

On reflexive and reciprocal uses of anaphors in German and other European languages

Volker Gast & Florian Haas (Free University of Berlin)

to appear in: König, E. & V. Gast (eds.). *Reciprocals and Reflexives: Cross-linguistic and Theoretical Explorations*. Current Trends in Linguistics. Berlin: Mouton de Gruyter.

1 Introduction¹

The starting point of our paper is the observation that German *sich*, commonly analysed as a reflexive and reciprocal anaphor, has no reciprocal interpretation in prepositional phrases (Section 2). We will argue that this seemingly arbitrary restriction is in fact consistent with a systematic pattern that emerges if we consider the distribution and interpretation of similar elements in some Scandinavian and Romance languages, which have two distinct forms corresponding to *sich* (section 3). We consequently argue that a similar functional split needs to be assumed for German. On the basis of a series of syntactic tests it can be shown that there are two use types or lexical entries of *sich*: in one use type ('pronominal *sich*'), it behaves like an element of category NP and functions as a marker of reflexivity; in its second use type ('clitic *sich*') it displays a restricted distribution and has the semantics of a middle marker (section 4). Given that only clitic *sich* may have a reciprocal interpretation, the impossibility of using use *sich* as a marker of reciprocity in PPs becomes much less mysterious: *sich* does not have reciprocal readings in prepositional phrases because only clitic *sich* may express reciprocity, and clitic *sich* cannot occur in PPs. We regard this distributional restriction as a consequence of the historical development of *sich*, which is sketched in section 5. We assume a split in Old High German in which (reflexive) *sih* was reanalyzed as a verbal clitic indicating 'role-indifferent valency reduction', while at the same time the pronominal use of *sih* was retained. Clitic *si(c)h* came to express reciprocity, among other meanings, but being a verbal clitic it could not occur after prepositions. What occurs in PPs is the pronominal form of *sich*, which is restricted to the expression of reflexivity (section 6).

Even though this would be a tempting conclusion, we do not take the scenario sketched in section 6 to be a universal development of reflexive anaphors. In particular, Slavonic languages such as Polish or Czech provide evidence that a different kind of development is also possible (section 7). In such a scenario reflexive pronouns acquire the reciprocal meaning directly, in certain contexts, without having first developed into middle markers. The latter type of change is in fact assumed by Heine and Miyashita (this volume) for reflexive-reciprocal polysemies in general. We will make a case that for German and the Scandinavian and Romance languages treated in this paper the first type of development is the more plausible one, while the development assumed by Heine and Miyashita can account more accurately for the distributional facts observed in Slavonic languages (section 8).

2 The interpretation of German *sich* in PPs

The German anaphor *sich* is commonly described as having both a reflexive and a reciprocal interpretation (see for example Zifonun et al. 1997: 1355ff.). The following examples are thus ambiguous.^{2,3}

¹ We wish to thank all participants of the Workshop on *Reciprocity and Reflexivity – Description, Typology and Theory* for valuable comments. In particular, the paper has benefited from suggestions made by Östen Dahl, Martin Haspelmath, Bernd Heine, Elena Maslova and Tal Siloni. Moreover, we would like to thank Daniel Hole for helpful criticism. For Czech data we are indebted to Sven Siegmund. All remaining errors and inaccuracies are our own.

² Any element that is etymologically related to Germ. *sich* and that has a similar function will simply be glossed 'SE'.

- (1) *Karl und Maria sehen sich.*
 Karl and Mary see SE
 ‘Charles and Mary see themselves/each other.’
- (2) *Die Kinder bewunderten sich.*
 the children admired SE
 ‘The children admired themselves/each other.’

The ambiguity illustrated in (1) and (2) does not arise if *sich* follows a preposition. Reciprocal readings are consequently categorically disallowed for the a-sentences in (3)–(5) below, while they are possible in the (near) equivalent (but syntactically different) b-sentences. The c-sentences illustrate the use of the German reciprocal marker *einander* ‘one another’, which is morphologically composed of the numeral *ein* ‘one’ and the adjective/noun *ander* ‘other’. In PPs *einander* is the only option to express reciprocity. This distributional asymmetry of *sich* in PPs has been noted in the relevant literature (cf. Starke 1992; Zifonun et al. 1997: 1357, König and Vezzosi 2004; Safir 2004: 262), but with a few exceptions (e.g. Heine and Miyashita this volume) no attempt has so far been made to explain it.⁴

- (3) a. *Sie glauben an sich.*
 they believe at SE
 ‘They have confidence in themselves/*each other.’
- b. *Sie vertrauen sich.*
 they trust SE
 ‘They trust each other/themselves.’
- c. *Sie glauben an-einander.*
 they believe at-one.another
 ‘They have confidence in each other.’
- (4) a. *Sie starrten auf sich.*
 they stared on SE
 ‘They stared at themselves/*each other’
- b. *Sie starrten sich an.*
 they stared SE PTCL
 ‘They stared at each other/themselves’
- c. *Sie starrten auf-einander.*
 they stared on-one.another
 ‘They stared at each other.’
- (5) a. *Paul und Maria riefen jeden Tag bei sich zu Hause an.*
 Paul and Mary called every day at SE at home PTCL
 ‘Paul and Mary called their respective homes every day.’
- b. *Paul und Maria riefen sich jeden Tag zu Hause an.*
 Paul and Mary called SE every day at home PTCL
 ‘Paul and Mary called each other every day at home.’
- c. *Paul und Maria riefen jeden Tag bei einander an.*
 Paul and Mary called every day at one.another PTCL
 ‘Paul and Mary called each other every day at home.’

The ban on reciprocal *sich* in PPs is quite robust. It applies to PPs in both argument and adjunct positions. In (3)–(5) above the PPs containing *sich* were arguments. The PP in (6) is

³ In most cases the context probably disambiguates between the two readings, but this does not affect the generalization at issue. Furthermore note that we use the term ‘ambiguous’ in a wide sense at this point. The semantic relationship between the two meanings will be discussed in section 6.1.

⁴ Heine and Miyashita (this volume) go in the same direction as we do in the present paper but come to a somewhat different conclusion (cf. section 6).

an adjunct, and it only has the reading ‘They saw a snake beside them(selves)’, but not ‘They saw a snake beside each other’:

- (6) *Sie sahen eine Schlange neben sich.*
they saw a snake beside SE
‘They saw a snake beside them(selves)/*each other’

While the examples in (3) – (6) seem to show that the absence or presence of a reciprocal reading is a function of the syntactic position taken by *sich*, closer scrutiny reveals that this cannot be the whole story. Irrespective of its position in a sentence, *sich* does not have a reciprocal reading if it is stressed. This is illustrated in (7):

- (7) *Hans und Karl zitieren nur SICH*
Hans and Karl quote only SE
‘Hans and Karl only quote themselves/*each other.’

A seeming exception to the generalization that *sich* cannot be interpreted as a reciprocal marker if it follows a preposition, or if it is stressed, can be found in the context of a limited set of prepositions that indeed allow a reciprocal interpretation. The most typical representative of this class is *unter* ‘among’:

- (8) *Die Spieler wollten unter sich bleiben.*
the players wanted among SE remain
‘The players wanted to remain among themselves.’

We will argue below (section 4.2) that (8) is not an instance of reciprocity, but displays a specific type of reflexive meaning (‘collective reflexivity’). The phenomenon that reflexive markers may have a reciprocal-like interpretation in specific contexts is not restricted to German. As will be seen, many Germanic and Romance languages show the same seemingly exceptional behaviour with prepositions of the same meaning.

3 A view on other Germanic languages and Romance

While the distributional restriction on reciprocal *sich* in German has repeatedly been noticed in the literature on reciprocity (cf. section 2), a completely parallel asymmetry in some other Germanic and Romance languages has largely gone unnoticed. These languages display a contrast between one phonologically heavier and one phonologically lighter item (cf. Kemmer 1993: 25). Interestingly, in each of these languages it is only the phonologically lighter element that may be used as an expression of reciprocity. Even though there is no overt formal contrast between two reflexive forms in German, it therefore appears conceivable to assume two functionally different elements in German, too. We will return to this point below (section 4). Let us now have a look at some Scandinavian and Romance languages.

3.1 Scandinavian

The Proto-Scandinavian reflexive pronoun **sik* diverged into two different forms in Old Norse. On the one hand, **sik* was phonologically reduced and developed into a verbal clitic and later into an affix. At the same time the reflexive anaphor was retained and later developed into the various SE-anaphors of modern Scandinavian languages (*sig*, *seg*). To take Swedish as an example, there is a verbal suffix *-s* and an anaphor *sig*. The former expresses a variety of meanings, including those normally described as the ‘middle voice’, the passive, and also reciprocity.⁵ Generally, the suffix has only limited productivity and tends to compete

⁵ Actually even within the group of verbs that take the *s*-suffix different meanings may be distinguished formally. Consider the possible forms derived from the verb *slå* ‘hit’, for instance. *Slåss*, pronounced with a short vowel, has the reciprocal meaning ‘fight’, while *slås*, pronounced with a long vowel, expresses the passive meaning ‘be beaten, be defeated’. We are grateful to Östen Dahl for pointing this out to us. The fact that the stem vowel is affected in the reciprocal verb and not in the passive might suggest that the passive is a more recent

with other, formally more complex, constructions. As far as the passive uses of *-s* are concerned there is a competing periphrastic construction involving the verb *bli* ‘become’, and in the case of reciprocity there is a nominal ‘competitor’, viz. the reciprocal expression *varandra* ‘each other’. A fact that seems highly relevant for our argument is that reciprocity in Swedish can be expressed using either the *s*-suffix or the specialized reciprocal *varandra*, but not the reflexive anaphor *sig*. This is illustrated in (9). Since the *s*-suffix can only be attached to verbs (cf. (9)a.), and since the full form may not express reciprocity ((9)b. and c.), the only form to indicate this meaning in PPs is *varandra* (cf. (9)d.).

- (9) a. *De träffa-s och tala-s vid.*
 they meet-s and speak-s at
 ‘They meet and talk to each other’
- b. **De träffar sig.*
 they meet SE
- c. **De talar med sig.*
 they talk with SE
- d. *De träffar varandra och talar med varandra*
 they meet each.other and speak with each.other
 ‘They meet each other and speak to each other.’

Danish displays a similar pattern. As in Swedish we find a set of reciprocal verbs which are derived morphologically.⁶ It is interesting to note that some of these verbs are lexicalized to such an extent that they do not occur without the *s*-suffix at all (*enes* ‘agree, get on’, **ene*; *forliges* ‘become reconciled’, **forlige*; *kappes* ‘compete’, **kappe*; *kives* ‘bicker’, **kive*; cf. Bergeton 2004: 289). Apart from such verbal reciprocals only the specialized reciprocal pronoun *hinanden* ‘each other’ may be used to express reciprocity. Sentence (10)a. exemplifies the reciprocal use of the *s*-suffix. In (10)b. reciprocity is expressed by *hinanden*, and (10)c. shows that a reciprocal interpretation of *sig* is not available. As we saw above, this is parallel to Swedish, which does not allow for a reciprocal interpretation of the reflexive anaphor *sig*.

- (10) a. *Peter og Marie møde-s ofte på gade-n.*
 Peter and Mary meet-S often at street-DET
 ‘Peter and Mary often meet in the street.’
- b. *Peter og Marie møder ofte hinanden på gade-n*
 Peter and Mary meet often each.other at street-DEF
 ‘Peter and Mary often meet (each other) in the street.’
- c. *De slår sig i skolen.*
 they hit SE in school.DEF
 ‘They hit themselves/*each other in school.’

development, thus confirming the universality of similar grammaticalization paths in other languages (cf. Kemmer 1993: 151-200). Faarlund (2004: 125-126), too, states that the development of the passive meaning started in Old Norse while the reciprocal use was already well established. Here is a selection of verbs that are assigned a reciprocal meaning by the suffix *-s*: *brottas* ‘wrestle’; *enas* ‘unite’; *förlikas* ‘be reconciled’; *kivas* ‘squabble’; *kramas* ‘hug’; *kyssas* ‘kiss’; *mötas* ‘meet’; *pussas* ‘kiss’; *råkas* ‘meet’; *samlas* ‘gather’; *ses* ‘meet’; *slåss* ‘fight’; *tampas* ‘tussle’; *följas åt* ‘accompany (one another)’; *hjälpas åt* ‘help (one another)’; *skiljas* ‘part’; *retas* ‘tease’; *hörs* ‘hear (one another)’ (Holmes and Hincliffe 1994: 307).

⁶ Here is a sample of reciprocal verbs from Danish (Jones and Gnade 1981: 129; Bergeton 2004: 289): *mødes* ‘meet’; *træffes* ‘meet’; *ses* ‘see each other, meet’; *slås* ‘fight’; *skændes* ‘quarrel’; *trættes* ‘quarrel’; *brydes* ‘clash, wrestle’; *kysses* ‘kiss’; *skiftes* ‘take turns...-ing’; *føljes* ‘accompany (each other)’; *hjelpes (ad)* ‘help each other’; *tales ved* ‘talk’; *snakkes ved* ‘talk, chat’; *enes* ‘agree, bicker’; *forliges* ‘become reconciled’; *kappes* ‘compete’; *kives* ‘bicker’.

Icelandic differs from Danish and Swedish only in that the two elements of its reciprocal pronoun *hvor/hver annan* ‘each other’ have preserved more syntagmatic independence. Specifically, when in construction with a preposition the universal quantifier *hvor/hver* ‘each’ can either precede or follow the preposition (Thráinsson 1994: 173):

- (11) a. *Strákanir tala aldrei hvor við annan.*
 boys talk never each to other
 ‘The boys never talk to each other’
 b. *Strákarnir tala aldrei við hvorn annan.*

Again, the reflexive anaphor *sig* does not allow a reciprocal interpretation, even in a context that would strongly favour one. Since *sig* may not be interpreted as a reflexive marker in the object position of verbs like *elske* either, (12) is ungrammatical.

- (12) **María og Sigurd elska sig.*
 Maria and Sigurd love SE
 int.: ‘Maria and Sigurd love each other.’

To sum up the situation in modern Scandinavian, we observe an asymmetry to the effect that of the two items in question – a full reflexive anaphor and a reduced middle affix – only the latter has the potential to express reciprocity. Later we will propose that this fact can shed some light on the distribution and meaning of German *sich*. But first, we will have a look at two Romance languages.

3.2 Spanish and Italian

We saw in section 3.1 on Scandinavian that a reflexive anaphor may diverge into a strong and a weak form, the strong form being used for the expression of reflexivity, and the weak form having a set of middle interpretations including reciprocity. The Romance languages Spanish and Italian follow this pattern as well. The division between a set of strong pronouns and one of unstressed clitics in Romance languages is well-known, not the least because the two sets differ both formally and distributionally. The strong forms generally follow the (finite) verb, while the weak forms precede it. This does not only apply to reflexive forms, but also to non-reflexive ones. Consider the following examples from Italian and Spanish:

- (13) a. *Vediamo LORO.*
 see.1PL them
 b. *Li vediamo.*
 them see.1PL
 (14) a. *Vemos a ELLOS.⁷*
 see.1PL PREP them
 b. *Los vemos.*
 them see.1PL
 ‘We see them.’

Loro in Italian and *ellos/ellas* in Spanish are always non-topical and stressed. They contrast with the weak forms, which are always unstressed (and, therefore, ‘clitics’). Such pairs of ‘tonic pronouns’ and clitics are also available in the domain of reflexivity, our main interest at this point. Italian has a clitic *si* and a stressed form *sé*. In Spanish the forms are *se* (clitic) and *sí* (tonic). As with non-reflexive pronouns, this opposition goes together with a distributional difference: pronouns occupy argument positions, whereas weak forms cliticize to the verb. As the following examples show, however, the difference between both forms goes beyond mere aspects of their distribution, and their lexico-semantic potential is also different: Only the

⁷ Definite NPs with animate referents in object position are marked by the preposition *a* in Spanish (‘differential object marking’). This does not affect the generalization concerning the distribution of stressed and unstressed pronominal forms.

weak forms can get a reciprocal interpretation in addition to a reflexive one (cf. the a-versions in (15) – (16) from Italian and Spanish respectively), while this is excluded for the strong forms (cf. the b-sentences).⁸

- (15) a. *Paolo e Maria si vedono.*
 Paul and Mary SE see.3PL
 ‘Paul and Mary see themselves/each other.’
 b. *Paolo e Maria vedono sé.*
 Paul and Mary see.3PL SE
 ‘Paul and Mary see themselves/*each other.’
- (16) a. *María y Pedro se quieren.*
 Mary and Peter SE love.
 ‘Mary and Peter love each other’
 b. *María y Pedro se quieren a sí*
 Mary and Peter SE love OBJ SE
 ‘Mary and Peter love themselves/*each other.’

In PPs it is of course only the stressed forms that are possible. The unstressed forms, being verbal clitics, are excluded in that position. With respect to reciprocity this means that neither of the two forms at issue can have a reciprocal interpretation in PPs, the one being excluded in PPs anyway and the other not having the semantic potential to express reciprocity. Exactly as in German and the Scandinavian languages discussed above, the only reciprocal expression possible in PPs is a complex non-reflexive construction consisting of a quantifier and the word ‘other’. These bipartite expressions resemble the Icelandic reciprocal marker *hver/hver annan* ‘each other’ insofar as they do not follow the preposition as a fixed unit.⁹ The examples in (17) and (18) illustrate the use of the specialized reciprocals – Spanish *uno(s) al/a los otro(s)* and Italian *l’un l’altro* with the corresponding forms in different gender/number configurations – as the only option after prepositions:

- (17) *Gli studenti hanno parlato gli uni con gli altri.*
 ART students AUX talked ART ones with ART others
 ‘The students talked to each other.’
- (18) *Los estudiantes hablarón los unos con los otros.*
 ART students talked ART ones with ART others
 ‘The students talked to each other.’

To conclude this section, Spanish and Italian exhibit an asymmetry very similar to the one that we saw in Scandinavian. Reflexivity may be encoded using one of two phonologically and distributionally distinct forms, a weak one and a strong one. Only the weak form has the potential to also trigger a reciprocal interpretation. This excludes reciprocal interpretations of the relevant items in the position of a PP complement, only the strong forms being allowed there. In the next section we will draw on this general pattern and show that the German data presented in section 2 can be explained in a similar way.

4 Clitic and pronominal *sich* in German

As was discussed in section 2 a reciprocal interpretation of German *sich* is strictly excluded in PPs (with the seeming exception of ‘collective reflexivity’, which, according to our analysis, is not an instance of reciprocity in a narrow sense; cf. below). With the formal differentiation between weak and strong reflexives and the concomitant ban on a reciprocal interpretation in

⁸ This sentence is hardly acceptable anyway, since for a reflexive reading the intensifier *mismo* would be used (*María y Pedro se quieren a sí mismos*).

⁹ The relative independence of the single elements is also evinced by the fact that their gender and number agreement is still intact.

PPs in Scandinavian and Romance in mind, we will now propose to assume a similar split between two forms of German *sich*. To be sure, there are no differences in the segmental phonological make-up of those two forms. As far as the potential to be stressed is concerned, however, the data suggest a systematic separation parallel to the one observed in Scandinavian and Romance languages above. We propose the hypothesis in (19) and the attendant cross-linguistic pattern in Table 1: clitic *sich* has a distribution and meaning similar to Swedish *-s*, Italian *si* and Spanish *se*, while pronominal *sich* behaves similarly to Swedish *sig*, Italian *sé* and Spanish *sí*.

- (19) There are two forms of German *sich*, one clitic (*sich_{CL}*) and the other pronominal (*sich_{PRO}*), which functionally correspond to the formally differentiated expressions in Romance and Scandinavian.

	reduced form (middle, reciprocal)	full form (reflexive, no reciprocal)
German	<i>sich_{CL}</i>	<i>sich_{PRO}</i>
Scandinavian	<i>-s(t)</i>	<i>sig/seg</i>
Italian	<i>si</i>	<i>sé</i>
Spanish	<i>se</i>	<i>sí</i>

Table 1: Shared pattern of asymmetry

As far as the interpretation of the two markers is concerned, we posit that clitic *sich* functions as a middle marker and pronominal *sich* as an anaphor (cf. section 6). The differentiation may be represented as in (20). There are two distinct lexical entries of *sich*, just as in the case of Spanish (cf. (21); <'> indicates a *potential* word (and therefore also sentence) accent:

- (20) Two lexical entries of German *sich*:
1. *sich_{PRO}* ($(\prime(/zɪç/)_\sigma)_\omega$) ANAPHOR
 2. *sich_{CL}* ($((/zɪç/)_\sigma)_\kappa$) MIDDLE MARKER
- (21) Two lexical entries for Spanish *se/sí*:
1. *sí_{PRO}* ($(\prime(/si/)_\sigma)_\omega$) ANAPHOR
 2. *se_{CL}* ($((/se/)_\sigma)_\kappa$) MIDDLE MARKER

From a syntactic point of view the assumption of such a differentiation effectively means that only those instances of *sich* that do not occupy NP-positions should be able to express reciprocity. This will be illustrated in the following.

4.1 Evidence for a differentiation between two uses of *sich*

The observation that *sich* is not completely homogeneous, as far as its distribution and meaning is concerned, is not new (see Stötzel 1970: 174-198 et passim; Cranmer 1975: 135; Reinhart and Reuland 1993: 667-668). What has not yet been commented on, as far as we can see, is a systematic correlation between the morphosyntactic status of *sich* and the ability to convey a reciprocal meaning. We will now go through some standard tests for argument status and see whether the generalization holds that those instances of *sich* that are clearly of category NP do not have a reciprocal reading. It has already been shown in section 2 that *sich* as a prepositional complement – a position associated with elements of category NP – excludes a reciprocal interpretation. Another position in which only argument expressions, but no verbal clitics, may occur is the initial position in a topic construction (the ‘Forefield’, in terms of a topological description of the German sentence):¹⁰

¹⁰ In the German linguistic tradition the term ‘Forefield’ refers to the slot for topical or focal constituents which precede the finite verb in main clauses. ‘Middle Field’ stands for the space between the finite verb in the second position and verbal particles or non-finite verb forms on the right edge of the sentence (Bech 1955/57).

- (22) *SICH konnten die Spieler nicht leiden, aber sie mochten den TRAINER.*
 SE could the players not bear but they liked the coach
 ‘The players couldn’t stand themselves/*each other, but they liked the coach.’

The translation of (22) shows that fronted *sich* may not express a reciprocal meaning, although such an interpretation is not ruled out by the context. A reading in which the players do not like each other while they like the coach is pragmatically not only conceivable but even preferred to the reflexive reading. Yet, the grammatical restriction on reciprocal *sich* in NP-positions seems to be robust in this case, too. Moreover, *sich* cannot have the reciprocal meaning if it is coordinated with another noun phrase:¹¹

- (23) *Erst lobten die Spieler SICH und dann die GEGNER.*
 first praised the players SE and then the opponents
 ‘The players first praised themselves/*each other and then their opponents.’

Some so-called ‘exceptional case marking’ structures (ECM), i.e. sentences where the NP functioning as the (syntactic) object of the matrix clause is the (semantic) subject of a non-finite subordinate clause, give less clear results. We have found that a reciprocal reading of *sich* in the position of the matrix object is not totally excluded. Interestingly, however, a search in the COSMAS-corpus¹² showed examples of this type to be extremely rare. Here are two made-up examples among which at least (25) would not exclude a reciprocal reading:

- (24) *Sie hörten sich beten.*
 they heard SE pray
 ‘They heard themselves/?each other pray’
 (25) *Sie ließen sich nicht allein.*
 they let SE not alone
 ‘They didn’t leave themselves/each other alone’

While sentences like (24) and (25) seem to contradict the generalization that reciprocal readings of *sich* should not be possible in syntactic positions that allow only elements of category NP, it should be noted that the ability to be stressed remains an unequivocal criterion

¹¹ The exclusion of the reciprocal reading in (22) and (23) may not be totally obvious. Note that a reflexive with a plural subject is ambiguous between a distributive reflexive and a collective reflexive reading (cf. also section 4.2). In the first case, each of the individuals denoted by the plural subject acts on him- or herself and in the second case the individuals collectively act on themselves as a group. The latter reading is conceptually very similar to the reciprocal reading: if a, b, c act on themselves as a group, a indirectly acts on b and c, b indirectly acts on a and c etc. That the two readings are nevertheless distinct is evinced by the inacceptability of examples where the collective reflexive reading is ruled out by the context. Compare (i) and (ii):

- (i) *Die Polizisten hielten sich für Dealer.*
 the policemen held SE for drug.dealers
 ‘The policemen took each other to be drug dealers.’
 (ii) *?Die Polizisten hielten SICH für Dealer und die echten Dealer für Kollegen.*
 the policemen held SE for drug.dealers and the real d.d.s for colleagues
 ‘The policemen held themselves/*each other to be drug dealers and the real drug dealers to be colleagues.’

For the above examples imagine two plainclothes policemen pursuing two drug dealers in a dimly lit street at night. The policemen stand face to face, but with a distance of some 40 meters between each other. The drug dealers whom they are pursuing are standing in front of an entrance nearby. A collective reflexive reading of stressed *sich* in (ii) is ruled out by world knowledge; policemen normally do not consider themselves to be someone else. If reciprocal and collective reflexive meaning were just facets of a more general vague meaning, one would therefore expect a reciprocal interpretation of *sich* to be possible. (To replace *sich* with the reciprocal *einander* would make the sentence perfectly acceptable, so there is nothing wrong about a reciprocal interpretation in general.) Nonetheless, *sich* in (ii) cannot have a purely reciprocal interpretation, i.e. a reading in which each policeman considers the other policeman but not himself to be a drug dealer. Only the odd distributively reflexive interpretation would make the sentence acceptable.

¹² COSMAS (Corpus Search, Management and Analysis System), Institut für Deutsche Sprache, Mannheim.

clearly selecting for a non-reciprocal interpretation. If *sich* in (24) receives stress (*Sie hörten SICH beten*), a reciprocal interpretation is clearly excluded. The fact that reciprocal readings are consistently ruled out if *sich* is stressed is a completely general phenomenon. As was already shown above it also applies to sentences in which *sich* could function as a clitic, as far as its position in the sentence is concerned:

- (26) a. *Die Spieler lobten SICH.*
 the players praised SE
 ‘The players praised themselves/*each other.’

So far we have called *sich*_{CL} a ‘verbal clitic’, thus suggesting that it must stand adjacent to its verbal host. This is not totally correct, as the following example shows:

- (27) *Sie versuchten, sich auf die Schultern zu klopfen.*
 they tried SE on the shoulders PTCL pat
 ‘They tried to pat themselves/each other on the shoulder.’

In (27) *sich* does not stand adjacent to the verb *klopfen* ‘pat’, but occupies a left-marginal position within the ‘Middle Field’ instead. Two points should be noted, however. First, *sich* cannot leave the Middle Field and is thus more restricted distributionally than ordinary pronominal arguments (cf. (22) above vs. (28) below). Second, not only instances of *sich* with a reciprocal interpretation may be separated from the verb in this way. Other use types of unstressed *sich* – which clearly do not function as arguments syntactically – may likewise occur at a distance from the verb. So-called ‘reflexive verbs’ like *sich freuen* ‘delight’, *sich trauen* ‘dare’, for instance, behave like reciprocal *sich* in this respect (cf. (29)–(30)):

- (28) *IHN konnten die Studenten nicht leiden, seine Frau schon.*
 him could the students not bear his wife yet
 ‘The students didn’t like HIM, but they liked his wife.’
- (29) *Die Kinder versuchten, sich trotz der schlechten Wettervorhersage auf die Schulferien zu freuen.*
 the children tried se despite the bad weather.forecast on the holiday to look.forward
 ‘Despite the bad weather forecast, the children tried to look forward to their holidays.’
- (30) *Beim Tanzunterricht lernt man, sich wie ein Gentleman zu verneigen.*
 at.the dancing lessons learns one SE like a gentleman to bow
 ‘At dancing lessons one learns to bow like a gentleman.’

What these examples show is that occurrences of *sich* which are normally analyzed as (lexicalized) ‘middle markers’ or ‘detransitivizers’ (cf. (29) and (30)) exhibit the same distributional freedom within the Middle Field as reciprocal *sich* in examples such as (27), while they are barred from taking a position in the Forefield. In other words, we are dealing here with a general property of the topological organization of the German sentence. If we now assume, as we do, that there are two distinct *sich* lexemes in German, one of which is a verbal clitic functioning as a valency operator with the potential to express reciprocity, the fact that clitic *sich* need not be adjacent to the governing verb does not come as a surprise.

4.2 The collective reflexive

In section 2 we took note of the fact that there is a class of apparent counterexamples to our claim that stressed *sich* may not express reciprocal relations. In particular, the preposition *unter* ‘among’ followed by *sich* appears to admit of a reciprocal interpretation. Consider again example (8), repeated here as (31):

- (31) *Die Spieler wollten unter sich bleiben.*
 the players wanted among SE remain
 ‘The players wanted to remain among themselves.’

Before we attempt to provide an explanation for the seemingly exceptional behaviour of *sich* in examples like (31), it should be noted that we are dealing with a pattern that is considerably widespread in Europe. With a restricted set of prepositions, especially those meaning ‘among’ and ‘between’, many languages allow anaphors to be used in reciprocal contexts, even though normally these languages distinguish between reflexive and reciprocal pronouns in PPs. In English and Dutch PPs headed by prepositions like *among(st)* are in fact the only contexts in which reflexive pronouns may have a reciprocal interpretation (cf. (32) and (33) respectively). The examples in (34)–(36) show that ‘collective reflexivity’ may also be expressed by elements that are otherwise incompatible with reciprocity in Italian, French, and Latin (on the interpretation of Latin *se*, cf. section 5.1).

- (32) English
They started chatting among themselves.
- (33) Dutch
Duitsland en Frankrijk verdeelden het land onder zich.
 Germany and France relocated the land among SE
 ‘Germany and France relocated the land among themselves.’
 (Modern Dutch; Jenny Audring, p.c.)
- (34) Italian
Cominciavano a chiacchierare fra sé. (Italian)
 begin.IMPF.3PL PREP chat between SE
 ‘They started chatting among themselves.’
- (35) French
Ils ont fait des bêtises entre eux. (French)
 they have done ART jokes between them
 ‘They joked among themselves.’
- (36) Latin
civitatēs inter sē fidem et iūsiūrandum dant. (Latin)
 tribes among SE loyalty and oath give
 ‘The tribes promise each other loyalty.’ (Rubenbauer and Hofmann 1989: 229)

We would like to argue that in the composition of the sentence meaning for cases like (32) – (36) the anaphors should indeed be analysed as expressing reflexivity. First note that the relevant prepositions (Latin *inter*, Italian *fra*, English *among*, *between* etc.) impose the following selectional restriction on their complements: they have to denote groups partitioned into two or more (possibly atomic) subsets. Hence, a preposition like *among* cannot take a singular complement, since its lexical meaning makes reference to a group with more than one entity. The preposition then establishes a relation between those subsets. As far as the meaning contribution of *sich* in those cases is concerned, we can now say that *sich* refers to the entire group as a reflexive, while the apparent reciprocal meaning component is contributed by the semantics of the preposition.

It is a consequence of this fact that those prepositions whose lexical meaning does not make reference to the internal structure of the set denoted by their complement are impossible in the construction at issue (cf. (37)a. vs. (37)b. and c.). We can conclude that instances of ‘collective reflexivity’ are not counter-examples to the generalization that German *sich* following a preposition cannot have a reciprocal interpretation.

- (37) a. *Die Spieler wollten unter sich bleiben.* (= (31))
 ‘The players wanted to remain among themselves.’

- b. ?? *Die Spieler wollten vor sich bleiben.*
 the players wanted before SE remain
 ‘?? The players wanted to remain before themselves.’
- c. ?? *Die Spieler wollten auf dem Foto hinter sich stehen.*
 the players wanted on the picture behind SE stand
 ‘?? On the picture, the players wanted to stand behind themselves.’

5 Historical development

In the light of the hypothesis made in (19) above a number of new questions arise. If it is true that there are two lexical entries of *sich* – one of them a reflexive marker, and the other one a middle marker with the *potential* of expressing reciprocity – we should try to determine how this situation has come about historically. Under the assumption that the observed asymmetry is the result of a formal and functional split in the historical development of a formerly monosemous pronominal element *sich*, there seem to be two options: first, *sich* may have formerly been used as a marker of both reflexivity and reciprocity without any major distributional restrictions, having lost the reciprocal readings in prepositional phrases (or, more generally, NP-positions). And second, it may have been used only as a marker of reflexivity at an earlier stage of development, so that the middle readings, including the reciprocal ones, are the result of an innovation. This innovation would then have been restricted to specific semantic or syntactic environments (direct and indirect object positions). These two possible developments are represented in (38):

(38) a. loss of reciprocal reading in PPs



b. adoption of reciprocal reading in direct and indirect object positions



The data that we have found suggest (38)b. as the correct answer. It seems that in all major Germanic and Romance languages the reflexive use of SE is older than the middle uses (including reciprocity). This is in accordance with the assumption frequently expressed in the relevant literature that a reflexive form is expected to develop middle meanings, while it is unexpected that a reciprocal marker should develop into a marker of reflexivity (e.g. Kemmer 1993, Heine 2000, Heine and Miyashita this volume). In the following we will present some data from Latin and earlier stages of Germanic that lend support to this assumption.

5.1 Reflexive and reciprocal readings of anaphors in Latin, Gothic and Old High German

The Classical Latin pronoun *se* was productively used as a marker of reflexivity, in both local and non-local contexts (‘indirect reflexivity’, i.e. long-distance bound occurrences of *se*; cf. Rubenbauer and Hofmann 1989: 229). A relevant example is given in (39)a. It could not, however, be used with a reciprocal meaning, at least not in written Classical Latin. Kühner (1976: 614f.) categorically excludes reciprocal readings of *se* for Classical Latin, but he points out that “popular speech does not always observe the strictly logical differentiations” (our translation, V.G. & F.H.). It seems, thus, that a semantic bleaching and distributional extension of *se*, which clearly manifests itself in Medieval Latin and the Romance languages,

had already been under way in spoken Classical Latin.¹³ In Classical texts, however, the generalization that *se* cannot have a reciprocal reading when standing by itself is very robust, and most if not all apparent counterexamples turn out to be instances of ‘collective reflexivity’ (cf. section 4.2). In fact, the collocation *inter se* ‘among themselves’ is a standard way of expressing reciprocity in Latin. A relevant example is given in (39)b.

(39) *Latin*

- a. *Lēgātī ad Caesarem vēnērunt ōrātum ut sibī ignōsceret.*
 delegates to Cesar came to.ask COMP ANPH forgive
 ‘The delegates came to Cesar in order to ask him to forgive them.’
 Rubenbauer and Hofmann (1989: 264)
- b. *Video eōs inter sē amāre.*
 I.see them among SE love
 ‘I see them loving each other’
 [Terence Ad. 5, 3, 42; cited in Baldi 1974: 22]

Just like Latin *se*, the Old High German reflexive pronoun *sih* was only rarely used as a marker of reciprocity, and most authors do not use it at all in that function. Among the very few attested reciprocal uses of *sih* is the one given in (40) (from Notker’s *Martianus Capella*, cf. Behaghel 1923: 306). Usually, reciprocity was expressed by the PP *untar in* ‘among them(selves)’ (cf. (42)), which was sometimes juxtaposed to *sih*. The ‘double PP’ *untar zwisgen sih* ‘under among ANPH’ is also found in this function. Again, both collocations are clearly instances of collective reflexivity. The reciprocal meaning of the whole construction does consequently not result from the (supposedly reciprocal) semantics of *sih*, but from the semantics of the whole PP. In addition to those collective reflexive constructions, there are also frequent occurrences of *ein...ander*, parallel to *one...another* in English (cf. (43), and the beautiful Early Modern German example in (44), which is given by Plank, this volume).

(40) Old High German

sie sih gehalset habetin.
 they ANPH hug have
 ‘They hugged (each other).’
 Behaghel (1923: 306)

- (41) *Fluahhonte sih nalles uuidar-fluahhan, uzzan meer uuihan.*
 cursing SE not back-curse but more bless
 ‘Not to curse those who curse us/*each other, but rather to bless them.’
 [Rule of Benedict 4, 10]

- (42) *int isuohenti untar in uuer iz uuarifon in uuer sulih tati.*
 and seek.PART underthem who it was of them who such did
 ‘...and seeking among themselves the one who of them did such a thing.’
 [Tatian, Gospel Harmony, 158,7]

- (43) *uuar unde gnada bechamen ein anderen.*
 verity and mercy met one another
 ‘Verity and mercy met each other.’
 Hänsel (1876: 28)

(44) Early Modern German

offt be-scheisz wir beide an-ein-ander
 often be-shit we both at-one-other
 ‘Often we cheat (be-shit) each other’
 Behaghel (1923: 410), quoted from Plank (this volume)

¹³ In some idiomatic combinations *se* displays the behaviour of a middle marker already in Classical Latin, e.g. in *se convertere* ‘to transform oneself’, but such uses were not productive.

In Wulfila's Bible translation, reciprocal uses of the Gothic anaphor *sik* are likewise virtually non-existent (cf. also Wright 1910: 189f.). Behaghel (1923: 306) mentions example (45) as a singular occurrence of reciprocal *sik*. Generally, reciprocity is expressed only in combination with the adverb *misso* 'reciprocally' (cf. (46)). A reflexive occurrence of *sik* is given in (47).

- (45) Gothic
gaqepun sis Judaieis...
 agreed ANPH.Jews...
 'The Jews had agreed (that)...'
 [John 9, 22]
- (46) *galeika sind barnam þaim in garunsai sitandam jah*
 equal are children art.dat in market place sit.part and
wopjandam seina misso jah qipandam.
 speaking SE reciprocally and saying
 'They are like children who sit in the market place and talk to each other and say:...'
- (47) *jah auk þai frawaurhtans þans frijondans sik frijond.*
 andalso the sinners the loving SE love
 'Even sinners love those who love them.'
 [Luke 6,32]

Even though the ban on reciprocal uses of Latin *se*, Old High German *sih* and Gothic *sik* may not have been completely categorical, such uses were certainly marginal at best in written language, though they may have been more widespread in spoken language. We take this as a piece of evidence pointing to the onset of desemanticization of the various SE-forms. It seems, thus, that the development sketched in (38)b. is basically correct.

As we will see below, there is still an important question concerning the development from reflexive marking to middle marking that needs to be addressed: Did reflexive *si(c)h* develop into a marker of reflexivity directly – was reflexive SE reanalysed as reciprocal SE – or was the development 'mediated' by a (very general) middle meaning? We will argue in the following that the second assumption is actually true, and that this fact is the key to an understanding of the distributional asymmetries described in section 2.

6 Towards an (historical) explanation of the asymmetries in the distribution of *sich*

On the basis of what has been said above we can now come back to the starting point of our paper, addressing once again the question of why there are no reciprocal uses of German *sich* in PPs. First of all, the asymmetry in question has been 'explained' by assuming two different lexical entries for *sich* that differ in terms of both distribution and meaning. This is summarised in (48):

- (48) There are no reciprocal uses of *sich* in PPs because...
- (i) PRONOMINAL *SICH* does not have the lexico-semantic potential to function as a marker of reciprocity, and
 - (ii) CLITIC *SICH* does not occur in prepositional phrases (is restricted to argument positions).

The assumption of two lexical entries for *sich* has been corroborated using synchronic (distributional) evidence in section 4. In Section 5, we have argued that the split in question is an innovation of modern Germanic and Romance languages, and that the reciprocal uses have been newly created, while at the same time the reflexive uses have been retained. However, a number of questions still remain open. First, we have claimed but not demonstrated that

clearly defined meanings can be assigned to the two lexical items under discussion (clitic and pronominal *sich*). This issue is raised in (49)a. Second, the assumption of a formal and functional split in the history of *sich*, and the question of why reciprocal readings have emerged in some environments but not in others, calls for a more detailed account of the historical processes leading to the formation of clitic *sich* (cf. (49)b.) In this context, we can also address the key question of why the relevant developments have taken place in direct and indirect object positions, but not in prepositional phrases (cf. (49)c.).

(49) Questions to be answered

- a. What is the lexico-semantic potential of pronominal and clitic *sich*?
- b. Under what circumstances has the development from pronominal to clitic *sich* taken place?
- c. Why has that process been restricted to specific syntactic environments? (Why can clitic *sich* not occur in the complement position of a PP?)

In what follows, we will address the questions in (49) in turn. First, we will give an account of the meaning of pronominal and clitic *sich* (section 6.1); second, we will describe the process of reanalysis that has given rise to the formal and functional split described above (section 6.2); and finally, we will explain why the process of reanalysis has been restricted to specific syntactic contexts (section 6.3).

6.1 The interpretation of pronominal and clitic *sich*

6.1.1 Pronominal *sich*: a bound variable

In keeping with traditional Binding Theory, pronominal *sich* can be analyzed as an expression of category NP that ‘stands for’ an entity of type *e* and that fills syntactic positions associated with semantic roles. It is ‘referentially dependent’ (cf. Reinhart and Reuland 1993: 658, Kiparsky 2002: 200), i.e. it cannot refer by itself and requires a syntactic binder (like NP-traces; cf. Reuland 2001). Under the hypothesis that subject positions are restrictor positions (e.g. Diesing 1992), the meaning of (50) can accordingly be represented as in (51). *Sich* is interpreted as a bound variable.¹⁴

(50) *Hans lacht über sich.*

John laughs at SE

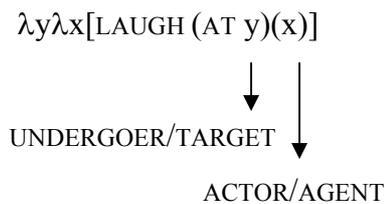
‘John laughs at himself.’

(51) for $x = \text{Hans}$: x laughs at x

(52) provides a representation of the argument structure of the (transitive) predicate *laugh*. Each of the two variables (x and y) is associated with a semantic (macro)role. If there is an anaphor in the complement position of the preposition *über*, the relevant predicate has the form given in (53). Here, both argument slots are associated with the same variable. However, it is crucial to see that there are still two (semantic) argument positions, and two semantic roles.

¹⁴ In our treatment of the interpretation of variables we follow Heim and Kratzer (1998: 92 ff.): „A variable denotes an individual, but only *relative to a choice of an assignment of a value*.“ If there is only one variable (here, x), an assignment can simply be regarded as an individual (some $x \in D_e$). If *sich* is interpreted as a bound variable, this means that for any assignment g , both variables will necessarily be identified with the same individual. Accordingly, a fully explicit formula would like the following: ‘For any assignment g in which x is mapped onto Hans, x laughs at x ’. For the sake of simplicity, we will simply write ‘for $x = \text{Hans}$: x laughs at x .’

(52) transitive predicate:



(53) $\lambda x [\text{LAUGH}(\text{AT } x)(x)]$



Abstracting away from the distinction between coreference and variable binding (cf. Reinhart 1983), *Hans lacht über sich* is basically equivalent to *Hans lacht über Hans*. Each occurrence of the variable x in (53) is associated with a distinct semantic role. In a (neo-)Davidsonian interpretation (50) can accordingly be paraphrased as follows: ‘There is an event of laughing in which John is the Actor (or Agent) and John is (also) the Undergoer (Target).’

The reason why pronominal *sich* cannot function as a marker of reciprocity was answered above by saying that it “does not have the lexico-semantic potential to function as a marker of reciprocity”. What does this mean? The crucial point is that *sich* cannot be interpreted as a marker of reciprocity *if it is interpreted as a bound variable* along the lines sketched above (for the notion of bound variable pronouns see Quine 1960; Hall Partee 1970; Evans 1980, later adopted by Chomskyan Binding Theory; cf. Reinhart 1983, Chomsky 1986). Consider (54) and the semantic representation given in (55):

(54) *Die Professoren lachen über sich.*
 the professors laugh at/about SE
 ‘The professors laugh at/about themselves/*each other.’

(55) for $x \in$ [[the professors]]: x laughs at x

Under the assumption that the predicate *laugh (at)* assigns two semantic roles, (55) can be paraphrased (in a neo-Davidsonian fashion) as follows: for any x , if x is in the set of professors, then x is the Actor in an event of laughing e , and x is (also) the Undergoer in e . This paraphrase does clearly not allow for a reciprocal interpretation. It says that every professor laughs at himself/herself. The same point can be made with regard to the (conjoined) plural subject in (56):

(56) *Hans und Maria lachen über sich.*
 John and Mary laugh at/about SE
 ‘John and Mary laugh at/about themselves/*each other.’

(56) has two readings: first, in a collective interpretation of the conjunction *und* it says that (the plural referent) John and Mary laugh(s) at (the plural referent) John and Mary, so there is only one (plural) Actor and one (plural) Undergoer. In the second (distributive) reading, *und* distributes over the VP, so (56) is equivalent to *John laughs at John and Mary laughs at Mary*. It should be emphasised that these two interpretations have nothing to do with the lexical meaning of *sich*; they are simply functions of the two possible interpretations of the conjunction *und*, which either distributes over the VP, or else forms a plural subject.

A reciprocal reading of (56) (‘John laughs at Mary und Mary laughs at John’) is not available because the type of ‘cross-distribution’ which is characteristic of reciprocity is not expressed in the sentence *Hans und Maria lachen über sich* as interpreted above. We

consequently come to the following conclusion: if (pronominal) *sich* is interpreted as a ‘referentially dependent anaphor’ in the sense of Reinhart and Reuland (1993), i.e. an element of category NP that is interpreted as a bound variable, it cannot function as a marker of reciprocity.

6.1.2 The interpretation of clitic *sich*: a middle marker

In this section we will argue that clitic *sich* is not an expression of category NP, but a valency-changing (quasi-derivational) element that indicates, in our terminology, ‘role-indifferent valency-reduction’. This basically amounts to saying that clitic *sich* is a (specific type of) *middle marker*. In the terminology of Kemmer (1993), it turns predicates describing two-participant situations into predicates describing one-participant situations (for a similar analysis, cf. Reinhart and Siloni to appear). Thus, clitic *sich* acts ‘detransitivizing’, in a (θ-)semantic sense of that word. Accordingly, ‘middle-marked verbs’ – i.e., verbs with clitic *sich* in the direct or indirect object position – assign only one semantic role. We argue that this role is maximally general and can be conceived of as a generalization over Actor and Undergoer in the tradition of Foley and van Valin (1984: 29) and Van Valin and LaPolla (1997: 141), and we will call it ‘Participant’. As will be seen, the Participant-role associated with middle-marked predicates is specified contextually, in interaction with the semantics of the verb it associates with (cf. Kaufmann 2004 on the interaction between middle marking and verb semantics).¹⁵ To illustrate with an example, consider the transitive sentence in (57). A neo-Davidsonian paraphrase of (57) is given in (58). The verb *verletzen* ‘hurt’ assigns two semantic roles, an Actor-role and an Undergoer-role. This is illustrated in (59).

(57) *Der Hans verletzt den Fritz.*
 DET Hans hurts DET Fred
 ‘Hans hurts/injures Fred.’

(58) ‘There is an occurrence (event) of bodily harm in which John is the Actor and Fred is the Undergoer.’

(59) *verletz-*: $\lambda y \lambda x [\text{HARM}(y)(x)]$
 $\downarrow \quad \downarrow$
 UNDERGOER
 \downarrow
 ACTOR

When clitic *sich* combines with *verletzen*, the resulting predicate becomes intransitive and, accordingly, describes a one-participant situation. It assigns only one semantic role, viz. the Participant-role. The middle-marked counterpart of (57) is given in (60). Again, a neo-Davidsonian paraphrase is given in (61). (62) provides the argument structure of the intransitivized verb *sich verletz-*.

(60) *Der Hans verletzt sich.*
 DET John hurts SE
 ‘John gets hurt.’

(61) ‘There is an occurrence (event) of bodily harm in which (only) John PARTICIPATES.’

(62) *sich verletz-*: $\lambda x [\text{HARM}(x)]$
 \downarrow
 PARTICIPANT

¹⁵ Like Kaufmann (2004), we take it that middle markers have a rather general meaning which is specified contextually. However, Kaufmann analyses the middle voice as indicating deviations from the canonical control patterns associated with a verb, while we regard the process of valency reduction as basic.

As has been mentioned, we take it that the Participant-role is specified contextually. In particular, it is interpreted *in accordance with the semantics of the relevant verb*. A ‘natural’ interpretation is, by default, induced. In the case of (60), the most natural interpretation is that John gets hurt, since an event of ‘bodily harm’ without an intentional Agent is conceivable, but not one without an Undergoer. If only John participates in such an event, it is consequently implied that he is the Undergoer. Note that we assume thematic roles to be assigned exhaustively by default, but not necessarily. This is why *only* is put in parentheses in (61). Moreover, it should be mentioned that there is, of course, a considerable degree of conventionalization in such combinations, which leads to the development of more specific lexical meanings. More relevant examples illustrating the operation of ‘role-indifferent valency reduction’ are given in (63) and (64).

(63) *Hans rasiert sich.*

John shaves SE

‘There is an event of shaving in which (only) John PARTICIPATES’

Natural interpretation: ‘John shaves’

(64) *Dieser Wein trinkt sich gut.*

this wine drinks SE well

‘This wine drinks well.’

’for all events e, if e is an event of drinking in which this wine PARTICIPATES, then e is generally a good event of drinking.’

(63) is most naturally interpreted as designating an event of John’s shaving himself. It is not only conceivable that John shaves himself (by default), it is also expected. In (64), the situation is different. Crucially, it is *not* conceivable that an event of drinking wine happens without there being an animate drinker, so the default case of exhaustive theta-role assignment is not available (‘there is an event of drinking in which only this wine participates’). Given that (64) describes a generic state of affairs, it is interpreted as a (quasi) universal quantification over events, not an episodic statement of a fact. The most natural interpretation is as indicated in the paraphrase given above: ‘Every event of drinking that wine is a good event of drinking.’ By way of conventionalization, this reading is lexicalized. Note that this analysis correctly predicts that such ‘facilitative’ middle situations always require an adjective or an adverb. Without the adverb *gut*, the sentence would be incomplete: ‘For all events of drinking in which this wine participates...’.¹⁶

It should be mentioned that the interpretation of *sich* in combination with middle-marked verbs is not only restricted by the semantics of the verb that *sich* combines with, but also by competing expressions like (non-reflexive) pronouns or generic ellipsis (cf. Gast and Hole 2003). Therefore, clitic *sich* often gives rise to relatively fixed meanings, not only as a result of conventionalization. For example, (65) is interpreted as ‘John gets angry’ not only because of exhaustive theta-role assignment by default, but also because the reading ‘John_i annoys him_j’ is blocked by the competing sentence in (66). Given that a fully explicit and ‘non-prolix’ sentence describing the state of affairs that ‘John annoys someone else’ is available, this interpretation is blocked for the (less explicit) sentence in (65).

(65) *Hans ärgert sich.*

John annoys SE

’John gets annoyed.’

¹⁶ As Daniel Hole has pointed out to us, our analysis overgenerates, since it predicts that a sentence like **Dieser Wein trinkt sich in Prag* should be possible. As was said above, we take it that middle marking is generally associated with a considerable degree of conventionalization and/or lexicalization.

- (66) *Hans ärgert ihn.*
 John annoys him
 'John annoys him.'

6.1.3 Middle marking in interaction with verb meanings

We can finally turn to the relevance of the analysis provided above for reciprocal readings of clitic *sich*. When clitic *sich* combines with so-called 'naturally reciprocal verbs' (Haiman 1983, Kemmer 1993), it gives rise to reciprocal readings of those verbs. Consider the examples in (67) and (68):

- (67) *Hans und Maria küssten sich.*
 John and Mary kissed SE
 'There was an event of kissing in which (only) John and Mary participated'
- (68) *Hans und Maria stritten sich.*
 John and Mary argued SE
 'There was an event of arguing in which (only) John and Mary participated.'

In both cases, the reciprocal reading is induced by default because 'role-indifferent valency reduction' delivers a verb which describes a situation of kissing or arguing in which (only) the subject referents participate. Any interpretation other than the reciprocal one is hard to imagine. This is why clitic *sich* has the *potential* to signal reciprocity: 'Role-indifferent valency-reduction' not only allows but even enforces reciprocal readings of the relevant predicates.

A similar effect can be observed when middle markers combine with 'typically other-directed predicates' (cf. König and Vezzosi 2004) that are not 'naturally reciprocal'. For example, actions of killing are not typically reciprocal. Yet, if a relevant verb combines with clitic *sich* and has a plural subject, the resulting sentence will typically be interpreted as describing a reciprocal eventuality.

- (69) *Eines Tages werden sie sich totschiagen.*
 one.GEN day.GEN will they SE slaughter
 'Someday they will slaughter each other.'

The most natural interpretation of (69) is reciprocal because it is very hard to conceive that the persons under discussion should slaughter themselves, which is the most prominent competing interpretation.

As a corollary of our analysis, clitic *sich* should not be called a 'reciprocal marker' in a narrow sense. It simply reduces the (semantic) valency of a transitive predicate, and the reciprocal interpretation of the whole sentences is a function of the predicate meaning in interaction with contextual information or world knowledge. Clitic *sich* produces a predicate with a very broad semantic potential, and contextual information selects for a reciprocal reading only if this is the default interpretation (cf. Creissels and Nougier-Voisin this volume).

6.2 Reanalysis: from anaphor to valency-marker

Having argued that pronominal *sich* does not have the potential to express reciprocity if it is interpreted as a bound variable, while clitic *sich* does have this potential because the process of 'role-indifferent valency reduction' allows and even induces reciprocal readings in combination with specific verbs, we now have to tackle the question of *how* pronominal *sich* was reanalyzed as a middle marker. This process is well studied and has been described, among others, by Kemmer (1993), Heine (2000) and Heine and Miyashita (this volume). Typical contexts for such a reanalysis are sentences in which transitive verbs denoting 'typically self-directed activities' (König and Vezzosi 2004) combine with a reflexive marker. Such two-participant situations can easily be reanalysed as one-participant situations because

the truth-conditions for both types of situations are identical, while the ‘conceptualizations’ (or ‘modes of presentation’, in Fregean terms) may differ. Consider the input structure in (70), with the source meaning given in (71). It can easily be reanalyzed as shown in (72) because *John washes John* and *There is an event of washing in which (only) John participates* are basically equivalent. The difference in the argument structure of transitive *wäscht* and intransitive *wäscht sich* is indicated by subscripts on the predicate WASH.

(70) INPUT	<i>Hans wäscht sich.</i> ‘John washes SE.’
(71) SOURCE meaning (pronominal <i>sich</i>)	for x = Hans: WASH _{TR} (x)(x)
(72) TARGET meaning (clitic <i>sich</i>)	for x = Hans: WASH _{ITR} (x)

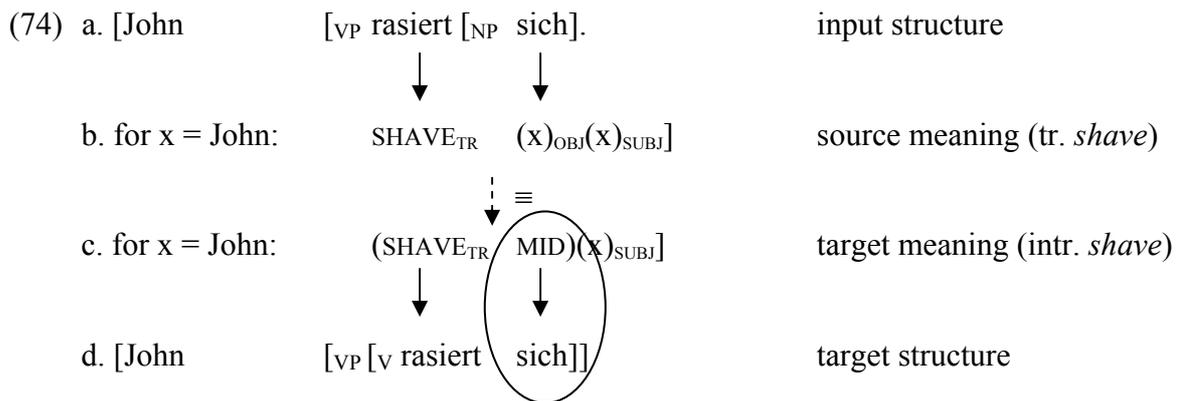
Once *sich* has been reanalyzed semantically as a diathetic operator of valency-reduction, it extends its distribution and can also be used in contexts with a non-reflexive semantics – a middle marker has been newly created. At the same time, it loses some of the properties typically associated with an argument status (cf. Section 4), as well as the ability to be stressed. Other aspects of its distribution, however – like its position within the Middle Field – are not immediately affected (cf. Section 4.1). We interpret this as an instance of ‘inertia’ in language change (cf. Keenan 2003).

6.3 Why has reanalysis been restricted to specific syntactic positions (direct and indirect objects)?

We have argued that the formal and functional split of *sich* into a (pronominal) marker of reflexivity and a (clitic) middle marker is responsible for the fact that *sich* in prepositional phrases cannot be interpreted as a reciprocal marker. The reason is that clitic *sich* is restricted distributionally and cannot take the complement position inside a PP. What consequently remains to be shown is the following: Why is it that reanalysis of *sich* as a middle marker has been restricted to argument positions? The answer to be given in this section is: If pronominal *sich* occurs in a prepositional phrase, reanalysis as a middle marker is syntactically blocked by the preposition. Therefore, middle readings of *sich* have failed to develop in prepositional phrases. In order to see this point, let us consider (73) as an input to a process of reanalysis like the one described above:

(73) <i>John vertraut auf sich.</i>
John relies on SE
‘John relies on himself.’

Let us assume that (73) is semantically reanalyzed as meaning ‘John is self-confident’. In order to preserve the verbal character of the predicate in (73), we will use the paraphrase (involving a made-up verb) ‘John self-confides’. In accordance with the analysis provided in section 6, (73) could thus be paraphrased as ‘There is a situation of confiding in which (only) John participates.’ Nothing seems to prevent this development. In a next step, however, we have to determine in how far this process of semantic reanalysis could manifest itself structurally. What meanings could be assigned to the constituents of the sentence *John vertraut auf sich*, in such a way that the target meaning ‘John self-confides’ could be associated with these constituents? How can we isolate a specific segment which would be associated with a newly created middle meaning? We have to be aware that spontaneous semantic reanalysis at the level of sentence interpretation does not have any repercussions on the interpretation of the elements of a sentence, or the language system as a whole, as long as it is not associated with the assignment of new meanings to the single components of the sentence. To illustrate with an example of ‘successful’ reanalysis of clitic *sich* in an argument position, take a look at (74).



The syntactic input *Hans rasiert sich* (cf. (74)a.) is mapped onto a semantic representation in which the two-place predicate *shave* takes two arguments (*Hans* and *sich*), and is interpreted as ‘for x = John: x shaves x’ (cf. (74)b.). This situation is truth-conditionally equivalent to a one-participant situation in which John is the only participant in an event of shaving, which is represented in (74)c. Semantically, this corresponds to the application of ‘role-indifferent valency reduction’, here represented as MID (for ‘middle’). This process of semantic reanalysis now needs to be associated with a concomitant process of syntactic reanalysis. The verb form *rasiert* is not reinterpreted, and it can still be regarded as denoting a two-place predicate; but the anaphor *sich* can now be reanalyzed as a valency marker which operates on *rasiert*. This aspect of the mapping from semantics to syntax in c. to d. (MID → *sich*) is highlighted because it is central to an understanding of why reanalysis of *sich* in the complement position of a PP is not possible. In what follows, we will aim to show that there is no way in which the intended target meaning of ‘role-indifferent valency reduction’, which is a crucial step in the reanalysis of a reflexive anaphor as a middle marker, could be mapped onto a corresponding syntactic structure for a sentence like (73) above. We will consider three scenarios in which reanalysis may appear to be possible, but is actually impossible.

First, we could imagine the following situation: the constituent *vertraut auf* (‘relies on’) is reanalyzed as a one-place predicate (‘self-confide’), and *sich* as a middle marker. The problem of this scenario is the following: if [*vertraut auf*] is reanalysed as an intransitive verb, we would expect to find a new verb in the lexicon of German – say, **vertrauenauf* or **vertrauauafen* – but this would not mean that *sich* can be interpreted as a middle marker within a prepositional phrase. Rather, the preposition would be reanalyzed as belonging to the verb in such a configuration, which would leave *sich* in the position of a direct object. This is illustrated in (75).

- (75) [*Hans* [_{VP} *vertraut* [_{PP} *auf sich*]]]
- [*Hans* [_{VP} [_V *vertraut*=*auf*] *sich*_{DO}]] (structural reanalysis)
- [*Hans* [_{VP} [_V *vertraut*=*auf*] *sich*_{MID}]] (reanalysis of *sich* as a middle marker)

It goes without saying that a process of reanalysis as sketched in (75) is highly improbable for several reasons. But even if the sentence in (73) were reanalysed as denoting a middle situation, this would not mean that *sich* could productively be used in other prepositional phrases, too. Again: what would be reanalysed in (75) is the string *vertraut auf*, not the pronoun *sich*.

In a second scenario, we could imagine that the whole prepositional phrase *auf sich* is reanalysed as a middle marker, which combines with the predicate *vertraut*. The problem here is obvious: if the prepositional phrase [*auf sich*] were reanalysed as a middle marker, this would not give rise to a middle marker *sich*, but to a middle marker **aufsich*, which would be restricted to verbs that take complements headed by the preposition *auf* (e.g. *bauen auf* ‘build (up)on’). This process, which is illustrated in (76), is certainly not particularly general in

nature. And, again, we would not generate a middle marker *sich* within a prepositional phrase; we would generate a middle marker **aufsich*, with a severe distributional restriction.

- (76) [Hans [VP vertraut [PP auf sich]]]
 → [Hans [V vertraut=*aufsich*_{MID}]]

Note, however, that this does not mean that a preposition and a (genuine) reciprocal pronoun may never be reanalysed as a new unit. In fact, such processes have taken place in German. For some combinations of a preposition and *einander* symptoms of lexicalization can be observed. Consider, for instance, the complex expressions *durcheinander* ('through' + 'one another') and *auseinander* ('from/off' + 'one another'). It seems that the sequence is not at all used in its literal sense anymore ('through each other', cf. (77)a.), but either adjectivally or adverbially with the meaning 'confused' or 'in a confused manner' (cf.(77)b.), or as a noun meaning 'chaos' (cf. (77)b.):

- (77) a. ?Die Wege im Schlosspark führen durcheinander.
 The paths in.the palace.grounds lead through.one another
 'The paths of the palace grounds cross each other.'
- b. Alle redeten durcheinander.
 all talked through.one another
 'Everybody talked in confusion'
- c. Am Ende gab es ein großes Durcheinander.
 at.the end gave it a big chaos
 'At the end there was a big chaos.'

Similarly *auseinander* 'from/off one another' shows signs of lexicalization. As an adverb modifying the verb *schreiben* 'write' in colloquial German it means 'as two words' (*Das schreibt man jetzt auseinander* 'This is now written as two words'), a meaning that is incompatible with the 'dynamic' component of the preposition *aus* (for more progressive developments in the Bavarian dialect of German see Plank, this volume).

What these cases show is that a preposition and a reciprocal pronoun can indeed be reanalysed as a unit. The important point that we would like to stress, however, is that the relevant meaning changes are necessarily restricted to a particular combination of preposition and reciprocal marker. Accordingly, such a change cannot give rise to a middle marker, which of course must not be limited to specific prepositions in its applicability. The above generalization – a process such as (76) could only generate middle markers with severe distributional restrictions – thus holds, and is even strengthened by cases such as *durcheinander* and *auseinander*, since they show meaning changes that are idiosyncratic to each case of lexicalization.

Returning to our possible scenarios of reanalysis, we could, as a third option, assume that *sich* is reanalysed as a middle marker, attached to the verb *vertraut*. This process is blocked for several reasons. First, in main clauses *vertrauen* and *sich* are not even adjacent:

- (78) [Hans [VP vertraut [PP auf sich]]]

But even if *vertraut* and *sich* are adjacent, as it happens in subordinate clauses, reanalysis of *sich* as a middle marker is not possible. The reason is that the complement position of the preposition would be empty in this case:

- (79) [weil Hans [VP[PP auf sich] vertraut]]
 → [weil Hans [PP auf ...] [V sich=*vertraut*]]

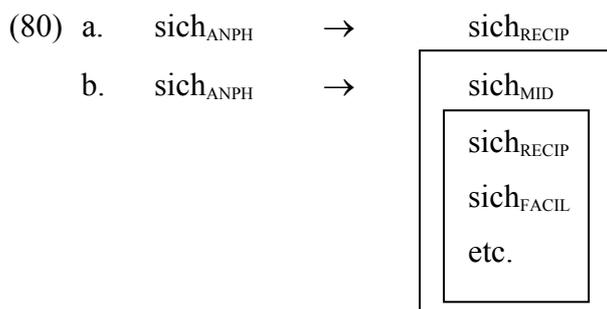
To summarise, reanalysis of *sich* as a middle marker in prepositional phrases is not possible because *sich* does not combine with the *verbal predicate*; it combines with the *preposition*, and the PP, in turn, combines with the verbal predicate as a whole. Therefore, only the prepositional phrase could, in principle, be reanalysed as a middle marker; but such contexts

are certainly not frequent enough to trigger structural reanalysis, and the resulting expressions would be of a crucially different kind from those found in the object position of a transitive verb.

It should be noted that the explanation given above does not primarily exclude the possibility of deriving *reciprocal* readings in prepositional phrases. Rather, it says that *middle* readings of *sich* cannot be generated in PPs by way of reanalysis. Since we have argued that reciprocal interpretations of *sich* are merely a special case of middle *sich*, however, our explanation applies to the absence of reciprocal readings in PPs as well.¹⁷

7 A look at Slavonic languages

So far we have made the following argument: middle-marking German *sich* is the result of a process of reanalysis which has originated in a bound variable reading of *sich*, in the position of a direct or indirect object. Structurally, *sich* has been reanalyzed as a valency operator which indicates middle marking or, in our terminology, ‘role-indifferent valency reduction’. Middle marking, in this sense, allows or triggers reciprocal readings of transitive predicates if such readings are compatible with, or invited by, the semantics of the relevant verb. A corollary of this analysis is that the historical process leading from reflexive marking to reciprocal marking has been mediated by reanalysis of *sich* as a middle marker. In other words, we take it that the process leading from reflexive to reciprocal *sich* was not as in (80)a. but as in (80)b. Reciprocity is only one of several sub-meanings of middle-marking *sich*.



Should we exclude the grammaticalization path shown in (80)a. then? The answer is clearly *No!* While the distribution and meaning of *sich* in German suggests the development shown in (80)a., the ‘direct’ reanalysis of a reflexive anaphor as a reciprocal marker is clearly also possible (cf. Heine 2000, Heine and Miyashita, this volume for a number of striking examples). However, it is of a crucially different nature from the type of reanalysis sketched above (reflexive \rightarrow middle). As we will try to show below, it takes place in a different type of context, and it gives rise to reciprocal markers with a completely different distribution, and with crucially different patterns of polysemy.

The development sketched in (80)a. can be assumed to account for the distribution and interpretation of specific anaphors in some Slavonic languages. Unlike the anaphors of the Germanic and Romance languages described above, those of Czech and (some varieties of)

¹⁷ Heine and Miyashita (this volume) propose an explanation for the distributional restrictions of reciprocal *sich* in terms of grammaticalization theory and the notion of context extension. They claim that the new reciprocal meaning expressed by *sich* arose in a specific context and is only gradually extended to new contexts. In this way the direct object position of transitive verbs is the first syntactic context in which a reciprocal interpretation, i.e. one of “the more grammaticalized use patterns” (Heine and Miyashita, this volume:[23]) of *sich* became possible. The position of a PP complement, like those of coordinated and topicalized NPs, are then taken to be syntactic contexts to which the new meaning has not yet been extended. This scenario is not incompatible with the one proposed in the present paper, but we think that it fails to capture the fact that all contexts from which reciprocal *sich* is excluded have one thing in common: They are argument positions with potential stress. Heine and Miyashita’s account would not theoretically exclude a situation in which reflexive *sich* were first reinterpreted in PPs.

Polish do have reciprocal readings when occurring in a PP. Relevant examples are given in (81) and (82).

(81) Czech¹⁸

- a. *vědi* *o* *sobě*.
 they.know about ANPH
 'They know about each other.'
- b. *stojíme* *vedle* *sebe*.
 we.stand next ANPH
 'We stand next to each other.'

(82) Polish (Rothstein 1993: 745-746)

- a. *Przekonałem* *ich*, *że* *nic* *nie* *wiedzą* *o* *sobie*.
 convinced.SG.M them that nothing not know about ANPH
 'I convinced them that they don't know anything about each other/themselves.'
- b. *Ciągle* *myślą* *o* *sobie*.
 always they.think about ANPH
 'They're always thinking about themselves/one another.'

In addition to their reciprocal function exemplified in (81) and (82), the full anaphors of Czech and Polish are used only in reflexive contexts. Beside these full anaphors, both Czech and Polish also have light forms corresponding to *sebe* and *siebie* respectively, viz. *se* and *się*. These clitics have a semantics very similar to Spanish *se*, Italian *si* and clitic *sich* in German, i.e. they are basically middle markers. The full anaphors *sebe* and *siebie*, however, do not have middle uses. Wiemer (1999: 302f.) notices that “[b]y and large, *się* in lexical kinds of recessive diathesis [valency reduction, VG & FH] cannot be replaced by *siebie*.”

If we compare the full and clitic SE-forms of Czech and Polish to the corresponding Germanic and Romance forms, the following picture emerges: First, all languages have clitics that are used as middle markers; second, all languages have full anaphors that are used as reflexive markers. Consequently, the development in (80)b. above seems to have taken place in all languages under consideration (note that the Czech and Polish clitics are both used in reciprocal contexts, too). The difference between Czech and Polish on the one hand, and the other languages mentioned above on the other, is that an *additional* process of reanalysis has taken place in the former, but not in the latter, languages: The anaphors *sebe* and *siebie* have been reanalyzed directly as markers of reciprocity, too, without a ‘mediating’ middle meaning. This kind of reanalysis is crucially different from the one assumed for German above for two reasons. First, it has, in all likelihood, taken place in other types of contexts; and second, it has given rise to ‘genuine’ reciprocal markers, rather than middle markers with the potential to express reciprocity.

Unfortunately, we cannot offer any relevant historical data confirming the type of development postulated above. Reciprocal uses of *sebe* are already attested in Old Church Slavonic, so an empirical assessment of the actual historical processes seems to be outside the scope of observation. We conjecture, however, that the relevant process of reanalysis could have taken place in either of two scenarios. First, reciprocal readings of heavy anaphors may have developed in the context of collective plural nouns. A relevant example is given in (83).

(83) *The family was proud of itself.*

In a literal interpretation, (83) can be understood as ‘[The family]_i is proud of [the family]_i’. But given that the EXPERIENCER of pride is usually an individual rather than a group, while the group is the THEME in such predications, a sentence like (83) will most naturally be understood as ‘The family members were proud of the family’. This reading, in turn, seems to

¹⁸ We thank Martin Haspelmath (p.c.) for drawing our attention to Czech. The examples are from Sven Siegmund.

suggest (though not necessarily entail) that ‘All family members were proud of all family members’, i.e. everybody was proud of every other family member, which corresponds to a ‘strong reciprocity’-reading (‘The family members were proud of each other’).

The second possible bridging context between reflexives and reciprocals may be instantiated in what we have called ‘collective reflexivity’. Remember the English example in (32) above, which is here repeated for convenience:

(84) *They started chatting among themselves.*

It is conceivable that collective reflexivity is reinterpreted as (genuine) reciprocity, and that this meaning is attributed to the element complementing the preposition (the anaphor), rather than the preposition itself. As has been mentioned, collective reflexivity is taken to be the most important ‘interface’ between reflexivity and reciprocity by Heine and Miyashita (this volume). We believe, too, that it is an important aspect of the development of reciprocal markers, but we claim that it is not what has happened in German (cf. footnote 17).

If one of the two scenarios sketched above is feasible (or maybe both of them), we would have a way of relating reflexivity and reciprocity directly to one another. This, of course, remains a conjecture at this point. Still, the hypothesis that reciprocal readings of Czech *sebe* and Polish *siebie* in PPs have resulted from ‘direct’ reanalysis of both items as reciprocal markers, rather than from previous reanalysis as a middle marker, seems highly plausible to us. Moreover, we would like to point out that the development as assumed above (reflexive → reciprocal) would be predicted to be relatively infrequent, simply because the relevant configurations are rare in actual discourse. This could be taken as a possible explanation for the fact that reflexive → reciprocal reanalysis has taken place in Czech and (certain varieties of) Polish, but neither in most other Slavonic languages, nor in Germanic or Romance.

8 Conclusion: different developments, different language types

We have argued that the distribution and interpretation of anaphors in Romance and Slavic languages can be explained on the basis of the historical development of the relevant markers, and we have pointed out that there are two crucially different (and possibly completely unrelated) developments: (i) reanalysis of a reflexive marker as a middle marker, and (ii) reanalysis of a reflexive marker as a reciprocal marker. In order to account for the differences between the language types distinguished above – say, the German type versus the Czech type – we consequently have to make a distinction between two different aspects relating to the occurrence or non-occurrence of specific historical developments. First, there are *possible* developments on the one hand and *impossible* ones on the other. And second, we have to consider whether the possible developments have actually taken place. As we have shown, an anaphor in the object position of a verb *can* be reanalysed as a middle marker. This process seems to be of considerable generality. By contrast, we have argued that reanalysis of an anaphor as a middle marker in the complement position of a preposition is *not* possible. These facts can be regarded as being more or less ‘universal’ in nature. Finally, we have claimed that the direct reanalysis of a reflexive marker as a marker of reciprocity is also possible, though obviously much less probable. This process simply has not taken place in Germanic and Romance languages, which is not to say that it *may* not have taken place. These considerations are summarized in Diagram 1.

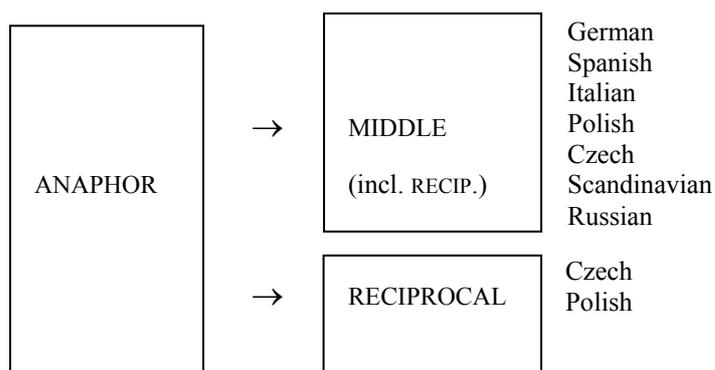


Diagram 1 Historical developments in Germanic, Romance and Slavonic

9 References

- Baldi, Philip (1975). Reciprocal verbs and symmetric predicates. *Linguistische Berichte* 36: 13-20.
- Bech, Gunnar (1955/57). *Studien ueber das deutsche verbum infinitum*. København (Det Kongelige Danske Videnskabernes Selskabs. Historisk-filologiske Meddelelser 35, No.2, 1955.36. No.6, 1957).
- Behaghel, Otto (1923). *Deutsche Syntax. Eine geschichtliche Darstellung. Band 1: Die Wortklassen und Wortformen. A. Nomen, Pronomen*. Heidelberg: Winter.
- Bergeton, Uffe (2004). The Independence of Binding and Intensification. *PhD Thesis*, University of Southern California.
- Chomsky, Noam (1986). *Knowledge of Language. Its Nature, Origin and Use*. New York: Praeger.
- Cranmer, David J. (1975). Derived intransitivity, and German reflexive verbs and valence. *Leuvense Bijdragen* 64: 129-150.
- Dreissels, Denis and Sylvie Nougouier-Voisin (this volume). Valency-changing operations in Wolof and the notion of co-participation.
- Diesing, Molly (1992). *Indefinites*. Cambridge, Mass.: MIT Press.
- Eisenberg, Peter (1994). *Grundriss der Deutschen Grammatik*. Stuttgart: Metzler.
- Evans, Gareth (1980). Pronouns. *Linguistic Inquiry* 11: 337-362.
- Faarlund, Jan Teerje (2004) *The Syntax of Old Norse – With a Survey of the Inflectional Morphology and a Complete Bibliography*. Oxford: Oxford University Press.
- Foley, William and Robert D. van Valin (1984). *Functional Syntax and Universal Grammar*. Cambridge: Cambridge University Press.
- Gast, Volker and Daniel Hole (2003). On paradigmatic (in)coherence in Romance and Germanic reflexives. In Gunkel, L., G. Müller and G. Zifonun (eds.), *Arbeiten zur Reflexivierung*, 75-89. Tübingen: Niemeyer.
- Haiman, John (1983). Iconic and economic motivation. *Language* 59:781-819.
- Hajičová, Eva, Petr Sgall and Barbara Partee (eds.) (1989). *Topic-Focus Articulation, Tripartite Structures, and Semantic Content*. Dordrecht: Kluwer.
- Hall Partee, Barbara (1970). Opacity, coreference, and pronouns. *Synthese* 21: 359-385.
- Hänsel, Otto Hugo (1876). Über den Gebrauch der Pronomina reflexiva bei Notker. *Dissertation*. Halle an der Saale.
- Heine, Bernd (2000). Polysemy involving reflexive and reciprocal markers in African languages. In Frajzyngier, Zygmunt and Tracy S. Curl (eds.), 1-29. *Reciprocals: forms and functions*. Amsterdam: Benjamins.
- Heine, Bernd and Hiroyuki Miyashita (this volume). The intersection between reflexives and reciprocals: a grammaticalization perspective.

- Holmes, Philip and Ian Hincliffe (1994). *Swedish: A Comprehensive Grammar*. London: Routledge.
- Jones, Walton Glyn and Kirsten Gade (1992). *Danish: A Grammar*. 5th ed. Copenhagen: Gyldendal.
- Kaufmann, Ingrid (2004). *Medium und Reflexiv – Eine Studie zur Verbsemantik*. Niemeyer, Tübingen (Linguistische Arbeiten 489).
- Keenan, Edward L. (2003) An Historical Explanation of Some Binding Thoretical Facts in English. In Moore, John and Maria Polinsky (eds.), 152-189. *The Nature of Explanation in Linguistic Theory*. Stanford: CSLI Publications.
- Kemmer, Suzanne (1993). *The Middle Voice*. Amsterdam: Benjamins.
- Kiparsky, Paul (2002). Disjoint reference and the typology of pronouns. In Kaufmann, Ingrid and Barbara Stiebels (eds.), *More than Words – A Festschrift for Dieter Wunderlich*, 179-226. Berlin: Akademie Verlag.
- König, Ekkehard and Peter Siemund (2000). The development of complex reflexives and intensifiers in English. *Diachronica* 17/1: 39-84.
- König, Ekkehard and Letizia Vezzosi (2004). The role of predicate meaning in the development of reflexivity. In Bisang, Walter, Nikolaus P. Himmelmann and Björn Wiemer (eds.), *What Makes Grammaticalization: A look from its fringes and its components*, 213-244. Berlin: Walter de Gruyter.
- Kühner, R. (1976). *Ausführliche Grammatik der Lateinischen Sprache*. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Plank, Frans (this volume). Thoughts on the origin, progress, and pro status of reciprocal forms in Germanic, occasioned by those of Bavarian.
- Quine, Willard Van Orman (1960). *Word and Object*. Cambridge, Mass.: The MIT Press.
- Reinhart, Tanya (1983). *Anaphora and Semantic Interpretation*. London: Croom Helm.
- Reinhart, Tanya and Eric Reuland (1993). Reflexivity. *Linguistic Inquiry* 32: 439-492.
- Reinhart, Tanya and Tal Sioni (to appear). Thematic arity operations and parametric variations. *Linguistic Inquiry*.
- Reuland, Eric (2001). Primitives of Binding. *Linguistic Inquiry* 32.3: 439-92.
- Rothstein, R. A. (1993). Polish. In Comrie, Bernard. and Greville G. Corbett (eds.), *The Slavonic Languages*, 686-757. London and New York: Routledge.
- Rubensbauer, Hans and J.B. Hofmann (1989). *Lateinische Grammatik*. Bamberg: C.C. Buchners Verlag.
- Safir, Kenneth J. (2004). *The syntax of anaphora*. Oxford: Oxford University Press.
- Starke, Günter (1992). Zum sprachlichen Ausdruck reziproker Verhältnisse. *DaF* 29, 225-29.
- Stötzel, Georg (1970). Ausdrucksseite und Inhaltsseite der Sprache: Methodenkritische Studien am Beispiel der deutschen Reflexivverben. München: Hüber.
- Thráinsson, Höskuldur (1994). Icelandic. In König, Ekkehard and Johan van der Auwera (eds.), *The Germanic Languages*, 142-189. London: Routledge.
- van Valin, Robert D. (1993). A synopsis of Role and Reference Grammar. In van Valin, Robert D. (ed.) *Advances in Role and Reference Grammar*, 1-166. Amsterdam: Benjamins.
- van Valin, Robert D. and Randy J. LaPolla (1997). *Syntax: Structure, Meaning and Function*. Cambridge: Cambridge University Press.
- Wiemer, Björn (1999). The light and the heavy form of the Polish reflexive pronoun and their role in diathesis. In: Böttger, K., M. Giger and B. Wiemer (eds.). *Beiträge der Europäischen Slavistischen Linguistik (POLYSLAV)* 2, 300-313. München: Sagner.
- Wright, Joseph (1910). *Grammar of the Gothic Language*. Oxford: Clarendon Press.
- Zifonun, Gisela, Ludger Hoffmann, Bruno Strecker et al. (1997). *Grammatik der Deutschen Sprach, Band 2*. Berlin: de Gruyter.