

The Argument Structure of Reflexively Marked Anticausatives and Middles - Evidence from Datives *

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1. Introduction

In many Indo-European languages transitive verbs alternate with a reflexively marked version that lacks the original external argument. The most prevalent alternations of this type are *reflexively marked anticausatives*, and *reflexively marked middles*, illustrated for German in (1b) and (2b). German has a second type of middle derived from the causative/permisive verb *lassen* 'let', which follows the same pattern (3b).

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|-----|----|---|----|--|
| (1) | a. | Hans öffnet die Tür.
John opens the door
'John is opening the door.' | b. | Die Tür öffnet sich.
the door opens REFL
'The door is opening.' |
| (2) | a. | Hans liest das Buch.
John reads the book
'John is reading the book.' | b. | Das Buch liest sich gut.
the book reads REFL well
'The book reads well.' |
| (3) | a. | Hans lässt das Buch lesen.
John lets the book read
'John makes s.o. read the book.' | b. | Das Buch lässt sich gut lesen.
the book lets REFL well read
'The book can be read well.' |

These b)-constructions have found three different analyses either as (i) unaccusative, (ii) unergative, or (iii) reflexivized causative structures (see section 2 for details). We provide configurational arguments from German for the unaccusative analysis, and show that with respect to the base position of the nominative DP (DP_{NOM}), (1b-3b) differ from ordinary reflexive construals such as 'Tom hits himself' (thematic reflexives henceforth), whose structural subject behaves like an external argument.

2. The three potential analyses

In unaccusative analyses, (1b-3b) lack an external argument (though middles have it on an interpretative level) and the theme DP, although marked with nominative case,

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is merged as the internal argument of the verb - just as in the transitive counterpart. The reflexive pronoun is non-thematic and its presence is associated with the absence of an external argument (though theories differ a lot in their details here; e.g. Reinhart 2002, Schäfer 2008, Labelle & Doron 2010).

In unergative analyses of reflexive anticausatives and middles, DP_{NOM} is merged externally but, nevertheless, is assigned the theme role. The reflexive pronoun is again non-thematic and either marks the reduction of the agent role (Lekakou 2005) or morphologically realizes a specific Voice-head that passes the verb's internal θ -role up to its specifier (Labelle 2008).

Under a causative analysis of reflexively marked anticausatives (Chierchia 2004, Koontz-Garboden 2009), DP_{NOM} is interpreted as both the internal (theme) and external (causer/effector) argument. That is, reflexively marked anticausatives are assumed to be semantically transitive and to work exactly like thematic reflexives. The meaning of (1b) could therefore be paraphrased as 'the door causes/effects the door to be open.' Technically, the reflexive pronoun is analyzed as a reflexivization operator with the semantics in (4a): it takes a relation as its argument and identifies both arguments of the relation. (4b) shows how the application of this reflexivization operator to a transitive causative verb leads to the proposed interpretation.

- (4) a. $[[sich]] = \lambda \mathcal{R} \lambda x [\mathcal{R}(x, x)]$
 b. $[[sich]] ([[öffnen]]) = \lambda x \lambda e \lambda s [\exists v [\text{CAUSE}(v, e) \wedge \text{EFFECTOR}(v, x) \wedge \text{BECOME}(e, s) \wedge \text{THEME}(s, x) \wedge \text{open}(s)]]$

Though these authors do not discuss the mapping to syntax, under any linking theory we are aware of, DP_{NOM} should be merged as an external argument (see e.g. the mapping theory in Levin & Rappaport 1995, or Reinhart & Siloni's 2005 bundling approach to reflexive verbs). The reflexive pronoun, acting as a reflexivization operator, could either be attached to the verb itself, leading to an unergative structure, or merge as an internal argument, which would give rise to a transitive/causative syntax (a structure suggested in e.g. Steinbach 2002). Under the assumption that there is, in fact, no difference between anticausatives and thematic reflexives, the second possibility is more likely given the arguments in Doron & Rappaport Hovav (2007) and Schäfer (2012) that Romance and German reflexives (i.e. SE-reflexives) behave as anaphoric pronouns subject to Principle A in thematic reflexives. This analysis of anticausatives, then, treats the reflexive as an anaphoric pronoun in object position, which is bound by the causer/effector DP_{NOM} in external argument position. Such a structure carries over to causative analyses of middles. Zwart (1998) proposes that middles involve a little v head expressing causation/permission. German *lassen* in (3) could be seen as the overt instantiation of such a head, which assigns a 'responsibility-role' to DP_{NOM} . The reflexive, again, can be understood as taking up the theme role so that (2b/3b) roughly mean 'the book is responsible that one can read the book easily'.

3. The Tests

The three analyses cannot be distinguished on the surface, partially because the German reflexive pronoun tends to move to Wackernagel position (i.e. it right-adjoines to the complementizer or finite verb in C). In the next subsections, we will therefore provide a number of tests involving dative DPs which strongly suggest that

an unaccusative analysis with DP_{NOM} merged in internal argument position is correct (cf. Schäfer 2008, Pitteroff & Alexiadou 2012 for the role of the reflexive pronoun in anticausatives and middles. These authors propose that it acts as a non-thematic external argument expletive). The tests built on two properties of German: DP_{NOM} in passive or unaccusative structures can stay in vP-internal object position (Haider 1993, Wurmbrand 2006), and anticausatives and middles allow subcategorized or free datives. These tests will also show that thematic reflexives differ from anticausatives and middles in that their DP_{NOM} clearly behaves like an external argument.

3.1 Lexical datives

A first observation favoring the unaccusative analysis of (*let*-)middles involves lexical datives. Recall that under the unergative and causative analysis, the sole referential DP is merged as external argument in Spec,Voice. For verbs like *helfen* 'to help', which in the transitive use assign lexical dative to their internal theme argument (*Er hilft ihm* 'He.NOM helps him.DAT'), this would mean that the sole DP should be base-generated in Spec,Voice in the corresponding (*let*-)middle. Crucially, there is no independent evidence in German that non-nominative DPs can be merged in Spec,Voice - a fact that would entail a rather exceptional status for middle constructions. Note that the ban on lexically case marked DPs in Spec,Voice seems to hold even for a language like Icelandic which allows quirky subjects. That is, while in Icelandic (but not in German) Spec,TP can be occupied by lexically case marked DPs (e.g. Zaenen, Maling and Thráinsson 1985, Sigurðsson 1992, 2002), these quirky subjects are always base-generated below Voice and receive internal theta roles (see e.g. Jónsson 2000, Sigurðsson 2012, Wood 2012). For the unergative and causative analysis of German (*let*-)middles, then, this would predict middles to be either incompatible with predicates assigning lexical dative to their internal argument, or to involve dative to nominative advancement. Neither prediction is borne out: (*let*-)middles involving such predicates are well-formed, and retain dative case ((5b,c), see e.g. Steinbach 2002).¹ The situation depicted in (5) therefore serves as an argument for the unaccusative analysis, in which the sole referential DP is merged as an internal argument of the predicate, and can thus be assigned lexical dative.

- (5) a. Er hilft einem Obdachlosen.
He.NOM helps a.DAT homeless.person
'He is helping a homeless person.'
- b. Einem Obdachlosen / *ein Obdachloser hilft es sich leicht.
A.DAT homeless.person/a.NOM homeless.person helps it REFL easily
'It is easy to help a homeless person.'
- c. Einem Obdachlosen / *ein Obdachloser lässt sich leicht helfen.
A.DAT homeless.person/a.NOM homeless.person lets REFL easily help
'It is easy to help a homeless person.'

¹ Our conclusion is strengthened by the observation that (5c) with DP_{NOM} (and without the adverbial modifier) is grammatical, but only on a non-middle, permissive/causative interpretation ('A homeless person allows/causes that someone helps him'). In such a case, DP_{NOM} functions as the external argument of the causative predicate *lassen*. The fact that the two interpretations correlate with dative and nominative case respectively strongly suggests a difference in the merge position of the argument (see Pitteroff & Alexiadou 2012).

3.2 Affectedness datives

Affectedness datives are indirect objects that are interpreted as the beneficiary or maleficiary of a change-of-state event. Following Cuervo (2003) and Pylkkänen (2008) (among many others) we assume that indirect objects are not arguments of the verb per se, but are introduced in the specifier of an applicative phrase (ApplP). Appl₀ assigns inherent dative case to the applied argument in German. Cuervo (2003) and Schäfer (2008) argue that in the case of affectedness datives Appl₀ relates an entity to a resultant state predicated of the theme DP as in (6).

- (6) ... [VP V [APPLP DP_{DAT} Appl [RESULTP DP_{THEME} √Root]]]

The ResultP in (6) spans a small-clause like structure relating the theme to a property expressed by the category-neutral root. (6) predicts that affectedness datives should only be compatible with structures that involve a resultant state predicated of an internal argument, which is correct, as (7) shows: while unaccusative (7a), as well as causative predicates (7b) are compatible with an affectedness dative, unergatives are not (7c), unless a resultative particle like *weg* 'away' is added.

- (7) a. Der Mutter ist das Kind gestorben.
The.DAT mother is the.NOM child died
'The child died and the mother is affected by this.'
- b. Er hat der Mutter die Vase zerbrochen.
He has the.DAT mother the.ACC vase broken
'He broke the vase and the mother is affected by this.'
- c. Der Mutter schwamm das Kind *(weg).
The.DAT mother swam the.NOM child (away)
'The child swam *(away) and the mother was affected by this.'

If reflexively marked anticausatives, middles, and *let*-middles were in fact unergatives, they should disallow the addition of affectedness datives, much like (7c), contrary to fact. (8) shows that all three constructions license such datives.

- (8) a. Dem Mann öffnete sich eine Tür.
The.DAT man opened REFL a.NOM door
'A door opened for the man (i.e. the man is positively affected by this).'
- b. Einem Tauben übersetzt sich Merkurs Rede leicht
A.DAT deaf translates REFL Merkurs.GEN speech.NOM easily
'It is easy to translate Merkel's speech for a deaf person.'
- c. Einem Tauben lässt sich Merkurs Rede leicht übersetzen.
A.DAT deaf lets REFL Merkurs.GEN speech.NOM easily translate
'It is easy to translate Merkel's speech for a deaf person.'

The acceptability of affectedness datives thus functions as an argument against an unergative analysis of (1b-3b).² It also undermines a causative/transitive approach

² Low applicatives could be used to make the same point. Furthermore, our argument holds even if (some of) the datives in (7)-(9) are analyzed as involving possessor raising.

where, as with ordinary reflexive verbs, a thematic reflexive pronoun would be merged in object position. This is so because of a curious difference between reflexively marked anticausatives/(*let-*) middles and thematic reflexives with respect to the licensing of affectedness datives. Whereas the former allow the addition of this type of applied argument (as shown in (8)), the latter are incompatible with it (9).

- (9) a. *Der Sohn rasiert (sich) der Mutter (sich).
The son.NOM shaves REFL the.DAT mother REFL
'The son shaves himself for the mother.'
- b. *Der Soldat tötet (sich) dem Präsidenten (sich).
The.NOM soldier kills REFL the.DAT president REFL
'The soldier kills himself for the president.'

Whatever the reason for the unacceptability of (9a, b),³ the contrast between (8) and (9) suggests a difference in argument structure. The following tests will make this difference more precise, showing that with thematic reflexives DP_{NOM} is merged externally, and the reflexive pronoun internally, while in anticausatives and (*let-*) middles DP_{NOM} is merged internally in conformity with the unaccusative analysis.

3.3 Information structure and word order

Lenerz (1977) observed that the acceptable orders of a rhematic/focussed DP_{DAT} and a topical DP_{NOM} differ in active and passive contexts: in the former, the nominative obligatorily precedes the dative (10), while in the latter (11), DP_{NOM} may precede or follow DP_{DAT}. Unaccusatives pattern with passives in this regard (12):⁴

- (10) Q: Wem hilft heute noch die Bibel?
Whom.DAT helps today yet the.NOM bible
'Whom does the bible help these days?'
- A: Heute hilft (die Bibel) nur noch dem Gläubigen (*die Bibel).
Today helps the.NOM bible only yet the.DAT believer the.NOM bible
'These days, the bible only helps the believer.'
- (11) Q: Wem wird heute noch das Leben gerettet?
Who.DAT becomes today yet the.NOM live saved
'Whose life is saved these days.'
- A: Heute wird (das Leben) nur noch dem Versicherten
today becomes the.NOM life only yet the.dat insured
(das Leben) gerettet.
the.NOM life saved
'These days, only the life of insured is saved.'
- (12) Q: Wem gefällt heute noch der Klang des Vinyls?
Whom.DAT pleases today still the.NOM sound of vinyl
'Who is still pleased by the sound of vinyl these days?'

³ If we replace the reflexive pronoun with a DP, the examples in (9a, b) are grammatical under the intended reading. Referential pronouns are sometimes marginally acceptable (e.g. with 'kill'), and sometimes ungrammatical (e.g. with 'shave'). We have not investigated the reason for this variation.

⁴ For the unaccusative nature of German *gefallen* 'to please', see Fanselow (1992).

- A: Heute gefällt (der Klang des Vinyls) nur noch
today pleases the.NOM sound of vinyl only yet
dem Nostalgiker (der Klang des Vinyls).
the.DAT nostalgic the.NOM sound of vinyl
'These days, the sound of vinyl only pleases the nostalgic.'

Lenerz explanation is based on the assumption that a focussed phrase has a strong tendency to appear towards the end of the middle field, such that movement of a focus to the left is ruled out (cf. Neeleman and van de Koot 2008 for Dutch). If, then, the focussed phrase is base-generated below the topic (as in 10), scrambling of this phrase leads to unacceptability. By contrast, if the focussed phrase is base-generated above the topic (as in 11 and 12), scrambling of the latter is acceptable. This is abstractly represented in (13), where (13a) corresponds to (10), and (13b) to (11) and (12):⁵

- (13) a. base order: A[TOP] B[FOC]
*derived order: B[FOC] A[TOP] $t_{B[FOC]}$
b. base order: A[FOC] B[TOP]
derived order: B[TOP] A[FOC] $t_{A[TOP]}$

Based on (13), the sequence $[DAT]_{FOC} >> [NOM]_{TOP}$ is only acceptable if this is the non-scrambled base-order, which is the case if the predicate is unaccusative or passive (see e.g. den Besten 1982, Grewendorf 1989, Fanselow 1991, Haider 1993, Wurmbrand 2006 for the observation that DP_{NOM} may remain in vP-internal position in these contexts). If, by contrast, the base-order is $[NOM]_{TOP} >> [DAT]_{FOC}$, as in transitives, scrambling of the dative to create $[DAT]_{FOC} >> [NOM]_{TOP}$ is impossible.

The order of a focussed DP_{DAT} and a topical DP_{NOM} can therefore be used to investigate the argument structure of reflexively marked anticausatives and (*let-*) middles (see already Schachtel 1991 for this argument). Consider (14-16):

- (14) Q: Wem öffnet sich heute noch die Tür zum Reichtum?
Whom.DAT opens REFL today yet the.NOM door to.the wealth
'Who can become wealthy these days?'
A: Heute öffnet sich (die Tür zum Reichtum) nur
today opens REFL the.NOM door to.the wealth only
noch dem Zocker (die Tür zum Reichtum).
yet the.DAT gambler the.NOM door to.the wealth
'During the financial crisis, only a gambler can become wealthy.'
- (15) Q: Wem räumt sich heute noch die Wohnung leicht auf?
Whom.DAT cleans REFL today yet the.NOM apartment easily up
'Whose apartment cleans up easily these days?'
A: Heute räumt sich (die Wohnung) nur noch
Today cleans REFL the.NOM apartment only yet
dem Blinden (die Wohnung) leicht auf.
the.DAT blind the.NOM apartment easily up
'These days, only the apartment of a blind person cleans up easily.'

⁵ The derivation of these differences would go beyond the scope of this paper. For this, see e.g. Neeleman and van de Koot (2008), or Wurmbrand (2008, 2010), Bobaljik and Wurmbrand (2012).

- (16) Q: Wem lassen sich heute noch die Haare leicht schneiden?
Whom.DAT lets REFL today yet the.NOM hair easily cut
'Whose hair can be cut easily these days?'
- A: Heute lassen sich (die Haare) nur noch
Today let REFL the.NOM hair only yet
dem Glatzköpfigen (die Haare) leicht schneiden.
the.DAT baldy the.NOM hair easily cut
'These days, only the hair of a baldy can be cut easily.'

The data above show that the three constructions pattern with passive/unaccusative structures in so far as both orders are acceptable. Thus, the data in (14-16) must be an instantiation of the situation in (13b), where in the base-order, the focus precedes the topic. This means that in (14-16), the nominative DP needs to be merged low.

With respect to this test, reflexively marked anticausatives and (*let*-)middles can again be shown to differ from thematic reflexives. While DP_{NOM} in the former patterns with the internal argument of unaccusatives and passives, the nominative DP in the latter behaves like the external argument in active NOM-DAT constructions: DP_{NOM} can only precede, but not follow a rhematic/focussed DP_{DAT} (17).⁶

- (17) Q: Wem vertraut sich der Arbeitnehmer heute noch an?
Whom.DAT entrusts REFL the.NOM employee today yet on
'Whom does the employee confide in these days?'
- A: Heute vertraut sich (der Arbeitnehmer) nur noch
today trusts REFL the.NOM employee only yet
dem Psychologen (*der Arbeitnehmer) an.
the.DAT psychologist the.NOM employer on
'Nowadays, the employer only confides in the psychologist.'

This section therefore further supports our conclusions from the preceding ones: DP_{NOM} in reflexively marked anticausatives and (*let*-)middles is merged as an internal argument, which is only compatible with the unaccusative analysis. In that regard, the constructions under investigation differ systematically from thematic reflexives, in which DP_{NOM} behaves like an external argument.

3.4 Wh-indefinites

Even though German is a scrambling language, it is well-known that there are certain elements that cannot be scrambled. Amongst these elements are weak *wh*-indefinites (Haider 1993). (18) shows that if the internal argument is realized as a pronoun, it can either appear in its base-position where it linearly follows DP_{NOM}, or in scrambled position where it precedes it. If, however, DP_{ACC} surfaces as a *wh*-indefinite (as in (b)), only the base-order is acceptable.

- (18) a. weil (der Mann) ihn (der Mann) gefangen hat.
because the.NOM man him.ACC the.NOM man caught has
'because the man has caught him.'

⁶ Note that animacy does not play a role here. The relevant order in the active NOM-DAT construction in (10) is also unacceptable if DP_{NOM} is animate.

- b. weil (der Mann) was (*der Mann) gefangen hat.
because the.NOM man something.ACC the.NOM man caught has
'because the man has caught something.'

The fact that *wh*-indefinites do not scramble, then, predicts a difference in the behavior of nominative DPs, depending on whether that DP is merged externally, or internally. This is indeed what we find. Consider the following predicates involving a lexical dative, where the second predicate (*gefallen* 'please') is unaccusative (cf. fn 4):

- (19) a. weil (die Bibel) wem (*die Bibel) geholfen hat.
because the.NOM bible someone.DAT the.NOM bible helped has
'because the chancellor has helped someone.'
- b. weil (das Buch) wem (das Buch) gefallen hat.
because the.NOM book someone.DAT the.NOM book pleased has
'because the book has pleased someone.'

If DP_{NOM} is merged externally, its base-position precedes DP_{DAT} , such that the acceptable order in (19a) is an instantiation of the base-order. The sequence $DP_{DAT} \gg DP_{NOM}$ in (19a) can therefore only be a derived order, involving scrambling of DP_{DAT} across DP_{NOM} . Since DP_{DAT} is realized as a *wh*-indefinite and cannot scramble, this order is expected to be ungrammatical. In (19b), by contrast, both orders are acceptable. This is a consequence of the fact that DP_{NOM} is base-generated as an internal argument, which means that $DP_{DAT} \gg DP_{NOM}$ is the base-order. Since the sequence $DP_{NOM} \gg DP_{DAT}$ does not involve scrambling of the *wh*-indefinite, but is derived via scrambling of the nominative instead, both orders are acceptable.

If marked anticausatives and (*let*-)middles involved an unaccusative syntax, they should pattern with (19b), rather than (19a). This prediction is borne out:

- (20) a. weil sich (der Gewinn) wem (der Gewinn) verdoppelte.
because REFL the.NOM profit s.o.DAT the.NOM profit doubled
'because the profit of someone doubled.'
- b. weil sich (das Buch) wem (das Buch) leicht verkauft.
because REFL the.NOM book s.o.DAT the.NOM book easily sells
'because it is easy to sell the book to someone.'
- c. weil sich (das Buch) wem (das Buch) leicht
because REFL the.NOM book someone.DAT the.NOM book easily
verkaufen lässt.
sell lets
'because the book can easily be sold to someone.'

The fact that both orders are acceptable in (20) is only compatible with an internal merge-position of DP_{NOM} . The data presented in this section therefore argue for the unaccusative analysis, since the unergative, as well as the transitive/causative approach would predict the order $DP_{DAT} \gg DP_{NOM}$ to be ungrammatical, contrary to fact. Again, this time with respect to the positioning of weak *wh*-indefinites, marked anticausatives and (*let*-)middles systematically differ from thematic reflexives, further supporting the view that DP_{NOM} in the former is not merged externally, while it is in the latter:

- (21) weil sich (der Arbeitnehmer) wem (*der Arbeitnehmer)
because REFL the.NOM employee someone.DAT the.NOM employee
anvertraut hat.
entrusted has
'because the employee entrusted himself to someone.'

3.5 Binding

The last piece of evidence for the unaccusative analysis of marked anticausatives and (*let*-)middles comes from word order facts involving variable binding. In particular, transitives and unaccusatives show different word order possibilities when a nominative quantifier binds a possessor in DP_{DAT}:

- (22) a. weil (seinem_i Schüler) [jeder Lehrer]_i gerne (seinem_i Schüler)
because his.DAT student every.NOM teacher gladly his.DAT student
hilft.
helps
'because every teacher likes to help his student.'
- b. weil (*seiner_i Mutter) [jeder Sohn]_i (seiner_i Mutter) gefällt.
because his.DAT mother every.NOM son his.DAT mother pleases
'because every son pleases his mother.'

Under the well-motivated assumption that DP_{NOM} in (22a) is merged externally, while it is merged internally in (22b) (see e.g. sections 3.3, 3.4), the situation above can be abstractly represented as follows:⁷

- (23) a. Base order: quantifier (NOM) >> possessor (DAT)
Derived order: possessor (DAT) >> quantifier (NOM) >> t_{possessor}
- b. Base order: *possessor (DAT) >> quantifier (NOM)
Derived order: quantifier (NOM) >> possessor (DAT) >> t_{quantifier}

Apparantly, while reconstruction of the scrambled phrase for binding purposes can take place in (22a/23a), bringing the possessor into the scope of the quantifier and thereby licensing the bound variable reading, reconstruction of DP_{NOM} in (22b, 23b) must be blocked, otherwise the bound variable reading should never arise. This situation is a direct reflection of the A-/A'-scrambling asymmetry in German, where only the former allows reconstruction (24a), while the latter blocks it (24b, taken from Lechner 1998; see also Frey 1989, Lasnik 1999):

- (24) a. weil (ein Bild von seinem_i Auftritt) [jeder Kandidat]_i
because a picture of his appearance every candidate
(ein Bild von seinem_i Auftritt) behalten möchte.
a picture of hi appearance keep wants
'because every candidate wants to keep a picture of his appearance.'

⁷ (22) draws a partial correlation between word order and variable binding which conforms to the 3/4 signature described in Wurmbrand (2008, 2010), and Bobaljik and Wurmbrand (2012). In fact, the data could be easily recast in their economy framework.

- b. weil sie (*ein Bild von seinem_i Auftritt) [jedem Kandidaten]_i
 because she a picture of his appearance every candidate
 (ein Bild von seinem_i Auftritt) zeigte.
 a picture of his appearance showed
 'because she showed a picture of his appearance to every candidate.'

In (22a) scrambling crosses the external argument, which indicates that it is A'-scrambling. Reconstruction is therefore expected to be possible. In (22b), by contrast, due to the unaccusative nature of the predicate, it is most likely A-scrambling that is involved, which blocks reconstruction. The difference with respect to the availability of the bound variable reading under the scrambled order is thus accounted for: it matters whether DP_{NOM} is merged externally, with subsequent A'-scrambling of DP_{DAT}, or internally, and A-scrambles itself to generate the derived word order.

If DP_{NOM} in reflexively marked anticausatives, and (*let-*)middles was merged externally, we would expect the surface order DAT>>NOM to be derived via A'-scrambling. This predicts that reconstruction should be possible, allowing a bound variable reading in either order - a prediction which is not borne out:

- (25) a. Uri Geller war schuld daran, dass sich (*ihrem_i Besitzer)
 Uri Geller was guilty there.of that REFL her.DAT owner
 [jede Uhr]_i (ihrem_i Besitzer) verstellt hat.
 every.NOM clock her.DAT owners changed has
 'It was U.G.'s fault that every clock kept the incorrect time on its owner.'
- b. Ich glaube, dass sich (*seinem_i Autor) [jedes Buch]_i
 I believe that REFL its.DAT author every.NOM book
 (seinem_i Autor) gut verkauft.
 its.DAT author well sells
 'I believe that every book can be sold easily to its author.'
- b. Ich glaube, dass sich mit genügend Geld (*seinem_i Besitzer)
 I believe that REFL with enough money its.DAT owner
 [jedes Haus]_i (seinem_i Besitzer) leicht abkaufen lässt.
 every.NOM house its.DAT owner easily of.buy lets
 'I believe that with enough money, every house can easily be bought from its owner.'

The data in (25) show that a bound variable reading is only possible if the nominative precedes the dative. In other words, (25) patterns with (22b/23b) which suggests that DP_{NOM} is merged internally, and A-scrambles across DP_{DAT}. This, again, is only compatible with the unaccusative analysis.

As with the tests discussed in the preceding sections, marked anticausatives and (*let-*)middles systematically differ from reflexive verbs with respect to the word order possibilities in the context of variable binding:

- (26) weil sich (seinem_i Psychologen) [jeder Arbeitnehmer]_i
 because REFL his.DAT psychologist every.NOM employee
 (seinem_i Psychologen) anvertraut hat.
 his.DAT psychologist entrusted has
 'because every employer confided in his psychologist.'

Thematic reflexives pattern with (22a, 23a) in licensing a bound variable reading in both orders. This suggests that DP_{NOM} is merged externally, and that DP_{DAT} A'-scrambles across the nominative, and subsequently reconstructs for purposes of binding. Thematic reflexives therefore exemplify the exact reverse of marked anticausatives and (*let*-)middles.

4. Conclusion

The behavior of free and lexical datives in the reflexive constructions in (1b-3b) strongly suggests that their DP_{NOM} is an internal argument, and that these constructions are unaccusative. We also showed that the behavior of DP_{NOM} in reflexively marked anticausatives/(*let*-)middles and thematic reflexives differs systematically. DP_{NOM} in the latter patterns with externally merged arguments with respect to all the test employed, suggesting that the argument structure of reflexive verbs is the exact inverse of the ones in (1b-3b), further supporting the unaccusative analysis of these constructions. Even though our arguments depend on certain properties of German (such as the acceptability of subcategorized or free datives in all three constructions, and the fact that passive or unaccusative subjects may stay in vP-internal position), the null-hypothesis certainly is that if the constructions in (1b-3b) can be found in other languages where they show exactly the same morphology and semantics, they should be based on the same configuration.

References

- Besten, H. den. 1982. Some Remarks on the Ergative Hypothesis. *Groninger Arbeiten zur germanistischen Linguistik* 21, 61-82. Groningen: University of Groningen.
- Bobaljik, J., and S. Wurmbrand. 2012. Word Order and Scope: Transparent Interfaces and the 3/4 Signature. *LI* 43.3: 371-421.
- Chierchia, G. 2004. A semantics for unaccusatives and its syntactic consequences. In A. Alexiadou, et al. (eds.), *The unaccusativity puzzle: explorations of the syntax-lexicon interface*, 22-59. Oxford: OUP.
- Cuervo, M. C. 2003. *Datives at Large*. PhD thesis, MIT.
- Doron, E., and M. Rappaport Hovav. 2007. Towards a Uniform Theory of Valence-changing Operations. *Proceedings of IATL* 23.
- Fanselow, G. 1991. *Minimale Syntax*. Groninger Arbeiten zur germanistischen Linguistik 32. Groningen: University of Groningen.
- Fanselow, G. 1992. Ergative Verben und die Struktur des deutschen Mittelfeldes. In L. Hoffmann (ed.), *Deutsche Syntax: Ansichten und Aussichten*, 276-303. Berlin: Mouton de Gruyter.
- Frey, W. 1989. *Syntaktische Bedingungen für die Interpretation*. PhD thesis, University of Stuttgart.
- Grewendorf, G. 1989. *Ergativity in German*. Dordrecht: Foris.
- Haider, H. 1993. *Deutsche Syntax Generativ*. Tübingen: Narr Verlag.
- Jónsson, J. G. 2000. Case and Double Objects in Icelandic. In D. Nelson & P. Foulkes (eds.), *Leeds Working Papers in Linguistics* 8, 71-94.
- Koontz-Garboden, A. 2009. Anticausativization. *NLLT* 27: 77-138.
- Labelle, M. 2008. The French Reflexive and Reciprocal se. *NLLT* 26: 833-876.

- Labelle, M., and E. Doron. 2010. An ergative analysis of French valency alternation. *Proceedings of the 40th Linguistic Symposium on Romance Languages (LSRL)*.
- Lekakou, M. 2005. *In the Middle, Somewhat Elevated. The semantics of middles and its crosslinguistic realization*. PhD thesis, University of London.
- Lasnik, H. 1999. Chains of Arguments. In S. Epstein & N. Hornstein (eds.), *Working Minimalism*, 189-215. Cambridge, Mass: MIT Press.
- Lechner, W. 1998. Two kinds of reconstruction. *Studia Linguistica* 52:276-310.
- Lenerz, J. 1977. *Zur Abfolge nominaler Satzglieder im Deutschen*. Tübingen: Niemeyer.
- Levin, B., and M. Rappaport Hovav 1995. *Unaccusativity. At the Syntax-Lexical Semantics Interface*. Cambridge, Mass.: MIT Press.
- Neeleman, A., and H. van de Koot. 2008. The Nature of Discourse Templates. *Journal of Comparative Germanic Linguistics* 11: 137-189.
- Pitteroff, M., and A. Alexiadou. 2012. The properties of German sl-middles. In *Proceedings of WCCFL 29*, 214-222. Cascadilla Press.
- Pylkkanen, L. 2008. *Introducing Arguments*. MIT Press, Cambridge, MA.
- Reinhart, T. 2002. The Theta System – An Overview. *Theoretical Linguistics* 28: 229-290.
- Reinhart, T. & T. Sioni. 2005. The Lexicon-Syntax Parameter: Reflexivization and Other Arity Operations. *LI* 36: 389–436.
- Sigurðsson, H. Á. 1992. The case of quirky subjects. *Working Papers in Scandinavian Syntax* 49: 1-26.
- Sigurðsson, H. Á. 2002. To be an oblique subject: Russian vs. Icelandic. *NLLT* 20: 691-724.
- Sigurðsson, H. Á. 2012. Minimalist C/case. *LI* 43: 191-227.
- Schachtl, S. 1991. Der Akkusativ in der Medialkonstruktion des Deutschen. In G. Fanselow & S. Felix (eds.), *Strukturen und Merkmale Syntaktischer Kategorien*, 104-120. Tübingen: Niemeyer.
- Schäfer, F. 2008. *The Syntax of (Anti-)Causatives*. Amsterdam: John Benjamins.
- Schäfer, F. 2012. The passive of reflexive verbs and its implications for theories of binding and case. *Journal of Comparative Germanic Linguistics* 15: 213-268.
- Steinbach, M. 2002. *Middle Voice*. Amsterdam: John Benjamins.
- Wood, J. 2012. *Icelandic Morphosyntax and Argument Structure*. PhD thesis, NYU.
- Wurmbrand, S. 2006. Licensing Case. *Journal of Germanic Linguistics* 18:175-234.
- Wurmbrand, S. 2008. Word Order and Scope in German. In *Groninger Arbeiten zur germanistischen Linguistik* 46, 89-110. Groningen: University of Groningen.
- Wurmbrand, S. 2010. Reconstructing the A/A-bar Distinction in Reconstruction. *UPenn Working Papers in Linguistics* 16: 245-254.
- Zaenen, A., J. Maling & H. Thráinsson. 1985. Case and Grammatical Functions: The Icelandic Passive. *NLLT* 3: 441-483.
- Zwart, J. W. 1998. Nonargument Middles in Dutch. *Groninger Arbeiten zur germanistischen Linguistik* 42: 109-128. Groningen: University of Groningen.

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