x has all y ’s properties’

In addition, we assume a general linking rule coupling thematic roles and grammatical functions and associated marking as in (12).

- (12) Generalized Theta Grammatical Function Linking³
 A higher thematic role must be expressed by a higher grammatical function with lesser formal means.

Regarding reflexivization, the interpretation of DIFFERENCE will be in line with the principle linking thematic roles and grammatical functions as long as the reflexive pronoun is associated with a semantic role that is lower in the thematic hierarchy than the semantic role of its antecedent: *sich* carries fewer features than its antecedent, namely, only person and number. If however *sich* is associated with a higher role than the one of its antecedent, we arrive at a violation of the linking principle, as *sich* couldn’t possibly code a property that its antecedent does not code. As laid out in Brandt (2019), we propose that the second part of DIFFERENCE – that a certain property coded on the first (higher) argument is not coded on the second (lower) argument – is therefore uninterpretable, i.e., $\text{not} : P(x)$ does not get interpreted locally but banks, as it were, off the interface. In the ensuing cycle, $\text{not} : P(x)$ is literally recycled in that it is now interpreted in the terms customarily negotiated here – these are times, possible worlds or thresholds as giving the coordinates against which propositional meanings as coded in the verbal projection (VP) get interpreted. Let us give concrete sample derivations for our three paradigm cases, starting with the reflexive inchoative or middle.

³ Dative case appears to be problematic in that it employs more marked means in German(ic) than accusative while the indirect object is syntactically higher than the theme. We believe that dative must be compared to the (accusative or dative) VP internal prepositional phrase which is lower structurally and which appears more marked than dative as it employs a prepositional element.

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4 Deriving the semantics

Let's start with the least transparent case, that of German reflexive inchoatives and middles like *(sich) öffnen* 'open' or *(sich) erledigen* 'finish'. In a nutshell, we adopt Chierchia's (2004) idea that in reflexive inchoatives, the higher CAUSE role is taken by a property that is derived from and more general than the expression realizing the lower THEME role appearing in subject position. Set-theoretically, properties include their members and are therefore more general or weaker semantically than the latter.

4.1 Reflexive inchoatives and middles

In the paradigm transitive structure, an argument with agentive properties such as CONTROL, CAUSATION etc. gets to be realized as the grammatical subject and another argument which does not have these properties gets to be realized as the grammatical object. Using and manipulating my daughter Johanna's drawing of a hunter and an extraterrestrial beaver, we have (13) for the transitive structure and (14) for the legally reflexivized structure where the THEME argument is, as it were, included as regards its relevant semantic properties in the AGENT.



(13) Semantics of transitive structure
(J.T. Brandt 2023)



(14) Semantics of ordinary reflexive structure
(J.T. Brandt 2023)

If, however, the reflexive is associated with the higher CAUSE role, it is as if the logical object (beaver) includes the logical subject (hunter) in contradiction of the linking principle requiring that expressions realizing higher roles must carry properties that expressions realizing lower roles do not code (cf. (12) above). Let us look at the evidence that *sich* is indeed associated with the CAUSE role in reflexive inchoatives.

In German, *sich* is the (least specific) form to express reflexivization. It can only occur in object position, where it is regularly interpreted as bound by the subject. Regarding binding, there is reason to assume that the relevant semantic relation is actually weaker than the identity relation that is usually assumed. In particular, *sich* can be interpreted as the kind that its binder belongs to, where kinds are like nominalized properties and therefore more general or inclusive (less specific or exclusive) than the individuals that belong to them. The example in (15) from Brandt (2019: 197) and built on Rooth (1985) shows that the kind-selecting predicate of being extinct allows for *sich* to function as its logical subject. Obviously, it cannot refer to anything different from what its antecedent refers to. In contrast, it may refer to something that is less specific than its antecedent, the kind that the antecedent's referent refers to.

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- (15) Dort präsentierten die Wale sich als praktisch ausgestorben
 there presented the whales SICH as practically extinct
 ‘The whales presented themselves as practically extinct there.’

To repeat, reflexive *sich* merely codes person and number features formally and has a semantics more inclusive or weaker than that of its antecedent. Binding the object to the subject by means of *sich* is in line with the principle that, semantically, the subject is more specific than the object (cf. below). Clearly, for the prototypical case, the AGENT has certain properties that the THEME lacks (while it is indeed not clear whether a THEME is semantically restricted at all). This is legal binding.

However, from a purely logical perspective, the subject may be bound to the object as well. Härtl (2003) presents evidence that *sich* may indeed carry causative semantics, where a CAUSE, like an AGENT, has to be linked to subject position in the presence of a THEME. Thus, a dative argument may be interpreted as the responsible CAUSE in an unaccusative structure without *sich* as in (16). If *sich* is present as in (17), this appears impossible, i.e., (17) cannot mean that the dative referent (unintentionally) caused the door to open. This follows if *sich* takes the CAUSE role, as it cannot be taken twice. The less prominent THEME role is taken by a semantically richer full NP (*die Tür* ‘the door’), in violation of the second condition (cf. (9) above).

- (16) Das Glas ist ihm zerbrochen.
 the glass is him-DAT broke
 ‘The glass broke on him.’
- (17) Die Tür hat sich ihm geöffnet.
 the door has SICH him-DAT opened
 ‘The door opened for him.’

If *sich* carries the CAUSE role, then it should have a property that the THEME and surface subject does not have. Being more inclusive than its antecedent, however, it cannot. Therefore, the binding here is the wrong way around, as the object ends up being more specific than the subject. This is illegal binding or verboten reflexivization.

Adding support to the idea that *sich* is associated with the CAUSE role in unaccusative structures, Haspelmath (1993) shows in a crosslinguistic survey that verbs taking part in the causative alternation without overt marking (e.g., English *cook, dry*) code more ‘spontaneous’ eventualities, i.e., prototypically, changes of state that come about without external causation. Hinting at an external CAUSE, *sich* in (17) thus appears to compensate for a lack of inherent causation, as is typical of verbal concepts that imply spontaneous change.

In a similar vein, Oya (1996) argues specifically for German that inchoative structures without *sich* are compatible with the adverbial modifier *von selbst* ‘by itself’ that by assumption expresses the spontaneous (internally caused, natural) coming about of the eventuality expressed, cf. (18) (Oya’s (20)).

- (18) a. Das Obst ist von selbst gereift.
 the fruit is by itself ripened
 ‘The fruit ripened by itself.’

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- b. Das Faß ist von selbst gerollt.
 the barrel is by itself rolled
 ‘The barrel rolled by itself.’

With inchoatives featuring *sich* as in (19), adding *von selbst* yields odd results.

- (19) a. Die Lösung hat sich (?? von selbst) gezeigt.
 the solution has SICH (by itself) shown
 ‘The solution showed by itself.’
 b. Das Rennen hat sich (?? von selbst) entschieden.
 the race has SICH (by itself) decided.
 ‘The race was decided by itself.’

Reminiscent of the observations in the context of dative arguments (cf. (16) and (17) above), Oya notes that the transitive variants of *sich*-inchoatives require their animate subject referents to act deliberately, while inchoatives without *sich* with an animate subject referent allow for interpretations according to which the eventuality comes about by accident, i.e., the subject referent is interpreted as a mere CAUSE and not as a bona fide AGENT, cf. (20) and (21) (Oya’s (23) and (24)).

- (20) a. Joachim hat die Tür geöffnet.
 Joachim has the door opened
 ‘Joachim has opened the door.’
 b. Joachim hat die Tablette aufgelöst.
 Joachim has the pill dissolved
 ‘Joachim has dissolved the pill.’
- (21) a. Joachim hat die Brille zerbrochen.
 Joachim has the glasses broken
 ‘Joachim has broken the glasses.’
 b. Joachim hat das Bein gebrochen.
 Joachim has the leg broken
 ‘Joachim has broken his leg.’

This concludes the evidence that *sich* in inchoative structures is associated with the CAUSE role. We propose that this is in conflict with linking principles operative at the syntax–semantics interface that requires that an expression realizing a higher role must have features distinguishing it from an expression realizing a lower role. In the situation depicted in (22), reflexivization is the wrong way around, as the AGENT is included in the THEME. As a consequence, the negative property $\text{not} : P(x)$ that characterizes the second (THEME) argument cannot be locally interpreted. Using my daughter’s metaphorical way of speaking, the beaver gets “resurrected”, cf. the verboten reflexive representation in (22) and the resulting resurrection in (23).

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(22) Semantics of verboten reflexive structure



(23) Resurrected THEME – $\text{not} : P(x)$
 remains locally uninterpreted

As noted initially, we cannot just leave features uninterpreted. Instead, the non-alignment of the horizontal dimensions of the thematic hierarchy and the grammatical function hierarchy leads the interface to evade into the vertical dimension in that, now, the noninterpreted negative property $\text{not} : P(x)$ is pushed to the indexical level as coded higher in the syntactic structure.⁴ Further manipulating my daughter's drawing, we picture this as the disassembly of the (ordinary) semantic representation of the THEME (beaver), followed by its reassembly into an indexical element, i.e., a time (t), world (w) or threshold (th), cf. (24) and (25).



(24) Disassembling Theme



(25) Assembling t , th and w

⁴ Answering an anonymous reviewer's questions, we contend that, indeed, only parts of certain logically deep-seated relations making up the fundamental reasoning schemes associated with existential and universal quantification and logical negation (as represented in the square of opposition) can be subject to this strategy of evading into the vertical dimension, while leaving other parts of logical form locally uninterpreted would lead to ungrammaticality. Presumably, the operations in question may become hard-wired as they provide welcome shortcuts to highly mandatory meanings (cf. Brandt 2019: 37f). The logical form $\text{not} : P(x)$ is pushed to the indexical level quite simply because the ensuing syntactic-semantic cycle deals with indexical information. Presumably, uninterpreted logical form must be interpreted (semantically represented) as soon as possible.

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It is important to note that what exactly the disassembled THEME is reassembled into depends on the linguistic context. In the formally reflexive inchoative case, reassembly is into a time and P is identified with the result state of the eventuality, i.e., in the case at hand, a dead beaver. What we get then is that the proposition that the THEME has a certain property (beaver is dead, door is open etc.) at t does not hold at t' .⁵ Adding an (adjectival) adverb that we may assume carries indexical material regarding the threshold with respect to which the property in question holds or does not hold (cf. Lewis 1972), the THEME may be reassembled into such a threshold variable, giving rise to a comparative semantics as associated, arguably, with middle constructions such as in (26).⁶

- (26) Diese Biber jagen sich leicht.
 these beavers hunt SICH easily
 ‘These beavers are easy to hunt.’

Roughly, the semantics here is that there is a threshold with regard to which hunting beavers is not easy, and there is another threshold with regard to which hunting beavers is easy. Slightly manipulating the individual argument semantics by relaxing it to a more inclusive interpretation in the comparandum (cf. Brandt 2019: 213), we get a logical form according to which hunting the beaver in question is easy while hunting beavers in general is not easy. While arriving at the exact semantics in the middle construction thus requires some extra steps, we deem it an advantage of our analysis that it does semantic justice to the syntactic parallel between reflexively construed inchoative and middle constructions respectively.

4.2 *Zu-excessives*

Staying in the domain of comparatives, let us look next at so-called *zu*-excessives as in (27).

- (27) Das Ding war zu schwer um abzuheben. (SZ, 15 July 2003 (edited))
 the thing was too heavy in.order.to take.off.’
 ‘The thing was so heavy in w0 that it couldn’t take off in w0.’

zu-excessives are a kind of comparative structure featuring a nominal subject and an optional purpose clause or prepositional phrase coding a standard of comparison (e.g., *too heavy for a plane*), but not both. The fact that run-of-the-mill comparatives feature two nominal arguments but do not allow a purpose clause or a standard of comparison suggests that the purpose clause or a standard of comparison is the second argument in *zu*-excessives, while they are one-place regarding the number of nominal arguments. Following the “A not A” analysis of comparatives (Lewis 1972), a regular comparative predicates (asserts) A of the comparandum and not:A of the comparatum, cf. the example in (28).

- (28) Bo is heavier than Ben.
 Bo is so.heavy and Ben is not so.heavy

⁵ We assume following Givon (1972) that it is indeed the (negative) pre-state of the change of state that comes into the derivation in the process described, while the post or result state is coded in the VP from the start.

⁶ Cf. Dowty (2001) for the proposal that middles are hidden comparatives or Brandt (2019: chapter 4.1.2).

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In the rendering in (28), the proform *so* indicates the degree to which heaviness is instantiated; under a paraphrase with thresholds, we have a certain heaviness-threshold with regard to which Bo is heavy and Ben is not. As degrees (or thresholds) are strictly ordered, comparatives are asymmetric: if Bo is heavier than Ben then it is not the case that Ben is heavier than Bo. Following Brandt and Schumacher (2021), we assume that *zu*-excessives are indeed reflexivized comparatives and as such predicate A and $\text{not} : A$ of one and the same individual as in (29), now assimilated to the original corpus example with a purpose clause.

(29) The thing was so heavy and the thing was not so heavy and the thing took off.

Predicating P and $\text{not} : P$ of one and the same individual gives rise to a contradiction. What happens is that again $\text{not} : P$ is not interpreted *in situ*, but “pushed” to the ensuing (syntactically higher) derivational cycle, which, in this case, takes care of the purpose clause. Identifying P with the property coded there (taking off) and moving the negation to the purpose clause as well, we get (30) with the now redundant second predication struck out.

(30) The thing was so heavy ~~and the thing was so heavy~~ and the thing did not take off.

We submit that modulo a few refinements due to enrichment in the pragmatic component, (30) expresses the basic semantics of *zu*-excessives. In support, Brandt and Schumacher (2021) present psycholinguistic evidence that processing of *zu*-excessives indeed involves the repair of a contradiction as similarly found in more intuitively contradictory privative predicates (*fake professor*) or so-called animal-for-statue-constructions (*stone lion*). This reconceptualization is reflected in a late positivity (P600) in the ERP signature.

Thinking of it in more traditional terms, reflexivization goes wrong in that the arguments of a naturally asymmetric comparative relation are identified, which is like symmetrizing the relation. In fact, taking the relevant relation connecting to identity to be subsumption, the case is somewhat more complex. As we argued in Brandt (2019), it is logically trivial to subsume the comparatum (standard of comparison) under the comparandum, as, due to negation meaning “less” in the comparative domain (Jespersen 1924: 325), it will always be true that an individual that has P under a certain threshold automatically has $\text{not} : P$ as well. E.g., it is true that if John is 10 years old, he is also 8 years old. Only in the pragmatics is the meaning strengthened by exhausting the comparatum with silent “only”, i.e., there is an x that has $\text{not} (=less) P$ and no more.

4.3 Particle verb constructions

So far, the problem with illegal reflexivization lay in the mapping from thematic roles to grammatical functions and associated grammatical expression (accusative and *sich* in reflexive inchoatives and middles, *zu* in *zu*-excessives) or in the symmetrized asymmetric semantics of comparatives (but cf. the end of the last paragraph). In our third and final class of cases where verboten reflexivization results in “pushing” a negative property $\text{not} : P$ to the next higher computational cycle, the problem is really in the semantics, namely, in real semantics, where we claim that, if an individual is included in a certain region, then its spatial extension is also to be included in that region, which amounts to not having a property that the occupied region would not have as well. The corpus example in (31) serves for illustration.

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- (31) Hugo fuhr in [die Grube]_{ACC} ein. (Rhein-Zeitung, 13. May 2000 (edited))
 Hugo pulled into the mine PRT.
 ‘Hugo is not in the mine at t0 and he is in the mine at t1’

(31) qualifies as coding a change of state (e.g., if Hugo has pulled into the mine, he cannot be pulling into the mine now, unless he was out of the mine in between). Suggesting that accusative case marking plays a key role for the change interpretation, the minimally different example in (32) with the particle verb *herumfahren* ‘cruise’ and the preposition *in* assigning dative case does not code a change of state but just a state (a Vendlerian (1957) activity).

- (32) Hugo fuhr in [der Grube]_{DAT} (herum).
 Hugo went in the mine (around)
 ‘Hugo was cruising in the mine.’

In support of the idea that nominative-accusative (31) indeed corresponds to the transitive prototype, Sluckin (2021: 199) observes that directional prepositional phrases (or grammatically equivalent expressions) help license agentive adverbials. The observation carries over to constructions with German *Wechselpräpositionen* assigning accusative case, cf. Sluckin’s (33) and the corresponding German example in (34).

- (33) John came carefully #/??(into the house).

- (34) Johann kam vorsichtig #/??(in [das Haus]_{ACC}).

The pattern in (34) is reminiscent of Burzio’s (1986) generalization that there is a correlation between there being an AGENT semantically represented and accusative case being expressed. There is good reason then to follow Gehrke’s (2008:4) hypothesis that the accusative of *Wechselpräpositionen* is a structural case.

- (35) The Accusative Case Hypothesis (Gehrke 2008: 4):
 Accusative case inside German PPs is a structural case, licensed under the same conditions as accusative case on direct objects.

As the particle verb construction features nominative and accusative case-marked arguments, it counts as transitive. By hypothesis, the interface demands there to be well-distinguished referents in the semantics given a transitive structure (unless it is reflexivized, cf. Kemmer 1993). We take non-overlapping spatiotemporal location to be the basic criterion for well-distinguishedness.⁷

Following Givón (1972), we take it that the VP codes the result state of the event, i.e., that the THEME is at the GOAL, i.e., that Hugo is in the mine. This means, though, that the subject Hugo has no spatiotemporal properties that the structurally lower mine does not have as well.

⁷ Cf. Strawson (1959). As Philateles puts it in Leibniz’ (1765) dialogue:

Nous ne trouvons jamais et ne pouvons concevoir qu’il soit possible que deux choses de la même espee existent en même temps dans le même lieu.

‘We never find and cannot conceive that it is possible that two things in the same space exist at the same time in the same place.’

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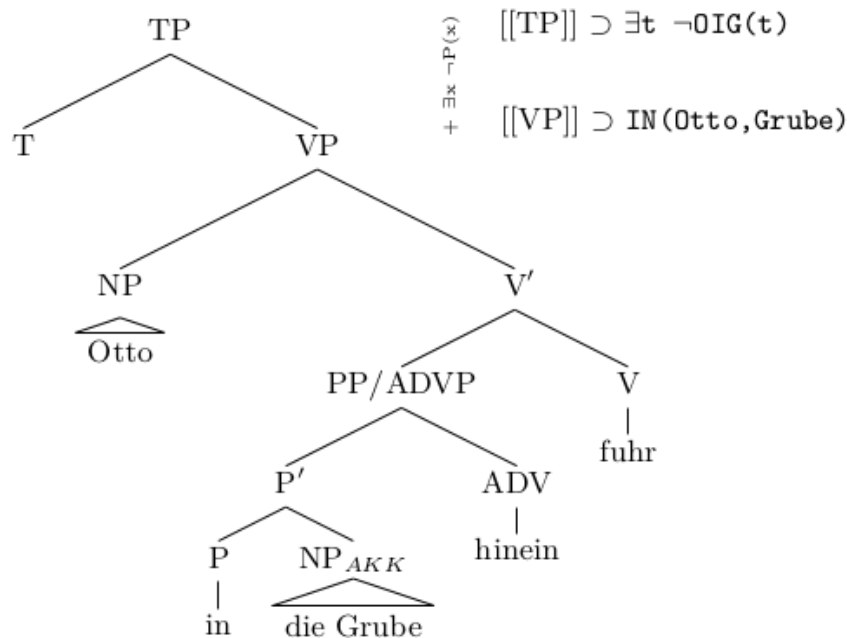
But then the argument realizing the higher THEME role has no property that the argument realizing the lower GOAL role does not have as well, thereby contradicting the generalized Theta-GF linking principle repeated in (36).

(36) Generalized Theta Grammatical Function Linking

A higher thematic role must be expressed by a higher grammatical function with lesser formal means.

As a consequence, $\text{not} : P$ is pushed up from the verb phrase (VP) to the next higher tense phrase (TP) cycle, as pictured in (37), where internal structure is left implicit for space reasons unless it matters for the analysis.⁸

(37)



In violation of the second condition (cf. (9) above), the first argument does not feature a property P that sets it apart from the second argument, as characterized by the absence of that property, viz. $\text{not} : P$. This negative property is, as it were, verticalized and pushed up, the end result being a representation according to which there are two times that are distinguished by contradictory properties, namely, one time satisfying the result state $IN(Hugo, \text{the.mine})$ and one time satisfying its negation $\text{not} : IN(Hugo, \text{the.mine})$.

Quite crucially for our analysis, the nominal complement of the preposition carries accusative case, which is indicative of a directional semantics with German so-called “Wechselpräpositionen”, which, when assigning the dative, come to code just (stative) location. Interestingly, prepositional objects that feature a Wechselpräposition (*an etwas glauben* ‘believe in sth’, *auf*

⁸ It appears that prefix verbs internalize this type of binding, resulting in the passive-like applicative syntax and semantics, where an adverbial GOAL is promoted to direct object position, resulting in the “totalized” affectiveness of the THEME, cf. Brandt (2024).

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etwas hoffen ‘hope for sth’) overwhelmingly appear with direction-indicating accusative case, and prepositional objects are in complementary distribution with directional prepositional phrases. Often, the accusative on the complement of the preposition is coupled with a modal semantics. There are cases where indeed the prepositional object may carry accusative or dative case, like *auf etwas bestehen* ‘insist on sth.’. The author shares the intuition of Grimm (1854–1961) or Paul (1897) that, with the accusative, the THEME is interpreted as something that is “erstrebt” (roughly: ‘aspired to’ or ‘desired’). (38) translates Grimm’s (1854–1961) formulation:

(38) [The] more frequently, *insist on something* occurs, namely, with the dative when the thing is already there [...] [and] with the accusative, when it is desired.

Desirability is of course a modal property. Obviously, we would like to suggest that this modality owes to the relatedness to particle verbs and the way they employ verboten reflexivization as just described.⁹ More generally, our prediction is indeed that accusative case on the prepositional complement of a Wechselpräposition is tied to a change of state, a modal or a comparative semantics.

Summary

We sketched the outlines of a compositional analysis of the unexpected change of state or modal semantics of reflexive inchoative, *zu*-excessive and particle verb constructions in German. A basic assumption is that we have standard alignments between thematic and grammatical function hierarchies (and associated marking).

Diatheses – specifically, reflexivization by means of *sich* – may change the linking, but they can do this “in the right way” (where a higher role is linked with a higher grammatical function and lesser marking) or “in the wrong way” (where a higher role is associated with a lower grammatical function and more marking (accusative, *sich*)).

In such cases, certain semantics – namely, the negation (complement) of a property independently given – may be locally ignored at the interface to be interpreted in terms of the next higher syntactic-semantic cycle.

At the end of the instant, the wrong way turns out virtuous insofar as it delays the interpretation of – i.e., literally recycling – the semantically problematic logical form leads to a highly mandatory (context co-dependent) meaning in a highly economic fashion.

Acknowledgments

I would like to thank my daughter Johanna for the drawings and Kris Estep at Dale’s Wheels Through Time Museum (Maggie Valley, NC 28751) for granting permission to use the picture of Len Andres’ banked off twin. Many thanks go as well to Norbert Cußler-Volz (IDS) for help

⁹ However, there appears to be speaker variation here and even Grimm says that the semantics of desire may come about as well with dative, in particular, if the object in question has itself a modal quality like e.g. *Vorstellung* ‘imagination’. If so, then the generalization would seem to be that with the accusative, the prepositional complement must be but with dative, it only may be desired.

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with the poster design and to and Jordan Reid for their help preparing the manuscript for publication. Many thanks finally to the organizers of the First International Workshop on Theoretical and Experimental Linguistics at Károli Gáspár University of the Reformed Church in Hungary in Budapest in October 2023 and to two anonymous reviewers for their very helpful questions and remarks.

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