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SPECIAL ISSUE

Ditransitivity

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Introduction

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1. Background to this special issue: past and present interest in ditransitive constructions

Of the three major transitivity types, intransitive, transitive and ditransitive, ditransitive constructions, understood as involving a verb which requires three obligatory arguments, an Agent, Theme and Recipient/Beneficiary, are the most complex, structurally, semantically and pragmatically. They are also less common than either transitive or intransitive constructions within languages, as well as across languages. Languages always have far fewer ditransitive verbs than transitive or intransitive ones. In fact many languages have only a handful of ditransitive verbs, some only one corresponding to *give*. There are even languages which are seen to lack ditransitive verbs altogether, ditransitive meanings being expressed via serial verb constructions. Two cases in point are Maybrat, a Papuan language of Irian Jaya (Dol 1999:82, 164) and Labu, an Austronesian language of Papua New Guinea (Siegel 1984:97, 117). Arguably as a consequence of the above, ditransitive constructions are relatively under-investigated as compared to both intransitive and transitive ones. While the last decades have seen many publications on various aspects of ditransitive constructions, in the formal literature (e.g. Marantz 1984; Larson 1988; Bresnan & Moshi 1990; den Dikken 1995; Collins and Thráinsson 1996; McCawley 1998: 169, 318), the functional-typological literature (e.g. Plank 1984; Dryer 1986; Newman 1997; Polinsky 1998; Siewierska 1998; Haspelmath 2004), and in cognitive linguistics (e.g. Goldberg 1992, 1995, 2002; Croft 2003), there is still much about the form and function of these constructions, their syntactic properties, cross-linguistic realizations, diachronic development and mental representation that needs to be explored.

This special issue seeks to fill in some of the gaps in our knowledge of ditransitive constructions by providing seven articles dealing with synchronic and diachronic facets of these constructions in a variety of languages. All seven articles

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are firmly couched in the functional-cognitive approach to language analysis and as such are concerned not solely with matters of structure but rather with how structure interacts — and is motivated by — semantic-pragmatic and cognitive factors. Special attention is devoted by several of the contributors to the impact of frequency on the structure of ditransitive constructions (see the articles by Gast, Haspelmath, Hollmann, Siewierska & Bakker) as conceived of within the usage-based model of language (Barlow & Kemmer 2000; Bybee 1985; Bybee & Hopper 2001; Croft 2000; Langacker 1987). Frequency is also seen to bear on the diachrony of ditransitive constructions, different aspects of which are studied within all the contributions, albeit implicitly in one case (Kittilä).

The origins of this special issue lie in a workshop on ditransitives, organised by the authors of this introduction at the 6th Biennial Meeting of the Association for Linguistic Typology, 21–25 July 2005 in Padang, Indonesia. Not surprisingly therefore, all the articles aim to offer a typological perspective, although the means of achieving this range from carrying out fairly narrow language-internal or language-family internal analyses (see Barðdal, Gast, Hollmann and Song) to broad typological surveys (see Haspelmath, Kittilä and Siewierska & Bakker). It needs to be emphasized that the concern with cross-linguistic validity is not only due to the focus of the conference where most of the articles were first presented, but reflects the authors' conviction that such a broad, functional-typological perspective may help explain issues in a way that a purely language-internal investigation never could.

2. The studies in this issue

Jóhanna Barðdal's study, 'The semantic and lexical range of the ditransitive construction in the history of (North) Germanic' looks at present-day and historical data from Icelandic, archaic Swedish and Norwegian dialects, English and German. The author offers a detailed comparison of these cognate languages in terms of the lexical semantics of the predicates that may occur in the ditransitive construction with a Dative Recipient/Benefactive and an Accusative Theme. This comparison allows her to reconstruct the semantic structure of the construction in the common Germanic proto-language. In so doing she makes use of the semantic map model, which is increasingly popular in cognitive functional-typological linguistics (Croft 2001, Haspelmath 2003).

Volker Gast's article, entitled '*I gave it him* — on the motivation of the "alternative double object construction" in varieties of British English', continues the diachronic and Germanic themes. It focuses on the origin of the English double-object construction with the Theme preceding the Recipient — a non-canonical

order which is available in some dialects, especially if both objects are pronouns. This non-canonical order is traced back to Old English and is explained with reference to the frequency of the pattern <finite verb + accusative pronoun> as against <finite verb + dative pronoun>. The former pattern is more frequent because most transitive clauses are monotransitive, and monotransitive objects are more commonly realised as accusatives than as datives. Gast further shows that the stylistic principle of end weight is likewise found to favour the pronominal Theme-Recipient order. His explanation of the English facts is supported by the fact that in German, a V2 language just like Old English, the same syntactic and 'pattern frequency' circumstances obtain — and the same Theme-Recipient pattern is found.

In 'From language-specific constraints to implicational universals: a cognitive-typological view of the dative alternation', Willem Hollmann asks whether the possibility of a verb occurring in the double-object, as opposed to prepositional, construction can be predicted. This issue has of course been discussed before, but Hollmann argues that the answers traditionally given tend to work well only for one language and are too specific to be applicable across languages (that is, languages that have the alternation). Observing a parallel between the semantics-pragmatics of dative and passive constructions, and drawing on Croft's (2001) insight that typological universals may be discovered by careful intralinguistic analysis, the author analyses a corpus of English active vs. passive ditransitive constructions. He finds that some semantic parameters that have been suggested in previous scholarship (e.g. volitionality of the Agent) do indeed play a role in passivisability — and therefore dativisability — while others (e.g. volitionality of the Recipient) do not. In addition, observing that the double-object construction is more compact than the prepositional variant, he suggests that a high token frequency may also contribute to a verb's dativisability, which has not been suggested elsewhere. The latter suggestion constitutes a clear theoretical bridge with the article by Gast and further contributions to this issue that consider effects of frequency.

Martin Haspelmath's 'Ditransitive alignment splits and inverse alignment' is the most outspokenly frequency-driven article included here. Taking as a point of departure the classification of basic ditransitive alignment patterns into the indirective, neutral and secundative alignment types (Haspelmath 2004), the author sets out to account for split alignment (differential marking of the Recipient and the Theme) and for inverse alignment patterns (person-role and pronoun-full NP inverses). Competing patterns, in languages where there is this kind of variation, are analysed in terms of differing degrees of coding complexity, and it is shown how, in all cases, the more frequent patterns (e.g. human Recipients in ditransitive constructions) receive less coding than less frequent patterns (e.g. non-specific inanimate Recipients in ditransitives). The underlying motivation for this, the author

argues, is that they are more expected. Haspelmath uses his findings as a vehicle for the argument that the functional-typological approach has important merits compared to formalist theories, in that for example the claims are in principle far more easily falsifiable, as the analysis is entirely based on the real ('surface') data, i.e. they do not presuppose a belief in 'deep' levels.

Anna Siewierska and Dik Bakker's article 'Bound person forms in ditransitive clauses revisited' addresses the issue of the order of bound (affixal and clitic) Themes and Recipients relative to each other. In particular it argues that contrary to what has been claimed recently by Gensler (2003), quite successful predictions can be made in relation to the order of bound themes and recipients if due consideration is given to the nature of the ditransitive alignment in the sense of Haspelmath (2004). On the basis of a cross-linguistic sample they show that the Recipient argument is placed closer to the verbal stem than the Theme in all alignment types except for the indirective type, where the reverse obtains. These patterns are explained in terms of the discourse frequency of the relevant <verb + person form> sequences: the more frequent combinations grammaticalise, i.e. essentially become fixed. Depending on one's interpretation of the cross-linguistic data Siewierska and Bakker achieve a correct prediction rate of around 80 per cent — a considerable improvement on previous accounts. On a more general, theoretical level, Siewierska and Bakker raise the question of the lack of accounts of the ordering of bound forms in ditransitive clauses within the formal paradigm. They are somewhat sceptical about the possibility of providing a UG analysis involving specifier-head agreement, as is typically assumed for person affixes within the Chomskyan framework (see e.g. Culicover 1997: 29 or Adger 2003) or structurally defined scope relations, as in Rice (2000). This is reminiscent of Haspelmath's point that functional-typological linguistic theory compares favourably with formalist models in accounting for cross-linguistic variation.

The last two papers in this issue, by Jae Jung Song and Seppo Kittilä, focus on the Recipient argument. Song's 'Getting three out of two: The development of a three-participant construction in Oceanic languages' continues the grammaticalisation thread of preceding contributions. He demonstrates how possessive classifiers in Oceanic languages have been pressed into service for Recipient/Benefactive marking. In this way three-participant constructions have emerged out of two-participant ones. As the author recognises, whether these three-participant constructions qualify as "proper" ditransitives depends on one's definition of the latter: on a purely syntactic definition they would not, but on the semantically based view of e.g. Haspelmath (2005) they would. The major theoretical point of Song's contribution, however, is not to engage in the debate over the definition of these constructions, but instead concerns grammaticalisation theory. In line with what several decades of research on grammaticalisation would lead one to expect, the process in question started out as a pragmatic inference and features word order change, generalisation and specialisation. Interestingly, however, the development in one respect runs counter to the theory: whereas grammaticalising expressions are normally said to decrease in terms of their structural scope (Hopper & Traugott 1993: 130, Lehmann 1995[1982]: 143) the possessive classifier > Recipient/Benefactive marker change in Oceanic involves structural scope *increase*.

The starting point of Kittilä's 'On the encoding of transitivity-related features on the indirect object' is the observation that transitivity effects on objects are normally only studied in relation to direct not indirect objects. The most well-known study in this regard is probably Hopper and Thompson (1980). Their multifaceted semantic conception of transitivity is adopted by Kittilä, but applied to indirect objects. Contra Blansitt (1988) — an exception to the generalisation that transitivity effects have not been studied with regard to indirect objects — Kittilä finds that there are languages that do show an indirect object coding effect of the aspectual contour of the transfer event, the definiteness of the Recipient/Benefactive, and some other semantic factors of transitivity identified by Hopper and Thompson (1980) and other functional-typological studies. The author goes on to argue that it is only natural that these semantic features should affect indirect, as opposed to direct, object encoding: in languages that feature a given coding distinction (say, between completed and non-completed events), the nature of the indirect object argument is generally much more relevant to this feature than the direct object (an event is seen as completed when the Theme reaches the Recipient's sphere of control).

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The semantic and lexical range of the ditransitive construction in the history of (North) Germanic

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Current analyses of the semantic structure of the ditransitive construction in English assume that the construction consists of approximately nine semantic subconstructions, namely those of actual, intended, retained and metaphorical transfer (and some corresponding subconstructions). An examination of the ditransitive construction in Icelandic reveals at least seventeen subconstructions in that language. In addition to most of the subconstructions found in English, the ones in Icelandic also denote transfer along a path, possession, utilizing, enabling, hindrance, constraining and mental activities. An investigation of the ditransitive construction in the most archaic Swedish and Norwegian dialects reveals a significant overlap with Icelandic, but also some overlap with English and German. This comparative evidence permits a reconstruction of the semantic structure of the ditransitive construction common to the Germanic language area.

1. Introduction

A semantic analysis of the ditransitive Dat–Acc construction in Modern Icelandic reveals that the lexical scope of the construction is much wider than in, for instance, Modern English.* In addition to verbs denoting actual, intended, retained and metaphorical transfer, verbs of transfer along a path, verbs of possession, utilizing, enabling, hindrance, constraining and verbs denoting mental activities are also instantiated by the ditransitive construction in Icelandic. At the same time, the Icelandic ditransitive construction can only to a limited degree be instantiated by verbs of creation and obtaining, as opposed to English and Mainland Scandinavian. Moreover, verbs of ballistic motion cannot occur at all in the ditransitive construction in the standard North Germanic languages, in contrast to English and German, only in some dialects. Hence, even though the ditransitive construction

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in English is much lower in type frequency than the ditransitive construction in Icelandic, it is still not a proper subset of the ditransitive construction in Icelandic, as the overlap is only partial.

This raises the question of whether the lexical and the semantic range of the ditransitive construction has expanded in the history of Icelandic but contracted in the other Germanic and North Germanic languages, or whether the facts of the present-day languages reflect differences that already existed before the beginning of recorded history. A comparison between text corpora from two different periods of Icelandic reveals that there is a substantial reduction of 42 percent in the type frequency of the ditransitive construction from Old Norse-Icelandic to Modern Icelandic, and its text frequency has gone down correspondingly. This decrease in the use of the ditransitive construction in Icelandic is concomitant with an emerging restriction on the indirect object of verbs of creation and obtaining that it be reflexive. A similar decrease in the use and the frequency of the ditransitive construction has also been documented in Dutch. A comparison with the most archaic Swedish and Norwegian dialects reveals a large semantic overlap between the subconstructions of the ditransitive construction in these variants, except for the existence of the subconstruction of ballistic motion, found in Överkalix, one of Sweden's most archaic dialects. A comparison with other Germanic languages and dialects reveals that all the subconstructions in Icelandic are shared across some of the Germanic languages, so that a common semantic structure for the ditransitive Dat–Acc construction can be reconstructed for Germanic. This reconstruction excludes the subconstruction of ballistic motion, as facts of case marking support the hypothesis that it is a later development in English, German and Överkalix.

In Section 2 I present an analysis of the semantic and lexical range of the ditransitive Dat–Acc construction in Icelandic, discuss constraints on the construction found in language use, and compare its frequency in Modern Icelandic texts with Old Norse-Icelandic texts. In Section 3 I compare the Icelandic data with data from Swedish and Norwegian dialects. Finally, in Section 4 I reconstruct a semantic space for the ditransitive construction in Germanic, based on the semantic and lexical distribution of the construction in the daughter languages. Section 5 summarizes the content and the conclusions of this article.

2. The ditransitive construction in Icelandic

As is well known from the literature on case and ditransitives, there are five different case frames associated with the ditransitive construction in Icelandic, namely Dat–Acc, Dat–Dat, Acc–Dat, Acc–Gen and Dat–Gen (cf. Zaenen, Maling and Thráinsson 1985, Yip, Maling and Jackendoff 1987, Ottósson 1991, Holmberg and

Platzack 1995, Jónsson 2000, Maling 2002). Of these, the Dat–Acc is highest in type frequency with approximately 150 predicates, while the others are instantiated by 5–14 predicates each.[1] Due to space limitations, I will confine the present lexical and semantic analysis to the high type frequency Dat–Acc construction in Icelandic.

It has been assumed for English that the ditransitive construction is more or less associated with transfer, i.e. with verbs inherently denoting transfer, as well as intended, retained, metaphorical or future transfer (cf. Goldberg 1995, Croft 2003). In Icelandic, however, the lexical and semantic range of the ditransitive construction stretches far beyond the scope of transfer, although transfer verbs make up a substantial part of the verb classes instantiating the ditransitive construction. In addition to transfer verbs, verbs denoting possession, enabling, hindrance, utilizing, constraining, and mental activities are also found in the ditransitive construction in Icelandic. The following seventeen narrowly-defined verb classes can be discerned, of which only nine coincide with the ones assumed for English (Pinker 1989: 110–123, Goldberg 1995: 126, Croft 2003):[2]

1. Verbs denoting (prolonged) possession/owning: *eiga sér e-ð* 'have sth', *geyma sér e-ð* 'save sth for oneself', *treina sér e-ð* 'eke sth out for oneself', *spara sér e-ð* 'save sth for oneself', etc.
2. Verbs inherently denoting giving or delivering: *afhenda e-m e-ð* 'deliver sth to sby', *ala e-m barn* 'bear sby a child', *byrla e-m eitur* 'poison sby', *eigna e-m e-ð* 'attribute sth to sby', *fá e-m e-ð* 'give sth to sby', *fela e-m e-ð* 'entrust sby with sth', *gefa e-m e-ð* 'give sby sth (as a present)', *láta e-m e-ð í té* 'grant sby sth', *leggja e-m e-ð til* 'provide sby with sth', *rétta e-m e-ð* 'hand sby sth', *selja e-m e-ð* 'sell sth to sby', *selja e-m e-ð í hendur* 'hand sth over to sby', *skammta e-m e-ð* 'give a portion to sby', *skenkja e-m e-ð* 'pour sby sth', *tileinka e-m e-ð* 'dedicate sth to sby', *veita e-m e-ð* 'give sby sth', etc.
3. Verbs of lending: *lána e-m e-ð* 'lend sby sth', *leigja e-m e-ð* 'hire sth out to sby', *ljá e-m e-ð* 'lend sby sth', etc.
4. Verbs of paying: *borga e-m e-ð* 'pay sby for sth', *bæta e-m e-ð* 'compensate sby for sth', *(endur)greiða e-m e-ð* '(re)pay sby sth', *gjalda e-m e-ð* 'pay sby sth', *greiða e-m e-ð* 'pay sby sth', *launa e-m e-ð* 'reward sby with sth', etc.
5. Verbs of sending: *senda e-m e-ð* 'send sby sth', etc.
6. Verbs of bringing: *bera e-m e-ð* 'bring sby sth', *bera e-m e-ð á brýn* 'bring sth into the face of sby, accuse sby of sth', *flytja e-m kveðju* 'bring sby a greeting', *færa e-m e-ð* 'bring sby sth', *leiða e-m e-ð fyrir sjónir* 'bring sth into sby's field of vision, make sby understand sth', etc.
7. Verbs of future transfer: *bjóða e-m e-ð* 'offer sth to sby', *dæma e-m e-ð* 'award sth to sby by ruling', *skulda e-m e-ð* 'owe sby sth', *tryggja e-m e-ð* 'guarantee sby sth', *ætla e-m e-ð* 'intend sth for sby', etc.

8. Verbs denoting transfer along a path: *brjóta sér leið* 'break oneself a passage', *opna e-m leið/dyr* 'open up a passage/door for sby', *stytta sér leið* 'take a shortcut', etc.
9. Verbs of enabling: *auðvelda e-m e-ð* 'facilitate sth for sby', *gera e-m greiða* 'do sby a favor', *heimila e-m e-ð* 'authorize sth to sby', *láta e-m e-ð eftir* 'give (sth) in to sby', *leggja e-m lið* 'provide sby with manpower, assist sby', *létta e-m e-ð* 'make sth easier for sby', *leyfa e-m e-ð* 'permit sby sth', *sjá e-m farborða* 'provide for sby', *vinna e-m gagn* 'do service to sby', etc.
10. Verbs of communicated message: *(af)ráða e-m e-ð* 'advise sby (against) sth', *auðsýna e-m e-ð* 'show sby sth', *birta e-m stefnu* 'serve a summons on sby', *boða e-m trú* 'preach a belief to sby', *finna e-m e-ð til lasts* 'find/express sth negative about sby', *fyrirskipa e-m e-ð* 'order sby (to do) sth', *innprenta e-m e-ð* 'program sby with sth', *innræta e-m e-ð* 'indoctrinate sby in sth', *kenna e-m e-ð* 'teach sby sth', *lesa e-m pistilinn* 'read sby the epistle, tell sby off', *mæla e-u bót* 'give excuses for sth', *kunngera e-m e-ð* 'announce sth to sby', *kynna e-m e-ð* 'introduce sth to sby', *opinbera e-m e-ð* 'announce sth to sby', *ráða e-m e-ð* 'advise sth to sby', *ráðleggja e-m e-ð* 'advise sby (to do) sth', *rita e-m e-ð* 'write sby sth', *segja e-m e-ð* 'tell sby sth', *skipa e-m e-ð* 'order sby to do sth', *slá e-m gullhamra* 'give sby compliments', *syngja e-m ljóð* 'sing sby a song', *sýna e-m e-ð* 'show sby sth', *telja e-m trú um* 'convince sby about sth', *tilkynna e-m e-ð* 'inform sby of sth', *tjá e-m e-ð* 'express sth to sby', *uppáleggja e-m e-ð* 'enjoin sby to do sth', *vanda e-m ekki kveðjurnar* 'express critical words towards sby', *vísa e-m e-ð* 'show sby sth', *votta e-m samúð* 'express sympathy to sby', *yrkja e-m ljóð* 'write poetry for sby', *þakka e-m e-ð* 'thank sby for sth', etc.
11. Verbs of instrument of communicated message: *(e)meila e-m e-ð* '(e)mail sby sth', *faxa e-m e-ð* 'fax sby sth', *sмsa e-m e-ð* 'text sby sth', etc.[3]
12. Verbs of creation: *baka e-m sorg/vandræði* 'cause sby grief/problems', *blanda sér drykk* 'mix a drink for oneself', *brugga e-m launráð* 'brew a plot against sby', *byggja sér e-ð* 'build oneself sth', *elda sér e-ð* 'cook sth for oneself', *halda e-m veislu* 'throw sby a party', *hekla sér e-ð* 'crochet sth for oneself', *hita sér e-ð* 'warm sth (food/coffee) for oneself', *höggva sér e-ð* 'cut, carve sth for oneself', *prjóna sér e-ð* 'knit sth for oneself', *reisa e-m e-ð* 'erect, build sth for sby', *rista sér e-ð* 'toast sth for oneself', *sauma sér e-ð* 'sew sth for oneself', *sjóða sér e-ð* 'boil, cook sth for oneself', *skapa sér e-ð* 'create sth for oneself', *smíða sér e-ð* 'build oneself sth', *smyrja sér e-ð* 'butter sth for oneself', *sníða sér stakk eftir vexti* 'cut one's coat according to one's cloth', *tálga sér e-ð* 'whittle sth for oneself', etc.
13. Verbs of obtaining: *áskilja sér rétt* 'reserve for oneself the right (to sth)', *ávinna sér e-ð* 'acquire sth for oneself', *biðja sér konu* 'propose to a woman', *bóka sér far* 'book a passage for oneself', *draga sér fé* 'embezzle sth', *fastna sér konu* 'take a fiancée', *finna sér e-ð* 'find sth for oneself', *geta sér orðstír* 'create a reputation for oneself', *hasla sér völl* 'make a niche for oneself', *helga sér e-ð* 'make sth one's own', *kaupa sér e-ð* 'buy oneself sth', *kjósa sér forseta* 'elect a president (for oneself)', *merkja sér e-ð* 'mark sth (as one's own)', *panta sér e-ð* 'order sth for oneself', *reikna sér e-ð* 'calculate one's share', *skaffa e-m e-ð* 'get sby sth', *skera sér e-ð* 'slice sth for oneself', *snapa sér e-ð* 'beg for sth for oneself', *sníkja sér e-ð* 'scrounge sth for oneself', *taka sér e-ð* 'take sth (as one's own)', *temja sér e-ð* 'make a habit of sth', *tileinka sér e-ð* 'adopt sth for oneself', *útvega e-m e-ð* 'obtain sth for sby', *veiða sér e-ð* 'fish sth for oneself', *velja sér e-ð* 'choose sth for oneself', etc.
14. Verbs of utilizing: *(hag)nýta sér e-ð* 'make most of/use of sth', *nota sér eitthvað* 'use sth for oneself', *notfæra sér e-ð* 'take advantage of sth', etc.
15. Verbs of hindrance: *banna e-m e-ð* 'forbid sby to do sth', *byrgja e-m sýn* 'block the view for sby', *gera e-m e-ð* 'do sth (bad) to sby', *meina e-m e-ð* 'hinder sby from (doing) sth', *torvelda e-m e-ð* 'make sth difficult for sby', *villa e-m sýn* 'deceive sby', etc.
16. Verbs of constraining: *einsetja sér e-ð* 'resolve to do sth', *setja sér e-ð* 'determine to do sth', *setja e-m e-ð fyrir* 'give sby a task', *setja e-m úrslitakosti* 'give sby an ultimatum', *setja e-m stólinn fyrir dyrnar* 'put a chair for the door for sby, give sby an ultimatum', etc.
17. Verbs denoting mental activity: *fyrirgefa e-m e-ð* 'forgive sby sth', *gera sér e-ð ljóst* 'realize sth', *hugsa sér e-ð* 'think of sth', *ímynda sér e-ð* 'imagine sth', *kunna e-m þakkir fyrir* 'be grateful to sby for sth', *mynda sér skoðun* 'form an opinion', etc.

The classification above is fairly self-explanatory. The verbs and predicates have been grouped together depending on their meaning, so that verbs with similar lexical meanings fall into the same class, whereas verbs with different lexical meanings do not share a class. For instance, 'lend' and 'rent out' are both "verbs of lending," whereas 'lend' and 'teach' belong to "verbs of lending" and "verbs of communicated message", respectively. Several of the predicates above are lexicalized set phrases with a meaning not necessarily derivable from the meaning of the parts. One such example is *leiða e-m e-ð fyrir sjónir*, which literally means 'lead/take sth before sby's eyes', but has acquired the meaning 'make sby understand sth' in contemporary Icelandic. Several of the predicates can be used either concretely or metaphorically, like *brjóta sér leið* 'break oneself a passage' which can either be used in a concrete situation about someone breaking his/her way through a thicket, or metaphorically about someone working their way up the career ladder.

Even though classifying verbs into similarity clusters is not particularly arduous, it is much more problematic to draw the line between potential semantic verb

classes, especially if the number of predicates is as high as in this case (as opposed to 69 in Goldberg's 1995: 126 analysis). For instance, verbs of creation also entail obtaining when the indirect object is reflexive. Consider the ditransitive reflexive *byggja* 'build':

(1) *Fyrsti grísinn byggði sér hús úr stráum.*
first piglet built himself house of straws
'The first little pig built himself a house of straw.'

Clearly, the subject referent both creates the object and obtains it at the same time. This is why I have placed verbs of obtaining and verbs of creation next to each other on the semantic map of the Icelandic ditransitive Dat–Acc construction in Figure 1.

The verb classes in bold in Figure 1 are the ones that denote actual/intended transfer in the verbs' concrete senses. Together these ten verb classes make up the most coherent class of ditransitives in Icelandic. Verbs of owning are related to transfer verbs as transfer typically entails changes in ownership or a change from one location to another. Verbs of owning/possession thus profile the end poles of that event chain (i.e. owning/possession before or after the transfer). Verbs of utilizing are contiguous with verbs of owning since utilizing something presupposes possession, either physical possession or being in control of something. Moreover, verbs of enabling, hindrance and constraining all entail power or authority; they are therefore located next to verbs of owning and utilizing. Verbs of instrument of communication are found between ordinary verbs of sending and verbs of communicated message, as they combine features from both these classes, namely the concrete sending of a message. Observe that verbs of communicated message do not entail direct transfer of an object, as is well known in the literature, but rather a metaphorical movement of the message from an initiator to an endpoint. Hence, I have placed this class contiguous to, but outside, the central and most entrenched subconstruction of transfer. Observe, moreover, that some verbs of communicated

<table>
<tr><td></td><td></td><td colspan="3">transfer along a path</td></tr>
<tr><td></td><td></td><td rowspan="4">giving
lending
sending
instrument of sending
paying</td><td>future transfer</td><td></td></tr>
<tr><td></td><td></td><td>bringing
obtaining</td><td></td></tr>
<tr><td></td><td></td><td>creation</td><td></td></tr>
<tr><td></td><td></td><td>communicated message</td><td>mental activity</td></tr>
<tr><td>constraining</td><td>enabling</td><td>owning</td><td></td><td></td></tr>
<tr><td></td><td>hindrance</td><td>utilizing</td><td></td><td></td></tr>
</table>

Figure 1. A semantic map of the ditransitive Dat–Acc construction in Icelandic

message can also be regarded as verbs of creation. Consider the following attested examples:

(2) *Ég sem jú fyrir kærustuna, og syng henni öll mín ljóð.*
I compose yeah for girlfriend.the and sing her all my poems
'I of course compose for my girlfriend and sing her all my songs.'

(3) *… hvort hann orti henni ekki ljóð í eitt skiptið.*
whether he wrote her not poem in one time
'… whether he didn't write her a poem at some point.'

In both these examples the communicated message is being created at the same time as it is being communicated/transferred. Hence, these two classes are adjacent to each other on the map. Verbs denoting mental activities, like *ímynda sér e-ð* 'imagine sth' and *mynda sér skoðun* 'form an opinion' involve a mental image or "product". They differ from verbs of communicated message in that the product is processed internally, so the initiating point and the endpoint are the same.

The principles behind organizing conceptual space, laid out in for instance Croft (2001) and Haspelmath (2003), are based on the idea that items showing the same grammatical behavior are adjacent to each other in conceptual space, whereas items that are dissimilar in behavior are distant from each other. In the case of the ditransitive, all the predicates share the same grammatical property, namely that of instantiating the ditransitive construction. They can therefore not be arranged in conceptual space according to their grammatical behavior. My goal in the present article is rather to arrange the relevant vocabulary items on a semantic map according to the semantic similarities found across these items. The result is a network of subconstructions, based on verb classes and the similarities found between them (cf. also Barðdal 2004). Semantic maps of this kind are as easily falsifiable as conceptual spaces based on grammatical similarities, as a cross-linguistic comparison will either sustain or falsify the relative order of the subconstructions on the map. All that is needed to falsify the map is a language containing a subset of the subconstructions of the ditransitive which cannot be arranged contiguously on the semantic map presented here. A comparison of the Germanic languages, and in particular the North Germanic languages, does not reveal any inconsistencies in the arrangement of the present semantic map.

The seventeen verb classes suggested above and the semantic map in Figure 1 are a first coarse-grained attempt to model the lexical and the semantic range of the ditransitive construction in Icelandic within a construction-based theory of grammar. On such an account each semantic subclass corresponds to a subconstruction of the ditransitive construction, motivated by its unique semantics. The subconstructions are thus verb-class-specific constructions, which may in turn be

divided into verb-subclass-specific constructions. These again consist of all the verb-specific constructions, which are the concrete lexically filled instantiations at the bottom of the schematicity–lexicality hierarchy (cf. Barðdal 2001a, 2004, 2006, Croft 2003). In Section 3 below, I will compare the semantics of the ditransitive construction in Icelandic with the semantics of the construction in the most archaic Modern Mainland Scandinavian dialects. Before that, however, a note on the use of the construction in Icelandic is warranted.

There are several things worthy of being pointed out with regard to the use of the ditransitive construction in Icelandic. First of all, as opposed to English, verbs of ballistic motion cannot be used ditransitively in Icelandic:

(4) * *Ég kastaði honum boltanum.*
I threw him ball.the.DAT

(5) * *Ég sparkaði honum boltanum.*
I kicked him ball.the.DAT

Observe that the majority of verbs of translational motion in Icelandic, including ballistic motion, select for a dative on the direct object (Barðdal 1993, 2001b: 151–156, forthcoming) and not accusative. They are thus excluded from the prototypical Dat–Acc ditransitive construction on formal grounds. They are, however, not excluded from the low type frequency Dat–Dat ditransitive construction, but as the examples in (4–5) above show, they cannot instantiate the Dat–Dat construction either in Icelandic.

Falk (1990: 72) discusses similar examples in Swedish (her acceptability marking):

(6) # *Han slängde henne en handske.*
he threw her a glove

She points out that Swedish speakers do not agree on the status of such examples in Swedish, and that there is either some speaker variation with regard to their acceptability or they are regarded as marginal. My Swedish informants reject this example.

Second, several of the verb-specific subconstructions of the ditransitive in Icelandic are only found with a reflexive indirect object. A large majority of creation verbs and verbs of obtaining, for instance, can only be used reflexively in Modern Icelandic (cf. Holmberg and Platzack 1995: 190, 202, Jónsson 2000: 78–80, Maling 2002: 51–52). The following attested examples illustrate this:

(7) *Margrét keypti sér skíði með 15% afslætti.*
Margaret bought herself skis with 15% rebate
'Margaret bought herself skis with 15% off the price.'

(8) *Stefán saumaði sér litla pyngju.*
Stephen sewed himself small pouch
'Stephen sewed himself a small pouch.'

Corresponding non-reflexive examples are ill-formed in Modern Icelandic:

(9) * *Margrét keypti þeim/börnunum skíði með 15% afslætti.*
Margaret bought them/children.the skis with 15% rebate

(10) * *Stefán saumaði þeim/krökkunum litla pyngju.*
Stephen sewed them/kids.the small pouch

It also seems that verbs of obtaining are more restricted in Icelandic than in, for instance, English or Swedish, as illustrated by the difference in felicitousness of the following examples:

(11) *I peeled him an orange.* English

(12) *Jag skalade honom en apelsin.* Swedish
I peeled him an orange
'I peeled him an orange.'

(13) * *Ég afhýddi honum appelsínu.* Icelandic
I peeled him orange

Observe, however, that the Icelandic example in (13) is perfectly natural if the object is reflexive, as shown in (14):

(14) *Ég afhýddi mér appelsínu.*
I peeled myself orange
'I peeled myself an orange.'

The same pattern as in Icelandic is also found in some West-Norwegian dialects:

(15) ?/* *Eg skrella han ein appelsin.* West-Norwegian
I peeled him an orange

(16) *Eg skrella meg ein appelsin.*
I peeled myself an orange
'I peeled myself an orange.'

A comparison between Modern Icelandic and Old Norse-Icelandic reveals that at least some verbs of obtaining and creation could select for a non-reflexive object in earlier stages of Icelandic (examples are given with Modern Icelandic spelling):

(17) *Síðan mun ég kaupa þér hér land …*
then will I buy you here land
'Then I will buy you land here …' (Valla-Ljóts saga 1987: 1832)

(18) … *ef þú skyldir skera Vésteini bróður mínum skyrtuna.*
if you should cut Vésteinn brother my shirt.the
'… if you were to make a shirt for my brother Vésteinn.'
(Gísla saga Súrssonar 1987: 859)

Both these examples are unacceptable in Modern Icelandic.

I have encountered one example of a verb of ballistic motion occurring in the ditransitive construction in Old Norse-Icelandic, namely with the verb *kasta* 'cast':

(19) … *þá vendi hann og aftur kastaði þeim sínum úrskurði*
then turned he and back cast them his.DAT decision.DAT
og orlofi.
and permission.DAT
'… then he turned and overturned his decision and permission for them.'
(*Stjórn* 1862: 269)

It is, however, important to point out that the meaning of the predicate *(aftur)kasta* 'cast back' is not that of a ballistic motion here, as it is used metaphorically about reversing an earlier decision. Observe also that the direct object is in the dative case and not the accusative. Hence, this is not an example of the prototypical Dat–Acc construction but of the low type frequency Dat–Dat construction. This is the only ditransitive example I have encountered in Old Norse-Icelandic of a verb that denotes ballistic motion in its concrete sense. This example is, however, from a biblical translation and its status as 'real' Old Norse-Icelandic is thus dubious. In contrast, the fact that the examples in (17–18) are not from translated literature but are documented in the classic Saga literature clearly testifies to their acceptability in Old Norse-Icelandic. By the same token, these facts also show that the ditransitive construction has become grammatically more restricted over time. An investigation of the frequency of case constructions in Old Norse-Icelandic and Modern Icelandic texts seems to support that, since it reveals that both the type and the token frequency of the prototypical ditransitive construction, i.e. Dat–Acc, is lower in Modern Icelandic texts than in corresponding Old Norse-Icelandic texts.

Table 1 shows that not only is the type and the text frequency of the ditransitive Dat–Acc construction lower in the Modern Icelandic texts, but the frequency is approximately half of what it is in the corresponding Old Norse-Icelandic texts.

Table 1. Type and text frequency of ditransitive Dat–Acc verbs in Icelandic texts

	Old Norse-Icelandic	Modern Icelandic	Total
Types	38	22	60
Tokens	92	39	131

This does not automatically entail that ditransitive predicates are lower in absolute type frequency in Modern Icelandic than Old Norse-Icelandic, or that the class of ditransitive verbs has shrunk by 42%, since the total number of texts is very small or only 20,000 running words for each period (see Barðdal 2001b for details on the corpus, its stratification, the four different genres and their comparability). However, these figures reveal that ditransitive verbs are used less in Modern Icelandic on a 20,000 word basis than in Old Norse-Icelandic.

The question now arises whether there is a difference in the lexical and semantic range of the ditransitive construction across these time periods. In order to address that issue, I have extracted the relevant predicates from both corpora. The following predicates instantiating the ditransitive Dat–Acc construction occur in the Modern Icelandic texts:

1. Verbs of possession: *eiga sér stað* 'own him/herself a place, take place'
2. Verbs of giving: *gefa e-m eitthvað* 'give sby sth', *fá e-m e-ð* 'hand sth over to sby', *veita e-m athygli* 'give sby attention'
4. Verbs of paying: *bæta e-m e-ð upp* 'compensate sby for sth'
7. Verbs of future transfer: *bjóða e-m e-ð* 'offer sby sth'
8. Verbs denoting transfer along a path: *gera sér ferð* 'take on a trip'
9. Verbs of enabling: *gera e-m greiða* 'do sby a favor', *gera sér far um* 'do one's utmost', *létta e-m e-ð* 'facilitate sth for sby'
10. Verbs of communicated message: *herma e-m e-ð* 'tell sby sth', *segja e-m e-ð* 'tell sby sth', *sýna e-m e-ð* 'show sby sth', *vísa e-m e-ð* 'show sby sth'
12. Verbs of creation: *baka sér vandræði* 'create problems for oneself'
13. Verbs of obtaining: *fá sér drykk* 'have a drink', *kaupa sér e-ð* 'buy oneself sth'
15. Verbs of hindrance: *ráða e-m bana* 'kill sby', *villa e-m sýn* 'deceive sby'
17. Verbs denoting mental activity: *hugsa sér e-ð* 'think about sth', *kynna sér e-ð* 'acquaint oneself with sth', *vilja e-m e-ð* 'want sth for/from sby'

The predicates are distributed across eleven of the seventeen subconstructions, with those of giving, enabling, communicated message and mental activities being highest in type frequency. The verb *bjóða* 'offer' is by far the highest in text frequency with seven instances, *gefa* 'give' occurring six times, *segja* 'tell' three times, and *gera sér ferð* 'take on a trip', *veita eftirtekt* 'give sby attention', *kynna sér e-ð* 'acquaint oneself with sth' and *sýna e-u áhuga* 'show interest in sth' all occurring twice each.

From the Old Norse-Icelandic corpus the following predicates instantiating the ditransitive Dat–Acc construction were extracted:

2. Verbs of giving: *gefa e-m e-ð* 'give sby sth', *gifta e-m e-n* 'marry off one's daughter to sby', *fá e-m e-ð* 'give sby sth', *rétta e-m e-ð* 'hand sby sth', *segja sér e-ð af*

hendi 'renounce sth', *selja e-m e-ð* 'sell/deliver sth to sby', *skipa e-m stað* 'give sby a property (by official order)', *veita e-m e-ð* 'give sby sth'
4. Verbs of paying: *launa e-m e-ð* 'pay sby sth'
5. Verbs of sending: *gera e-m orð* 'send sby a message'
6. Verbs of bringing: *bera e-m e-ð* 'carry sth to sby', *færa e-m e-ð* 'bring sby sth'
7. Verbs of future transfer: *bjóða e-m e-ð* 'offer sby sth', *borga e-m e-ð* 'guarantee sby sth', *tryggja e-m e-ð* 'guarantee sby sth', *ætla e-m e-ð* 'intend sth for sby'
9. Verbs of enabling: *gera e-m gagn* 'do sby a favor', *gera e-m lotning* 'obey sby on sth'
10. Verbs of communicated message: *festa e-m trú* 'declare one's loyalty to sby', *gefa e-m sök* 'accuse sby of sth', *gera sér gabb og gaman* 'make fun of sth', *kunngera e-m e-ð* 'make sth known to sby', *segja e-m e-ð* 'tell sby sth', *sverja e-m e-ð* 'swear sth to sby', *þakka e-m e-ð* 'thank sby for sth'
12. Verbs of creation: *gera e-m kastala* 'make sby a castle', *skera e-m e-ð* 'cut, sew sby sth'
13. Verbs of obtaining: *frelsa e-m e-n* 'free sby for sby', *kaupa e-m e-ð* 'buy sby sth', *nefna sér votta* 'point to sby as a witness (for oneself)', *taka sér e-ð* 'take something for oneself'
15. Verbs of hindrance: *gera e-m mein* 'hurt sby', *gera e-m óspekt* 'put sby in turmoil', *varða e-m e-ð* 'defend sth from sby'
17. Verbs denoting mental activity: *fyrirgefa e-m e-ð* 'forgive sby sth', *huga sér ráð* 'think up a solution (for oneself)', *virða e-m e-ð til þunga* 'regard sth as demeaning for sby', *ætla sér hóf* 'correctly estimate one's abilities'

The predicates occurring in the Old Norse-Icelandic texts are also distributed across eleven of the seventeen subconstructions, although not the exact same ones as in Modern Icelandic. The subconstruction of owning/possession and transfer along a path are not represented in the Old Norse-Icelandic material, while those of sending and bringing do not occur in the Modern Icelandic texts. However, as the text corpora are so small, this cannot be regarded as a safe indication that there has been a change in the semantic structure of the construction. With such a small corpus, it is presumably a coincidence which verb-specific constructions are attested in the texts and which are not. This conclusion is supported by the fact that all the eleven subconstructions found in the Old Norse-Icelandic texts still exist in Modern Icelandic, as illustrated by the comprehensive list of ditransitives in Modern Icelandic at the beginning of this section.

The subconstructions of giving and communicated message are by far the highest in type frequency in the Old Norse-Icelandic texts, with those of future transfer, obtaining and mental activities closely following. The verb *gefa* 'give' is definitely the most frequently occurring verb, as it occurs twenty-four times, the verb *segja* 'say' occurs eleven times, *bjóða* 'offer' seven times, *fá* 'get' six times, *veita* 'give' and *þakka* 'thank' occur three times each, while *nefna* 'appoint', *skera* 'cut, make', *ætla* 'intend', *taka* 'take', *festa* 'fasten, declare', *gera* 'make' and *selja í hendur* 'sell, deliver' occur twice each.

Although this comparison between the Modern Icelandic and the Old Norse-Icelandic texts does not suggest any major change in the semantic structure of the construction, it is clear that the ditransitive construction is used less in Modern Icelandic than in Old Norse-Icelandic and the difference between the type frequencies in the two corpora is highly significant (Pearson Chi-square, $p < .000$). A similar decrease in the use of the ditransitive construction has also been documented for Dutch by Colleman (2002), who found a significant reduction in the frequency of the subconstructions of creation and obtaining in contemporary Dutch as compared to 19th-century Dutch. Observe that these are exactly the same subconstructions as are mostly used with reflexive indirect objects in Modern Icelandic. In Dutch, moreover, it seems that there is a clear preference for a pronominal indirect object in the ditransitive construction as opposed to a lexical noun (Colleman and De Vogelaer 2003: 205–206).

In sum, the subconstructions of the ditransitive construction are not the same in English and Icelandic. In addition to the subconstructions of actual, intended, retained and metaphorical transfer, as in English, subconstructions of transfer along a path, possession, utilizing, enabling, hindrance, constraining and mental activities also exist in Icelandic. Verbs of ballistic motion cannot be used ditransitively in Modern Icelandic, and a large majority of verbs of creation and obtaining are only used felicitously with a reflexive indirect object. In Old Norse-Icelandic, in contrast, verbs of creation and obtaining do not seem to be restricted to reflexive use. It thus seems clear that the use of the ditransitive construction in Icelandic has become grammatically more restricted over time, although its lexical and semantic scope has been maintained. The ditransitive construction is also used less in Modern Icelandic texts than in corresponding Old Norse-Icelandic texts. Such a narrowing in the usage of the ditransitive construction is not unique for Icelandic, as the use of the ditransitive construction has also become more restricted in the history of Dutch. I now turn to a lexical and semantic analysis of the ditransitive construction in those Swedish and Norwegian dialects that have maintained dative case marking.

3. The ditransitive construction in Mainland Scandinavian dialects

Morphological case was lost in Swedish around 1400 (Delsing 1991) and later in Norwegian. The dative case has, however, been maintained in some central

Swedish and Norwegian dialects. In her work on dative case marking in these dialects, Reinhammar (1973: 78–97) lists 146 predicates as occurring in the ditransitive construction. Of these, 119 are presumably original Dat–Acc verbs whereas 27 predicates had a different case pattern, but have become assimilated to the Dat–Acc construction over time.[4] Reinhammar's original 119 Dat–Acc predicates can be divided into more or less the same subconstructions as found in Icelandic (here given with Reinhammar's original spelling):

2. Verbs inherently denoting giving or delivering: *beskära* 'assign, give', *bevilja* 'grant', *fli* 'give, hand over', *förära* 'honor sby with sth (as a gift)', *få* 'give', *giva* 'give', *höva* 'give sby sth according to the occasion, *lever(er)a* 'deliver', *lämna* 'give', *rita* 'hand', *räcka* 'hand', *rätta* 'hand', *skänka* 'give (as a present)', *sticka* 'hand', *sälja* 'sell', etc.
3. Verbs of lending: *borga* 'lend', *leja* 'rent out', *låna* 'lend', etc.
4. Verbs of paying: *betala* 'pay', *forskottera* 'pay in advance', *gottgöra* 'compensate', etc.
5. Verbs of sending: *skicka* 'send', *sända* 'send', etc.
6. Verbs of bringing: *bringa* 'bring', *servera* 'serve', etc.
7. Verbs of future transfer: *akta* 'intend', *bjuda* 'offer', *försäkra* 'guarantee', *skulda* 'owe', *skilja* 'award', *testamentera* 'bequeath', *tillåta* 'allow', *traktera* 'offer', *äga* 'owe', *ätla* 'intend', etc.
9. Verbs of enabling: *göra ngn en tjänst* 'do sby a favor', etc.
10. Verbs of communicated message: *anbefalla* 'advise', *avhälla* 'advise against', *avlägga* 'advise against', *avråda* 'advise against', *befalla* 'order', *bevisa* 'prove', *diktera* 'order', *draga ngn von* 'threaten', *föreslå* 'suggest', *föreställa* 'suggest', *förklara* 'explain', *fortelja* 'tell', *lägga ngn råd* 'advise', *lära* 'teach', *läsa* 'read', *meddela* 'inform', *pålägga* 'order', *röpa* 'reveal', *sjunga* 'sing', *syna* 'show', *säga* 'say', *tillråda* 'advise', *vörda* 'show respect', etc.
12. Verbs of creation: *binda* 'knit', *brodera* 'embroider', *bygga* 'build', *böja* 'forge', *hålla* 'entertain sby with sth', *koka* 'boil', *laga* 'cook', *skära* 'cut, make', *smida* 'hammer', *spela ngn ett spektakel* 'play a trick on sby', *steka* 'fry', *stricka* 'knit', *sy* 'sew', *sätta* 'put up/make', *sömma* 'sew', *väva* 'weave', etc.
13. Verbs of obtaining: *blädja ut* 'select', *dricka sig ett rus* 'drink oneself into oblivion', *finna* 'find', *föreskriva* 'attribute', *förvärva* 'acquire', *hämta* 'obtain', *kanna* 'adopt sth for oneself', *köpa* 'buy', *ordna* 'get, fix', *plocka* 'pick', *röja ngn en plats* 'make space for sby', *skaffa* 'obtain', *skjuta* 'shoot', *taga* 'take', etc.
15. Verbs of hindrance: *förbjuda* 'forbid', *frändöma* 'take sth from sby (by official order)', *förhålla* 'keep sth away from sby', *formena* 'hinder', *meinka* 'forbid', *neka* 'deny', *nekta* 'deny', *vägra* 'deny, refuse', *ådraga* 'put sby through sth', *ålegga* 'put sby through sth', etc.

16. Verbs of constraining: *sätta* 'set a task for sby', *sätta ngn stolen för dörren* 'give sby an ultimatum', etc.
17. Verbs denoting mental activity: *avundas* 'envy', *avunna* 'envy', *förlåta* 'forgive', *hugsa* 'think', *inbilla* 'imagine', *offra ngt en tanke* 'think about sth', *tillgiva* 'forgive', *tänka* 'think, imagine', *vilja* 'want', *verdiga* 'feel that sby is worthy of sth', etc.
18. Verbs of motion: *kasta* 'throw', *lyfta opp* 'lift up', *slunga* 'throw', *ösa* 'scoop', *slå* 'hit', *smicka* 'hit', *sno ngn ryggen* 'turn one's back on sby', *venda ngn ryggen* 'turn one's back on sby', etc.

Observe that the subconstructions missing in the Mainland Scandinavian dialect material are those of owning, transfer along a path, instrument of communication and utilizing, all of which are extremely low in type frequency in Modern Icelandic. It is also noteworthy that the Norwegian and Swedish ditransitives are either cognates or synonymous with the Icelandic ditransitives. In a few cases where this is not so, the verb still belongs to one of the common semantic fields of the ditransitive. The Scandinavian *förklara* 'explain', which is a verb of communicated message, is one such example.

A major difference between Icelandic and Mainland Scandinavian is that motion verbs can instantiate the ditransitive in the Mainland Scandinavian material (subconstruction nr. 18 above), whereas they cannot in Icelandic. Some of the relevant predicates denote ballistic motion (*kasta* 'throw') whereas others denote non-translational motion (*sno* 'turn'). However, all the predicates in this class stem from one and the same dialect area, namely the Överkalix dialect in northern Sweden, which is known to be one of the most conservative and archaic Swedish dialects. This raises the question of whether this particular subconstruction is inherited from Proto-Germanic or whether it is a later West-Germanic development. I will address this issue in the next section.

The remaining 27 ditransitive predicates in the Scandinavian dialect material are either cognates or synonymous with the low type frequency Acc–Gen, Acc–Dat, Dat–Dat and Dat–Gen constructions in Icelandic (which have not been discussed here due to space limitations). I list the Scandinavian predicates here to give the reader an insight into the semantics of the greater ditransitive construction which subsumes the five different case constructions and various semantic subconstructions of each case construction:

> *bedja* 'ask', *beröva* 'rob sth from sby', *betro* 'confide in sby about sth', *dölja* 'hide', *fråga* 'ask', *förtaga* 'take away from sby', *förtro* 'confide in sby', *förvålla* 'cause', *frånråda* 'advise sby against sth', *forunna* 'not begrudge', *leta* 'search', *lova* 'promise', *missunna* 'begrudge, envy', *påminna* 'remind', *påvålla* 'cause', *skulda* 'accuse', *spå* 'predict', *spörja* 'ask', *stjäla* 'steal', *svara* 'answer', *tilldela*

'assign', *tilltro* 'confide in sby about sth', *tryssja* 'collect wood', *unna* 'not begrudge', *vålla* 'cause', *vänja* 'adopt', *önska* 'wish'

Observe that *unna* 'not begrudge' (cognate with Old English *unnan*, Modern German *gönnen*, Modern Dutch *gunnen* and Modern Icelandic *unna*) is originally a Dat–Gen and not a Dat–Acc predicate. Hence, it is not found in the Icelandic list in Section 2 above. This verb has then either been attracted by the high type frequency Dat–Acc construction in Dutch, German and Scandinavian, or assimilated to the construction when the case morphology disappeared. In any case, it is clear from this list that there is a certain degree of semantic overlap between the five ditransitive constructions in Icelandic, and ultimately that a comprehensive analysis of the ditransitive construction in Germanic also has to take the smaller constructions into account, and not only the high type frequency prototypical Dat–Acc construction (for a first attempt at such an enterprise, see Barðdal, Kristoffersen and Sveen 2006).

To summarize, I have here shown that the semantic structure of the ditransitive construction in Mainland Scandinavian overlaps to a large degree with the semantic structure of the Dat–Acc construction in Icelandic. One subconstruction existing in Överkalix, one of Sweden's most archaic dialects, a subconstruction which does not exist in Icelandic, is with verbs of motion. The subconstructions lacking in the Mainland Scandinavian dialect material are those of owning/possession, utilizing and transfer along a path. It may of course be a coincidence that these semantic fields are not represented in this dialect material. As we will see in next section, all these subconstructions are in fact found in some of the other Germanic languages. I now turn to a reconstruction of the semantic structure of the ditransitive construction in Proto-Germanic.

4. The ditransitive construction in Germanic

As the more observant reader may have noticed, several of the subconstructions of the ditransitive Dat–Acc construction in Icelandic also exist in English in spite of the fact that they have not been included in previous analyses of the English ditransitive construction. Consider the following attested examples of verbs of enabling, hindrance and transfer along a path:

(20) *You did him a favor by educating him and ….* Enabling

(21) *… but not enough to do him any harm.* Hindrance

(22) *… often having to hew myself a passage with my axe.* Transfer along a path

I have also come across verbs of owning used ditransitively in both English and earlier Norwegian:

(23) *If I owned me a car, I would …* Owning

(24) *Det var engang fem kjerringer som gikk på en åker og skar. Alle var*
it was once five old-women who walked on a field and reaped all were
de barnløse, og alle ønsket de at de hadde seg et barn.
they childless and all wished they that they had themselves a child
'Once there were five little women reaping a field. None of them had children but they all wished that they had one.'

The English example in (23) is not accepted by all my informants, but it is still an attested example uttered by a real native speaker. The Norwegian example in (24) is from an old folk tale, presumably representing an older layer of the language.

The subconstructions of enabling and utilizing are also found in German:

(25) *Ermögliche ihm soviel freien Auslauf …* Enabling
facilitate him so-much free running
'Make as much free running possible for him …'

(26) *Ausserdem nutze ich mir den Y-Wert …* Utilizing
apart-from-that use I me the Y-value
'Apart from that I make use of the Y-value …'

As all the initial seventeen subconstructions of the ditransitive construction in Modern Icelandic also exist in some other Germanic language or dialect, it does not seem reasonable to assume that any of them is an innovation in Icelandic. Therefore, the Icelandic situation can be regarded as representative of the original Germanic situation.

The question arises whether the subconstruction denoting movement or ballistic motion is original for Germanic. It exists in Modern English, Modern German and Överkalix. This distribution may be taken as an argument for the existence of the subconstruction in Proto-Germanic, as it seems unlikely that it is an innovation in Överkalix. However, this subconstruction does not exist in Icelandic, in spite of the fact that Icelandic is the only Germanic language that has maintained the five original ditransitive case constructions. Also, most of the Old Norse-Icelandic vocabulary has been maintained in the modern language, including verbs and their argument structure constructions. Modern Icelandic is known to be the most archaic North Germanic language of today. Given that, it would seem anomalous to assume that this particular subconstruction had gone lost in the (pre-)history of Icelandic.

The case marking of motion verbs is also problematic, as they usually select for dative case on their direct objects and not accusative, at least in Old Norse-Icelandic, the Mainland Scandinavian dialects (Reinhammar 1972: 175–183), Old English, and several classic Indo-European languages (cf. Holland 1993).[5] As such, motion verbs do not fit the case pattern of the Dat–Acc subconstruction as the direct object is in the dative case and not the accusative. Hence, motion verbs are not prime candidates for occurring in the Dat–Acc ditransitive construction, at least not in these languages. They would, however, formally qualify for occurrence in the ditransitive Dat–Dat construction, as discussed in Section 2 above, but no motion verbs are instantiated by this subconstruction in, for instance, Icelandic. This is not surprising since the ditransitive Dat–Dat construction is a non-productive low type frequency construction.

In Visser's (1963) discussion of the ditransitive in Old English, no examples of verbs of ballistic motion are given. Visser (1963: 629) points out that the construction became extraordinarily productive during the Middle English period, being extended to all kinds of verbs that were not used ditransitively in Old English. At that point in time, English had in fact lost its morphological case (Allen 1995: 211–220). As a result, case marking did not constitute a hindrance for the occurrence of motion verbs in the ditransitive construction. Also, in some Old High German texts, for instance Tatian, there are extremely few examples of motion verbs assigning dative case to their objects (cf. Fink 1898), suggesting that dative case on objects of motion verbs was already retreating in Old High German. All the Scandinavian dialects, including Överkalix, have lost morphological case, except for the dative.

Överkalix, however, seems to be the only Swedish dialect, maintaining the dative case, in which ordinary transitive motion verbs assign accusative to their objects (cf. the list of transitive verbs in Reinhammar 1972: 175–183). Another very archaic Swedish dialect, Älvdalsmålet, has all its motion verbs assigning dative case to their objects, exactly as in Modern Icelandic, and none of these verbs is attested in the ditransitive construction. In other words, all the ditransitive uses of motion verbs in Reinhammar's material are from Överkalix (i.e. from Norrbotten) and none from Älvdalsmålet. Therefore, Överkalix is exactly like German and English in that verbs of motion select for accusative objects and not dative objects. This may be the reason why motion verbs in Överkalix, German and English are a better fit for the ditransitive Dat–Acc construction than corresponding dative-assigning motion verbs in Icelandic and Scandinavian. The assignment of accusative case to the object of motion verbs seems to be a prerequisite for the occurrence of verbs of ballistic motion in the Dat–Acc construction. Hence, the occurrence of verbs of ballistic motion in the ditransitive construction must be an innovation in English, German and Överkalix, as the assignment of accusative case to

<table>
<tr><td colspan="3"></td><td colspan="3">transfer along a path</td></tr>
<tr><td colspan="3"></td><td rowspan="4">giving
lending
sending
paying</td><td>future transfer</td><td></td></tr>
<tr><td colspan="3"></td><td>bringing
obtaining</td><td></td></tr>
<tr><td colspan="3"></td><td>creation</td><td></td></tr>
<tr><td colspan="3"></td><td>communicated message</td><td>mental activity</td></tr>
<tr><td>constraining</td><td>enabling</td><td>owning</td><td colspan="3"></td></tr>
<tr><td></td><td>hindrance</td><td>utilizing</td><td colspan="3"></td></tr>
</table>

Figure 2. A reconstruction of the semantic space of the Dat–Acc ditransitive construction in Germanic

these verbs is most likely secondary in Germanic. This development need not have taken place independently in these languages/dialects, as there was a clear increase in the extensibility of the ditransitive construction to new verb classes during medieval times (cf. Visser 1963: 629). This wave swept over the West-Germanic language area and presumably reached Scandinavia as well, including the area of Överkalix.

On the basis of this comparative evidence it seems most reasonable to assume that Proto-Germanic had sixteen subconstructions of the Dat–Acc ditransitive construction, i.e. the same subconstructions as in Modern Icelandic, except of course for the subconstruction of instrument of communication (nr. 11 in the list in Section 2). The semantic structure of the ditransitive construction in Proto-Germanic can thus be represented as in Figure 2.

To summarize, all the subconstructions of the ditransitive Dat–Acc construction in Icelandic are also found in some other Germanic language or dialect. They are thus presumably original for the whole Germanic language area. The subconstruction of ballistic motion is only found in those languages/dialects where motion verbs assign accusative case to their objects, and not the dative case. The change whereby the ditransitive construction started attracting verbs denoting ballistic motion to itself therefore probably took place after the change from dative to accusative of objects of motion verbs in English, German and Överkalix, and must thus be considered an innovation in these languages/dialects.

5. Summary

An analysis of the semantic structure of the ditransitive Dat–Acc construction in Icelandic reveals at least seventeen subconstructions of the construction, namely those denoting actual, intended, retained and metaphorical transfer, as well

as transfer along a path, possession, utilizing, enabling, hindrance, constraining and mental activities. These are significantly more subconstructions than those assumed in the literature for Modern English. A comparison with Scandinavian dialects, English, Dutch and German reveals that the subconstructions found in Icelandic seem to have been common for the Germanic language area. The subconstruction denoting ballistic motion is, however, not included in the reconstruction of the semantic structure of the ditransitive Dat–Acc construction, as it is only found in those languages/dialects where motion verbs select for accusative objects as opposed to dative objects. Since dative case on objects of motion verbs seems to be primary in Germanic, and the assignment of accusative to the objects of these verbs is thus a secondary development, it was not until after that change that verbs of ballistic motion fulfilled the formal requirements of occurring in the ditransitive Dat–Acc construction, a development which seems to have been confined to English, German and Överkalix.

Notes

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1. The ditransitive predicates which form the basis for the present analysis were extracted from a relatively recent bilingual Icelandic-English dictionary (Hólmarsson, Sanders and Tucker 1989). The list was complemented with approximately 20 Dat–Acc predicates from the appendix in Jónsson (2000), and a few more that I have come to remember in the process. The type frequencies given above stem from this list.

2. See Jónsson (2000) and Maling (2002) for different semantic classifications.

3. For the acceptability of these new verbs of instrument of communication in the ditransitive construction in Icelandic, and their alternation with the caused-motion and the transfer constructions, see Barðdal (2003, forthcoming).

4. I have left out some of the predicates discussed by Reinhammar, which are clearly impersonal, possessive or predicative in nature and not ditransitive.

5. These verbs originally marked their objects/complements with the instrumental case but due to the merging of the instrumental and dative in Proto-Germanic/early Germanic, these objects/complements came to be marked with the dative case.

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I gave it him — on the motivation of the 'alternative double object construction' in varieties of British English

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Three ditransitive constructions can be found in varieties of British English: (i) the 'prepositional object construction', where the recipient is encoded as a prepositional phrase (*gave it to him*); (ii) the 'canonical double object construction', where the recipient precedes the theme (*gave him it*); and (iii) the 'alternative double object construction', where the theme precedes the recipient (*gave it him*). The last of these constructions is typically found in (north)western varieties of British English when both objects are pronominal, and most of the relevant varieties have a 'canonical' ordering (REC > TH) when the theme is non-pronominal. Consequently, there seems to be an 'inconsistency' in the clause structure of the varieties in question. Using comparative and historical evidence, this article addresses the question of how this inconsistency can be explained. The 'paradigmatic mismatch' under discussion is shown to be a remnant of Old English clause structure which can also be observed in other verb second languages such as Modern German. It is argued to result from a tendency for both verb positions (finite/left and non-finite/right) to attract direct objects. This tendency is regarded as an effect of performance preferences in natural language discourse.

1. Introduction

As is well known, standard British English has two alternating constructions for the expression of three-place predicates: the 'double object construction' and the 'prepositional object construction' (see e.g. Larson 1988; Levin 1993; Goldberg 1995; Bresnan and Nikitina 2003 and references cited there). Moreover, the double object construction comes in two different types if non-standard varieties of English are taken into account: (a) the RECIPIENT precedes the THEME[1] (*I gave him the book*), or (b) the THEME precedes the RECIPIENT ([D]*I gave it him*;[2] cf. Siewierska and Hollmann 2007). This programmatic article addresses the question of how

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the various constructions are distributed in varieties of British English, and how these distributions can be explained in synchronic and/or diachronic terms. After surveying some basic information about the three ditransitive constructions in this introductory section, their distribution within varieties of English will be summarized in Section 2. Specific ('inconsistent') varieties exhibit what I call a 'paradigmatic mismatch', i.e. variation in the order of theme and recipient relative to the (lexical or pronominal) status of the objects involved: while the recipient precedes the theme in most sentence configurations (*He gave the man/him*$_{\text{REC}}$ *the book*$_{\text{TH}}$), the reverse order is found when both objects are pronominal (*He gave it*$_{\text{TH}}$ *him*$_{\text{REC}}$). An explanation for this 'inconsistency' is offered in Section 3 on the basis of a frequency-driven functionalist approach, using comparative data from German. Section 4 outlines the historical development of ditransitive constructions in English, illustrating that the 'inconsistent' varieties have preserved patterns of Old English whereas the 'consistent' ones are probably innovative and may have been influenced by contact with Old Norse. The article concludes with a summary and outlook in Section 5.

1.1 Double object construction and prepositional object construction

The double object construction and the prepositional object construction are usually regarded as basically equivalent, though the exact extent of equivalence or non-equivalence is a matter of debate (cf. Bresnan and Nikitina 2003:3–12 and Hollmann this issue for discussion). In general, a contrast in meaning emerges only under specific circumstances. For instance, in some cases the double object construction necessarily expresses "successful transfer between a volitional agent and a willing recipient" (Goldberg 1995:151) whereas an event described by the prepositional object construction may be unsuccessful (cf. (1)). (2) illustrates that the double object construction requires a "volitional agent".

(1) a. I *sent a parcel to her* but she never received it. (prepositional object construction)
b. ?I *sent her a parcel* but she never received it. (double object construction)

(2) ??Joe *threw the right fielder the ball* he had intended the first baseman to catch. (Goldberg 1995:143)

Moreover, there are instances of 'idiomatization' for both the double object construction and the prepositional object construction. The following examples are usually regarded as not allowing an alternation (but see Bresnan and Nikita 2003:8–10 for a number of examples showing that many supposedly idiomatic occurrences of *give*-idioms do alternate):

(3) This development gave rise to a perplexing problem. [BNC ASF]
(*…gave a perplexing problem rise.)

(4) We might *give the hospital a call*, I think, and get the latest report. [BNC CJX]
(*…give a call to the hospital.)

Since such contrasts as illustrated in (1) and (2) above emerge only rarely (or are rarely relevant in actual discourse), and for idiomatic constructions like those in (3) and (4) an alternation is (usually) not even available, differences in propositional meanings only have a minor impact on the distribution of the two alternating constructions. Much more important are structural, inherent semantic and discourse-pragmatic properties of the constituents involved, in particular their syntactic complexity or length, their status as a pronoun or as a lexical NP, the animacy of their referents, their discourse accessibility (given vs. new) and their (in)definiteness (cf. Hawkins 1994; Collins 1995; Gries 2003; Bresnan and Hay 2006; Bresnan *et al.* forthcoming). For instance, constituents that are either syntactically complex or bear heavy stress (or both) tend to come last. All other things being equal, the double object construction is therefore preferred when the theme is heavy, whereas the prepositional object construction is preferred with heavy recipients (cf. Hawkins 1994, 2004 for an explanation of such heaviness effects). Gries (2003) and Bresnan *et al.* (forthcoming) have accounted for the distribution of the double object construction in terms of multi-dimensional statistical models which take all of the aforementioned parameters into account.

1.2 The order of objects in ditransitive constructions

In standard English, the prepositional object construction exhibits greater syntactic flexibility than the double object construction in so far as the order of prepositional and non-prepositional objects is not entirely fixed: if the non-prepositional object is heavier than the prepositional one, it may be postponed ('heavy NP-shift'; cf. (5)). Such reordering is not generally possible with the double object construction, as is witnessed by the ungrammaticality of (6b) (in standard varieties of English):

(5) His son was Decimus Burton whose designs [gave [to the scheme] [a wholeness much more successful than any of the other attempts in the county]]. [BNC CB6]

(6) a. The colonial period ushered in an era of foreign investment which [gave [the large scale trading houses of Europe] [a hold on the development]] … [BNC A6M]
b. *The colonial period ushered in an era of foreign investment which [gave [a hold on the development] [the large scale trading houses of Europe]] …

TH–REC order as illustrated in (6b) is found only in some regional varieties of British English. Hughes and Trudgill (1979:21) provide the example in (8), noting that it "is not especially common, but does occur in northern varieties, particularly […] if *man* is contrastively stressed" (cf. also Siewierska and Hollmann 2007). I will refer to the construction illustrated in (8) as the 'alternative double object construction', in contradistinction to the 'canonical double object construction' illustrated in (7).

(7) CANONICAL DOUBLE OBJECT CONSTRUCTION
She [gave [$_{REC}$ the man] [$_{TH}$ a book]].

(8) ALTERNATIVE DOUBLE OBJECT CONSTRUCTION
[D]She [gave [$_{TH}$ a book] [$_{REC}$ the MAN]]. (Hughes and Trudgill 1979:21)

By and large, the generalizations made above about the distribution of ditransitive constructions apply when one of the objects is a pronoun as well, and pronouns simply behave like very short constituents of category NP. The alternative double object construction with a pronominal theme is illustrated in (9):

(9) [D]We give it the cook and she cooked it. [*sic*] [BNC HVB]

Just like cases such as (8) above ([V NP$_{TH}$ NP$_{REC}$]), constructions of the type illustrated in (9) ([V PRO$_{TH}$ NP$_{REC}$]) are very rare, and only a handful of instances can be found in the BNC[3] (e.g. *I give it the birds*, *Give it the horses* […]). However, the alternative double object construction is more common when *both* objects are pronominal, i.e. combinations of the form [V *it*$_{TH}$ *me*$_{REC}$], [V *it*$_{TH}$ *you*$_{REC}$], etc. are relatively frequent in regional varieties of British English, though overall much less common than the prepositional object construction ([V *it*$_{TH}$ [$_{REC}$*to me*]]), and slightly less common than the canonical double object construction ([V *me*$_{REC}$ *it*$_{TH}$]). Examples of each construction are given in (10)–(12). The numerical distribution of the three constructions in registers of English is shown in Table 1 (in occurrences per million words, in the Longman Spoken and Written English Corpus; cf. Biber *et al.* 1999:928; the table has been adapted from Siewierska and Hollmann 2007).

(10) His Dad pulled the arrow off the door and *gave it to him*. [BNC ABX]

(11) He wanted more time and the rebels *gave him it*. [BNC HH5]

(12) I got the map from his secretary, and when I *gave it him* he spread it out on his desk. [BNC H0D]

For one specific combination of pronominal recipients and themes the variation between varieties of English has been mapped in the *Linguistic Atlas of England*

Table 1. Ditransitive constructions with pronominal objects in the LSWEC

	CONV	FICT	NEWS	ACAD
[V PRO$_{TH}$ *to* PRO$_{REC}$]	90	70	10	<5
[V PRO$_{REC}$ PRO$_{TH}$]	40	<5	<5	<5
[V PRO$_{TH}$ PRO$_{REC}$]	20	10	<5	<5

(Orton *et al.* 1978), based on the *Survey of English Dialects* (Orton *et al.* 1962–1971), namely for third person/inanimate themes and first person recipients (*give it to me, give it me,* or *give me it*; cf. Figure 1). The emerging patterns roughly correspond to traditional classifications of English dialects, in particular of Middle English. Five major areas can be distinguished: the northern varieties, where REC–TH order prevails, just as in the East Midlands, whereas in the West Midlands it is TH–REC order that is more widespread. In the southwest and in London, neither of

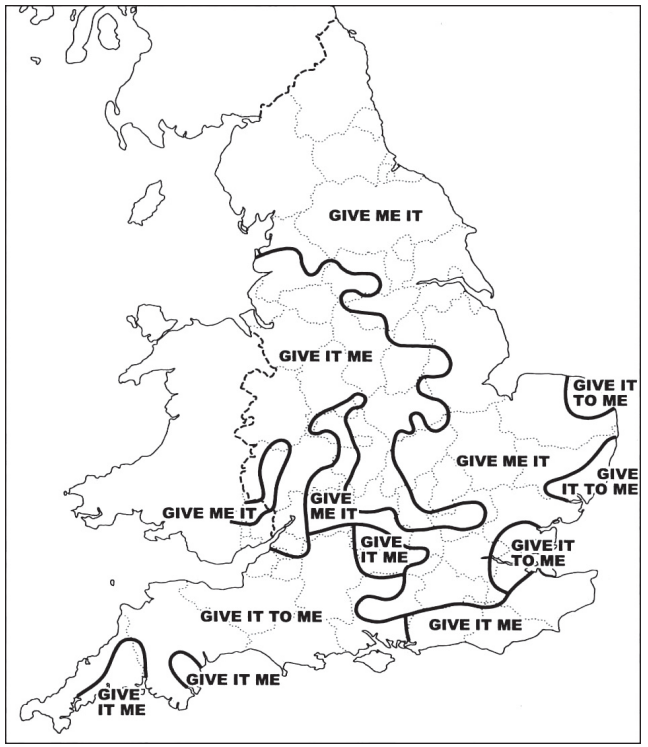

Figure 1. Map "Give it me", p. 52 from *An Atlas of English Dialects* by Upton, C. and Widdowson, J.D.A. (1996). By permission of Oxford University Press.

the two double object constructions is widely used. As will be seen later, reference to Middle English dialects is significant because it was probably between Old and Middle English that the different constructions established themselves.

2. The distribution of ditransitive constructions within varieties of English

As has been mentioned, the two ditransitive constructions of standard English — the prepositional object construction and the canonical double object construction — have a strongly overlapping, though not identical, distribution (cf. Section 1.2). The question arises how ditransitive constructions are distributed in non-standard varieties which have all of the three constructions distinguished above. To my knowledge, no comprehensive data set is available so far which would allow us to answer this question conclusively, so this section is confined to some suggestions and preliminary observations.

Given that even the most comprehensive dialect corpora are not large enough to provide any statistically significant figures about the (pronominal) double object construction (cf. Hollmann and Siewierska 2006), I will use data from a novel to illustrate the distribution of the three constructions within a given 'variety' of English (where 'variety' is put in quotation marks because it is used in a maximally broad sense; here it stands for the idiolect of the narrator or some protagonist as conceived by the author of a novel).[4] In Charles Dickens' novel *David Copperfield* the two double object constructions are in complementary distribution, in so far as for each combination of a theme and a recipient (pronominal theme/pronominal recipient, pronominal theme/lexical recipient, etc.) only one of the constructions is used. The canonical double object construction is found only with the combinations 'lexical recipient/lexical theme' (*give your boy an exercise*) and 'pronominal recipient/lexical theme' (*give him a sky-blue coat*). When both objects are pronominal, only the alternative, but not the canonical, double object construction is used (*gave it me*). Neither of the two constructions is found with lexical recipients/pronominal themes, so the prepositional object construction is the only option in such cases (*gave it to Steerforth*). The prepositional object construction is also found as an alternative option in all other cases. Table 2 summarizes the distribution of the various constructions relative to the status of the objects involved. Examples of the four possible combinations of pronominal and non-pronominal recipients and themes are given in (13)–(16).[5]

(13) lexical REC, lexical TH
"Clara, there's nothing like work — *give your boy an exercise*; …" [DC 61]

Table 2. Distribution of ditransitive constructions in Charles Dickens' novel *David Copperfield*

RECIPIENT THEME	pronominal	lexical
pronominal	alternative DO-construction PO construction	PO-construction
lexical	canonical DO-construction PO-construction	canonical DO-construction PO-construction

(14) lexical REC, pronominal TH
She withdrew her hand timidly from his arms as we stopped to speak to them, and blushed as she *gave it to Steerforth and to me*. [DC 321]

(15) pronominal REC, lexical TH
"If I was ever to be a lady, I'd *give him a sky-blue coat* with diamond buttons…" [DC 43]

(16) pronominal REC, pronominal TH
Mr. Dolloby rolled it up again, and *gave it me back*. [DC 186]

It should be noted that the categories 'pronominal' vs. 'lexical' are rather coarse-grained, since some elements may not be clearly categorized as either pronouns or lexical NPs. For instance, deictic pronouns and pronominal *one* are generally classified as pronouns, but they often behave like full NPs with respect to their distribution in ditransitive constructions. In the language of *David Copperfield* these elements license the canonical double object construction (cf. also Bresnan and Nikitina 2003:18 on the behaviour of such 'heavy pronouns'):

(17) "…how could I deny her when she *give me this* to carry for her — knowing what she brought it for? …" [*sic*] [DC 434]

(18) But if you want a dog to race with, Little Blossom, he has lived too well for that, and I'll *give you one*. [DC 897]

Assuming that the language of *David Copperfield* represents one type of variety of English, we can so far distinguish three major types of varieties with respect to the availability of ditransitive constructions (assuming that the prepositional object construction is generally available as one alternative): (i) varieties that have only the canonical (but not the alternative) double object construction, but that do not use it when both objects are pronominal (**gave me it*, **gave it me*, *gave it to me*; e.g. standard British English); (ii) varieties that have only the canonical double object construction and that do allow it in sentences with two pronominal objects (*gave me it,* **gave it me*, *gave it to me*; e.g. some north-eastern varieties of British English); (iii) varieties that have both the canonical and the alternative double object

construction and that use the latter when both objects are pronominal (**gave me it, gave it me, gave it to me*; e.g. some (north)western varieties of British English). This list of varieties is, of course, not exhaustive, but it seems to capture the patterns most commonly found on the British Isles. For the sake of future reference, I will use the following labels for the three types of varieties: varieties of type (i) will be called 'neutral', varieties of type (ii) 'consistent', and varieties of type (iii) 'inconsistent'. The term 'inconsistent' is motivated by the varying order of the theme and the recipient relative to the [non-]pronominal status of the objects.

In order to determine the distribution of ditransitive constructions in varieties of English more exactly, we would of course have to make more fine-grained distinctions. For instance, the distribution of specific constructions with two pronominal objects ([D]*gave it him*) would have to be investigated in comparison to their distribution with one pronominal object ([D]*gave it the cook*, [D]*gave the book him*), or without a pronominal object ([D]*gave the book a man*). Moreover, the question should be addressed to what extent the availability of constructions depends on lexical or grammatical classifications (NP, pronoun), or maybe on other properties such as animacy or the ability to carry stress. Sentences such as (19) seem to be unattested in any variety of English, but Hughes and Trudgill (1979:21) provide the example in (20), which requires that *him* carry heavy stress:

(19) *She gave some thought it.

(20) [D]She gave the book HIM. (Hughes and Trudgill 1979:21)

We may speculate that certain implicational relations can be established with regard to the availability of the various constructions. For instance, the hypothesis suggests itself that varieties allowing the alternative double object construction in sentences such as (8) above ([D]*She gave a book the man*) will also allow it in cases like (9) ([D]*We give it the cook*), though not vice versa; and it seems likely that varieties which allow (9) will also allow sentences of the form [D]*I gave it him*, but not vice versa. This hypothesis amounts to postulating a hierarchy of the form shown in (21), which is, however, nothing more than a conjecture at this point. The hierarchy says that if a variety of English allows a certain construction at some point on the hierarchy, it will also allow all other constructions further to the left.

(21) [V PRO_{TH} PRO_{REC}] > [V PRO_{TH} NP_{REC}] > [V NP_{TH} NP_{REC}] > [V NP_{TH} PRO_{REC}]

3. A parallel structural mismatch in German: Towards an explanation

From the perspective of language-internal 'paradigmatic architecture' — the organization of syntactic relations into constructional schemas, as it were — the existence of the alternative double object construction in some varieties of English is unexpected. As has been shown, this construction leads to what we may call a 'paradigmatic mismatch': in some sentences the recipient precedes the theme while in others the theme precedes the recipient, even though there is no distinctive morphological case marking. Although misunderstandings will only rarely arise because contextual information and animacy asymmetries will usually indicate which constituent functions as a theme and which one as a recipient (cf. Haspelmath's 2004 'ditransitive person-role constraint'), such 'constructional inconsistency' seems to call for an explanation. It contradicts the 'principle of analogy' as postulated, for instance, by the Neogrammarians in the domains of phonology and morphology (cf. Osthoff and Brugmann 1878:78ff.). The 'paradigmatic mismatch' in 'inconsistent' varieties of English will be addressed from a historical perspective in Section 4, where the development of ditransitive constructions from Old English to Modern English is sketched. Before turning to the diachronic facts of English, however, a comparative survey of some relevant facts from German will be given in Section 3.1, since German has a syntax quite parallel to that of Old English and since, unlike for Old English, negative evidence and grammaticality judgements are readily available. In Sections 3.2–3.4, the distributional facts of German will be explained with reference to three general motivations underlying the structure and development of languages, namely 'frequency', the 'principle of analogy' and the 'principle of end weight'. I take it that parallel explanations could be given to account for the word order of Old English.

3.1 Object serialization in the German Middle Field

A paradigmatic mismatch parallel to the one found in 'inconsistent' varieties of English can be observed in ditransitive constructions of standard German. While the recipient generally precedes the theme when both objects are lexical, the inverse order is found when the two objects are pronominal. This is illustrated in (22)–(25).[6]

(22) *Er gab* [$_{\text{REC}}$ *einem Bettler*] [$_{\text{TH}}$ *eine Münze*].
he gave a beggar.DAT a coin.ACC

(23) [?]*Er gab* [$_{\text{TH}}$ *eine Münze*] [$_{\text{REC}}$ *einem Bettler*].
he gave a coin.ACC a beggar.DAT

(24) *Er gab* es_{TH} ihm_{REC}.
he gave it.ACC him.DAT

(25) [?]*Er gab* ihm_{REC} es_{TH}.
he gave him.DAT it.ACC

The data from German seem to indicate that we may be dealing with a rather general phenomenon, at least within the Germanic language family. If we consider the make-up of the German sentence in a so-called *topological* model (e.g. Lenerz 1977; Höhle 1986), it turns out that the paradigmatic mismatch under discussion gives German main clauses a remarkably symmetrical structure. Such a topological model is illustrated in (26). German main clauses are regarded as being made up of three major 'fields': the 'Forefield' (or 'Prefield'), the 'Middle Field' and the 'Postfield'. The Postfield, which hosts extraposed/right-dislocated constituents, is not relevant at this point. The Middle Field is 'embraced' by the 'sentence bracket', which consists of the finite verb on the left margin and the non-finite verb (if there is one) on the right margin.

(26)

Gestern	*hat*	*Karl*	*wahrscheinlich*	*einem Bettler*	*eine Münze*	*gegeben.*
yesterday	has	Karl	probably	a beggar.DAT	a coin.ACC	given
FOREFIELD	V_{FIN}	MIDDLE FIELD				$V_{NON\text{-}FIN}$
	sentence bracket					

The Forefield is a slot for one sentence-initial constituent which is generally either topical or focal. It often contains the subject but it may, alternatively, be occupied by any other constituent of the clause. The Middle Field constitutes the 'core' of the sentence. It contains all arguments and adjuncts (except, of course, the topical and extraposed ones, which are located in the Forefield and the Postfield, respectively). In (26), the Forefield is filled by the adverbial *gestern* 'yesterday'. The sentence bracket is formed by the auxiliary *hat* 'has' and the (non-finite) main verb *gegeben* 'given'. The non-topical arguments and adjuncts are located in between. Table 3 shows that any constituent of the clause may occupy the Forefield.

Pronouns usually occur on the left margin of the Middle Field (if they are unstressed), in a position that is sometimes called the 'Wackernagel position'.[7] If one of the objects (*einem Bettler* 'a beggar.DAT' or *eine Münze* 'a coin.ACC') is pronominalized, the relevant pronouns immediately follow the finite verb. When they are both pronominalized, the accusative tends to precede the dative.[8] Table 4

Table 3. The structure of German main clauses

Forefield	V_{FIN}	Middle Field					$V_{NON\text{-}FIN}$
Karl	*hat*	___	*wahrscheinlich*	*gestern*	*einem Bettler*	*eine Münze*	*gegeben*
Wahrscheinlich	*hat*	*Karl*	_____	*gestern*	*einem Bettler*	*eine Münze*	*gegeben*
Gestern	*hat*	*Karl*	*wahrscheinlich*	_____	*einem Bettler*	*eine Münze*	*gegeben*
Seinem Sohn	*hat*	*Karl*	*wahrscheinlich*	*gestern*	_____	*eine Münze*	*gegeben*
Ein Fahrrad	*hat*	*Karl*	*wahrscheinlich*	*gestern*	*einem Bettler*	_____	*gegeben*
	has	Karl	probably	yesterday	a beggar.DAT	a coin.ACC	given

Table 4. Pronominal objects in the German Middle Field

Forefield	V_{FIN}			Middle Field			$V_{NON\text{-}FIN}$
Karl	*hat*			*gestern*	*einem Bettler*	*eine Münze*	*gegeben*
Karl	*hat*		*ihm*	*gestern*	_____	*eine Münze*	*gegeben*
Karl	*hat*	*sie*		*gestern*	*einem Bettler*	_____	*gegeben*
Karl	*hat*	*sie*	*ihm*	*gestern*	_____	_____	*gegeben*
Karl	has	her.ACC	him.DAT	yesterday	a beggar.DAT	a coin.ACC	given

illustrates the structures that result when the subject is located in the Forefield and the objects are pronominalized.

When we consider the structures displayed in Table 3 and Table 4, it becomes apparent that in the most typical sentence configuration — in sentences with a (topical) subject in the Forefield — German clause structure displays a remarkable symmetry as far as the arrangement of arguments and adverbials in the Middle Field is concerned:[9] the verbs (finite and non-finite) occupy the outermost positions, while the constituents located towards the centre of the Middle Field become increasingly oblique, in what looks like a shell structure. If we move from the verbs inwards the first elements are the accusative objects *sie* (to the left) and *eine Münze* (to the right), then follow the dative objects *ihm* (left) and *einem Bettler* (right), and in the centre there is the adverbial *gestern* 'yesterday'. Accordingly, the Middle Field (plus the sentence bracket) can be described as a concentric structure in such 'subject-topic sentences'. This is illustrated in (27). Note that the ellipses do not indicate constituency but spatial distance in typical sentence configurations, and that pronouns and noun phrases with identical case specifications are of course complementary, which means that for each layer either a pronoun or a noun phrase has to be chosen:

(27) *Karl* *hat* *sie* *ihm* *gestern* *einem Bettler* *eine Münze* *gegeben*

Given that verbs, rather than adverbials, should be regarded as the centre of the clause, the structure could better be described as a 'bi-polar' formation with a verb (position) on each side. This is shown in (28) and (29):

(28) *Karl* *hat* *sie* *ihm* *gestern* *einem Bettler* *eine Münze* *gegeben*

(29) NP_{NOM} V_{FIN} PRO_{TH} PRO_{REC} ADV NP_{REC} NP_{TH} $V_{NON\text{-}FIN}$

The structure shown in (28) and (29) suggests that the two verb positions, in a way, 'attract' the theme, or NPs in the accusative case. If this is right, it follows that accusative pronouns will precede dative pronouns — since pronouns are located on the left margin of the Middle Field, close to the finite verb — whereas the reverse order will be found with lexical NPs on the right margin of the Middle Field. However, saying that the verb positions 'attract' the accusative is of course only a metaphor which is itself in need of an explanation. The assumption that two elements or categories *x* and *y* 'attract each other' can be translated into a more falsifiable statement by saying that, all other things being equal, they tend to co-occur more often than any other possible combination of elements. In other words, they tend to be placed together if they occur in the same sentence and if no other reason requires an alternative ordering. Such a generalization can be accommodated within the framework of frequency-driven functionalism as advocated, among others, by Martin Haspelmath (cf. Haspelmath 2004, 2006, forthcoming; cf. also Bybee and Hopper 2001 and Bybee 2001, 2005 for phonological applications). This argument requires that we briefly digress into matters of text frequency, which will be done in Section 3.2. Section 3.3 deals with the question of how and why frequency should have an effect on the linear order of elements, against the background of claims made in 'frequency-driven functionalism'. As will be argued, frequency is an important, but not the only factor determining the order of elements in the clause. It sometimes competes with the 'principle of analogy', which requires that elements with identical morphological and/or semantic properties should be treated alike in the application of syntactic rules. In addition to these two explanatory principles accounting for the order of elements in the clause, a third one is introduced in Section 3.4, namely the 'principle of end weight'. While the principle of end weight is theoretically independent of the other two principles, it will be argued to 'conspire' with frequency effects favouring the type of configuration found in the German Middle Field, thus outweighing the 'principle of analogy'.

3.2 Types of text frequencies

The most basic type of frequency is that of ITEM FREQUENCY,[10] i.e. the frequency of elements such as *give*, *it*, *me*, etc. in a text. A second type of frequency has been called STRING FREQUENCY (see e.g. Krug 1998, 2000). String frequency measures the frequency of specific linear combinations of items, for instance <*give it*>, <*give me*>, or <*give him*>. Thirdly, if we generalize over one of the two positions in a 'string', this gives us one type of PATTERN FREQUENCY — say, 'unary pattern frequency' — which indicates the frequency of patterns such as <V *it*> or <V *me*> (cf. also Bybee's 2001 'schemas'). Finally, we can also abstract away from the second element of a string, thus determining what we may call 'binary pattern frequency'. In this case we are dealing with patterns such as <V NP_{ACC}> or <V PRO_{DAT}>. Note

that string frequency and pattern frequency have nothing to do with constituency, i.e. the elements of a string like <*give it*> need not form a constituent. This is why such pairs are enclosed by angle brackets rather than square brackets.

The crucial point of my argument concerning the preferred order of objects in German is that the pattern frequency of a finite verb followed by a pronominal accusative, or of a non-finite verb preceded by a lexical accusative, will always be higher than the frequency of the corresponding structures with dative pronouns or NPs. This prediction is independent of the order of accusative and dative constituents in the Middle Field. The reason is that most transitive verbs are monotransitive, thus licensing only one (accusative) object, whereas the dative is, with a few exceptions, licensed only *in addition to* an accusative object (some verbs license only a dative object, e.g. *helfen* 'help' or *folgen* 'follow'). In other words, the set of environments licensing a dative object is (almost) a subset of the set of environments licensing an accusative object. Therefore, patterns such as <V_{FIN} + *ihn*> or <V_{FIN} + PRO_{ACC}> on the left margin of the Middle Field are expected to be more frequent than the corresponding structures with a dative pronoun (<V_{FIN} + *ihm*>, <V_{FIN} + PRO_{DAT}>). Likewise, on the other side of the Middle Field, the pattern <NP_{ACC} + $V_{NON\text{-}FIN}$> is expected to be more frequent than the corresponding pattern with a dative object (<NP_{DAT} + $V_{NON\text{-}FIN}$>).

The expectations concerning the closer affinity of accusative pronouns and NPs to finite and non-finite verbs, respectively, are corroborated by data from the COSMAS corpus.[11] The results obtained from a random sample of 969 occurrences of the (unary) pattern <*hat* + PRO_{SG}> for pronouns in the nominative, accusative and dative are given in Table 5 (*hat* is the 3rd person singular form of the auxiliary *haben* 'have').

As Table 5 shows, the finite verb *hat* is most frequently followed by a nominative pronoun. There are 754 occurrences of the pattern <*hat* + PRO_{NOM}>. This is expected since every sentence has a subject. The corresponding pattern with an accusative pronoun occurs 191 times, in most cases with a neuter pronoun (*es*). The dative pronouns are much rarer in this configuration, and are moreover special in so far as masculine and feminine pronouns outnumber neuter pronouns. Comparing the three cases to each other, the nominative is approx. 4 times more frequent than the accusative, which in term outnumbers the dative by a factor of 8.

Table 5. Frequencies of the pattern <*hat* + PRO_{SG}>

	MASC	FEM	NEUT	Σ
NOM	435	190	129	754
ACC	36	19	136	191
DAT	15	8	1	24
Σ	486	217	266	969

A similar asymmetry between dative and accusative case can be observed on the other side of the Middle Field. The pattern <DET$_{\text{ACC.MASC}}$ (+ N) + *gegeben*> (e.g. *einen Tritt gegeben,* lit. 'a kick given') occurs 2,411 times in the whole COSMAS corpus and is thus much more frequent than the corresponding structure with a dative NP (<DET$_{\text{DAT.MASC}}$ (+ N) + *gegeben*>, e.g. *einem Mann gegeben* '[to] a man given'), which occurs only 373 times. The first pattern outnumbers the second by a factor of approx. 6.5.

3.3 Pattern frequency and word order

We now turn to the question of how frequency patterns like those pointed out above can be causally related to word order rules (or tendencies of constituent linearization). The idea underlying the explanation proposed in this section can be summarized like this: whenever there is a set of elements {α, β, γ} whose serialization is not determined by any independent principle of grammar, those serializations will be preferred which occur most frequently in actual discourse. For instance, if a string or pattern <α, β> is more frequent than <α, γ>, the orders <α, β, γ> and <γ, α, β> will be preferred over any order in which α and β are not adjacent. Let us refer to this hypothesis as the 'principle of frequency-based serialization':

(30) The principle of frequency-based serialization
The elements of a set {α, β, γ…} tend to be serialized in such a way that, all other things being equal, frequently co-occurring pairs of elements <x,y> are adjacent, and the tendency for any such pair to be adjacent correlates with its frequency.

The 'principle of frequency-based serialization' relies on claims made by proponents of what we may call 'frequency-driven functionalism'. Haspelmath (2004:1–2) refers to the relationship between discourse frequency and grammatical structure as "the *Frequency Condition on Entrenchment in Grammaticalization*. It says that when a loose combination of expressions becomes entrenched and is conventionalized as a separate construction, which particular elements may figure in the construction often depends on their frequency of occurrence". This is of course closely related to DuBois' (1985:363) claim that "grammars code best what speakers do most", and to Hawkins' 'Performance-Grammar Correspondence Hypothesis':

> Grammars have conventionalized syntactic structures in proportion to their degree of preference in performance, as evidenced by patterns of selection in corpora and by ease of processing in psycholinguistic experiments. (Hawkins 2004:3)

The reasoning underlying the 'Performance-Grammar Correspondence Hypothesis' is, of course, that more frequent structures require less processing or production effort than less frequent ones (cf. Bybee 2001:6–14 for an overview of the relationship between frequency and memory).

Let us consider example (31) for illustration, assuming that the order of the two pronouns *es* and *ihm* is not grammatically fixed. This is certainly not too far-fetched if we consider that neither of the two possible serializations gives rise to real ungrammaticality:

(31) *Ich habe* $\left\{ \begin{array}{l} es_{\text{ACC.NEUT}} \\ ihm_{\text{DAT.MASC}} \end{array} \right\}$ *gestern gegeben.*
I have {it, him} yesterday given

In (31), the Middle Field is delimited by the auxiliary *habe* 'have' and the past participle form of the verb *geben* 'give' (*gegeben*). The two possible 'output candidates' are given in (32) and (33):

(32) *Ich habe ihm es gestern gegeben.*

(33) *Ich habe es ihm gestern gegeben.*

Each of the output candidates has 'advantages': (32) is in accordance with the 'canonical' order of direct and indirect objects with non-pronominal NPs; we could say that it obeys the 'principle of analogy' (cf. below). (33) is at variance with the principle of analogy — it gives rise to a 'paradigmatic mismatch' in the clause structure — but it has the advantage of being in accordance with the 'principle of frequency-based serialization', since the string <*habe* + *es*> is more frequent than the string <*habe* + *ihm*> (24,614 vs. 6,539 occurrences in the COSMAS corpus; the ratio is approx. 4:1). Thus there are (at least) two competing principles at work: the 'principle of frequency-based serialization' stated in (30) above, and the 'principle of analogy'. The latter principle can be characterized more precisely in the present context as the 'principle of analogical form-function mapping':

(34) The principle of analogical form-function mapping
Elements with identical morphological and/or semantic specifications are treated alike in the application of syntactic rules, or the use of constructional schemas.

Roughly speaking, the 'principle of analogical form-function mapping' requires that the order of themes and recipients (or accusative and dative NPs) should be invariant across sentences and independent of the exact categorial status of the NP (e.g. pronoun or lexical NP). Given that the order of themes and recipients is not invariant in the German Middle Field, this principle seems to be outweighed by the 'principle of frequency-based serialization'.

3.4 The 'principle of end weight'

So far, I have postulated two (competing) principles underlying word order rules and tendencies of object serialization in the German Middle Field. Unfortunately, such an account probably falls short of an adequate explanation. In particular, the hypothesis that the two verb positions in the German Middle Field 'attract the accusative' via frequency effects faces one problem: it cannot account for the order of objects in subordinate clauses, where pronominal themes likewise precede pronominal recipients, although there is no (finite) verb to the left of the Middle Field. This is illustrated in (35):

(35) *…dass ich es*$_{\text{TH}}$ *ihm*$_{\text{REC}}$ *gestern gesagt habe.*
…that I it.ACC him.DAT yesterday told have
'…that I told him it yesterday.'

We could of course assume that the order of elements in the German Middle Field is primarily determined in main clauses and then generalized to subordinate clauses (another instance of the 'principle of analogical form-function mapping'). From the perspective of frequency-based explanations this seems feasible, since main clauses are certainly more frequent than subordinate clauses, especially in the spoken language. Still, one may object that we should be bound to expect the word order in subordinate clauses to differ from the one in main clauses if frequency were the only factor. In this section, a third explanatory principle will be discussed, namely the 'principle of end weight'. As will be argued, the principle of end weight favours TH–REC order for pronominal objects and REC–TH for non-pronominal ones and thus 'conspires' with the frequency effects pointed out above.

The 'principle of end weight', which I take to be equivalent to Behaghel's (1909) 'law of increasing constituents' ('das Gesetz der wachsenden Glieder'), is usually regarded as a principle of phonological well-formedness at the sentence level and has often been invoked by rhetoricians. Behaghel refers to the Athenian Demetrius of Phaleron (†280 BC), who states in his treatise on style (*perí hermeneías*) that "in composed periods the last element has to be larger [than the preceding ones]" (§18) and that "the words have to be arranged like this: to put first what is not very prominent, and in the second and last position what is more prominent" (§50; quoted from Behaghel 1909:137; my translation). Hawkins (1994, 2004) has shown that the principle of end weight can be explained in terms of processing ease and is thus firmly anchored in cognitive principles of language organization.

If we consider the serialization of pronouns in the German Middle Field from a phonological point of view, we notice that accusative pronouns typically have less phonological substance than dative pronouns. It is consequently to be expected that accusative pronouns will precede dative pronouns if the principle of end weight applies at this level of phonological organization (cf. also Müller 2001 for this assumption).[12] (36) provides a scale of phonological weight which orders the German pronouns according to the number of their syllables (monosyllabic vs. disyllabic) and the structure of their rhymes:[13]

(36)

monosyllabic			
-VC	-V{C,V}	-VV{V,C}	disyllabic
[əs]$_{\text{3SG.NT.ACC}}$	[ʊns]$_{\text{2PL.ACC/DAT}}$	[iːn]$_{\text{3SG.MASC.ACC}}$	[iːnən]$_{\text{3PL.DAT}}$
[mɪç]$_{\text{1SG.ACC}}$	[ziː]$_{\text{3PL.ACC/3SG.FEM.ACC}}$	[iːm]$_{\text{3SG.MASC.DAT}}$	
[dɪç]$_{\text{2SG.ACC}}$		[ɔɪç]$_{\text{2PL.ACC/DAT}}$	
[zɪç]$_{\text{3REFL.ACC/DAT}}$		[iːɐ]$_{\text{3SG.FEM.DAT}}$	

The generalization that pronouns are serialized according to their phonological weight makes the right predictions in most but not all cases. For instance, dative *uns* should precede accusative *ihn*, but the reverse order is usually found (e.g. *stellte ihn uns vor* 'introduced him to us'; note that the alternative ordering *stellte uns ihn vor* is also fully acceptable, but less frequent: <*ihn uns*> occurs 246 times in the COSMAS corpus as against 46 occurrences of <*uns ihn*>). Still, both of the two dative pronouns that are relatively light — *sich* and *uns* — are also used in the accusative, i.e. there is case syncretism. The following generalization can therefore be made: every dative pronoun that is lighter than some accusative pronoun is also used in the accusative. This seems to indicate that the scale in (36) is not only one of phonological weight, but also one of frequency: as was shown in Section 3.2, accusative pronouns are more frequent than dative pronouns in the Wackernagel position and are therefore expected to have less phonological weight.[14]

As far as combinations of pronouns are concerned, the principle of end weight thus works in the same direction as the principle of frequency-based serialization, in so far as it favours TH–REC order for combinations of pronouns. The same applies to the serialization of lexical NPs on the other side of the Middle Field: lexical recipients are typically 'lighter' than lexical themes, since the former tend to be human and given whereas themes are often non-human and new. This has been shown by Collins (1995:43), who states that on an average "entity NPs [themes] are over three times longer than receiver NPs". As a consequence, lexical recipients are expected to typically precede lexical themes, according to the principle of end weight.

To sum up this section, there are two principles favouring the order of objects as described for the German Middle Field in Section 3.1 (i.e., PRO$_{\text{TH}}$–PRO$_{\text{REC}}$ and NP$_{\text{REC}}$–NP$_{\text{TH}}$): (i) the principle of frequency-based serialization, and (ii) the principle of end weight. The principle of analogical form-function mapping is at variance with these ordering principles, though it does not favour any particular

order. It merely says that the order of objects should be invariant across sentences and independent of the types of NPs involved, but this could either mean that pronouns should be ordered like lexical noun phrases, or else that lexical noun phrases should be ordered like pronouns. The fact that German exhibits an 'inconsistent' ordering of objects in the Middle Field shows that the principle of analogical form-function mapping does not carry much weight in this part of German grammar. This is not unexpected considering that linear order plays a minor role in German clause structure, since grammatical relations are primarily identified by morphological case.

4. English ditransitive constructions in a diachronic perspective

Having discussed three principles accounting for the order of elements in the German Middle Field — partially conspiring and partially competing — we can now turn to the historical development of the double object construction in English. The clause structure of Old English or, to be more precise, of the West Saxon dialect of Old English, is quite similar to that of German. Old English is usually analyzed as a verb-second language, though the verb occurs regularly in the third position as well when it is preceded by a pronoun (cf. van Kemenade 1987; Denison 1993; Fischer *et al.* 2000 for surveys of Old English syntax; note that verb third structures are also found in Old High German; cf. Tomaselli 1995; Ramers 2005). It is typically analyzed as OV, but VO structures are also frequently found. This is attributed either to extraposition (i.e., right-dislocation beyond the final verb), or to variation in the underlying order (the 'double base hypothesis'; cf. Pintzuk 1990). V3-structure in main clauses is illustrated in (37) and an example of VO/extraposition is given in (38):

(37) *God him worhte ða reaf of fellum*
God them made then garments of skins
'God then made them garments of skin.'
(Ælfric's Homilies I, 147–148, ed. Clemoes; c990–994)

(38) *Se mæsse-preost sceal monnum bodian þone soðan ȝeleafan*
the mass-priest must people preach the true faith
'The mass priest must preach the true faith to the people.'
(Ælfric's letter to Wulfstan 1, 175, ed. Fehr/Oz; c1070)

In general, the topological structure of the OE sentence is nevertheless quite similar to that of the Modern German sentence, in particular, in so far as there is a 'basic' part of the clause, corresponding to the German Middle Field, and there are marginal positions for information-structurally prominent constituents. As far as the order of theme and recipient is concerned, the situation is also parallel to the one found in German. Both REC–TH (DAT–ACC) and TH–REC (ACC–DAT) are attested, but the order of objects seems to be sensitive to properties of the constituents involved. Using the same diagnostics that are commonly applied to modern V2-languages, Koopman (1991:120) has argued that "there is reasonable evidence to suggest that the underlying order is DAT-ACC". Two examples with this (supposedly) basic order are given in (39) (main clause) and (40) (subordinate clause):

(39) *He* [*sealde* [$_{\text{REC}}$ *þam geswenctum mannum*] [$_{\text{TH}}$ *reste*]]
he gave the oppressed people rest
'He gave the oppressed people rest.'
(Vercelli Homilies IV, 149–50, ed. Scragg; a1000)

(40) *þæt he* [[$_{\text{REC}}$ *þon biddendan*] [$_{\text{TH}}$ *ece lif*] *forgeafe*]
that he the asking eternal life gave
'that he gave eternal life to those who asked for it.'
(Blickling Homilies II, 19, 35, ed. Morris; c971)

The order of pronominal objects is likewise parallel to that of German. According to Visser (1963:623), "[w]hen both the objects are pronouns it seems always to have been the rule to put the direct object before the indirect object. Exceptions are not numerous." Examples are given in (41)–(43) (for more examples see Visser 1963:623):

(41) & Ø *hæfde hit*$_{\text{TH}}$ *him*$_{\text{REC}}$ *wel neh twelf monæð*
and PRO had it.ACC him.DAT well near twelve months
'…and PRO kept it for himself for about twelve months.'
(Anglo-Saxon Charters S 1467, ed. Sawyer; c1040)

(42) … *gelæste hit*$_{\text{TH}}$ *him*$_{\text{REC}}$ *georne ær oððon æfter*
… should.pay it.ACC him.DAT eagerly before or after
'…(he) should pay it to him readily before or after [the feast].'
(Laws of England: VI Æthelred 25, 2, ed. Liebermann; c1008–1011)

(43) *He þe bæd langes lifes, and þu hit*$_{\text{TH}}$ *him*$_{\text{REC}}$ *sealdest* …
he you asked long life and you it.ACC him.DAT gave …
'He asked you for a long life, and you gave it to him … '
(Paris Psalter 20, 4, ed. Stracke; a900)[15]

Turning from Old English to Middle English, we are faced with the well-known problem that Middle English cannot simply be regarded as a later stage of Old English if the latter is taken to be synonymous with West Saxon, since most Middle English documents are written in dialects from regions other than West Saxon.

It is therefore often difficult to say whether a structural difference between varieties of Old and Middle English is due to a process of historical change, or whether the relevant differences already existed in Old English times. The developments sketched below are therefore to be taken as models for possible developments, rather than representing specific developments in the history of English. The question at what time the order of objects changed will be taken up later.

In very general terms, the change from Old English to Middle English is characterized by two important developments: first, the basic word order shifted from V2/OV to SVO; and second, case morphology was lost (cf. Trips 2002 for an overview). Supposedly as a result of the loss of case distinctions, the word order in the VP became increasingly fixed, but this change proceeded less quickly than one may be led to expect. As Visser (1963:622) remarks, "the indirect object can no longer be distinguished from the direct object by means of the difference in inflectional form. Henceforth the interpretation depends on context and situation, and on the fact that in the majority of cases the indirect object refers to a person and the direct object to a thing, so that word order is mostly immaterial". Later, "a fixed wordorder [sic] came to take over the discriminative task of the difference in case forms", in other words, REC–TH order was established as the canonical order.

A certain freedom may also have existed in the order of pronominal objects. However, it is likely that combinations of the type *gave it him/gave him it* were fixed earlier than the corresponding patterns with lexical NPs, owing to their relatively high string frequency. Some (not necessarily regional) varieties of Middle English had TH–REC order, just like the West Saxon dialect of Old English (again, 'variety' is used in a maximally broad sense and stands for the language of specific manuscripts). Examples are given in (44)–(47) (in chronological order):

(44) he wule hit me forȝeuen
MED, s.v. *mīld-herted*, Lambeth Homilies; a1225, W-Midlands

(45) 'Gossip', quod þe wolf, 'forȝef hit me'.
MED, s.v. *god-sib* 2., The Fox and the Wolf; a1300, prob. Kentish

(46) Also I prey yow to foryeve it me.
Chaucer, Canterbury Tales, General Prologue, 743; 1380–90, London

(47) Thou þat knowest the vse of an argument, I pray the schewe yt me.
MED, s.v. *ūse* 4a., Chartier Dialogue of the Friend and the Fellow; a1500, dialect not classified

A second type of variety of Middle English differs from Old English in regularly showing REC–TH order in the case of pronominal objects, as is illustrated in (48)–(50). Note that the sentences in (48) and (49) show verb-final order and are, in this respect, conservative:

(48) Gode faith me it tauȝte
MED, s.v. *tēchen* 10., Piers Plowman B; c1378, W-Midland

(49) he wil me it allowe
MED, s.v. *allŏuen* 5., Piers Plowman B; c1378, W-Midland

(50) A pure man … prayed þaim to giff hym it.
MED, s.v. *thirst* 1.(b), Alph. Tales; c1450, dialect not classified

As mentioned above, it is not entirely clear whether REC–TH order was in all cases the result of a process of innovation, or whether the relevant structures already existed in Old English times. However, there is good evidence that REC–TH order may have been established (at least in some varieties) before the Middle English period: the area covered by '*me-it*-dialects' in Figure 1 corresponds more or less to the Danelaw (which extended more into the West Midland dialect area, though, and less into the south). In Old Norse, both REC–TH and TH–REC order are attested (for examples see Faarlund 2005:134, 141–142), but in modern Scandinavian languages REC–TH is the order generally used with all combinations of objects (nominal and pronominal). (51) and (52) are examples from Swedish and Icelandic:

(51) Swedish
Han lånade honom den.
he lent him it
'He lent him it.' (Holmes and Hinchliffe 1994:511)

(52) Icelandic
Ég gaf honum það.
I gave him it
'I gave it to him.' (Jóhanna Barðdal, p.c.)

Given that Modern Scandinavian languages uniformly have REC–TH order, it seems feasible that this was also the preferred order of Old Norse. If this is right, REC–TH order with pronominal objects in varieties of English may well be the result of language contact with Old Norse. In this case, the REC–TH construction may have been established before the Norman Conquest, i.e. before the emergence of Middle English, since the Danish settlements in the north-west date back to the late 8th century.

A similar instance of language contact has been claimed by Trips (2002:152–163) for 'object shift', viz. an operation commonly found in Scandinavian languages which is also attested in varieties of Middle English that are located in the Danelaw, in particular the language of the *Ormulum*. Given all the other (e.g. lexical) evidence that we have for contact influence of Old Norse on Old English, the hypothesis that REC–TH order in the pronominal double object construction

is due to language contact is certainly not too far-fetched. It is equally clear, however, that REC–TH order was also favoured by the 'principle of analogical form-function mapping', in so far as it led to a uniform serialization of objects in the Verb Phrase.

5. Conclusions and outlook

Starting with the observation that some varieties of English exhibit what we may call a 'paradigmatic mismatch' — the order of objects varies with their status as a noun or pronoun — I have attempted to show that such an inconsistency may actually be well motivated in V2-languages such as German and Old English if one takes frequency patterns ('the principle of frequency-based serialization') and stylistic preferences ('the principle of end weight') into account. Such principles have been claimed to counterbalance the 'principle of analogical form-function mapping', which is also an important motivation underlying language structure. TH–REC order (with pronominal objects) has been shown to be a conservative pattern in so far as it has been 'inherited' from Old English. Varieties manifesting REC–TH order in ditransitive constructions with two pronominal objects are basically found in the area corresponding to the Danelaw, which suggests that language contact with Old Norse may have played a role in the establishment of this construction. In order to corroborate this suspicion, a fine-grained analysis of Middle English texts with regard to the distribution of double object constructions and their geographical origin needs to be carried out. I leave this as a suggestion for future research.

Notes

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1. I will use the semantic terms 'recipient' (REC) and 'theme' (TH) to distinguish the two lower arguments of ditransitive predicates.

2. A superscript ^{D} is used to indicate a restriction to specific dialects.

3. The British National Corpus (BNC) contains approx. 100 million words. It comprises a spoken component of approx. 10 million words, which contains samples of speakers from all parts of Britain.

4. Note that the language of *David Copperfield* does not correspond to any northern or north-western variety of British English.

5. The page numbers correspond to the edition of the Etext of *David Copperfield*, published by Infomotions in 2005.

6. Note that the order of NPs is also sensitive to other factors such as length/complexity, definiteness and the interpretation of indefinite NPs. For instance, *eine Münze* in (23) can be preposed when it receives a specific/wide scope or a generic interpretation. If both objects are non-specific/existential, however, the dative precedes the accusative. This configuration is, for several reasons, regarded as the 'basic' or 'canonical' one (cf. Büring 2001; Lenerz 2001; Haider and Rosengren 2003; Frey 2004).

7. Wackernagel (1892) claimed that proto-Indo-European had a special position for clitics in the clause, namely the second position. Moreover, he contended that verb-second ordering in Germanic languages has emerged as a result of this rule, since (specific) verbs were generally enclitic in main clauses. Viewed from this perspective, it is the position of the finite verb that should be called the 'Wackernagel position' in German. However, since the position of the finite verb has lost its restriction to unstressed elements — assuming that there was such a restriction to begin with — today it is the position immediately following the finite verb that is usually called the 'Wackernagel position', since this position is occupied by elements similar to those occupying the 'genuine' Wackernagel position in languages such as Ancient Greek or Vedic (cf. also Anderson 1993).

8. In the COSMAS corpus, there are 18,139 occurrences of the sequence *es ihm* and only 67 of the order *ihm es*. Only in 10 cases of *ihm es* are the two pronouns co-arguments, i.e. in most cases there is a clause boundary between the two pronouns (e.g. *…sagt ihm, es sei Zeit*, 'told him it was time'); cf. also Note 14.

9. There are several positions for adverbials, but most of them are located between the pronouns on the left margin and indefinite/existential objects on the right margin; cf. Frey and Pittner (1998).

10. I deliberately avoid the term 'token frequency' since it evokes the dichotomy of token vs. type frequency, which is too coarse-grained for the present purposes.

11. The COSMAS-corpus (Corpus, Search, Management and Analysis System) is a corpus of written language that contains more than 1 billion words. It can be accessed online at: http://www.ids-mannheim.de/kl/projekte/cosmas_I/.

12. This assumption is, of course, not beyond doubt, since the principle of end weight can hardly be said to operate at all levels of the phonological hierarchy. There is good evidence, however, that it operates not only at the phrase level (as shown by Hawkins 1994, 2004), but also at the word level, at least within the German Middle Field. From a phonological point of view, the Middle Field can be divided into three major parts: (i) the left margin, often associated with the Wackernagel position, which attracts/hosts clitics; (ii) the right margin, which is usually occupied by focal material; and (iii) an area in between which usually contains material with stress positions but with no stress or only secondary stress. This topological tripartition is independent of constituency and clearly reflects phonological principles of word serialization.

13. The structure of the onset is generally irrelevant to rules that are sensitive to syllable weight, in particular stress rules.

14. The observation that accusative pronouns are more frequent than dative pronouns has been restricted to their occurrence in the Wackernagel position because, surprisingly perhaps, dative pronouns seem to be more frequent than accusative pronouns altogether. For instance, the pronoun *ihm* occurs 475,243 in the COSMAS corpus whereas *ihn* occurs only 426,738 times. This bias is due to two facts: first, *ihn* is only used as a masculine pronoun while *ihm* is also used as a neuter form. This fact is negligible, however, because neuter occurrences of *ihm* are very rare. More important is the fact that most German prepositions govern the dative (e.g. *mit* 'with', *ohne* 'without', *zu* 'to', *von* 'from'). Many locative prepositions can be used with either the dative or the accusative. Prepositions that always require the accusative are relatively rare (e.g. *für* 'for').

15. The prose portion of the Paris Psalter contains interlinear translations of the Latin texts and is therefore not a reliable source for syntactic information. In the example given, there is, however, no pronominal element corresponding to Old English *hit* (*tribuisti ei*), so I take it that the word order of (43) is not an artefact of translation.

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From language-specific constraints to implicational universals

A cognitive-typological view of the dative alternation

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This article seeks to shed more light on the well-studied, yet still challenging, dative alternation. It starts from the cognitive-typological suggestion of Croft (2001, 2003) that language-internal variation is subject to the same constraints as cross-linguistic variation (the semantic map model), and that careful language-specific research may therefore reveal facts about language in general. I argue that there is a parallel between dativisability and passivisability. Then, using a sample of active tokens from the British National Corpus of ditransitive *give* in both the indirect-object and double-object constructions and comparing these to a matched sample of passive examples, I evaluate the effect on passivisability — and hence dativisability — of the semantic parameters proposed in previous scholarship. The results are stated as a set of implicational universals. They should hold for all languages that feature the alternation, and make diachronic predictions as well. In addition to the semantics — which has been discussed in many previous studies — I argue that token frequency also plays a role in promoting dativisability — which has never been suggested before. The conclusion identifies some general implications for theoretical linguistics and for the practice of research on language structure and meaning.

1. The problem

The dative alternation, exemplified in (1), below, is a well-studied phenomenon. For overviews of scholarship see e.g. Levin (1993:45–48) or, less extensive but more recent, Gries (2003).

(1) a. John gave a gift to Mary.
b. John gave Mary a gift. (Gropen *et al.* 1989:204)

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The prepositional construction in (1a) will henceforth be referred to as the indirect-object construction (IOC), and the construction illustrated by (1b), as the double-object construction (DOC).

Determinant factors of the alternation have been analysed along two orthogonal dimensions: (i) the cross-linguistic vs. language-specific dimension and (ii) constraints on the verb type vs. the choice of one construction over the other in discourse. The present article sets out to investigate both language-specific and cross-linguistic constraints on the alternation, which, in line with the cognitive-typological approach to language of e.g. Croft (2001, 2003), are treated as two sides of the same coin.[1] The article is not concerned with the choice of a particular construction in discourse.

Typological work on the dative alternation has mostly focused on the variation in constructions across languages for the encoding of two objects, see e.g. Siewierska (2003), Haspelmath (2005). Some work has also been carried out on what determines the availability of the patterns in a given language. Givón, for example, citing evidence from English, Hebrew, Sherpa, Indonesian and KinyaRwanda has argued that the "grammaticalisation to DO, if occurring at all, is governed by the hierarchy of topicality" (1984:163):

BEN > DAT > ACC > LOC > INSTR > OTHERS

While this makes certain predictions as to which verbs, in a given language, may display the dative alternation, the semantic roles of the hierarchy are fairly general labels. Research on specific languages — where English has very much been the focus — suggests that the topicality hierarchy is not fine-grained enough to account for all the facts of the dative alternation.

A considerable body of language-specific research on the dative alternation investigates speakers' choice between IOC and DOC in running discourse. Various factors related to morphophonological weight and information structure (e.g. definiteness, topicality) have been shown to play a role, see e.g. Allerton (1978), Arnold *et al.* (2000), Givón (1984), Gries (2003), Hawkins (1994), Panther (1997), Polinsky (1998), Ransom (1979), Thompson (1990). As this article is not concerned with choices in discourse, I will not discuss this scholarship in any detail. Incidentally, the DOC construction itself has two variants (at least when both objects are pronominal), one with the recipient (REC) preceding the theme (TH), as in (1b) above, the other, with the two objects in reverse order, e.g. *John gave it her*. Variation here is determined by various factors, including again weight and discourse status but also regional dialect; see e.g. Siewierska and Hollmann (2007) and Gast (this issue) for an overview and discussion.

In previous work on verb-type restrictions on the dative alternation, scholars have been especially puzzled by the fact that semantically similar verbs such as

give vs. *donate*, *send* vs. *transport/carry/push/pull, tell* vs. *shout/report* may vary in their behaviour:

(2) John donated the painting to the museum.

(3) *John donated the museum the painting. (Groefsema 2001:525)

Some have taken this as an indication that while in a very general fashion there is a semantic constraint underlying the alternation — described by Levin as "change of possession, where possession is rather broadly construed" (1993:48) — there must be other factors at work as well. Specifically, Gropen *et al.* (1989), Mazurkewich and White (1984), Oehrle (1976), Pinker (1989), Storm (1977) and Stowell (1981) have argued that within the class of change of possession predicates there is a morphophonological or etymological constraint as well. (Goldberg 1992 argues for such a constraint, too, but her view of the role played by the semantics is more sophisticated than the constraint presented above — see below for discussion.) The suggestion is that, for example, *give* but not *donate* allows dativisation because it is monomorphemic/monosyllabic and of Germanic not Latinate origin. *Donate*, by contrast, is not monosyllabic or even polysyllabic with initial stress — which is the Germanic pattern; compare the dativisability of *promise* and *offer*, both of which are also of Latinate stock but have been assimilated to the native stress pattern.

With respect to these semantic and morphophonological/etymological constraints, Groefsema (2001:528–29) points out that none of the proposals accounts for all the data. Indeed, a quick glance at the list of dativisable verbs compiled by Levin (1993) shows that there are cases of monomorphemic and monosyllabic verbs of Latinate origin that do occur in DOC, e.g. *lease*, *pay* and *serve*, and that there are also cases of Latinate verbs that do not conform to the Germanic stress pattern yet may dativise nonetheless, e.g. *advance, allot, assign, award, bequeath*, to name but a few. Groefsema also observes that there are undativisable verbs whose meaning and morphophonological properties would nonetheless seem to make them candidates for dativisability on the traditional accounts of the authors mentioned above (not including Goldberg 1992), viz. *shout, scream, pull, push, lower, entrust, credit, supply, choose, pick, select* (2001:529). Another problem Groefsema identifies is that whether the morphophonological/etymological constraint applies or not ultimately depends again on the semantics of the verbs involved. Consider for example that the verbs *bequeath, refer, recommend, guarantee* and *permit* form a class of verbs of 'future having' (2001:529, see also the summary on p.533). She concludes, rightly to my mind, that morphophonology/etymology should be disregarded.

Groefsema argues that the solution to the problem of accounting for the distribution of DOC lies in a refinement of the semantic constraint. She labels her

specific proposal the Unique Effect Constraint: "for a verb to occur with both syntactic frames [viz. IOC and DOC], each one has to encode an effect which is not linguistically realised by any other VP" (Groefsema 2001:536–537). Let me illustrate the constraint in relation to *give* vs. *donate*. Groefsema suggests that *give* encodes a different effect on REC when in DOC as compared to IOC. This is widely accepted: the semantics of the two constructions with *give* are commonly analysed as follows (see e.g. Gropen *et al.* 1989:241, Goldberg 1992:45–46):

IOC → 'X causes Y to go to Z'
DOC → 'X causes Z to have Y'

In DOC, then, REC is causally affected in a way that it is not in IOC, which instead focuses on the effect on TH. The idea is that this meaning difference supports the availability of the two constructions for the verb *give*. *Donate* is different, Groefsema suggests, as its function is to ascribe a special status, i.e. that of being a donation, to TH. Given the focus on the status of TH, *donate* does not occur in DOC, which after all would focus more on REC, and "the effect on the recipient in an act of donating does not differ from that in an act of giving" (Groefsema 2001:542).

The Unique Effect Constraint is problematic, as it is not easy to decide in a principled way which verbs may describe a special effect on TH, and which verbs may code a special effect on REC. Regarding *donate*, the case does not look convincing. One could argue that this verb encodes a situation where REC is especially reliant on gifts, and is perhaps expected to be more grateful than in a typical act of giving. The common collocation of *donate* with the noun *charity* as in example (4), below, taken from the British National Corpus,[2] supports the suggestion that our frame knowledge of acts of donating does include a special effect on the recipient: we know that charities can only exist by virtue of donations, and are in that sense more profoundly affected than the recipient in an ordinary act of giving.

(4) Any readers who want to collect aluminium cans can either send them to me or contact local scrap metal dealers and take them there, where they can then donate the cash to a charity of their own choice. (BNC A17 1220)

The semantic dimension of Goldberg's (1992, cf. also 1995) account of dativisability is more sophisticated than other research on the phenomenon. Rather than proposing one single constraint, she argues that the DOC construction has a certain central meaning associated with it, i.e. 'Subj successfully causes Obj1 to receive Obj2' (Goldberg 1992:56). Core members of the class of dativisable verbs are fully compatible with this meaning, but various extensions are also possible (see e.g. Taylor 1995, Croft and Cruse 2004 for the prototype-based view of semantics implicit here). Her proposal, including some but not all of the extended senses of DOC, is summarised below:

Central sense: Subj successfully causes Obj1 to receive Obj2
Verb classes:
i. inherent acts of giving: *give, hand, pass, feed*
ii. punctual causation of ballistic motion: *throw, toss, slap, kick, poke, fling, shoot*
iii. verbs of continuous causation in a deictically-specified direction: *bring, take*

Extended senses: satisfaction conditions imply: Subj causes Obj1 to receive Obj2
verbs of giving with associated satisfaction conditions: *guarantee, promise, owe*
Subj intends to cause Obj to receive Obj2
i. verbs involved in scenes of creation: *bake, make, build, cook, sew, knit*
ii. verbs of obtaining: *get, grab, win, earn*
(adapted from Goldberg 1992:56)

Goldberg's account is descriptively adequate for the facts of present-day English. However, the extended senses all seem to be on a par, and so she would still have to explain why the scope of DOC was extended to certain verbs before others; consider for example that *owe* (*agan*) was already dativisable in Old English (Visser 1973:621) while e.g. *bake* and *build* were not.[3] In addition, Goldberg's proposal cannot straightforwardly account for some dativisability facts of other languages in which the alternation is found, even if the language is question is a closely related one such as Dutch:

(5) *Jan beloofde Marie een nieuwe fiets.*
'J. promised M. a new bike.'

(6) ?*Jan bakte Marie een cake.*
'J. baked M. a cake.'

(7) ?*Jan bouwde Marie een huis.*
'J. built M. a house.'

2. Theoretical perspective and methodology

2.1 Cognitive-typological linguistic theory

Despite the shortcomings in terms of diachronic and cross-linguistic applicability, Goldberg's (1992) — and others' — semantic analyses do make reference to uni-

versally valid semantic properties, such as volitionality of the agent (AG), volitionality of REC, and unity of time. The present article starts from the assumption that on the basis of these kinds of universal semantic parameters it is possible to devise an account of dativisability that is valid across time and across languages (that is, of course, languages where the alternation occurs).

Underlying this assumption is the cognitive-typological approach to language exemplified by e.g. Croft (2001, 2003). This approach takes an essentially universalist position on conceptual structure and cognitive processing. In other words, speakers of different languages share the same conceptual system, and the same set of cognitive abilities that allow them to interact with their environment, which includes language structure and meaning. Variation across languages occurs because different languages conventionalise different ways for the grammar to code aspects of the conceptual space, and these conventionalisations are subject to change. The variation is nevertheless constrained by the (cognitive) requirement that conceptually adjacent notions are more likely to be coded in a similar manner than conceptually distant ones (cf. e.g. Croft 2001:96). The diachronic manifestation of this principle is that extensions of a given linguistic expression (construction) are only possible if they are in the direction of conceptually adjacent conceptualisations (this is part of what Croft labels "diachronic typology" or "the dynamicisation of typology", where typological hierarchies and implicational universals are essentially reinterpreted as grammaticalisation clines, see especially Croft 2003: Chapter 8). In technical terms, the language-specific ways in which regions of the conceptual space are covered by linguistic expressions (constructions) are semantic maps. The traditional typological term for the constraints on cross-linguistic variation in the mapping of linguistic form onto function is implicational universals, and the diachronic typological view is that these universals are the synchronic manifestation of grammaticalisation clines (cf. especially Croft 2003:244ff.). Over the past two or three decades the semantic map model has become increasingly important in functional-typological linguistics: see also Anderson (1974, 1982, 1986, 1987), Croft *et al.* (1987), Croft and Poole (2004), Kemmer (1993), Haspelmath (1997, 2003), Kortmann (1997), Stassen (1997), Van der Auwera and Plungian (1998).

Because language-specific constraints are no more than conventionalised manifestations of cross-linguistic universals, it is possible to use language-specific facts to infer implicational universals (Croft 2001:107). This article uses data from English ditransitives to shed light on universal constraints on the dative alternation. The first step is to draw on previous scholarship to identify the semantic properties that may play a role in determining dativisability.

2.2 Dativisability and passivisability

With a list of potentially relevant semantic properties in hand, I will move on to an analysis of IOC vs. DOC in terms of these parameters. Unfortunately it is not feasible to compare the two constructions directly. This is because weight and information-structural factors also play a large role in speakers' decision to use one construction rather than the other, rendering it difficult to tease out the influence of the semantics. The evidence I will rely on instead is indirect, inasmuch as *passivisation* facts will be used to shed light on *dativisability*. There are two reasons why it is legitimate to use the former phenomenon as a window onto the latter.

The first reason has to do with the (abstract) lexical semantics of the REC argument. Specifically, according to the semantic characterisations of IOC vs. DOC presented in Section 1, REC in DOC is directly causally affected by the act of transfer, whereas in IOC s/he is not. In other words, in the transfer situation portrayed by DOC the interaction between AG and REC is semantically more highly transitive than in IOC. Significantly, research on the passive construction has shown that the interaction between AG and the undergoer tends to be semantically more highly transitive than in the corresponding active construction as well (see e.g. Bolinger 1978, Hopper and Thompson 1980, Keenan 1985, Rice 1987). It follows that there must be a parallel between dativisability and passivisability.

The second reason for assuming that there should be such a parallel is a discourse-pragmatic one. Functional models of grammar generally point to similarities between direct objects of active clauses — crucially including DOC sentences, where the direct object is the REC argument (see e.g. Givón 2001a:178) — and subjects of passive clauses. Givón argues that the competition for subjecthood and direct objecthood is determined by the discourse-pragmatic factor of topicality, where, in active transitive clauses, primary topicality will lead to coding as the subject, secondary topicality, as the direct object (2001b:198). Topicality, in its turn, is related to semantic function. One version of the topicality hierarchy for direct objects along these lines was given in Section 1 above; for subjecthood an agent node would have to be added to the left of the BEN role. Different functionalist schools propose slightly different hierarchies (compare e.g. Dik's 1997:266 Subject Function Hierarchy), but they overlap considerably and illustrate the same basic insight concerning the mapping between function and structure. Since the primary motivation for using a passive is to detopicalise the agent participant of the event portrayed, the secondary topic — i.e. what would be the direct object in a transitive clause portrayal of the event — emerges as the subject (see e.g. Givón 2001b:94, 125).

For these two reasons, the question as to what semantic constraints determine dativisability can be operationalised by comparing the semantics of passive

to active ditransitives. Properties found significantly more often in the passive are not only determinants of passivisation, but by extension also of dativisation. Furthermore, given the cognitive-typological view of language espoused here and the cross-linguistic validity of the semantic parameters involved, the results for English may be used to infer implicational universals pertaining to the dative alternation.

It is important to emphasise that it would be beyond the scope of this study to not only infer these implicational universals, but to subsequently go on and confirm them against a representative sample of cross-linguistic data as well. Languages that display alternation in ditransitives are extremely rare. Siewierska's (1998) survey of 270 grammars yielded usable data for 219 languages, of which only 12 exhibited the alternating constructions. This makes it difficult to obtain the necessary data. The situation is aggravated considerably by the fact that, as also noted by Siewierska (1998:179), most grammars only report on alternation in the verb *give*. For present purposes one would obviously need surveys of most, preferably all, verbs displaying the variation (*à la* Levin's 1993 comprehensive description of alternations in English), ideally illustrated by reliable corpus examples from the languages in question. The solution would be to elicit data for the relevant languages (abandoning the idea of a genetically and geographically stratified sample Siewierska 1998:179–180 managed to identify an additional 26 languages exhibiting the alternation) and put the universals inferred below to the cross-linguistic test. For now, this must remain an idea for a promising follow-up study.

2.3 Potentially relevant semantic properties

The potentially relevant semantic properties proposed in previous scholarship are six. I briefly discuss them below, illustrating the different values with examples from the British National Corpus, all involving the verb *give* (about which, more later).

The first property is the nature of the transfer. Goldberg (1992:51), Goldsmith (1980), Gropen *et al.* (1989:222 and *passim*), Mazurkewich and White (1984:264), Oehrle (1976) and Stowell (1981) argue, more or less explicitly, that there is a difference between a situation where REC actually ends up as being the possessor of a concrete TH, and where transfer is merely abstract or intended. The idea is that concrete transfer makes the situation more amenable to being portrayed by DOC than does abstract/intended transfer:

Hierarchy 1: concreteness of TH
concrete transfer > abstract/intended transfer

Groefsema adds a further dimension to the nature of the transfer, i.e. whether it is permanent or temporary (2001:538). She does not clearly link this to the notion

of dativisability, but since REC in cases of permanent transfer can be said to be affected more than if transfer is but temporary, we may hypothesise that this dimension is connected:

Hierarchy 2: permanence of transfer
permanent transfer > temporary transfer

The two hierarchies may be integrated as follows:

Hierarchy 3: combining concreteness of TH and permanence of transfer
permanent concrete transfer > temporary concrete transfer, > temporary abstract/intended transfer
permanent abstract/intended transfer

The following examples from the BNC illustrate the different values (apart from intended transfer, which *give* cannot be used for): (8) describes the permanent transfer of a concrete TH, (9) the temporary transfer of a concrete TH, (10) the permanent transfer of an abstract TH, and (11) the temporary transfer of an abstract TH.[4]

(8) She was polite, she gave me a small box of chocolates with a thank-you card and kissed me and shook my hand when she came for a meal on Sunday. (BNC A0U 1389)

(9) It gave me a temporary Equity card — mind you they took it away again as soon as I had done the four weeks work. (BNC A06 1809)

(10) In other words he opened up the circles, squares and longways sets to show what gave rhythm and life to the movements. (BNC A12 1151)

(11) She gave me a half-smile.[5] (BNC A0F 907)

The second property is punctuality (Pinker 1989:273):

Hierarchy 4: punctuality
punctual transfer > non-punctual transfer

Example (12), below, illustrates punctual, (13), non-punctual transfer.

(12) "Oui," she said, and gave him the folded note. (BNC A0L 3516)

(13) Richard Rampton QC, read out a draft of a speech which Lord Aldington gave in March 1985 to the pupils of Winchester College where he was Warden. (BNC A49 185)

Goldberg actually includes both punctual and non-punctual transfer in her DOC prototype (1992:57), but it is important to note that this stage of the investigation

is meant to be as unrestrictive as possible: limitations on what properties are important in determining dativisability will fall out of the data analysis later on.

The third semantic factor is volitionality of AG (Gropen *et al.* 1989:244, Goldberg 1992:46, 58–61):[6]

Hierarchy 5: volitionality of AG
volitional AG > non-volitional "AG"

Example (14), below, features a volitional AG, while (15–16) have non-volitional subjects (which for that reason strictly speaking should not be termed agents):

(14) "With his left hand he snatched the gun from the Pole's hands, and with his right he gave him a violent blow to the ear."(BNC A05 1445)

(15) In either case, the absence of colour gave an incentive to the authors to provide evocative descriptions. (BNC A04 713)

(16) Rivonia gave immortality to the men it jailed for life. (BNC A4X 250)

The fourth parameter is volitionality of REC:

Hierarchy 6: volitionality of REC
volitional REC > non-volitional REC

REC in example (17) is clearly volitional (especially since the preceding context makes it clear that if *she* does not rake the grass, a sudden thundershower may render it unusable), while in (18) it cannot be:

(17) He gave her the rake and she went vigorously at the hay while he plaited a grass rope to put round a burden and heft it down to the byre. (BNC A0N 1978)

(18) This gave greater depth to most of the patterns, but often made the dancers appear earthbound. (BNC A12 1768)

There is some confusion as regards the exact meaning of the term volitionality in Goldberg's account: she sometimes refers to a volitional REC as a "willing recipient" (1992:46, 61–62), but reluctant REC participants also qualify:

(19) Bill gave the driver a speeding ticket. (Goldberg 1992:62)

(20) Chris gave Bill a kick. (ibid.)

Volitionality, then, is defined as the *ability* to be willing to receive something, see also Goldberg's suggestion that "all cases where the first object is required to *accept* the transferred object in order for transfer to be successful imply that the first object is assumed to be a willing recipient" (1992:62; emphasis in the original). This

essentially means that volitional REC participants are human or at least sentient beings. Thus, the parameter is actually interpreted in terms of animacy. In this study I have chosen to adopt the more narrow definition of volitionality as real willingness. This does have the disadvantage of there being room for subjective judgment — can we always infer reliably whether someone wants something or not? — but as I show in Section 2.4, ambiguous cases are dealt with in a principled fashion.

The fifth semantic property is spatiotemporal contiguity, i.e. whether or not the giving and receiving are carried out in the same space and at the same time.[7] Groefsema (2001:537) only recognises spatial contiguity:

Hierarchy 7: spatial contiguity
unity of space > spatial remove

Goldberg (1992:56) only considers temporal contiguity:

Hierarchy 8: temporal contiguity
unity of time > temporal remove

Thompson and Koide (1987:401–402), by contrast, mention both. Spatial and temporal contiguity are interrelated, and are indeed often integrated in the functional-typological literature (see e.g. Givón 1990:520–526, 2001b:44–50). The hierarchy then becomes:

Hierarchy 9: spatiotemporal contiguity
unity of time and space < unity of space / temporal remove, < spatiotemporal remove
spatial remove / unity of time

In example (21) the giving and receiving are spatiotemporally contiguous, in (22) there is temporal contiguity but a spatial remove (the British Film Institute is not in Germany), and in (23) Tchaikovsky's character performs the solo in question at a spatiotemporal remove from the act of composing the piece.

(21) Cameron folded the paper and gave it to James Menzies. (BNC A0N 801)

(22) The German co-producers were shocked when they found that the contract for Melancholia gave this right to the BFI, since in Germany final cut is almost always given to the director. (BNC A4S 241)

(23) Tchaikovsky was the first to break that mould when he gave the Sapphire Fairy (now one of Florestan's sisters) a solo to a 5/4 time signature. (BNC A12 145)

The sixth potentially relevant semantic parameter mentioned in the literature concerns the question as to whether the verb foregrounds the transfer (as in *give*), or

the manner of motion. Gropen *et al.* (1989:226), citing Talmy (1985), Levin (1985) and Pinker (1989), suggest that in many languages manner of motion verbs such as *throw, toss, kick* and *flip* do not develop a transfer meaning, as a result of which they cannot dativise either.

Hierarchy 10: foregrounded aspect of transfer
transfer foregrounded > manner of motion foregrounded

Example (24), below, illustrates the use of a verb, *throw*, that foregrounds manner of motion:

(24) From its windows a crowd, led by John Žižka [*sic*], threw the anti-Hus councillors to the crowd below, who promptly lynched them. (BNC AE8 1311)

2.4 Sampling procedure and method of analysis

I restricted the analysis of active vs. passive ditransitives to the verb *give*. This verb allows speakers to describe transfer events that vary along all of the parameters listed above, except for the values 'intended transfer' and 'manner of motion foregrounded'. I collected examples from the BNC of *gave*, *was given* and *were given*. The tense-aspect value was kept constant because it is known to have an effect on semantic transitivity (cf. Hopper and Thompson 1980).

I extracted the first 100 examples of *was given* and the first 100 of *were given*. Together, these yielded 128 examples with a REC subject. In order to acquire a roughly equal number of active clauses, I extracted 500 tokens of *gave*. The first 200 tokens already contained 82 examples of DOC. IOC proved considerably less frequent: the full 500 tokens I analysed contained 67 examples. The sum total of 149 active clauses with *give* was close enough to the total of 128 passive clauses for my purposes.

The inclusion of both DOC and IOC in my sample follows from the theoretical approach adopted here. From a generative perspective one would perhaps argue that the passive is more likely to be a transformation of DOC than of IOC, in which case the sample of active sentences need not have included IOC. But transformations are not part of the cognitive-typological approach, and so it is impossible to say whether the passive corresponds more closely to DOC or to IOC, or to both. All three possibilities are considered in the calculations below.

To facilitate the comparison of active and passive clauses equal size samples were created. I balanced the definiteness of the AG and REC participants in the samples, such that there was an equal number of active and passive sentences with a definite AG and a definite REC, an equal number with an indefinite referential

Table 1. Samples used for passive vs. active comparison

sample type	passive vs. active	passive vs. DOC	passive vs. IOC
sample size	119 (i.e. of each)	79	54

AG and a definite REC, and so on. The reason for this precaution is that Hopper and Thompson (1980) argue that definiteness is among the factors determining semantic transitivity. The sizes of the resulting pairs of samples to be compared are shown in Table 1.

These samples might not seem very large, but they were large enough to allow interesting results to emerge from the statistical analysis — see Section 3.

The corpus examples were analysed in terms of the first five parameters outlined in Section 2.3. For bivalent hierarchies, an example displaying the higher value received a score of 1 for that parameter, while the lower value was rated 0. Thus, sentence (12) above was scored 1 for punctuality, and (13) was scored 0. For trivalent hierarchies, the values were 0, 1 and 2. Example (8) was rated 2 for the nature of transfer, (9–10) were rated 1, and (11) was rated 0. The fact that the top of the rating scale here is higher than for bivalent hierarchies does not matter, as the statistical test used is not sensitive to absolute values, only relative ones (i.e. the ranking). Indeterminate, ambiguous cases were consistently classed as the lower value. For instance, it is not easy to decide whether Bunty in example (25) below is a willing recipient of the sharp look, or a very reluctant one. Tokens like this receive the lower score, i.e. 0.

(25) She gave Bunty a very sharp look.

Using the values for all passive vs. active examples (either split up into DOC and IOC or taken together), I applied the Mann-Whitney U-test (one-tailed;[8] see e.g. Butler 1985:98–102) in order to determine whether there was a statistically significant difference between the two samples. The U-test is appropriate because it does not ascribe any absolute value to the intervals on the scales used. For example, it does not assume — as indeed our linguistic theory would not warrant us to — that the difference in transitivity between examples (8) and (9–10) above is *exactly* the same as that between (9–10) and (11). Instead, all it assumes is that (8) is more highly transitive *by some indeterminate amount* than (9–10), which in turn are more highly transitive *by some indeterminate amount* than (11). This is another way of saying that the U-test is sensitive to rankings not absolute values.

3. Results and discussion

Tables (2–4) present the U-scores and significance levels for all five parameters investigated, for all three active vs. passive samples.

Table 2. Comparison of passive and active (DOC +IOC)

	transfer	**punctuality**	**volitionality AG**	**volitionality REC**	**spatiotemporal contiguity**
U-score	8508.0	8362.0	9508.5	7080.5	7261.5
significance (one-tailed)	$p < .01$ highly sign	$p < .01$ highly sign	$p < .01$ highly sign	p appr. 5 not sign	$p > .35$ not sign

Table 3. Comparison of passive and active (DOC)

	transfer	**punctuality**	**volitionality AG**	**volitionality REC**	**Spatiotemporal contiguity**
U-score	3853.5	3634.0	3752.5	3397.0	3274.5
significance (one-tailed)	$p < .01$ highly sign	$p < .01$ highly sign	p appr. 01 significant	$p > .15$ not sign	p appr. 3 not sign

Table 4. Comparison of passive and active (IOC)

	transfer	**punctuality**	**volitionality AG**	**volitionality REC**	**spatiotemporal contiguity**
U-score	1492.0	1635.0	1890.0	1512.0	1508.5
significance (one-tailed)	$p > .4$ not sign	$p > .1$ not sign	$p < .01$ highly sign	$p > .35$ not sign	$p > .35$ not sign

The pretty solid statistical significance of nature of transfer, punctuality and volitionality, across the three ways of comparing active vs. passive ditransitive clauses, suggests that these are indeed determinant factors of passivisability of ditransitives — and by extension of dativisability (see Section 2.2). Volitionality of REC and spatiotemporal contiguity, by contrast, do not have a significant effect anywhere and therefore do not seem to play any role in this relation.

Regarding cross-linguistic constraints on the kinds of verbs that may occur in DOC as against those that may not, the following implicational universals may now be inferred:

Implicational universal 1
If in a language there are differences as to whether ditransitives allow dativisation or not, then verbs on the higher end of the transfer hierarchy will be at least as dativisable as verbs lower on the hierarchy (all other things being equal).

Implicational universal 2
If in a language there are differences as to whether ditransitives allow dativisation or not, then verbs associated with punctual transfer will be at least as dativisable as verbs associated with non-punctual transfer (all other things being equal).

Implicational universal 3
If in a language there are differences as to whether ditransitives allow dativisation or not, then verbs featuring volitional agents will be at least as dativisable as verbs associated with non-volitional agents (all other things being equal).

These implicational universals are interesting in that they represent the first attempt at a description of the dative alternation that potentially has cross-linguistic validity. Furthermore, where traditional studies of the alternation have steered clear of asking any diachronic questions, in line with Croft's (2003) dynamicisation of synchronic typology (cf. Section 2.1) these universals have diachronic implications as well. For example, while in any given language that has DOC we expect it to include at least predicates denoting the permanent transfer of concrete objects, an increase in the scope of DOC in that language to include temporary transfer of abstract entities will also imply inclusion of permanent transfer of abstract entities as well as temporary transfer of concrete objects.

The universals also shed light on some classical problem cases. Consider for instance that the kinds of transfer described by *donate, transport, carry, push, pull* and *report* are probably best analysed as non-punctual, cf. Implicational universal 2. Also, the difference in acceptability in Dutch of (5) vs. (6–7) is less surprising in light of this universal: whereas baking a cake and building a house take time, promising someone a new bike is easily thought of as punctual.

In addition, some problem cases, such as *donate, transport, carry, push, pull, shout, report*, do not foreground the act of transfer itself but rather the manner. The *give* corpus data made it impossible to test the relevance of the sixth parameter proposed in the literature (see Section 2.3), but we may tentatively hypothesise a fourth constraint that would help explain these cases:

Implicational universal 4 (not substantiated)
If in a language there are differences as to whether ditransitives allow dativisation or not, then verbs whose meaning foregrounds transfer itself will be at least as dativisable as verbs foregrounding manner of motion (all other things being equal).

The cognitive-typological stance leads me to suggest that there may be yet another factor involved in dativisability, which is (more or less) independent of semantics. The usage-based model and grammaticalisation theory, which many linguists

working in the framework adopted here support, suggest that morphophonological reduction is a function of token frequency (see e.g. Zipf 1935, Bybee and Hopper 2001). Due to the absence of oblique marking DOC may be seen as a more compact, reduced version of IOC. If this is correct, then ditransitive predicates with a high token frequency have an advantage over those with a low token frequency in terms of their ability to occur in DOC. There is some support for this. First, contra Wasow's (1981) suggestion that novel transfer verbs sound natural in DOC (e.g. *I satellited him a message*), Croft *et al*. (in prep.) present evidence from several Germanic languages to show that acceptance in DOC is by no means immediate (using *fax, e-mail, text*): using an apparent time-depth methodology this study finds that older speakers are more reluctant to accept novel transfer verbs than younger speakers. It may be that some threshold frequency must be reached before these verbs occur in DOC. Second, there is evidence from child language acquisition that children commonly overextend DOC with the verb *say* (e.g. *Don't say me that*, Gropen *et al*. 1989:239), which is very frequent. To the extent that this evidence is convincing, a fifth implicational universal may be inferred:

> *Implicational universal 5*
> If in a language there are differences as to whether ditransitives allow dativisation or not, then verbs whose token frequency is relatively high will be at least as dativisable as verbs whose frequency is lower (all other things being equal).

The fact that *owe* occurred in DOC earlier than *bake* and *build* (cf. Section 1) may well be related to the lower frequency of the latter two verbs, especially in their ditransitive uses.[9]

4. Conclusion

This article has applied a new approach to the old problem of the dative alternation. Adopting the cognitive-functional view of language, I have argued (with Croft 2001:107) that the language-specific constraints on the variation between IOC and DOC shed light on the phenomenon cross-linguistically. Using data from the British National Corpus I was able to determine which of the semantic factors proposed in previous scholarship should be relevant in determining dativisability, not only in English but also in other languages. The constraints were formulated as implicational universals, and in line with Croft's notion of the dynamicisation of synchronic typology, these make diachronic predictions as well. Following Groefsema's criticism of several classical studies on the phenomenon in English, morphophonological properties were regarded as irrelevant. The constraints proposed here are for the most part semantic, but contrary to all previous scholarship on the dative alternation I argue that token frequency may be another factor promoting occurrence in DOC. The proof of the pudding is of course in the eating, and the implicational universals inferred help explain some problems, synchronic and diachronic, in English and elsewhere, that previous scholarship cannot account for so readily.

The extent to which one may illuminate synchronic and diachronic typological patterns on the basis of synchronic data from a single language is of course limited in some ways, which means there is considerable scope for further research. Substantiation (or otherwise) of the hypothesised universals on the basis of a large sample of languages would obviously be desirable. It is not clear, either, whether the parameters proposed in the literature are sufficient, or sufficiently precise. The present study added the factor of token frequency, and there may be more. As for the level of precision of the parameters invoked, let me consider punctuality (Implicational universal 2). It is not inconceivable that speakers use a more sophisticated model of duration than is suggested by the simple punctual vs. non-punctual distinction. Conventional temporal expressions such as *a while, a long time, forever*, etc. would certainly seem to suggest as much, inasmuch as they illustrate the human capacity to conceptualise a broad range of time intervals. It may be the case that speakers make a distinction between relatively short vs. relatively long duration. It would be interesting in this connection to investigate for instance the relative chronology of the acceptance of *bake* and *build* in DOC, given that the former probably tends to occur with themes that are created faster (e.g. *a cake*) than the latter (e.g. *a house*).

This observation about predicates based on *bake* vs. *build* implies that, just like passivisability (Hopper and Thompson 1980), dativisability is properly regarded as a property of actual clauses, and only derivatively of the ditransitive verbs used in those clauses. This is interesting, as it vindicates theoretical models where constructions are taken to be primary in terms of speakers' grammatical knowledge, such as Radical Construction Grammar (Croft 2001) and some recent work in grammaticalisation theory (see especially Traugott 2003) and child language acquisition (e.g. Tomasello 2003).

This article shows that there is a lot of potential for symbiosis between traditional typological research on the one hand and corpus-based language-specific analysis on the other. Corpus-based intralinguistic research benefits from cross-linguistic validity of the notions invoked — here, the syntactic variants IOC and DOC, the semantic parameters, and the universal role of token frequency in processes of morphophonological reduction. Conversely, large-scale, often inevitably rather coarse-grained typological work may be refined considerably by corpus research on a single, well-documented language such as English.

Notes

1. An anonymous reviewer suggests that the hypothesis concerning the link between intra-linguistic research and cross-linguistically valid observations actually "goes back, within the Generative tradition, at least to Postal (1969)". In that famous study on so-called anaphoric islands, Postal states that while his data are all from his own variety of English "it is clear that they have general if not complete cross-dialect validity", and goes to say that "[t]he extent to which they are illustrative of true cross-linguistic principles deserves investigation" (1969:205). It is therefore unclear to what extent Postal intended his conclusions to hold for all varieties of English, much less all the languages of the world. It is easy to see why he should have been so careful as regards the general, cross-linguistic validity of his claims, as there is no clear typologically valid model of language structure and meaning underlying his study. At the date of publication of Postal's article, the systematic study of cross-linguistic variation, and constraints on that variation, was a relatively new enterprise — Greenberg's (1963) being the pioneering work. Moreover, within the Generative tradition the notion of Universal Grammar was still very much in its infancy: Seuren (1998:279–285) dates the concern with cross-linguistic validity in Generative linguistics to the 1970s. In contrast to Postal's study, the present article, like Croft's work, is grounded in the semantic map model (see Section 2.1, below), which is widely accepted in typological circles. Note that as a model to describe typological facts, there is now some dissatisfaction with Universal Grammar even within Generative circles, see Newmeyer (2005). For these reasons I would distance the present study from the Generative tradition more than the reviewer may seem to wish.

2. The BNC is a 100-million-word corpus of spoken and written present-day English; for more information see e.g. Aston and Burnard (1998).

3. Some scholars make a distinction between the dative alternation and the benefactive alternation, where the oblique object in the English IOC is linked with the preposition *for* not *to* (e.g. Levin 1993:45–49). For the purpose of this article I will follow the less fine-grained approach of e.g. Goldberg (1992) in grouping them together.

4. Examples (8–24) below are only meant to illustrate the values of the various semantic dimensions. In selecting examples I have first and foremost paid attention to their transparency in terms of exemplifying the semantic value in question. Whether or not the examples display the "right" structure, i.e. DOC for values on the left-hand side of the hierarchies, and IOC for values towards the right-hand side, has not been a consideration. "Right" is in scare quotes since on the functional-typological view espoused here — in the tradition of e.g. Givón (1980) and Hopper and Thompson (1980) — it is more appropriate to speak of tendencies than of absolute constraints. Thus, for example, a given token of IOC may very well display the left-most value on a given hierarchy. The only claim would be that given a sufficiently large sample examples of DOC would display that value more often. Section 3 presents the quantitative evidence regarding the extent to which this claim is upheld. As explained in Section 2.2, this study uses an indirect method, involving passivisation.

5. I am grateful to an anonymous referee for pointing out that strictly speaking TH is a second-order entity (an eventuality of some kind) rather than an abstraction, i.e. third-order entity. All examples of second-order entities in my data were classified as abstract entities.

6. In distinguishing volitional from non-volitional agents the definition of AG adopted here is quite broad. Other definitions are of course possible. Talmy (2000:473), for example, reserves the term for volitional instigators whose actions have the intended outcome, using *author* for volitional instigators whose actions have some unintended outcome (*I broke the vase in (with my/by) rolling the ball into it*) and *instrument* for non-volitional instigators (*A ball broke the vase in (by) rolling into it*).

7. An anonymous reviewer suggests that spatiotemporal contiguity must overlap to some extent with punctuality (see hierarchy 4, above). While it is perfectly possible to keep these notions logically distinct, it may indeed be that in practice spatiotemporally contiguous events are more often punctual than non-contiguous events. This is therefore an interesting suggestion meriting further research, but here I will simply note that as far as I am aware the two parameters are never integrated in the functional-cognitive and typological literature.

8. The reason why the U-test was employed as a one-tailed not two-tailed test is that I assume that the data are patterned *directionally*, that is to say, the data are studied from the perspective of the hierarchies presented in Section 2.3, which are essentially predictions as to the relation between structure and meaning. If it had not been possible to make any such predictions, a non-directional (two-tailed) test would have been appropriate. This basically means that the differences between the samples compared would have had to be larger in order for them to be deemed statistically significant. For more elaborate discussion see Butler (1985:72–74) or any other introductory statistics textbook.

9. An anonymous reviewer argues that in addition to token frequency the semantic role of the non-thematic object argument of the verb played a role as well, the idea being that since it is a benefactive in the case of *bake* and *build* but REC in the case of *owe* would have promoted attraction to the DOC construction for the latter. To the extent that this analysis of the participant roles is correct this is plausible. The analysis may be supported on structural grounds, as in IOC the arguments in question are linked to the preposition *for* in the case of *bake* and *build* but to *to* in *owe*. Semantically, however, these arguments in *bake/build* have some claim to REC status as well: change of possession of the TH is not necessarily less likely in these verbs than in *owe*. This situation illustrates the well-known fact that participant roles are often not clearly distinguishable; see in this connection Langacker's (1987:328) suggestion that to try and maintain strict distinctions between similar roles is not a very useful exercise.

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Ditransitive alignment splits and inverse alignment

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This paper argues that language-particular restrictions on ditransitive constructions are best understood as instantiations of easily falsifiable implicational universals that can be explained functionally, rather than as falling out from a restrictive formal metalanguage. Well-known restrictions on ditransitives in English (**She gave Kim it*) and French (**Elle donna Kim le livre*) are shown to be instantiations of inverse patterns that are completely parallel to inverse patterns in monotransitive constructions. Moreover, ditransitive constructions are parallel to monotransitives in that they exhibit differential recipient marking and differential theme marking, analogous to differential object and subject marking.

1. Asymmetries in ditransitive constructions, description and explanation

In this article, I propose functional explanations for a range of perhaps unexpected asymmetries in ditransitive constructions (i.e. constructions with a Recipient and a Theme argument, prototypically with the verb 'give'). I claim that ultimately the observed grammatical patterns are due to patterns of language use, i.e. they provide further evidence for Hawkins's (2004) Performance-Grammar Correspondence Hypothesis.

The patterns to be explained will be characterized in more detail below, but they include the following well-known patterns from English and French: Both English and French have two different ditransitive constructions, which are often called **double-object construction** (DOC) and (prepositional) **indirect-object construction** (IOC). The two constructions can sometimes be used side by side with no difference in meaning (apart from a more or less obvious information-structural difference), as in (1a–b), (1c–d), (2a–b), and (2e–f). However, in other cases only the indirect-object construction can be used, but the conditions are quite different in English and French. The ungrammatical sentences are printed in boldface. In (1e), English shows variation: Some speakers allow the double-object

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construction here, others do not (very roughly, it seems that British English speakers accept (1e), while American English speakers only accept (1f); for more details, see Hollmann, this issue).[1]

(1) English

a. *She gave me the book.*	b. *She gave the book to me.*
c. *She gave Kim the book.*	d. *She gave the book to Kim.*
e. %***She gave me it.***/%***She gave it me.***	f. *She gave it to me.*
g. ****She gave Kim it.***/****She gave it Kim.***	h. *She gave it to Kim.*

(2) French (glosses as in 1a–h)

a. *Elle me donna le livre.*	b. *Elle donna le livre à moi.*
c. ****Elle donna Kim le livre.***	d. *Elle donna le livre à Kim.*
e. *Elle me le donna.*	f. *Elle le donna à moi.*
g. ****Elle le donna Kim.***	h. *Elle le donna à Kim.*

These facts are easy to describe in language-particular terms (see 3a–c), but what does it take to understand or explain the patterns?

(3) a. American English allows only the IOC when the Theme is a pronoun, and the IOC or the DOC otherwise.
b. British English allows only the IOC when the Theme is a pronoun and the Recipient is a full NP, and the IOC or the DOC otherwise
c. French allows only the IOC when the Recipient is a full NP, and the IOC or the DOC otherwise.

In a weak sense of the term 'explanation', the descriptions in (3) provide explanations, because speaker behaviour can be explained on the basis of these general statements. But linguists are typically more ambitious. There are currently two main approaches to the explanation of grammatical patterns on the market, the generative approach and the functional-typological approach. Since the differences between the two approaches are often misunderstood, I will briefly outline them as I understand them.

In the generative approach, the linguist (i) constructs a formal metalanguage (= theoretical framework) for describing mental grammars, (ii) formulates a description of the facts using the metalanguage (= 'an analysis') that contains (= 'captures') all noticeable generalizations, (iii) argues that this description is minimally idiosyncratic (= 'stipulative'), i.e. that the facts/generalizations maximally follow (= 'fall out') from the metalanguage, and (iv) claims that the description is mentally real, and that the metalanguage represents the innate cognitive code for grammatical knowledge (= 'Universal Grammar').[2]

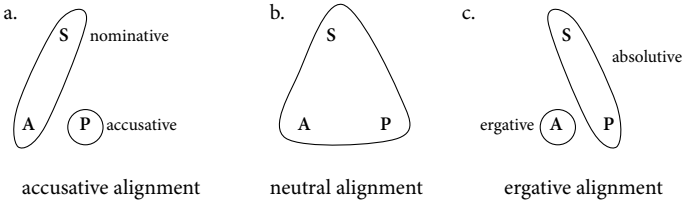
In the functional-typological approach followed here, by contrast, the linguist (i) adopts a widely understood and transparent metalanguage for describing grammars (e.g. Payne 1997, 'Basic Linguistic Theory', Dixon 1997), (ii) formulates a description of the facts that contains the minimal generalizations that speakers must make (= a 'phenomenological description', Haspelmath 2004b), (iii) conducts a cross-linguistic study of the relevant semantic domain and formulates universals of form-function correspondences, and (iv) shows how these universals follow from principles of language use and diachronic change. To the extent that language-particular facts instantiate universals, the language-particular facts are also explained by the explanations for the universals.

With this in mind, let us now approach ditransitive constructions in a broader perspective. I will first briefly explain the notion of **alignment** in the context of ditransitive constructions, pointing out the parallels between monotransitive (accusative/ergative) alignment and ditransitive alignment (§2). Then I will discuss two types of asymmetries in ditransitive alignment: alignment splits (§3) and inverse alignment (§4). Alignment splits are quite parallel to the much better-known monotransitive alignment splits (differential object marking, split ergativity). The parallels between what I call 'ditransitive inverse alignment' and the well-known monotransitive inverse patterns are perhaps less obvious, but I will argue that they are due to the same sorts of explanatory factors. The discussion of one type of inverse alignment will also bring us back to the surprising contrasts seen in (1)–(2), and we will see that they receive a natural explanation in the present approach.

2. The major alignment types, monotransitive and ditransitive

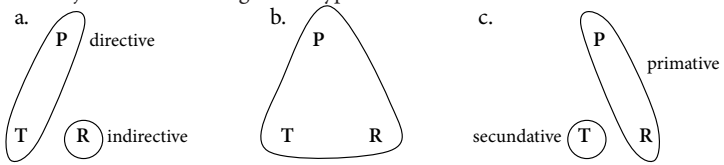
In syntactic typology, the monotransitive alignment types, in particular accusativity and ergativity, have been a major issue in recent decades. The picture that is shown in (4) has become standard textbook wisdom (e.g. Song 2001: ch. 3). If we use the well-known role-prototypes S (single argument of intransitive verb), A (agent-like argument of transitive verb) and P (patient-like argument of transitive verb), we can say that if S and A are treated alike as opposed to P, we get **accusative alignment** (as in 4a); if all three are treated alike, we get **neutral alignment** (as in 4b); and if S and P are treated alike as opposed to A, we get **ergative alignment** (as in 4c).

(4) The major monotransitive alignment types



Now as Dryer (1986) pointed out (and see Blansitt 1984, Croft 1990:100–108 and Dryer to appear), the relationship between the two object arguments in ditransitive clauses can be conceptualized in exactly the same way. The role-prototypes in ditransitive clauses are R for recipient-like argument and T for theme-like argument. Depending on whether it is T or R that is treated like the monotransitive P, we get two different non-neutral alignment patterns and a neutral pattern, shown in (5a–c). In Dryer's (1986) terminology, when T is treated like the monotransitive P, we have a **direct-object/indirect-object** distinction. Renaming it as **directive/indirective**, as in (5a), makes the parallel with monotransitive alignment even clearer. (Usually the terms *nominative/accusative* and the terms *ergative/absolutive* are thought of as terms for linking patterns, not as terms for grammatical relations themselves.) And when R is treated like the monotransitive P, we have a **primary-object/secondary-object** distinction. Again, for terminological convenience this has been renamed as **primative/secundative** in (5c).[3] We can now talk about **indirectivity** and **secundativity** in exactly the same way as we talk about accusativity and ergativity.

(5) The major ditransitive alignment types



indirective alignment neutral alignment secundative alignment

Ditransitive alignment has not received much attention after Dryer (1986) in the typological literature, but I believe that it is quite instructive to study ditransitive alignment in the same general perspective in which monotransitive alignment has been studied (see also Siewierska 2003, Siewierska 2004:57–63, Haspelmath 2005a, 2005b).

3. Ditransitive alignment splits

In monotransitive constructions, alignment splits are well-known (e.g. Silverstein 1976, Comrie 1989, Dixon 1994, Bossong 1998, Aissen 2003, Filimonova 2005). The two most widely occurring types depend on the arguments' position on the salience scales (animacy, definiteness, person):

(6) **Differential Object (= P) Marking**:
Special ('accusative') P-marking is the more likely, the higher the P is on the animacy, definiteness and person scales.

(7) **Differential Subject (=A) Marking**:
Special ('ergative') A-marking is the more likely, the lower the A is on the animacy, definiteness, and person scales.

It seems to be widely recognized that the explanation for these universals of monotransitive argument marking lies in the frequency with which P and A are animate and definite. The most frequent and therefore most expected monotransitive associations are: animate/definite A and inanimate/indefinite P. Deviations from this expectation need special marking (Comrie 1989:128; see Jäger 2004 for relevant frequency figures).[4]

It has only recently been noticed that very similar splits are also found in ditransitive constructions. I call them 'Differential Recipient Marking' and 'Differential Theme Marking' (see also Kittilä to appear, Kittilä this issue).

3.1 Differential Recipient Marking

3.1.1 *The universal and its explanation*

It appears that the following statement holds generally across languages:

(8) **Universal 1**:
Special ('indirective' or 'dative') R-marking is the more likely, the lower the R is on the animacy, definiteness, and person scales.

Note that this universal is parallel to Differential Subject Marking in (7) in that the special case-marking is favoured when the Recipient is low on the scales. This is as one would expect because while the P tends to be low on these scales in discourse, both the A and the R tend to be high on these scales. The explanation for the universal is thus completely parallel to the explanation of the universals in (6) and (7): the most frequent and therefore most expected ditransitive associations are animate/definite R and inanimate/indefinite T. Deviations from these expectations need special marking.

Following much of the previous literature, I take the relevant three scales to be as follows:

(9) Animacy scale: human > animate non-human > inanimate
Definiteness scale: proper > definite > specific indefinite > nonspecific
Person scale: 1st/2nd > 3rd

1st/2nd	3rd	proper	human	non-human	
•	•	•	•	•	Latin, Lezgian
	•	•	•	•	French, Yimas, Georgian
		•	•	•	Pero
			•	•	Drehu
				•	(English)

Figure 1. Attested cut-off points for differential R marking

My data in support of this universal are not very systematic yet, and so far I only have evidence for the following conflated scale (which has sometimes been called the 'individuation scale' or 'empathy scale'):

(10) 1st/2nd > 3rd > proper noun > human > non-human

Figure 1 shows some languages that exemplify different cut-off points on this scale.

Many languages are like Latin or Lezgian (Haspelmath 1993) and use a special dative case form for any R, regardless of its place on the scale. There is no need to illustrate this non-split type here, and in the following I will concentrate on the various types of split.

3.1.2 *No special marking for 1st/2nd person pronouns*

The first split is between 1st/2nd person pronouns and all other R types. This split is exemplified by French, as shown in (11). Third-person forms make a dative-accusative distinction, whereas 1st/2nd person pronouns have a single non-differentiated form. Non-pronominal NPs (and independent pronouns) always use the special indirective preposition *à*.

(11) French person clitics

		T ARGUMENT	R ARGUMENT
SG	1	*me*	*me*
	2	*te*	*te*
	3M	***le***	***lui***
	3F	***la***	***lui***
PL	1	*nous*	*nous*
	2	*vous*	*vous*
	3	***les***	***leur***

Of course, a possible and widely adopted description of French would say that all clitic pronouns have both accusative and dative forms, but that the first and second person forms happen to show syncretism. This description is not inconsistent with the universal as formulated in (8): 'special R-marking' does not refer to abstract case-values, but to overt forms. It is clear that the 1st and 2nd person clitic pronouns have no distinct T and R forms, whatever one wants to say about abstract case values.[5]

According to Siewierska (2004:66), 'person-determined splits in ditransitive alignment are less common than those in monotransitive alignment', but I have found further systems of bound pronouns that are similar to the French system. In (12)–(13), we see the systems of Tangale (a West Chadic language of Nigeria) and Yimas (a Lower Sepik-Ramu language of Papua New Guinea).

(12) Tangale (bound) object pronouns (Jungraithmayr 1991:36)

		DIRECT-OBJECT PRONOUN	INDIRECT-OBJECT PRONOUN
SG	1	*-no/-nọ, -n-*	*-no/-nọ, -n-*
	2	*-ko/-kọ, -k-*	*-ko/-kọ, -k-*
	3M	***mbɛ́ɛ̣ndâm***	***-ni/-nị***
	3F	***mbáastâm***	***-to/-tọ***
PL	1	*-mu/-mụ, -m-*	*-mu/-mụ, -m-*
	2	*-ku/-kụ, -k-*	*-ku/-kụ, -k-*
	3	***mbíindâm***	***-wu/-wụ***

(13) Yimas bound object pronouns (Foley 1991:200–211)

		'O-pronouns'	'D-pronouns'
SG	1	*ŋa-*	*ŋa-*
	2	*nan-*	*nan-*
	3	***na-***	***-(n)akn***
DL	1	*ŋkra-*	*ŋkra-*
	2	*ŋkul-*	*ŋkul-*
	3	***impa-***	***-mpn***
PL	1	*kra-*	*kra-*
	2	*kul-*	*kul-*
	3	***pu-***	***-mpun***

Other languages that behave similarly are Georgian (a Kartvelian language), Abkhaz (an Abkhaz-Adyghean language of Georgia), and Amele (a Trans-New Guinea language of Papua New Guinea; Roberts 1987).

Krongo (a Kadugli language of Sudan) is similar but has only independent pronouns. Its 1st/2nd person (independent) pronouns have the same shape for R and T (and A as well), but for 3rd person pronouns there are special forms with the dative-case prefix *à-* that is also used for full NPs:

(14) Krongo independent pronouns (Reh 1985:144, 166)

		OBJECT FORM	DATIVE FORM
SG	1	*àʔàŋ*	*àʔàŋ*
	2	*ùʔùŋ*	*ʊ̀ʔʊ̀ŋ*
	3M	***ìʔìŋ***	***à-níŋ***
	3F	***àakù***	***à-náakù***
	3n	***àay***	***à-náày***
PL	1INCL	*àŋŋá*	*àŋŋá*
	1EXCL	*óow*	*óow*
	2	*àakà*	*àakà*
	3	***àay***	***à-náày***

I know of no languages that (contrary to Universal 1) have different T/R forms only in 1st/2nd person pronouns, but not in 3rd person pronouns.

3.1.3 *No special marking for pronouns*

A language that has special marking of R only for full NPs, but lacks special marking for all pronouns is Pero (another West Chadic language of Nigeria, closely related to Tangale). The bound object suffixes do not distinguish between Patient/Theme and Recipient:[6]

(15) Pero (Frajzyngier 1989:109, 166–7)
a. *À-múntée-nò-té-m.*
NEG-give-1SG.OBJ-3SG.F.OBJ-NEG
'He didn't give her to me.'
b. *À-múntée-té-nò-m.*
NEG-give-3SG.F.OBJ-1SG.OBJ-NEG
'He didn't give me to her.'

But full NPs require the preposition *tí* when they occur as Recipients:

(16) *Músà mún-kò júrà tí Díllà.*
Musa give-COMPL peanuts to Dilla
'Musa gave peanuts to Dilla.'

3.1.3 *No special marking for pronouns and proper nouns*

In Drehu (Oceanic; Loyalty Islands), pronouns and proper nouns may show zero-marking if they are Recipient:

(17) Drehu (Moyse-Faurie 1983:161–2)
a. *Eni a hamëë angeic la itus.*
I PRS give him the book
'I give him the book.'

b. *Eni a hamëë Wasinemu la itus.*
I PRS give Wasinemu the book
'I give Wasinemu the book.'

But other NPs must appear with the preposition *kowe* 'to':

(18) *Eni a hamëën la itus* ***kowe*** *la nekönatr.*
I PRS give the book to the child
'I give the book to the child.'

3.1.4 *No special marking for all human NPs*

This split is not attested in a clear way, but English comes close: with some verbs, non-human NPs must appear with the preposition *to*:

(19) a. *I sent the letter to Masha./I sent Masha the letter.*
b. *I sent the letter to Warsaw./*I sent Warsaw the letter.*

This split is not found with all verbs, and one would probably say that Masha is a true recipient in (19a), while Warsaw is just a destination in (19b). But it comes at least close to exemplifying a human/nonhuman contrast that fits well with the universal in (8).

3.2 Differential Theme Marking

There is much less evidence for the opposite type of differential marking. This seems again to run parallel to the situation in monotransitive constructions, which show much less evidence for the Differential Subject Marking universal. Moreover, special case marking on the Theme of a ditransitive construction is quite rare to begin with (see Haspelmath 2005a). So the universal hypothesis of (20) is primarily motivated by the parallelism with the universals in (6)–(8).

(20) **Universal 2**:
Special ('secundative') T-marking is the more likely, the higher the T is on the animacy, definiteness, and person scales.

The explanation is again that the most frequent and expected ditransitive association is animate/definite R and inanimate/indefinite T. Deviations from the expectation need special marking, and one kind of special marking is special T marking.

The only example of differential Theme marking that I have at the moment comes from Akan (a Niger-Congo language belonging to the Kwa subfamily, spoken in Ghana). In this language, the Theme argument in a double-object construction must be indefinite, as in (21a). (21b) with the definite article on the Theme is

ungrammatical, and a construction with a special T-marking serial verb must be used instead (*dè* lit. 'take') (data from Sáàh and Ézè 1997:143–144).

(21) a. *Ámá màà mè sìká.*
Ama give 1SG money
'Ama gave me money.'
b. **Ámá màà mè sìká nó.*
Ama give 1SG money the
'Ama gave me the money.'
c. *Ámá dè sìká nó màà mè.*
Ama take money the give 1SG
'Ama gave me the money.' (Lit. 'Ama took the money gave me.')

4. Inverse ditransitive patterns

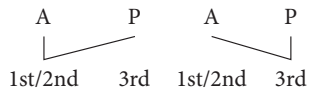
It has been observed in various languages that argument coding may depend not only on the intrinsic properties of the arguments (their semantic role, syntactic function, and position on the salience scales), but also on the relation between the salience positions of two co-occurring arguments. Such patterns will be called 'inverse alignment patterns' here (corresponding to Nichols's 1992:66 and Siewierska's 2004:51–55 'hierarchical alignment').[7] Again I begin the presentation with monotransitive inverses, before moving on to ditransitive inverses.

4.1 Monotransitive inverse patterns

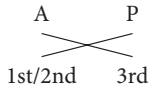
A monotransitive coding pattern is generally called '(direct/) inverse' if the coding of the A and P arguments (and of the verb) depends on their relative position on the person scale (1st/2nd > 3rd). A good way of thinking about such patterns is in terms of a mapping between two scales (A > P, and 1st/2nd > 3rd), as visualized in (22i–iv).[8]

(22) (i) Canonical ('maximally harmonic') association of role and person:

(ii)–(iii) Clustering ('less harmonic') associations of role and person:



(iv) Crossing ('disharmonic') association of role and person:



These four mappings form a scale of decreasing harmony of person-role association (Canonical (i) > Clustering (ii)/(iii) > Crossing (iv)). Given the mappings and this harmony scale, we can formulate the universal in (23):

(23) **Monotransitive Inverse Marking Universal**:
If a language shows any inverse patterns in monotransitive clauses, then on the scale of decreasing harmony of person-role association, the upper end is expressed by a simpler construction, and the lower end is expressed by a more complex construction.

For example, in the Kiowa-Tanoan language Picurís, the canonical association (i) and the first clustering association (ii) are obligatorily expressed in the simple ('active') construction (24a–b), whereas the crossing association is obligatorily expressed by the complex ('passive') construction (24c). With the second clustering association (iii), either the simple or the complex construction may occur, as seen in (24d–e) (Zaharlick 1982:45; cited here after Klaiman 1991:211–218, Mithun 1999:226–228).

(24) Picurís (= Northern Tiwa) (Zaharlick 1982:35–41)
a. (2>3) *Sənene ʔa-mǫn-ʔąn.*
man 2SG-see-PST
'You saw the man.'
b. (2>1) *May-mǫn-ʔąn.*
2>1-see-PST
'You saw me.'
c. (3>2) *ʔa-mǫn-mia-ʔąn sənene-pa.*
2SG-see-PASS-PST man-OBL
'The man saw you.' ('You were seen by the man.')
d. (3>3) *Sənene Ø-mǫn-ʔąn.*
man 3SG-see-PST
'The man saw him.'
e. (3>3) *Mǫn-mia-ʔąn sənene-pa.*
see-PASS-PST man-OBL
'He was seen by the man.'

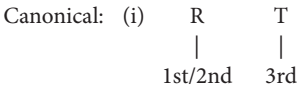
The simple and complex constructions are called 'active' and 'passive' (rather than 'direct' and 'inverse') by Zaharlick, but the pattern is one of inverse alignment because the 'passive' is obligatory for the crossing association.

The explanation for the universal in (23) is parallel to the explanation of the alignment splits in §3: the canonical person-role associations occur more frequently than the non-canonical person-role associations, and the crossing association is the rarest (see Zúñiga 2002:222–223 for discussion).

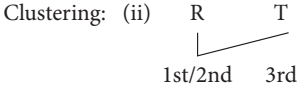
4.2 Ditransitive person-role inverses

In ditransitive constructions, the relevant role types are R and T, and they can be thought of as forming a role scale R > T (corresponding to A > P). The possible types of association of person and role are completely analogous to the monotransitive association types (cf. Haspelmath 2004a, which is the source of much of the material in this subsection):

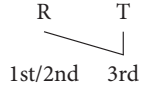
(25) Canonical: (i)



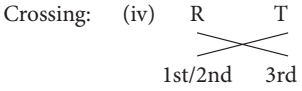
Clustering: (ii)



(iii)



Crossing: (iv)



The predicted universal is also completely analogous to the universal in (23).

(26) **Universal 3**:
If a language shows any ditransitive inverse patterns, on the scale of decreasing harmony of person-role association ('Canonical (i) > Clustering (ii/iii) > Crossing (iv)'), the upper end is expressed by a simpler construction, and the lower end is expressed by a more complex construction.

The explanation also appeals to frequency: The less harmonic the association, the less frequent the pattern. More frequent patterns are more expected and therefore need less coding. Some frequency data supporting this claim are cited in Haspelmath (2004a).

The primary difference between monotransitive and ditransitive inverses is that in the ditransitive inverses that have come to my attention so far, the greater complexity of the inverse pattern resides not in the verbal marking (as in the classical monotransitive inverses, exemplified by Picurís), but in the form of the personal pronouns expressing the R and T arguments.

For example, in French, Modern Greek, and Shambala, the (longer) independent pronouns are used instead of bound (affixal or clitic) pronouns in the crossing association:

(27) French (e.g. Grevisse 1986:§657 (b) 1°)
a. (1>3) *Agnès me la présentera.*
Agnès 1SG.REC 3SG.F.THM present.FUT.3SG
'Agnès will introduce her to me.'
b. (3>1) **Agnès me lui présentera.*
Agnès 1SG.THM 3SG.F.REC present.FUT.3SG
'Agnès will introduce me to her.'
c. *Agnès me présentera* ***à elle.***
Agnès 1SG.THM present.FUT.3SG to her
'Agnès will introduce me to her.'

(28) Modern Greek (Anagnostopoulou 2003:252–253)
a. (2>3) *Tha su ton stílune.*
FUT 2SG.REC 3SG.M.THM send.PFV.3PL
'They will send him to you.'
b. (3>2) **Tha tu se stílune.*
FUT 3SG.M.REC 2SG.THM send.PFV.3PL
'They will send you to him.'
c. *Tha tu stílune* ***eséna.***
FUT 3SG.M.REC send.PFV.3PL you.OBL
'They will send you to him.'

(29) Shambala (Bantu-G, Tanzania; Duranti 1979:36)
a. (1>3) *A-za-m-ni-et-ea.*
3SG.SBJ-PST-3SG.THM-1SG.REC-bring-APPL
'S/he has brought him/her to me.'
b. (3>1) **A-za-ni-mw-et-ea.*
3SG.SBJ-PST-1SG.THM-3SG.REC-bring-APPL
'S/he has brought me to him/her.'
c. *A-za-ni-eta* ***kwa yeye.***
3SG.SBJ-PST-1SG.THM-bring to him/her
'S/he has brought me to him/her.'

French and Modern Greek also forbid bound pronouns in one of the clustering associations:

(27) d. (2>1) **Agnès me te présentera.*
Agnès 1SG.THM 2SG.REC PRESENT.FUT.3SG
'Agnès will introduce me to you.'

(28) d. (1>2) *Tha mu se stílune.
FUT 3SG.M.REC 2SG.THM send.PFV.3PL
'They will send you to me.'

But Catalan allows these associations, prohibiting only the crossing associations:

(30) Catalan (Bonet 1994:41)
Te m' ha venut el mercador més important.
you me has sold the merchant more important
'The most important merchant has sold you to me.' (or: '… me to you')

And Kambera (Central Malayo-Polynesian, eastern Indonesia) allows only the canonical association:

(31) Kambera (Klamer 1997: 903–4)
a. *Na-wua-ngga-nya.*
3SG.AG-give-1SG.REC-3SG.THM
'He gives it to me.'
b. *Na-wua-nggau-nja.*
3SG.AG-give-2SG.REC-3PL.THM
'He gives them to you (e.g. apples).'
c. *Na-wua-nja-nya.*
3SG.AG-give-3PL.REC-3SG.THM
'He gives it to them.'
d. *Na-wua-ngga-nggau.*
3SG.AG-give-1SG.REC-2SG.THM
'He gives you to me.'

These three language types can be represented as in Figures 2–4, where the range of applicability of the simple ('direct') pattern is indicated by a line. Recall that Universal 3 predicts that all simple patterns express at least the canonical association, and that if a language has a direct pattern for the crossing association, it also has a direct pattern for the clustering associations.

I have not yet found an example of a language that has the direct pattern only for the canonical and the first clustering association (i.e. the mirror image of French), but I assume that this is an accidental gap.

I have no good explanation for the fact that verb-marked person-role inverses of the type seen in §4.1 have not been found in ditransitive constructions. Maybe it has to do with the fact that languages generally have far fewer ditransitive verbs than monotransitive verbs, so that it is more difficult for a verb-marking pattern to become productive.[9]

Siewierska (2004:60) discusses ditransitive person marking in Jamul Tiipay (Yuman), where according to Miller's (2001:162–163) description, only the object

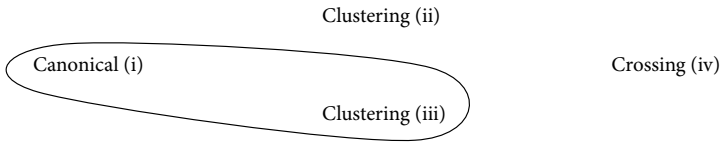


Figure 2. French and Greek direct (bound-pronoun) ditransitive patterns (person-role)

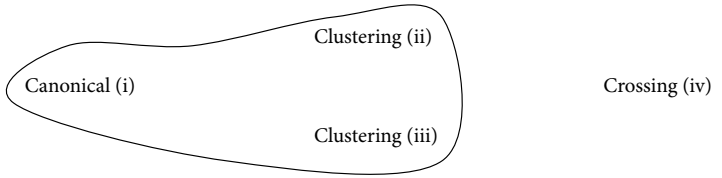


Figure 3. Catalan direct (bound-pronoun) ditransitive patterns (person-role)

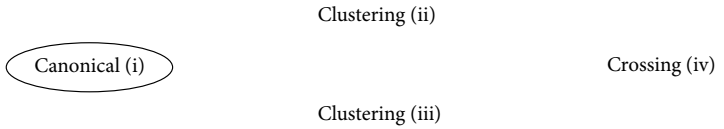


Figure 4. Kambera direct (bound-pronoun) ditransitive patterns (person-role)

that is higher on the person scale is expressed as a bound form on the verb (cf. 32a–b). Siewierska thus regards this as an example of inverse ('hierarchical') alignment.

(32) Jamul Tiipay (Miller 2001:162)
a. *Xiikay ny-iny-ma.*
some 1>2-give-FUT
'I'll give you some.'
b. *Nyaach maap Goodwill ny-iny-x.*
I.SBJ you Goodwill 1>2-give-IRR
'I'm going to give you to Goodwill.'

As seen in (32b), in Jamul Tiipay the crossing association uses the bound form, which is unexpected in view of Universal 3. However, Jamul Tiipay makes no difference between a simpler and a more complex form, so that Universal 3 is not applicable. Moreover, it is not clear that the Jamul Tiipay construction falls under the definition of 'inverse' that was given in §4.1 ('a coding pattern is called '(direct/) inverse' if the coding of the R and T arguments depends on their relative positions on the person scale (1st/2nd > 3rd)'). In Jamul Tiipay, the rule seems to be that any 1st or 2nd person object (whether R or T) is indexed on the verb, while no 3rd

person object is indexed on the verb. Thus, no reference to the relative positions of the two arguments is necessary in this case.

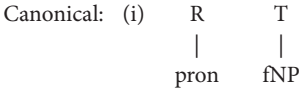
4.3 Ditransitive pronoun-full NP inverses

While the classical cases of inverse patterns make reference to the position of an argument on the person scale, other salience scales may be relevant as well. In Lummi (a dialect of Straits Salish), for example, the position of an argument on the scale 'pronoun > full NP' determines whether the simple/direct construction is possible in monotransitive clauses: if the A is a full NP and the P is a pronoun, the direct construction is impossible (see 33b), and a 'passive' construction must be used.

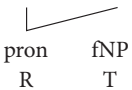
(33) Lummi (Jelinek and Demers 1983:168)
a. (pron>fNP) *ẋčí-t-s cə swəyʔqəʔ*
know-TR-3SG.SBJ the man
'He knows the man.'
b. (fNP>pron) **ẋčí-t-s cə swəyʔqəʔ*
know-TR-3SG.SBJ the man
'The man knows him.'

Pronoun-full NP inverses are also found in ditransitive constructions. Again four mapping patterns are possible:

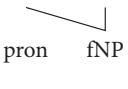
(34) Canonical: (i)



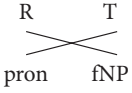
Clustering: (ii)



(iii)



Crossing: (iv)



The predicted universal is again parallel to the universals in (23) and (26), and it receives an analogous frequency-based explanation:

(35) **Universal 4**:
If a language shows any ditransitive inverse patterns, on the scale of decreasing harmony of pronoun-NP association ('Canonical (i) > Clustering (ii/iii) > Crossing (iv)'), the upper end is expressed by a simpler construction, and the lower end is expressed by a more complex construction.

Pronoun-NP inverses show up in three different ways: (A) as a contrast in the form of the personal pronoun (bound vs. independent, as with the examples of person-role inverses); (B) as a contrast in verb marking; and (C) as a contrast between a construction with no adpositional marking and a construction with adpositional marking. These three manifestations of inverse patterns are quite different in their morphosyntactic structure, but they all share the difference between simpler and more complex coding. The explanatory factor of economy only predicts simplicity/complexity, so this structural diversity is not unexpected.

The first examples are pronoun-NP inverses manifested in the form of the personal pronoun. In Capeverdean Creole (a Portuguese-based creole), for example, the clitic pronouns are only used in the canonical pattern (i), cf. (36a–b). If both the R and the T are pronominal (i.e. in the clustering pattern (ii)), they cannot be both expressed as clitics, and the T must be expressed as an independent pronoun, cf. (36c–d). This is also the case if T is a pronoun and R is a full NP, cf. (36e–f) ('crossing pattern'). (However, the second clustering pattern, (iii), which does not involve pronouns, is not a problem.)

(36) Capeverdean Creole (Baptista 2002, Marlyse Baptista, p.c.)
a. *El da=bu libru.*
she give=you book
'She gave you a book.'
b. *El da=l libru.*
she give=him book
'She gave him a book.'
c. **El da=bu=l.*
she give=you=him
'She gave you him=She gave him to you.'
d. *El da=bu* ***el.***
she give=you he
'She gave you him=She gave him to you.'
e. **El da João=l.*
she give João=her
'She gave her to João.'
f. *El da João* ***el.***
she give João her
'She gave her to João.'

The Capeverdean situation can be summarized as in Figure 5.

The situation in Hausa (West Chadic) is completely analogous to the situation in Capeverdean Creole:[10]

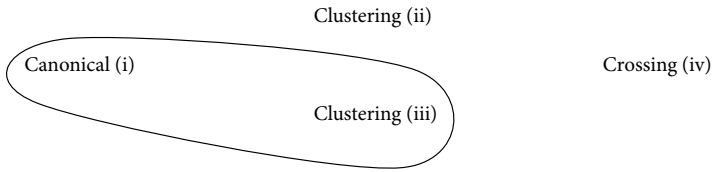


Figure 5. Capeverdean direct (bound-pronoun) ditransitive patterns (pronoun-NP)

(37) Hausa (Kraft and Kirk-Greene 1973:75–76)
a. *Naa báà=shì aikìi.*
I.PFV give=him work
'I gave him work.'
b. *Naa báà=tà aikìi.*
I.PFV give=her work
'I gave her work.'
c. **Naa báà=shì=tà.*
I.PFV give=him=her
'I gave him her=I gave her to him.'
d. *Naa báà=shì* ***ita.***
I.PFV give=him her
'I gave him her=I gave her to him.'

The next example is a pronoun-NP inverse manifested in the form of the verb. In Lillooet (Salishan) the crossing pattern (iv) is impossible, and a 'passive' construction must be used instead. The Lillooet pattern is shown by Figure 6.

(38) Lillooet (van Eijk 1997: 229)
a. *ʔúm'n-as-Ø* *kʷs-Sam* *ti_c'qáxʔa*
give-3SG.SBJ-3SG.OBJ ART-NMLZ-Sam ART-horse-ART
'He gave Sam a horse.'
b. **ʔúm'n-as-Ø* *kʷs-Sam*
give-3SG.SBJ-3SG.OBJ ART-NMLZ-Sam
'He gave it to Sam.'

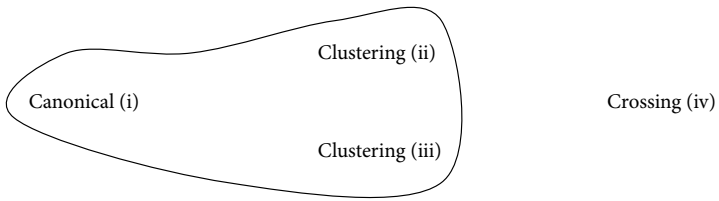


Figure 6. Lillooet direct (non-verb-marking) ditransitive patterns (pronoun-NP)

Finally, we return to the examples from English and French that were cited in the first section of this article. In English and French, pronoun-NP inverses are manifested in a contrast between a prepositional construction and a construction with no preposition. British English is like Lillooet in that only the crossing pattern (iv) is excluded with the simplest construction, the double-object construction (**She gave Kim it*/**She gave it Kim*). Instead, a more complex construction with the preposition *to* must be used instead (*She gave it* ***to*** *Kim*). In the other mapping patterns (i)–(iii), the prepositional construction is also possible, but not obligatory. (Canonical: *She gave me the book*/*She gave the book to me*; clustering (ii): *She gave me it*/*She gave it to me*; clustering (iii): *She gave Kim the book*/*She gave the book to Kim*.)

American English also excludes the clustering pattern (ii) (**She gave me it*/**She gave it me*), requiring a more complex prepositional construction here, too (*She gave it* ***to*** *me*.). Thus, the simple double-object construction is allowed only in the mapping patterns (i) and (iii), as depicted in Figure 7.

French is like English in that it excludes the crossing pattern (**Elle le donna Kim* '*She gave it Kim'), and it is like British English in that it allows the clustering pattern (ii) (*Elle me le donna* 'She gave me it'). However, the clustering pattern (iii) (**Elle donna Kim le livre* 'She gave Kim the book') is not possible without a preposition. The construction with the preposition is always possible in French, though it is only used under special discourse conditions when the prepositionless construction would be possible as well. The French situation is depicted in Figure 8.

Thus, all the inverse patterns that we have seen in this section fall under the inverse universals 3 and 4. These have a straightforward functional explanation and constrain the cross-linguistic diversity considerably. In each case, no language is attested in which only the crossing mapping is expressed simply, while one of the

Figure 7. American English direct (prepositionless) ditransitive patterns (pronoun-NP)

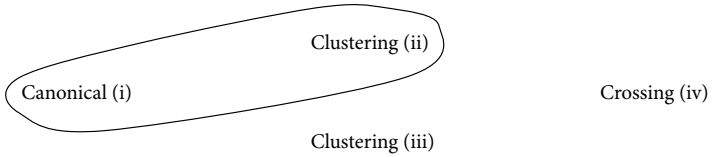


Figure 8. French direct (prepositionless) ditransitive patterns (pronoun-NP)

clustering mappings or the canonical mapping must be expressed in some complex way. There is also no language where one of the clustering mappings, but not the canonical mapping is expressed with the simple pattern.

5. Conclusion

In this article I have advanced four universals of ditransitive marking, two of them concerning split alignment patterns (differential R marking and differential T marking), and two of them concerning inverse alignment patterns (person-role inverses and pronoun-full NP inverses). The universals make predictions about the distribution of asymmetrical marking patterns in the world's languages. Examples of asymmetrical marking patterns from a variety of languages that conform to the universals have been cited.

I have proposed functional explanations of these universals that appeal to economy effects resulting from differences in frequency distributions. I have not been able in this article to back these up with full statistical data from cross-linguistic corpora. This is a matter for future research. To the extent that the statistical evidence is needed to support the functional explanations, these explanations thus remain somewhat incomplete at the present moment.

However, the virtues of the present functional-typological approach should have become apparent:

i. I have not made use of any highly specific formal metalanguage for describing the relevant grammatical structures. This article can be understood by any linguist without learning a complicated formal framework.
ii. I have not made any bold speculative claims about the mental grammars of speakers. While linguists are generally happy to take notice of such claims made by their colleagues in research papers, few of the claims made over the last couple of decades have been universally (or even widely) accepted and adopted. In view of this, I regard it as a virtue of the approach that it can make do with purely phenomenological descriptions that make no claims about cognitive states.
iii. Likewise, I have not made any claims about the genetically determined cognitive code for language ('Universal Grammar'). Again, while many linguists are interested in UG, there is no agreement about its actual makeup, and claims about UG are not readily testable.
iv. The universals are easily falsifiable by data from further languages because they have a very low degree of abstractness. No 'deep analysis' is required to find counterevidence.

v. The part of the explanation that refers to frequency of use in discourse is very easily testable, by simply examining texts in any language. The discourse frequency asymmetries are said to lie at the root of the universal asymmetries in coding patterns, so it goes without saying that they have to be universal, too.

The initially surprising coding asymmetries in English and French that we saw in §1 have been shown to find a natural explanation in the current approach. It was not necessary to consider competing explanations here, because it seems that at least for English, no serious competing explanation has been proposed (a surprising fact, given that English has been studied so thoroughly). Of course, one might still hope for an explanation that is even stronger in that it explains, say, why British English has the pattern in Figure 6 and American English has the pattern in Figure 7, rather than vice versa. Such an explanation would be possible only if we found some factor that makes this state of affairs necessary, most likely some other correlating property of the grammar. Until such a correlation is found, we have to be content with an explanation that shows that the English and French asymmetries conform to universal constraints on such asymmetries, which themselves make perfect sense on a view of grammatical structure that takes the effect of usage on grammar into account.

Notes

1. The different word orders in (1e) correspond to different regional varieties of British English (see Siewierska and Hollmann 2007), but I will not differentiate between them here. I have nothing to say about word order in this article.

2. See Haspelmath (2004b) for the term 'cognitive code' (analogous to 'genetic code').

3. These should be pronounced ['praimətiv] and [si'kʌndətiv], respectively. This terminology was proposed in Haspelmath (2005a) (originally presented in 2001) and adopted by Siewierska (2004: ch. 2).

4. Aissen (2003) offers an Optimality-theoretic reconstruction of this old insight, which has no official role for frequency. However, she has to rely on the concepts of markedness and iconicity, which can be dispensed with if frequency and expectedness are made the cornerstone of the explanation (see Haspelmath 2006). Moreover, as she admits in her note 12 (2003:447–448), even with all her machinery, she fails to make the right predictions if no further functional factors are appealed to.

5. Note that the situation is parallel to the situation with differential object and subject marking. Especially for Australian languages, there is no agreement on what to call the P case when it has no overt marking, *accusative* (using the same abstract case value as for the overtly accusative-marked pronouns) or *absolutive* (using a case label that emphasizes its identity to the equally zero-marked form used in intransitive clauses; see Goddard 1982). Fortunately, the universals in (6) are unaffected by these debates.

6. Abbreviations in glosses follow the Leipzig Glossing Rules. Special abbreviations: REC = recipient, THM = theme, AG = agent.

7. I prefer the older term 'inverse' (which was coined in Algonquian linguistics) to 'hierarchical' because the term 'hierarchy', which is often used instead of 'scale', is not very satisfactory (the term 'hierarchy' would be more appropriate for structures that have the form of a tree, whereas implicational scales and salience scales are purely linear).

8. The representation in (22) is taken from Zúñiga (2002:25). The conceptualization in terms of a mapping between two scales ('harmonic alignment') was recently highlighted by Aissen (1999).

9. Conversely, direct/inverse patterns reflected in a bound-pronoun vs. independent-pronoun contrast do exist in monotransitive constructions, although they have not been treated as inverses in the literature. For example, Hungarian allows affixal coding of 1>2 as in (i), but not of 2>1 as in (ii), where the first person must be expressed as an independent pronoun.

(i) *kér-lek* [ask-1SG>2SG] 'I ask you (singular)'
(ii) *engem kér-sz* [I.ACC ask-2SG] 'you ask me'

10. Gensler (2003:217–18) mentions the Hausa facts in the context of a cross-linguistic study of ordering of R and T person affixes, and finds them 'unexpected'.

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Bound person forms in ditransitive clauses revisited

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In a recent article Gensler (2003) has argued that little can be said about the ordering of bound person markers of the T(heme) and R(ecipient) relative to each other or relative to the verb stem apart from the fact that the outer markers are likely to be the result of a second-level cliticization process. We take issue with this claim and document that quite successful predictions with respect to the ordering of the T and R markers can be made on the basis of morphological alignment. Taking as our point of departure the typology of ditransitive alignment outlined in Haspelmath (2004; 2005), we show that the ordering patterns in which the R is placed closer to the verbal stem than the T are favoured in all relevant alignment types apart from the indirective, which exhibits a preference for positioning the T closer to the verbal stem than the R. These preferences for the ordering of the R and T are argued to relate directly to the frequency of use of the relative person forms and thus are seen as constituting yet another piece of evidence for the usage-based model of grammar being developed within the functional-cognitive typological paradigm (cf. e.g. Barlow & Kemmer 2000; Bybee & Hopper 2001; Tomasello 2003).

1. Introduction

Whereas bound markers of tense, aspect and modality display evident cross-linguistic ordering preferences (see Bybee 1985), the ordering of bound person forms, be it relative to the stem or to each other, is much less consistent. Not surprisingly therefore the attempts to account for the order of person forms cross-linguistically proposed to date have met with comparatively little success (see e.g. Givón 1976; Hawkins and Gilligan 1988; Siewierska and Bakker 1996; Bitner and Hale 1996; Cinque 1999). The principles postulated have been able to provide a satisfactory account for at most 60% of the cross-linguistic data. In the main these attempts have centred on the order of bound person forms corresponding to the two arguments of a transitive clause, i.e. the A and P. Our attention, by contrast,

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will be devoted to the order of the two non-subject arguments of a ditransitive clause, i.e. the T (theme) and the R (recipient).

In a recent paper Gensler (2003) has argued that little can be said about the ordering of the T and R markers relative to each other or relative to the verb stem apart from the fact that the outer markers are likely to be the result of a second-level cliticization process. We will take issue with this claim and document that quite successful predictions with respect to the ordering of the T and R markers can be made on the basis of morphological alignment. Taking as our point of departure the typology of ditransitive alignment outlined in Haspelmath (2004; 2005), we will show that the ordering patterns in which the R is placed closer to the verbal stem than the T are favoured in all relevant alignment types apart from the indirective, which exhibits a preference for positioning the T closer to the verbal stem than the R. These preferences for the ordering of the R and T will be argued to relate directly to the frequency of use of the respective person forms and thus will be seen as constituting yet another piece of evidence for the usage-based model of grammar being developed within the functional-cognitive typological paradigm (cf. e.g. Barlow and Kemmer 2000; Bybee and Hopper 2001; Tomasello 2003).

The article is organized as follows. In Section 2 we will briefly present some of the approaches to the order of affixes and in particular person forms that have been developed in the literature and consider to what extent they are applicable to the ordering of the R and T. In Section 3 we will take a closer look at the occurrence of bound person forms in ditransitive clauses, concentrating on the factors underlying the use of a bound person form for both the R and T as opposed to just for one or the other. Section 4 will be devoted to the ordering of the R and T relative to each other. After reviewing Gensler's analysis of the data, we will provide a modification to his predictions based on the ditransitive alignment of the respective forms. We will then test both sets of predictions first on the languages in Gensler's sample and then on our own extended sample. Some concluding remarks will be offered in Section 5.

2. Approaches to the order of bound forms[1]

The accounts of affix and clitic order currently available fall into two types: synchronic and diachronic. Synchronic analyses have been proposed within both the generative and functional-typological paradigms. The diachronic analyses are essentially functional-cognitive.

Most of the synchronic principles postulated to account for the order of bound forms do not directly encompass person forms. This holds for the various generative analyses based on versions of Baker's (1985) Mirror Principle as presented in,

for example, Pollock (1993), Chomsky (1995) or Cinque (1999) and for the post-syntactic account of affix order offered within an Optimality Theory framework by Trommer (2001). It also pertains to the functional analyses developed within Functional Grammar (Dik 1989; 1997) and Role and Reference Grammar (Foley and Van Valin 1984; Van Valin and La Polla 1997).[2] A synchronic analysis which does embrace person forms, but not necessarily those of the R and T in ditransitive clauses, is that suggested within a Chomskyan Universal Grammar framework by Rice (2000). Rice seeks to account for the order of bound morphemes in terms of scope relations.[3] Taking as her point of departure the assumption that scopal relations are structurally represented, Rice adopts the standard phrase-structure model of scope relations according to which a morpheme of greater scope c-commands a morpheme within its scope (e.g. Reinhart 1976, Marantz 1984). In the context of this model, in which subjects c-command objects, Rice suggests that in head-final languages bound subjects (As) should be placed to the right of bound objects (Ps), while in head-initial languages bound subjects (As) should be placed to the left of bound objects (Ps). Under the view that bound subjects and objects are heads and thus suffixes in head-final languages and prefixes in head-initial languages, the predicted orderings are as depicted in (1a) and (1b) respectively.

(1) a. head-final: Verb-P-A
    b. head-initial A-P-Verb

Although Rice's discussion of the order of bound person forms does not embrace the R and T, if her analysis were to be extended to the R and T in ditransitive clauses, presumably the R would be seen as having scope over the T, as argued by Polinsky (1998) and Primus (1995). By analogy with the order of the A and P presented in (1), the relative order of the R and T in head-final and head-initial languages might then be expected to be as shown in (2):

(2) a. head-final: Verb-T-R
    b. head-initial: R-T-Verb

However, neither of the ordering predictions in (1) or (2) can be translated in a straightforward manner onto surface representations since Rice (2000:224–245) allows for the possibility of morpho-phonologically conditioned metathesis, deviations from the predicted order of person forms analysed as lexical categories rather than functional ones and above all the placement of the verb in the "wrong" position. The last point is of particular importance in relation to Athapaskan languages, the order of affixes within which Rice seeks to account for, since these languages are in fact head-final but have prefixes rather than suffixes, counter to the predictions in (1). In sum, the account of the order of bound person forms presented by Rice is too theory-dependent to allow any clear predictions with

respect to actual surface orders to be made even for the A and P, let alone for the R and T.

Turning to diachronic explanations of the order of bound forms, the most frequently invoked is the principle of relevance, formulated by Bybee (1985), according to which the placement of an affix is a reflection of the degree to which it exerts a semantic influence on the stem. In other words, affixes which have a greater semantic effect on the stem are expected to be placed closer to the stem than those exerting a smaller effect. In line with this expectation, markers of aspect tend to be placed closer to the verbal stem than those of tense, tense markers tend to occur closer to the stem than modal markers and bound person forms occur still further away from the stem, as depicted in (3).

(3) Person-M-T-A-Verb-A-T-M-Person

In the case of the markers of the A and P, since the semantic and syntactic bond between the P and the verb is taken to be closer than that between the A and the verb, the principle of relevance defines a preference for the A to precede the P in prefixal position and the P to precede the A in suffixal position. These are the same ordering preferences as suggested by Rice's (2000) scope-based analysis though, unlike in the case of Rice, they are not tied to the general initial or final headedness of the language but only the prefixal vs. suffixal location of the bound person markers. Whether the principle of relevance can be extended to the R and T is not absolutely clear. If so, it is likely to predict a preference for the R to be placed closer to the stem than the T (see Section 4). In such a case the predicted patterns would be the converse of those potentially following from the scope principle suggested by Rice, i.e. for T > R prefixes as in (4), and for R > T suffixes as in (5).

(4) Abaza (O'Herin 2001:48)
Y-ʕa-lə-l-t-t'.
3SG(T)-DIR-3SG(R)-3SG(A)-give-DYN
'She gave it to her.'

(5) Noon (Soukka 2000:202)
Mi teeb-pi-raa.
I present-3SG(R)-2SG(T)
'I present you to her.'

An alternative diachronic explanation for the order of bound morphemes builds on their degree of grammaticalization. Diachronically older forms, i.e. forms that have undergone more development, are expected to occur closer to the stem than younger forms (see e.g. Bybee *et al.* 1991:33). Since As tend to be more grammaticalized than Ps, this suggests a preference for P > A order among prefixes and

A > P order among suffixes. Note that both orders are the very opposite to those predicted by the principle of relevance. Comparable knowledge about the degree of grammaticalization of Rs and Ts is lacking. Therefore we can only speculate. If Rs tend to grammaticalize before Ts, again we would expect the very opposite ordering preferences to those following from the principle of relevance. But if Ts tend to grammaticalize before Rs, then the relevance and diachronic principles make the same prediction and lead us to expect R > T in prefixal and T > R in suffixal position. Another possibility is that the order and degree of grammaticalization of the R and T are not only determined by these two forces, either in isolation or in combination, but that there is a third factor involved. It is precisely this assumption that we will be exploring. But first let us take a closer look at the actual distribution of person forms in ditransitive clauses.

3. Bound person marking in ditransitive clauses

While in the case of monotransitive clauses bound person forms on the verb for both the A and the P are cross-linguistically highly frequent, and may even be seen as the cross-linguistic norm, in the case of ditransitive clauses languages typically have bound person forms for the R or the T but not for both (see e.g. Blansitt 1984; Givón 1984; Gensler 2003). Languages in which bound person forms on the verb are used for the R but not the T appear to be much more common than those in which the converse is the case. Among the 227 languages in our sample for which we could obtain data for ditransitive clauses, 111 (49%) display bound person marking for the R but not the T, as compared to only 56 (25%) with bound person marking for the T but not the R. Another 25 (11%) languages display bound person marking for the R under one set of circumstances and for the T under another. In the Oceanic language Tigak, for example, the two patterns of marking depend on the verb. The verb 'give' takes a bound person form for the R while the T occurs as a complement of a preposition. With the verb 'say', on the other hand, it is the T that is marked on the verb while the R is attached to a preposition. This is shown in (6).

(6) Tigak (Beaumont 1979:42–43)
a. *Ga taval-irek papa-na.*
3SG:PAST give-3PL with-3SG
'He gave it to them.'
b. *Ga pising-i su-guk.*
3SG:PAST say-3SG to-1SG
'He said it to me.'

In Araki, another Oceanic language, the patterns of marking depend on the nature of the T. If the T is inanimate, as is generally the case, the R is bound to the verb while the T occurs as the object of the instrumental/oblique preposition *ni/ini* or *lo*. But if the T is human it may take priority over the R with respect to attachment to the verb. In such a case the R is marked by a different preposition, namely *sa/isa*. Compare (7a) with (7b).

(7) Araki (François 2002:161)
   a. *Na sile-ko ne-re presin.*
      I give-2SG OBL-some present
      'I feel like giving you a present.'
   b. *Na pa sle-ko sa-n ramare.*[4]
      I SEQ give-2SG to-CST devil
      'I will give you to a devil.'

In the Brazilian language Apurinã the two patterns of marking may be used with the same verb and the same T and R configuration. We see in (8a) that the verb is marked by the third person feminine form *-ro* corresponding to the T 'my arrow', while in (8b) the verbal suffix is the third person masculine *-ru* corresponding to the R, 'him'.[5]

(8) Apurinã (Facundes 2000: 291–292)
   a. *O-suka-ro uwa-mokaru nu-serepi.*
      3F-give-3F 3M-GOAL 1SG-arrow(F)
      'She gave my arrow to him.'
   b. *Nota suka-ru uwa-mokaru nu-serepi.*
      I give-3M 3M-GOAL 1SG-arrow(F)
      'I gave my arrow to him.'

What determines the two patterns of marking is not clear. In the Chukotko-Kamchatkan language Itelmen, which also displays verbal person marking either with R or the T, the choice of person form is determined by topichood (Bobaljik and Wurmbrand 2002). Significantly, this difference in person encoding on the verb is not accompanied by any change in order, case marking or argument structure as shown in (9).

(9) Itelmen (Bobaljik and Wurmbrand 2002:2)
   a. *Isx-enk n-zəl-ał-in kza kəna-nk.*
      father-LOC IPRS-give-FUT-2SG you me-DAT
      'Will father give you to me?'
   b. *Isx-enk n-zəl-ał-um kza kəna-nk.*
      father-LOC IPRS-give-FUT-1SG you me-DAT
      'Will father give you to me?'

In contrast to bound person marking of just the R, or just the T or one or the other depending on factors such as those mentioned above, the marking of both T and R is rare. It occurs in only 35 (15%) languages of the relevant 227 in our sample. Furthermore, even in these 35 languages the marking of both the T and R by bound person forms is typically not obligatory. Most commonly, bound forms for the T and R are in complementary distribution with lexical NPs or independent person forms, as is the case for instance in the Bantu languages. Compare (10a) and (10b).

(10) Kinyarwanda (Gary and Keenan 1977:91, 92)
   a. *Yohani y-a-yi-mw-oher-er-eje.*
      John 3SG-PAST-3SG(T)-3SG(R)-*send*-APPL-ASP
      'John sent it to her.'
   b. *Yohani y-a-oher-er-eje Maria ibaruwa.*
      John 3SG-PAST-send-APPL-ASP Mary letter
      'John sent the letter to Mary.'

Alternatively the bound person form for the R may be obligatory, while that for the T may be subject to various restrictions. Arguably the most common of these is that the T must be third person. This has been termed by Haspelmath (2004) the Ditransitive Person Role Constraint (DPRC). Such a constraint is manifest in, for example, Chickasaw, French, Modern Greek, Monumbo, Delaware and Southern Tiwa. Additional constraints are also found. For example, according to Andrews (1975:42–43) in Classical Nahuatl the T is marked by a bound person form on the verb in addition to the R only if the R is first or second person and the T is third person plural, as shown in (11).

(11) Classical Nahuatl (Andrews 1975:42–3)
   Ō-ni-mitz-im-maca-Ø-c.
   ANTI-1SG-2SG(R)-3PL(T)-give-PAST-SG
   'I gave them to you.'

In the Muskogean language Chickasaw the T receives overt marking by means of the form *pit-* only if human, as in (12).

(12) Chickasaw (Munro and Gordon 1982:110)
   Catherine-at Larry Bonnie-ak pit-im-pilash-tok.
   Catherine-SUBJ Larry Bonnie-NONSUBJ PIT(T)-3(R)-send-PAST
   'Catherine sent Larry to Bonnie.'

In the Australian language Ngiyambaa, in turn, the T must be definite. Observe the lack of a bound form for the T in (13a) as compared to (13b).

(13) Ngiyambaa (Donaldson 1980:131–32)
a. *Guya-ndu-na ŋu-nhi.*
fish:ABS-2SG:NOM-3ABS give-PAST
'You gave him fish.'
b. *Ŋu-nhi-dju-lugu-na.*
give-PAST-1NOM-3GEN-3ABS
'I gave it to him.'

While typically it is the T that fails to be marked on the verb if the relevant restrictions are not met, in some languages the affected argument is the R. For example, in the Austronesian language Muna both the T and R are marked on the verb (rather than just the R) only when the T is third person singular as in (14a). When the T is third person plural, it is attached to the verb while the R is encoded as the object of the preposition *ne*, as in (14b).

(14) Muna (van den Berg 1989:67)
a. *No-gholi-kanau-e.*
3SG-buy-1SG-3SG
'She bought it for me.'
b. * *No-gholi-kanau-da.*
3SG-buy-1SG-3PL
'She bought them for me.'
c. *No-gholi-da ne inodi.*
3SG-buy-3PL LOC 1SG
'She bought them for me.'

A similar situation may be observed in the Mexican language Yatzachi el Bajo Zapotec in which, however, apart from the subject only third person non-subject arguments may be bound to the verb. While both the T and R may be bound to the verb as in (15a), the inanimate T may be attached to the verb in preference to an animate R, as in (15b).[6]

(15) Yatzachi el Bajo Zapotec (Marlett 1985:104)
a. *B-nezXw-eʔe-boʔo-b.*
COMPL-give-3RESP-3FAM (R)-3ANIM (T)
'He gave it to him.'
b. *Gw-nezXw-aʔa-n llebo.*
POT-give-1SG-3INAN(T) 3FAM
'I will give it to him.'

Finally, there are also languages in which the verb may display verbal person marking of both the T and R or of either of the two. This is the case in Literary Arabic. According to Retsö (1987:228) person marking of the verb of both the R and T as in (16a) is the norm only with the verb 'give'. This construction co-exists with two alternative ones. In the first the R is marked on the verb while the T is realized as a suffix attached to the pronominal base *iyya,* as in (16b). In the second, the T is marked on the verb and the R is suffixed to the preposition *la*, as in (16c).

(16) Literary Arabic (Retsö 1987 :228, Gensler 2003:203)
a. *ʔa'ta-ni-hi.*
gave:3SG-1SG-3SG
'He gave it/him to me.'
b. *ʔA'ta-hu 'iyya-ya.*
gave:3SG-3SG:M ACC-1SG
'He gave me to him.'
c. *La-ka wahabtu-ha.* (T)
to-2SG gave:1SG-3SG
'I gave it to you.'

Significantly the construction with both the R and T on the verb is an option only when the R is first or second person and the T is third person. Other Arabic dialects tend to favour either of the other two constructions.

The discussion above has made it quite clear that the presence of two bound person forms in ditransitive clauses corresponding to the R and the T is cross-linguistically rather rare. This may be taken to be to a large extent a reflection of the rarity in discourse of ditransitive clauses with two pronominal non-subject arguments of any type.[7] The dominant pattern of ditransitive clauses seems to be for the T to be a lexical NP and the R a pronominal one. Hence the preference for bound person marking of the R as opposed to the T, which too has been documented above. Another factor contributing to the rarity of languages displaying ditransitive clauses with both the R and T marked by person forms on the verb is the previously mentioned Ditransitive Person Role Constraint coupled with the presence of third person bound non-subject forms only for humans, as is the case for instance in the New Guinea language I'saka (Donohue and Roque 2004:62) or alternatively the lack of overt forms for third person P or T altogether, as is the case in, for example, Seri (Marlett 1990:514). Although constructions with bound person forms for both the R and T are uncommon, the order of the two when they do co-occur needs to be accounted for. It is to this that we now turn.

4. The order of the R and T

4.1 The three basic patterns

In principle the order of bound forms may be considered in terms of linear precedence, i.e. from left to right, or in terms of closeness to the stem. Any account based on linear precedence would be rather difficult to reconcile with the principles of grammaticalization. Therefore we will be discussing the order of the R and T in terms of their respective closeness to the verbal stem. This gives us three basic patterns: (a) the T being closer to the stem than the R; (b) the R being closer to the stem than the T; and (c) the T and R being on opposite sides of the stem.[8]

Each of the above patterns is attested in two variants. In languages in which the T is placed closer to the verbal stem than the R, the R may precede the T in prefixal position, as in (17) from the Papuan language Ekari, or follow the T in suffixal position, as in (18) from Kashmiri.

(17) Ekari (Doble 1987:84)
Niya-e-dokai.
1PL(R)-3SG(T)-carry
'Carry him for us.'

(18) Kashmiri (Wali and Koul 1997:156, 88)
Kalam d'ut-un-am.
pen gave-3SG(T)-1SG(R)
'He gave me a pen.'

And analogously in the case of languages in which the R is closer to the verbal stem than the T. An example of the T preceding the R in prefixal position was given earlier in (4) from Abaza. And an illustration of the R preceding the T in suffixal position was provided in (5) from the Nilo-Saharan language Noon. As for the placement of the R and T on opposite sides of the stem, as one would expect from the ordering of lexical objects which typically occur on one side of the verb, languages in which the T and R differ in terms of prefixal and suffixal position are uncommon. An example of this pattern in which the T is a prefix and the R is a suffix is given in (19) from the Papuan language Yimas and another in which the R is a prefix and the T is a suffix is provided in (20) from Agarabi, a Trans-New Guinea language from the Eastern Highlands.

(19) Yimas (Foley 1991:212)
Na-mpi-tkam-r-akn.
3SG(T)-3DL-show-PERF-3SG(R)
'They two showed it to him.'

(20) Agarabi (Whitehead 1981:45)
Yonhi wuhku ti-m-e-m-ih.
John book 1(R)-give-NEUT-3(T)-3
'John gave me a book.'

While in most languages only one of the above patterns of the placement of the R and T forms is found, in some there is variation conditioned either by tense, aspect or mood or person/number (e.g. French, Mudang, Yimas). In various Indo-European languages such as Albanian, French, Macedonian and Modern Greek, for example, the R proclitic normally precedes the T proclitic, as shown in (21a) on the basis of Modern Greek. However in the case of verbs in the imperative or participial form, enclitics rather than proclitics are used. Furthermore, specifically in Modern Greek with monosyllabic imperatives, while the order in (21b) with the R preceding the T is preferred, the placement of the T clitic closer to the verbal stem than the R enclitic, as in (21c), is also a possibility.

(21) Modern Greek (Lascaratou 1994:73)
a. *Mu=to=estil-e.*
1SG:GEN=3SG:ACC=sent:PAST-3SG
'He sent me it.'
b. *Δo-se=mu=to.*
give-IMP=1SG:GEN=3SG:ACC
'Give me it!'
c. *Δo-se=to=mu.*
give-IMP=3SG:ACC=1SG:GEN
'Give me it!'

In French in turn the R > T order of proclitics obtains only when the R is first or second person. With third person Rs the order is T > R. Compare (22a) with (22b).

(22) French (Simpson and Withgott 1986:163)
a. *Il me=le=donne.*
he 1SG(R)=3SG(T)=give
'He gives it to me.'
b. *Il le=lui=donne.*
he 3SG(T)=3SG(R)=gives
'He gives it to him.'

4.2 Gensler's analysis

Using a cross-linguistic convenience sample, Gensler (2003) identified 32 languages in which both the R and T could, under some set of circumstances, be marked on

the verb.[9] Among these languages no preferences for the order of the R and T could be discerned. In terms of closeness to the stem, 17 languages displayed orders in which the T was closer to the stem than the R, 19 languages had orders in which the R was closer to the stem than the T and 4 languages required or allowed for the two to occur on opposite sides of the verb. In one language, Kiowa, the forms of the R and T were fused in preverbal position. And yet in another language, Delaware, the R was fused with the verb while the T was located postverbally. The distribution of these patterns in prefixal vs. suffixal position among the languages in Gensler's sample is shown in (23).[10]

(23)
a.	R-T-Verb	9 lgs
b.	Verb-T-R	8 lgs
c.	T-R-Verb	7 lgs
d.	Verb-R-T	12 lgs
e.	T-Verb-R	3 lgs
f.	R-Verb-T	1 lg
g.	X(R:T)-V	1 lg
h.	V:R-T	1 lg

These data led Gensler to suggest that the order of the R and T is random and cannot be accounted for in any other than diachronic terms. Gensler argued that given the principles of grammaticalization, we may expect the person forms further removed from the stem, be they R forms or T forms, to be diachronically younger than the inner forms. The outer forms may be seen to be the product of a second-level cliticization process. As such they may be assumed to be heavier segmentally, i.e. to involve more segments than the inner forms and/or to be internally complex, i.e. reveal traces of internal complexity such as the vestiges of an applicative marker as well as a person marker. In short, Gensler's analysis suggests that if the R is heavier than the T it should be placed further away from the stem than the T, if the T is heavier than the R, the T should be placed further away from the stem than the R and if both are equally heavy or light either order is possible.

Gensler's analysis of the person forms of the R and T among the 32 languages in his sample enabled him to identify 14 languages in which the forms of the R and T could be seen to differ with respect to heaviness. In two of these languages the R and T were positioned on opposite sides of the verb. With these two languages disregarded, his sample thus yielded 12 languages for the testing of his hypothesis about the ordering of the R and T relative to each other. His predictions, i.e. that the heavier T or R would be located further away from the stem than the lighter R or T were borne out by 8 of the 12 languages. The four exceptional languages were all Afro-Asiatic, namely Akkadian, Berber, Egyptian and Hausa. Gensler argues that the inner placement of a heavier R in Afro-Asiatic languages represents a

single case historically and is not due to a second stage cliticization process, which would counter his analysis, but rather a process of morphemic replacement. He hypothesizes that the heavy inner R was at the relevant proto-stage a light clitic, more or less as in example (16) cited earlier from Literary Arabic, and was subsequently replaced "in situ by heavy forms involving language specific augments".

The success rate of Gensler's word order predictions is 67% (8 out of 12), if interpreted relative to the number of languages in which the R and T differ in heaviness. But it drops to just over a quarter (28%; 8 out of 29) if measured relative to the total number of languages with bound person marking for both the T and R located on the same side of the verb in his sample. This figure of 28% can be improved on considerably if several additional factors are taken into account.

4.3 A refinement

In his analysis of the order of bound R and T forms, Gensler by and large ignored how these forms relate to those used for the transitive P. We in turn hold that the patterns of identification of the R and T with the P play a crucial role in how the R and T are ordered relative to each other. Following Haspelmath (2004) we will refer to the patterns of identification of the R, T and P as ditransitive alignment. By analogy with monotransitive alignment, the major patterns of ditransitive alignment are: indirective, secundative, neutral and tripartite. In indirective alignment, which is the ditransitive counterpart of accusative, the T is identified with the P in contrast to the R. In secundative alignment, the ditransitive counterpart of the ergative, it is the R which is identified with the P while the T is distinct. Neutral alignment obtains when the P, T and R are all treated the same, and tripartite alignment when each is treated differently. The identification of alignment may be achieved on the basis of morpho-phonological or syntactic criteria. We will adopt a morpho-phonological criterion which entails morpho-phonological identity of the bound person forms of the P and T in indirective alignment, the P and R in secundative alignment and the P, T and R in neutral alignment.[11] Given the morpho-phonological criterion we will also need to recognize a fifth minor alignment pattern in which the forms for the R and T are the same but distinct from those used for the P. We will refer to this minor alignment pattern with the same term as used for the corresponding monotransitive pattern, i.e. double oblique.

Our basic rationale for viewing patterns of morpho-phonological alignment as relevant for the determination of the order of bound R and T person forms comes from considerations of the effects on grammatical structure of token frequency. In usage-based models of grammar (c.f. Barlow and Kemmer 2000; Bybee and Hopper 2001; Croft 2001) it is widely recognized that more frequent forms are likely to undergo reduction and cliticization earlier than less frequent forms.

Since languages tend to have considerably fewer ditransitive verbs than transitive ones and ditransitive clauses occur in discourse less often than transitive ones, it seems pretty reasonable to assume that person forms which occur in both transitive and ditransitive clauses are likely to cliticize earlier than those that are specific to ditransitive clauses alone. In indirective alignment the relevant forms are those of the P and T. Accordingly, we may expect the T forms to grammaticalize earlier than the forms of the R, which in the normal course of events after the subsequent grammaticalization of the R should result in either of the orders in (24).

(24) a. R-T-Verb
b. Verb-T-R

In secundative alignment, by contrast, it is the R which is the same as the P. Consequently, the forms of the P and R are more common than those of the T. Accordingly, we may expect the R forms to grammaticalize in preference to those of the T. In fact the forms of the T may not undergo reduction and cliticization at all. But even if they do at some later stage, the resulting orders should be as in (25).

(25) a. T-R-Verb
b. Verb-R-T

Needless to say, in the case of neutral alignment, it cannot be the higher token frequency of one set of person forms as opposed to another which determines the order of the R and T, since the forms used for the P, T and R are all the same. Nonetheless, frequency may be seen to play a significant role, though not token frequency per se but rather the frequency of the use of pronouns, particularly person ones, in R as opposed to T roles. That the R is much more frequently pronominal than the T has already been commented on. Recall from Section 3 that there are many more languages in which it is the R which is manifested by a person form bound to the verb than in which it is the T. In fact, virtually all the instances that we are aware of in which the T takes precedence over the R in terms of bound person marking on the verb involve constructions in which the R is adpositionally marked, as in (26) from the Mayan language Mam where this is the only pattern, or as in Tigak (6), Araki (7) or Muna (14) where the marking of the T is just one of the existing possibilities.[12]

(26) Mam (England 1983:183)
Ma-a7 *Ø-tzaj-ky-q'o-7n* *q-ee.*
RECPAST-EMPH 3SG(T)-DIR-3PL(A)-give-DIR 1PL-to
'They gave it to us.'

Recall also that within languages the R is much more often pronominal than the T. In English there is even a well-known constraint, restricted to double object as

opposed to prepositional constructions, against clauses with a pronominal T and non-pronominal R; in other words if the T is pronominal so must the R be. Note the contrasts in (27).

(27) a. I gave him the sweets.
b. I gave him them.
c. *I gave Tom them.

Another piece of evidence in support of the predilection for Rs as opposed to Ts to be pronominal is that in languages which exhibit suppletion of the verbal stem dependent on person, it is always the person of the R and not of the T which is involved (Comrie 2000). This suggests that in languages manifesting neutral alignment of the bound person forms of the P, R and T we may expect the form placed closer to the verbal stem in ditransitive clauses to be interpreted as the R rather then the T. In other words we may expect a preference for the orderings in (25) as opposed to those in (24). This also holds for instances of tripartite alignment. If both the R and T are phonologically distinct from each other and from the P, the primacy of the R over the T with respect to person marking and pronominality suggests that either only the R should cliticize to the verb or at least it should do so earlier than the T, again yielding the orders in (25). And a similar argument can be advanced for positioning the R closer to the stem than the T in double oblique alignment. In sum, our considerations of the frequency of use of specific sets of person forms as reflected by their ditransitive alignment coupled with the evident preference for Rs as opposed to Ts to be pronominal suggests that the location of Rs closer to the verbal stem than Ts should be favoured in all alignment types but for the indirective.

Our predictions with respect to the ordering of bound person forms of the R and T in ditransitive clauses fair considerably better with respect to Gensler's sample than his own.[13] They fully account for the ordering found in 17 of the languages in his sample and make partially correct predictions, i.e. for at least one of the occurring orders, for another four languages. Our success rate for the sample as a whole (after the exclusion of five languages, four with fused markers or markers placed on opposite sides of the verb, namely Basque, Delaware, Kiowa, Ungarinjin, and Mundang) is thus 63% (fully correct) and 78% (partially correct), as compared to his 29%.

The difference between Gensler's account of the order of the R and T and ours essentially boils down to the cases where the forms of the R and T do not differ in heaviness. Gensler makes no predictions in such instances while we predict a preference for the R to be positioned closer to the stem than the T.

We have achieved a similar level of success with respect to a somewhat larger sample of 44 languages displaying bound person marking of both T and R, at least

under some set of circumstances. This sample, presented in Appendix 2, consists of Gensler's sample without Mundang and four languages which are irrelevant for this exercise, viz. Basque, Kiowa, Delaware and Ungarinjin, and enriched by an additional 17 languages. The distribution of ordering patterns reflecting our predictions relative to alignment among the languages in this sample is shown in (28). The alignments specified are those involving a third person T. Languages with an asterisk have more than one order.

(28) Orders of the R and T in line with our predictions
  a. Indirective
     R-T-Verb: *Albanian, *Bulgarian, Ekari, *French (R = 1 or 2), Southern Tiwa, *Modern Greek, Sumerian
     Verb-T-R: Amele, Anggor, Colloquial Arabic (B), *French, Gooniyandi, Kashmiri, Kate, Manam, Selepet
  b. Secundative:
     T-R-Verb: Yimas[14] (R = 1 or 2)
     Verb-R-T: Colloquial Arabic (A)
  c. Neutral
     T-R-Verb: Chinook, Kinyarwanda, Lakhota, Moshi, Nkore-Kiga
     Verb-R-T: Ashaninca, Classical Arabic, Diola Fogny, Doyayo, Koromfe, Nama, Noon, *Wolof, Zapotec
  d. Tripartite
     Verb-R-T: Hausa, Monumbo, Ngiyamba
     T-R-Verb: *Somali
  e. Double Oblique
     Verb-R-T: Kamberra

The distribution of orderings which counter our predictions relative to alignment is presented in (29).

(29) Orders of the R and T countering our predictions
  a. Indirective (5+4)
     T-R-Verb: Abaza, Abkhaz, *French (R = 3)
     Verb-R-T: *Albanian, Akkadian, Au, Berber, *Bulgarian, Egyptian, *Modern Greek
  b. Neutral
     R-T-Verb: Slave, *Wolof, Classical Nahuatl (T = 3PL)
  c. Tripartite
     R-T-Verb: *Somali

Interestingly enough, our overall success rate with respect to fully correct predictions is virtually the same as Gensler's, namely 68%. However, whereas Gensler's analysis embraced only 12 of the 32 languages in his sample, ours covers all the languages in our sample. Among these 44 languages the order of the R and T fully corresponds to our predictions in 30 cases, partially reflects our predictions in 6 and runs counter to our predictions in 8 cases. Thus under a favourable interpretation 36 out of 44 languages (82%) exhibit an ordering pattern of the R and T in line with our predictions.

On closer inspection we see that most of the exceptions to our predictions with respect to the ordering of the R and T involve indirective alignment. Some of the exceptional orders occur in languages in which they co-exist with patterns which conform to our predictions. The languages in question are all Indo-European, namely Albanian, Bulgarian, French and Modern Greek. In Albanian, Bulgarian and Modern Greek, the order in which the R is placed closer to the verbal stem than the T is clearly the minority pattern. Of the exceptional languages that display only a single ordering of the R and T, three are the same Afro-Asiatic languages that constituted an exception to Gensler's second-stage cliticization account, namely Akkadian, Berber and Egyptian. Another two are the Northwest Caucasian Abaza and Abkhaz. It is of interest to note that in both languages the morpho-phonological form of the R is distinct from the P and T essentially only in the third person. The forms used for third person Rs are, however, homophonous with those used for the A. Thus if what underlies the placement of the R or T closer to the stem is token frequency, the positioning of an R which is homophonous to an A closer to the stem than the T which is homophonous to a P would be fully in line with the dictates of frequency, since As are much more often pronominal than Ps or Rs, let alone Ts (cf. Du Bois 1987). The last language in which the order of the R and T in indirective alignment counters our expectations is Au, a Papuan language of the Toricelli family. Thus in all of the 26 cases found with person forms manifesting indirective alignment, 62% (16 out of 26) are in line with the expectations, which is only marginally better than chance.

The other alignment types consistently reflect a preference for positioning the R closer to the stem than the T. Of the three exceptional orders in neutral alignment, the one found in Classical Nahuatl could in fact be disregarded, as the presence of T marking in addition to R marking is very restricted. Recall that such marking occurs when the T is third person plural and the R is a first or third person. Alternatively the T must be indefinite. The case of Slave is also somewhat suspect. All the examples of two bound non-subject person forms on the verb provided in Rice's (1989:627, 775) grammar involve either a T which is unspecified rather than one corresponding to a definite referent or oblique objects rather than clear Rs. The latter typically include an incorporated adposition and consequently the alignment is not really neutral. This leaves Wolof in which the order with the T closer to the stem than the R is the minority pattern.

5. Concluding remarks

We have seen that the placement of the R and T relative to the verbal stem is in fact somewhat more predictable than has been recently suggested. The factor that plays a strong predictive role is ditransitive alignment. In all alignment types but for the indirective type, there is a strong preference for locating the R closer to the verbal stem than the T. In indirective alignment, by contrast, it is the T which is more commonly located closer to the verbal stem than the R. This ordering is not, however, as strongly preferred as we would have expected. There are a considerable number of languages which exhibit indirective alignment but require or allow for the placement of the R in an inner location. The question arises why this should be the case.

The explanation that we can offer is one based on competing motivations. We have argued that since in languages with indirective alignment the person forms used for the T are more frequent than those of the R, by virtue of the former being the same as those of the P, the T forms may be expected to cliticize earlier than the R forms. Nonetheless, as we have also argued, in ditransitive clauses it is the R rather than the T which tends to be pronominal. Thus while the forms used for a third person T are more frequent overall than those used for the R, in ditransitive clauses the converse is the case. Accordingly, the local frequency of the R forms may override the overall higher token frequency of the T forms and result in the earlier grammaticalization of the R than the T. In the case of the other alignment types there is no such conflict between token frequency of actual person forms and frequency of pronominal usage within the ditransitive construction. The person forms used to express the R will always be more frequent than those of the T irrespective of whether they are or are not homophonous with those of the P due to the strong tendency for Rs but not Ts to be human and pronominal.

Abbreviations

1	first person	GOAL	goal
2	second person	INAN	inanimate
3	third person	IPRS	impersonal
ABS	absolutive	LOC	locative
ANIM	animate	M	masculine
ANTI	anticessive	NOM	nominative
APPL	applicative	NEUT	neutral
ASP	aspect	NONSUBJ	non-subject
COMPL	completive	OBL	oblique preposition
CST	construct suffix	PAST	past
DAT	dative	PERF	perfect
DIR	direction	PL	plural
DL	dual	POT	potentialis
EMPH	emphatic	RECPAST	recent past
F	feminine	RESP	respect (honorific)
FAM	familiar (honorific)	SEQ	sequential aspect
FUT	future	SG	singular
GEN	genitive	SUBJ	subject

Notes

* Correspondence should be sent to the first author.

1. Our use of the term *bound form* here encompasses both affixes and clitics. For some discussion of the problems arising in distinguishing the two, see Siewierska (2004:24–34) and the references cited there. Although the location of the latter may be syntactically rather than morphologically determined, the verb is virtually always one of the categories to which person markers (of arguments) may attach.

2. Both Baker's (1988) Mirror Principle and the analyses suggested within Functional Grammar (Dik 1989; 1997) and Role and Reference Grammar (Foley and van Valin 1984; Van Valin and La Polla 1997) are indebted to Bybee's (1985) Principle of Relevance, discussed below.

3. In many generative accounts of bound forms the affix vs. clitic distinction is crucial as the proposed analyses may involve only the former or alternatively only the latter, however defined. Rice (2000) includes both types of forms under her analysis.

4. It is important to note that the language does have overt person markers for the third person objects.

5. It needs to be mentioned that Facundes (2000:192) questions whether the verb 'give' in Apurinã should be considered a ditransitive as opposed to a transitive verb.

6. Marlett (1985:107) states that in another of the Zapotecan languages, Isthmus Zapotec, only third person inanimate markers may be attached to the verb. This is cross-linguistically quite exceptional.

7. Relevant statistical data for English are presented in Siewierska and Hollmann (2007).

8. Another possible pattern is hierarchically determined order, where the order of the R and T depends on which is higher on the person hierarchy. According to Wise (1986:585) this is the basic principle determining the order of the R and T in the Andean language Nomatsiguenga, the first and second person always being placed before the third irrespective of which is the R and which the T. Unfortunately Wise does not provide examples involving both a third person T and R.

9. Gensler speaks of 31 languages but when one counts the two types of Colloquial Arabic, the correct figure is 32.

10. Some languages have more than one pattern. Therefore the numbers do not add up to 32 (languages) but to 42 (patterns).

11. As in the case of monotransitive alignments, there may be splits dependent on person and number. The most common ones involve neuter alignment for the first and second person and indirective for the third. Such is the case in Abaza, Abkhaz, Albanian and French, for example. In Tarifit Berber (McClelland 2000:2–21) the alignment is indirective both in the second and third person singular and neutral in the first person singular and in all persons in the plural.

12. When the R is not adpositionally marked, the encoding of the T by a person marker on the verb in preference to the R is generally due to topicality, animacy or definiteness restrictions.

13. We did not manage to find data for one of the languages in Gensler's sample, namely Mundang. We therefore had to exclude it from our considerations.

14. This pattern is difficult to classify in terms of alignment since the 1st and 2nd person forms exhibit secundative alignment and the third person forms indirective. If both the T and R are third person the R forms occur as suffixes rather than as prefixes.

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Appendix 1

Gensler' s (2003) sample (N = 32):
Abkhaz, Akkadian, Albanian, Amele, Classical Arabic, Colloquial Arabic A, Colloquial Arabic B, Basque, Berber, Chinook, Delaware, Egyptian, French, Gooniyandi, Hausa, Kamberra, Kashmiri, Kate, Kiowa, Manam, Monumbo, Mundang, Classical Nahuatl, Nama, Nkore-Kiga, Slave, Somali, Southern Tiwa, Sumerian, Ungarinjin, Wolof, Yimas.

Appendix 2

Our extended sample (N = 44) consisting of the languages in Appendix 1 without Basque, Delaware, Kiowa, Mundang and Ungarinjin, plus the following additional 17 languages:
Abaza, Anggor, Ashaninca, Au, Bulgarian, Diola Fogny, Doyayo, Ekari, Kinyarwanda, Koromfe, Lakhota, Modern Greek, Moshi, Ngiyambaa, Noon, Selepet, Zapotec.

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Getting three out of two

The development of a three-participant construction in Oceanic languages

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This article examines the development of the three-participant construction from the two-participant construction in Oceanic languages. This development involves the use of possessive classifiers for recipient or beneficiary marking. Arguments will be put forward in support of the change as an instance of grammaticalization. The change has its origins in pragmatic inferencing: the possessor is construed as a recipient or a beneficiary. Moreover, the change from possession to reception or benefaction is regarded, in terms of reduced structural autonomy, as a shift from a less grammatical to a more grammatical status: the relation between the recipient/beneficiary and the verb is much tighter than that between the possessor and the verb. Evidence will also be brought to bear to demonstrate the grammaticalization of possessive classifiers as recipient or beneficiary markers. In Kusaiean and Mokilese, the grammatical change has resulted in newly created recipient or beneficiary NPs moving into different sentence positions. In Kusaiean and Mokilese, the use of possessive classifiers for beneficiary marking has been extended from transitive to intransitive clauses (i.e. clauses without direct object NPs). In Lenakel, one of the multiple possessive classifiers, all used to express possession, has been chosen and pressed into the service of encoding benefaction.

1. Introduction

In Oceanic languages such as Mokilese (Micronesian subgroup; Mokil and Ponape) and Kusaiean (Micronesian subgroup; Kusaie, the Carolines and Nauru), so-called possessive classifiers (Lynch 1973, 1996, 1998; Lichtenberk 1983) are enlisted in the service of expressing the recipient or beneficiary role.* This is illustrated in (1), where the possessive classifier *nih-* is exploited to encode the recipient or beneficiary (i.e. the addressee in this case) (Harrison 1976:133).

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(1) Mokilese
ngoah insingeh-di kijinlikkoauoaw nih-mw
1SG:SBJ write-ASP letter PCL-2SG:POSS
'I wrote a letter to/for you.'

Similarly, in (2) the possessive classifier *la-* is used to express the role of the recipient *Sohn* (Lee 1975:262).

(2) Kusaiean
nga mole-lah rais ah la-l Sohn
1SG:SBJ buy-ASP rice DET PCL-3SG:POSS John
'I have bought the rice for John.'

The use of possessive classifiers for recipient or beneficiary marking, as initially documented in Song (1997 and 1998), is widely attested in Micronesian and, more broadly, Oceanic languages. Note that the English translation provided in (1) is not a free translation for something like "I wrote your letter". This is, in fact, one of the sentences that Harrison (1976:132–133) uses in order to demonstrate the "[recipient or] beneficiary use of the possessive classifiers" in Mokilese; "in [s]uch sentences [as (1)], the possessive classifier indicates the person who [receives or] benefits from the object (or action), rather than its owner" (Harrison 1976:133). A similar comment can be made of the recipient-marking possessive classifier in (2) (Lee 1975:261–263).

The original or primary function of possessive classifiers, as their name suggests, is to express possession, or more accurately alienable, as opposed to inalienable, possession. (The following description of possession in Oceanic languages is somewhat simplified for ease of illustration and the reader is advised to refer to Pawley 1973:153–169, Lynch 1973, 1996, Lichtenberk 1983, and Lynch, Ross and Crowley 2002:40–43 for detailed descriptions.) In alienable possession, the possessor is seen to have control either over the possession itself or at least over the fact of possession, e.g. items of disposable property or items that the possessor owns or controls in one way or another (Lynch 1998:123). This type of possession contrasts with inalienable possession, in which the possessor is seen to have little, if any, control over the fact of possession, e.g. parts of the body or some kinship terms (Lynch 1998:122). In Oceanic linguistics, alienable possession is referred to also as dominant, and inalienable possession as subordinate (Lynch 1998:122–123). In Oceanic languages, inalienable possession is most often associated with direct suffixation of possessive pronominal elements to possessed nouns (Lynch 1998:122). This type of construction, being of no relevance to the topic of the present article, will not be discussed any further. Alienable possession, on the other hand, tends to be expressed by means of possessive classifiers (Harrison 1988; Lynch 1973, 1996, 1998:122–123; Lichtenberk 1983). In this type of construction, possessive affixes

are attached to possessive classifiers, not to possessed nouns; when the possessor is expressed by a noun, the possessive classifier, depending on languages, may also carry a so-called construct affix or an appropriate third person possessive affix. The possessive classifier construction is exemplified in (3) and (4), taken from Mokilese (Harrison 1976:129) and Kusaiean (Lee 1975:262), respectively.

(3) Mokilese
nime-n woall-o pill-o
PCL-CONSTR man-that water-that
'that man's water'

(4) Kusaiean
nga mole-lah rais la-l Sohn ah
1SG:SBJ buy-ASP rice PCL-3SG:POSS John DET
'I have bought John's rice.'

The possessive classifier construction, as illustrated in (3) and (4), not only expresses possession but also categorizes semantic or culturally significant relationships that hold between the possessor and the possessum (i.e. possessed nouns) (Lichtenberk 1983). For example, given possessor X and possessum Y, the 'edible' possessive classifier expresses that Y is food to X; the 'drinkable' possessive classifier indicates that Y is a drink to X; and the 'plant' possessive classifier specifies that Y is a plant to X; and so on. In (3), therefore, the possessive classifier *nime-* indicates that the relation between the possessor and the possessum is such that the latter is something drinkable to the former — as opposed to water for washing. It is also possible that possessum Y, e.g. coconut, can enter into more than one relationship, e.g. food, drink and plant, with possessor X (for a general discussion of nominal classification systems, see Allan 1977, Aikhenvald 2000 and Senft 2000).[1]

Sentences such as (1) and (2) demonstrate that possessive classifiers in Oceanic languages are used to encode the recipient in the context of three-participant constructions (i.e. agent, theme and recipient). Whether these constructions can qualify as ditransitive constructions depends, however, on one's definition of the latter. For instance, ditransitive constructions can be defined as grammatical constructions with three syntactic arguments, i.e. subject, direct object and indirect object. On this definition, the recipient argument, along with the agent and the theme, must also be a syntactic argument or a complement. However, the recipient nominals in (1) and (2) may well be adjuncts, not complements, in which case (1) and (2) cannot be taken to be ditransitive constructions but should instead be treated as transitive constructions with adjuncts. Indeed, in (2) *la-l Sohn*, being an adjunct, can be deleted without the sentence being rendered ungrammatical (i.e. *nga mole-lah rais ah la-l Sohn* 'I bought the rice for John' versus *nga mole-lah rais*

ah 'I have bought the rice'). A similar comment can be made about the Mokilese sentence in (1) (Shelly Harrison, personal communication).

Alternatively, a semantically-based definition of ditransitive constructions can be adopted, as has been done in Haspelmath (2005), to the effect that ditransitive constructions are constructions built on verbs of transfer such as 'give', 'tell', 'buy', 'bring', 'write', etc. On this definition, ditransitive constructions involve two semantic arguments in addition to an agent, i.e. a 'recipient' (or 'addressee') argument, and a 'theme' argument (also see Goldberg 1995:141, and Newman 1996 and 2005 for similar definitions). In (1), the addressee is the one who (would) receive(d) the letter written by the speaker; in (2), *John* is a recipient in the sense that the speaker bought the rice and gave it to him; (1) and (2) can thus be taken to be semantically ditransitive constructions.

It is not the purpose of this article to decide between these two definitions of ditransitive constructions, let alone to arrive at a language-independent definition of ditransitive constructions (see Newman 2005 for an excellent discussion of difficulties in formulating such definitions). For the purposes of the present article, however, the semantically-based definition of ditransitive constructions will be chosen. The justification for this decision is that, aside from the difficulties in distinguishing between complements and adjuncts (Newman 2005:146–150), it is not always possible to ascertain, in the absence of detailed data, whether the recipient nominal is a complement or an adjunct in a given language. More importantly, in many Oceanic languages — insofar as it can be determined from the available data — there are no constructions other than the possessive-classifier-based construction in which the recipient can be expressed in consort with the agent and the theme (Song 1998, Margetts 1999:326, and Margetts 2002:619). For these languages, regardless of whether the recipient nominal turns out to be a complement or an adjunct, the possessive-classifier-based construction is all there is (for instance, to compare with unquestionably ditransitive constructions in other (non-Oceanic) languages, i.e. with three syntactic arguments).

Moreover, in order to describe sentences such as (1) and (2), the term "three-participant construction" will be used in preference to "ditransitive construction". First, the former reflects better than the latter the nature of the semantically-based definition adopted here, and helps avoid possible confusion with the other definition of ditransitive constructions (based on the presence of three syntactic arguments).

Second, this decision makes it possible to take into account the encoding of a beneficiary as well, because identical constructions tend to be used to depict three-participant events, regardless of whether they involve a recipient or a beneficiary. For example, the Kusaiean sentence in (1) is ambiguous between recipient and beneficiary readings. Thus the fact that recipient and beneficiary roles are

both expressed by means of possessive classifiers would go unrecognized or unaccounted-for, if the investigation were restricted to the encoding of recipient/indirect object nominals. In fact, this 'constructional polysemy' (e.g. (1)) comes as no surprise because there is much cross-linguistic evidence for a close relationship between a recipient of giving and being a beneficiary, as is evident in patterns of polysemy where an adposition or case marking (e.g. Chrau *iin* and Chamorro *pära*) may cover both recipient and beneficiary meanings (Newman 1996:217–223 and 2005:152–159).

Furthermore, the three-participant construction with a beneficiary is very similar to the three-participant construction with a recipient when interpreted in terms of Newman's (1996 and 2005) conceptual domains, namely the spatial-temporal, control, force-dynamics and human interest domains. In terms of force-dynamics, for example, action flows from the agent through the theme to the recipient (e.g. *Kylie gave the cat to Robbie*). Similarly, action flows from the agent through the theme to the beneficiary (e.g. *Kylie washed the cat for Robbie*). To wit, both the recipient and the beneficiary refer to persons to whom action is directed (Newman 1996:97).

Perhaps it may be useful to ascertain, before proceeding further, whether possessive classifiers can be used to encode a recipient argument in the context of what is regarded as the basic or the most frequent ditransitive verb in all languages, namely the verb 'give' (Newman 1996, Haspelmath 2005). Such an example has been attested in Mokilese. In this language, the presence of a recipient in the three-participant construction, based on the verb 'give' or *ki-*, is indicated by the directional or orientational suffix *-oang* (i.e. the person or place towards which the action is directed), as in (5) (Harrison 1976:202):

(5) Mokilese
joam-oai-o *ki-oang* *ngoahi* *ekij* *mwani*
father-1SG:POSS-DET give-to me some money
'My father gave me some money.'

The directional suffix *-oang* may also appear as an independent word, "separated from the verb", that is as a preposition (Harrison 1976:203), in which case *oang ngoahi* would appear after the direct object NP *ekij mwani*.

The marking of a recipient, however, can also be carried out by so-called possessive classifiers, albeit in conjunction with the directional suffix *-oang*, as in (6) (Harrison 1976:133, 263; cited also in Croft 1985:42):[2]

(6) Mokilese
ngoah *rapah-ki* *ih* *pwa* *ngoa-n* *ki-oang* *nah-Ø* *mwani-he*
I look.for-COMP him COMP I-MODAL give-to CL-3SG:POSS money-DET
'I looked for him (in order) to give him the money.'

In (6), the recipient argument, the presence of which is required by the directional suffix *-oang*, is also indicated by the possessive classifier turned recipient marker *nah-*. Margetts (2002:629) reports a similar situation for Saliba (Western Oceanic subgroup, Oceanic; Saliba Island and Sidea Island, Papua New Guinea): the possessive classifiers, *yo-* and *ka-*, are used in conjunction with the verb *le-* 'give', which in turn carries the directional suffix *-ma* 'towards the speaker', *-wa* 'towards the addressee' or *-Ø* 'towards the third person':

(7) Saliba
yo-gu *medolo* *se* *le-ya-ma*
CL-1SG:POSS medal 3PL give-3SG:OBJ-hither
'They gave me a medal.'

Unfortunately, no such examples have been retrieved from grammatical descriptions of other Oceanic languages. This, of course, does not mean that there are no other Oceanic languages that behave like Mokilese and Saliba in this respect. This may simply be due to a lack of published data. There is at least a modicum of evidence for possessive classifiers being able to be used in conjunction with the basic ditransitive verb 'give'.

In the remainder of this article, arguments will be put forward in support of the use of possessive classifiers for recipient or beneficiary marking as an instance of grammaticalization and then evidence will be brought to bear in demonstrating that possessive classifiers have grammaticalized as recipient or beneficiary markers. Thus the three-participant construction, as illustrated in (2), is taken to have arisen from the two-participant construction, as exemplified in (4) (i.e. three arguments out of what were originally two). In other words, what started as a modifying possessor expression within the theme nominal (i.e. *rais la-l Sohn ah* 'John's rice' in (4)) has now become the recipient nominal (i.e. *la-l Sohn* 'for John' in (2)), on a par with the agent and theme nominals. Moreover, the grammatical change will be shown to have a pragmatic basis. Thus it will be outlined how an inferential mechanism is triggered to give rise to the new meaning of reception (or benefaction).[3] Lastly, it must be noted that, while the use of possessive classifiers for recipient or beneficiary marking is widely attested in Oceanic languages (Song 1997 and 1998), only a small number of Oceanic languages will be discussed in this article due to a lack of detailed data (and also limitations of space). The languages featured here have been described sufficiently for the grammatical change to be shown to have occurred along the lines to be described in this article, but the grammatical descriptions of many other Oceanic languages — the documented recipient or beneficiary use of possessive classifiers notwithstanding — are not detailed enough in relevant respects to be included in the present discussion. Needless to say, the conclusions of this article will need to be augmented by detailed data from more

Oceanic languages, which can be obtained only through rigorous field work in individual languages. Nonetheless the small number of languages included here should not be taken to vitiate the theoretical and typological significance of the change in question, but should perhaps also be looked upon as a call for other Oceanic languages to be investigated in detail with respect to the change.

2. Grammaticalization of possessive classifiers as recipient/beneficiary markers

As indicated in the preceding section, the direction of change is taken to be from possessive classifiers to recipient/beneficiary markers, not the other way round (but cf. Heine 1997a and b, and also Heine and Kuteva 2002:54–55 for the opposite direction in non-Oceanic languages). There is reason to decide on this direction. In Oceanic languages, reflexes of the Proto-Oceanic possessive classifiers and relevant constructions express either possession or both possession and reception/benefaction, but never reception/benefaction alone (Song 1997:58 and 1998:270). Lichtenberk (2002) and Margetts (2004) likewise accept this distributional fact as a strong argument for assuming that the possession-marking function was the original one and that the reception/benefaction-marking function was a later development. This reasoning is, in fact, supported by the fact that the possession-marking function in Proto-Oceanic has been well established in the literature (e.g. Pawley 1973:153–169, Lynch, Ross and Crowley 2002:75–80).

Moreover, it is not the case that in (1) or (2) the recipient NP has been realized on the surface as the possessor of the direct object NP, as is suggested by Croft's (1985:41) "indirect object lowering" (i.e. some kind of synchronic rule designed to handle the surface realization of a recipient or beneficiary as the possessor of the direct object NP). Indeed the term "indirect object lowering" is problematic or misleading in the context of Oceanic languages in that it takes a ditransitive construction with an indirect object NP as basic and a possessive-classifier-based construction as an alternative or secondary one. As pointed out earlier, for many Oceanic languages the possessive-classifier-based construction is the basic three-participant construction, there being no alternative construction in which the recipient (or beneficiary) could be expressed as an indirect object NP or as a syntactic argument (also see 3.1).

The development of possessive classifiers into recipient/beneficiary markers in Oceanic languages must be regarded as an instance of grammaticalization in terms of: (i) fossilization of pragmatic or discourse strategies in the morphosyntactic structure (Givón 1971 and 1979; Lehmann 1995[1982], Traugott and Heine 1991:2–3; also see Margetts 2001, 2004, and Lichtenberk 2002); and (ii) reduced

structural autonomy with reference to the verb (Haspelmath 1998:336–340; cf. Lehmann 1995[1982]:109–113).

2.1 From pragmatics to grammar: The pragmatic basis of the change episode

The development is regarded as an instance of grammaticalization in the sense that what initially emerges as a pragmatic inference gives rise to a three-participant construction (see Traugott and Heine 1991 for general support of this particular view). The grammatical change or the change episode — to borrow Tabor and Traugott's (1998) term — has its origins in pragmatic inferencing: the possessor is pragmatically interpreted or construed as a recipient or a beneficiary. Though for lack of detailed data it is not possible to define exactly what the relevant bridging context(s), in the sense of Evans and Wilkins (2000:550), may be, it can at least be gleaned from some of the examples available from published grammars that possessive nominals in direct object function, not in subject function or in prepositional phrases, can lead to the new meaning of reception or benefaction (Margetts 2004:449). The possessor in the direct object NP can be construed as a recipient, e.g. *I bought John's rice* → *I bought the rice for John*, but the possessor in the subject NP as in *The woman's pig ran away* or in a prepositional phrase as in *The man ran with the woman's pig* cannot. Moreover, the activity denoted by the verb must be of such a kind as brings the possessor into possession of the object so that the referent of the grammatical possessor can be construed as the recipient of the object derived from the activity expressed by the verb (Croft 1985:44–47). Such verbs can be characterized as verbs of creation (e.g. *bake*, *build*, *cook*, *sew*, *write*), verbs of transfer (e.g. *give*, *send*, *pass*) or verbs of obtaining (e.g. *hunt*, *kill*, *fish*) (Croft 1985:45; cf. Barðdal this issue). Thus the possessor in the direct object NP in a sentence with the verb denoting the activity of buying rice (e.g. *I bought John's rice*) is likely to be construed as a recipient whereas the possessor in the direct object NP in a sentence with the verb denoting the activity of chasing a pig (e.g. *The man chased the woman's pig*) is not.

There is a conceptual motivation for this in that possessors can be thought of as (retrospective) recipients. "The new possessor is in the [recipient] role [because] of his coming into possession of the possessed item" (Croft 1991:295). In (4), for example, it was upon receiving the rice from the speaker that John came into possession of it. This kind of inferencing is not plausible in the case of the man chasing the woman's pig. More likely is the scenario in which the woman owned the pig prior to the man's chase. Thus while it is not difficult to think of the speaker's purchase contributing to John's possession of the rice, it is not easy to imagine that the man's chase somehow contributed to the woman's coming into possession of the pig; the possessor nominal (i.e. *the woman*) expressed in conjunction with

the possessum (i.e. *pig*) is there to indicate the identity of the latter more than anything else.

But then exactly how does the new meaning of reception arise from this kind of bridging context? Given the basic or original sentence *I bought John's rice*, the addressee could run through the following inferencing (cf. Diewald 2002:109–114; Heine 2002):[4]

> The speaker bought rice. I (= the addressee) somehow know that the rice did not belong to John prior to the purchase but now it does (e.g. because he had no rice before but now I see him cooking rice for himself). So when the speaker was buying it, John was not in possession of the rice, and it was after the speaker bought the rice and gave it to John that he actually came to possess it. Therefore, when the speaker says *I bought John's rice*, I can reasonably infer from this utterance that John **received** the rice from the speaker prior to coming into possession of it.

This pragmatically generated interpretation then gradually and increasingly becomes grammaticalized or manifested in the morphosyntax (Margetts 2004:447), as will be described in Section 3. Thus the change episode fits the description of the initial part or phase of grammaticalization identified, for example, in Givón's (1971, 1979) or Lehmann's (1995[1982]) work: the fossilization of pragmatic or discourse strategies in the morphosyntactic structure.

While there may be multiple factors responsible for this gradual morphosyntactic manifestation, one factor is glaringly obvious. Though the inferencing, as sketched above, may initially have motivated the possessive classifier construction to participate in encoding a three-participant event involving a recipient (or a beneficiary), the question arises as to how potential confusion can be avoided between the pragmatically generated meaning of reception (or benefaction), and the "original" meaning of possession.[5] The gradual morphosyntactic manifestation can thus be looked upon as a consequence of, or a response to, the need to distinguish these two meanings.

2.2 From less to more grammatical: The grammatical status of the change episode

Grammaticalization refers to language changes in which linguistic expressions shift from a lexical to a grammatical status or from a less grammatical to a more grammatical status (e.g. Kuryłowicz 1965; also see Campbell and Janda 2001 for a useful survey of definitions of grammaticalization). The change episode in question (i.e. possession → reception/benefaction) falls within the purview of this definition as well. Lehmann (1995[1982]:109–113), for instance, speaks of a grammaticalization hierarchy from locative to oblique to direct cases, e.g. directional → dative,

dative → accusative, and instrumental → ergative. In these changes, the earlier cases are more concrete or semantically richer than the latter, which are "desemanticized" (Haspelmath 1998:339; also see Heine *et al.* 1991:148–168 for detailed arguments for a similar grammaticalization hierarchy of cases). In other words, as one moves from locative to oblique to direct cases on Lehmann's grammaticalization hierarchy, the meanings of these cases become less concrete and more grammatical. (This is the basis for the traditional notion of concrete vs. grammatical case (Lehmann 1995[1982]:112).) However, it is not easy to see how possession is more concrete or semantically richer than reception or benefaction or vice versa; possession, reception and benefaction seem to be equally concrete (or abstract) or semantically rich (but cf. Heine *et al.* 1991:151).

Haspelmath (1998:339), however, interprets Lehmann's grammaticalization hierarchy of cases in terms of reduced structural autonomy. By reduced structural autonomy is meant "the tightening of the relation with the verb" (also see Lehmann 1995[1982]:110 for a similar perspective). For example, if its case (e.g. ergative) is directly governed (that is, grammatically licensed) by the verb and/or intimately connected with the meaning of the verb, the relation with the verb of a given nominal expression can be said to be "tight". If, on the other hand, its case (e.g. instrumental) is not directly governed by the verb and/or not intimately connected with the meaning of the verb, the relation with the verb of a given nominal expression can be thought to be "loose". (Bear in mind that the distinction between tight and loose is not an either-or one but a continuum.) Thus changes from non-direct to direct cases are understood in terms of reduction in structural autonomy. A change from the instrumental to the ergative case, for example, can be looked upon as a shift from a less grammatical (= loose) to a more grammatical (= tight) status. In other words, the degree of tightness of the relation with the verb is equated with the degree of grammaticalization.

The advantage of Haspelmath's interpretation is that the concept of reduced structural autonomy can be extended to changes from (more) non-direct to (less) non-direct cases, e.g. possession → reception or benefaction. The relation between the recipient or beneficiary NP and the verb is much tighter (or less loose) than that between the possessor and the verb. The recipient or beneficiary NP is connected with the meaning of the verb. Indeed the very notion of reception or benefaction depends on the action denoted by the verb (e.g. if X had not carried out an action, Y would not have received or benefited from (the object of) that action.) The possessor, on the other hand, is not at all connected with the meaning of the verb; rather it is associated with the meaning of the possessum alone. The notion of possession exists independently of the action denoted by the verb. In fact, the relation with the verb is non-existent as far as the possessor is concerned. This disparity is not unexpected, because the function of the possessive classifier is to

encode the relation between the possessor and the possessum (in other words, a noun-phrase-level relationship), whereas the function of the recipient or beneficiary marker is to encode the relation between the recipient or beneficiary NP and the verb (in other words, a verb-phrase-level relation). The noun-phrase-level relation points to a high degree of structural autonomy with respect to the verb, and the verb-phrase-level relation to reduced structural autonomy with respect to the verb. In terms of Haspelmath's reduced structural autonomy, therefore, the change episode in question (i.e. possession → reception or beneficiary) is a shift from a less grammatical to a more grammatical status.

3. Evidence for the grammaticalization

There are hallmarks of possessive-classifier-based recipient/beneficiary marking as an instance of grammaticalization, and they come from three different areas: (i) word order change; (ii) generalization; and (iii) specialization (Bybee and Pagliuca 1985:62–63, 67, 71–75, Hopper 1991:25–28, Heine *et al.* 1991:109, 157, Hopper and Traugott 1993:100–103, 113–116; but cf. extension in Campbell 2001:142–143, and Harris and Campbell 1995:97–119). Note that these three hallmarks of grammaticalization are not necessarily all attested within one and the same language (cf. 3.4).

3.1 Word order change

In Kusaiean, the determiner *ah* must occupy the final position of NPs (Lee 1975:237). The sequence of the possessive classifier and the possessor nominal, when expressing possession, appears in between the possessum *rais* and the determiner *ah* in (8), for it is part and parcel of the possessive NP (or the direct object NP in this case), *rais la-l Sohn ah* 'John's rice'.

(8) Kusaiean
nga *mole-lah* *rais* *la-l* *Sohn* *ah*
1SG:SBJ buy-ASP rice PCL-3SG:POSS John DET
'I have bought John's rice.'

In (9), on the other hand, the "possessive classifier" and the "possessor" encode a nominal with the recipient role. (Note that hereafter erstwhile possessive classifiers, possessors and possessums are enclosed within double quotation marks.) In other words, they are no longer part of the direct object NP, with the possessive classifier having been grammaticalized as a recipient marker. This is why the sequence in question appears to the right of or after the determiner *ah*, which marks the right periphery of the direct object NP.

(9) Kusaiean
nga *mole-lah* *rais* *ah* *la-l* *Sohn*
1SG:SBJ buy-ASP rice DET PCL-3SG:POSS John
'I have bought the rice for John.'

The development of the possessive classifier into the recipient marker has thus resulted in the possessor physically "moving" out of the erstwhile possessive nominal, as it were, and becoming a separate recipient NP. The recipient-marking function of the possessive classifier system in Kusaiean is further supported by (10) (Lee 1975:262).

(10) Kusaiean
Sohn *el* *mole-lah* *ik* *la-l* *Sepe* *ah* *la-l* *Sru*
John 3SG:SBJ buy-ASP fish PCL-3SG:POSS Sepe DET PCL-3SG:POSS Sru
'John has bought Sepe's fish for Sru.'

In (10), the possessive classifier *la-* is used twice in the same clause, once to express possession, and once again to the encode reception. Note the absence of the determiner *ah* in the second sequence of the "possessive classifier" and the "possessor", *la-l Sru*; the sequence cannot be understood to mean something like "Sru's (fish)", with the "possessum" deleted or understood.

Mokilese likewise exhibits a word order variation in conjunction with the change episode, albeit not as complete or dramatic as the word order change in Kusaiean. In this language, the word order within the possessive classifier construction is that which is illustrated in (3), repeated below: [possessive classifier + possessive/construct suffix]–[possessor]–[possessum] (Harrison 1976:129). However, when the possessive classifier is used to encode the recipient or beneficiary, this ordering can optionally change to the effect that the "possessum" is placed before the "possessive classifier" and the "possessor" (or the "possessive" suffix *-mw* in the present case) (Harrison 1976:133). This is illustrated by (1), repeated below.[6] In point of fact, this word order change makes sense in view of the basic SVO word order in Mokilese; in (1), the newly created direct object NP (i.e. the "possessum") appears immediately after the verb, with the newly created recipient or beneficiary adjunct (i.e. the "possessive classifier" and the "possessor") following these two expressions (and the subject NP).

(3) Mokilese
nime-n *woall-o* *pill-o*
PCL-CONSTR man-that water-that
'that man's water'

(1) Mokilese
ngoah *insingeh-di* *kijinlikkoauoaw* *nih-mw*
1SG:SBJ write-ASP letter PCL-2SG:POSS
'I wrote a letter to/for you.'

This kind of word order change demonstrates clearly that the use of possessive classifiers for recipient (or beneficiary) marking cannot be looked at from the perspective of Croft's (1985) indirect object lowering rule or other similar rules. If such a rule were to account for this, the possessive classifier and the possessor, when encoding a recipient (or a beneficiary), would be expected to occupy the same sentence positions as when expressing possession. This is so, because the recipient nominal, under indirect object lowering, is thought to be merely realized on the surface as the possessor of the direct object NP. However, they do appear in different positions in languages like Kusaiean and Mokilese, depending on whether they encode possession or reception/benefaction. This shows that Croft's indirect object lowering is inappropriate for the change episode under discussion.

3.2 Generalization

The "possessor" nominal may also be used on its own, without the "possessum" nominal being expressed in the same sentence, as long as the "possessive classifier" is there to encode the beneficiary role of the "possessor" nominal.[7] This is to say that the beneficiary use of the possessive classifier may also be extended or generalized to verbs which lack direct object NPs. (Note that because of the absence of direct object NPs, this comment does not apply to the encoding of recipient role; there is no object or entity for the recipient to receive.) Evidence of this generalization is observed in Mokilese, in which the beneficiary use of possessive classifiers is not only found in transitive clauses, as in (1), repeated here as (11), but also in clauses without overt direct object (or "possessum") NPs or in intransitive clauses, as in (12) (Harrison 1976:133).

(11) Mokilese
ngoah *insingeh-di* *kijinlikkoauoaw* *nih-mw*
1SG:SBJ write-ASP letter PCL-2SG:POSS
'I wrote a letter to/for you.'

(12) Mokilese
lih-o *doadoa* *ah-Ø*
woman-that sew PCL-3SG:POSS
'That woman sews for him.'

Note, again, that the English translations provided in (11) and (12) are not free translations for something like "I wrote your letter" and "The woman sews his (something)", respectively. The verb *doadoa*, used in (12), is a syntactically intransitive verb, as opposed to the transitive counterpart *doa* (Harrison and Albert 1977:26); only the latter verb co-occurs with a direct object NP.[8]

In Kusaiean, the possessive classifier can be used for beneficiary marking in conjunction with "derived" intransitive verbs as well as transitive verbs (e.g. (2)), although the former verbs must co-occur with their "included" or incorporated object nominals, as illustrated in (13) (Lee 1975:263, 270–277; see Sugita 1973 for a detailed discussion of object incorporation in Micronesian languages).[9]

(13) Kusaiean
nga twetwe mitmit nahtuh-l Sepe
I sharpen knife PCL-3SG:POSS Sepe
'I am knife-sharpening for Sepe.'

In (13), the "included" object nominal (or the "possessum") *mitmit*, amalgamated with the verb *twetwe*, is no longer grammatically associated with the "possessor" *Sepe*; *twetwe mitmit* is a "compound intransitive verb" (Lee 1975:271). There is ample evidence for the status of the "compound intransitive verb" or the "included" object nominal (Lee 1975:270–271). First, the "derived" intransitive verb *twetwe* contrasts with its transitive counterpart, *twem*. Second, the incorporated object nominal *mitmit* in (13) cannot be modified by a determiner, a numeral or an adjective, because it is part of the "compound intransitive verb". Finally, directional or aspect suffixes cannot be attached to the end of the "derived" intransitive verb *twetwe* but to the end of the "compound intransitive verb" *twetwe mitmit* in (13). By contrast, directional or aspect suffixes must be attached directly to the end of the transitive verb *twem*.

Being subject to fewer restrictions on its occurrence, the beneficiary use of possessive classifiers is permitted in a wide range of grammatical contexts in Kusaiean and Mokilese, although Mokilese seems to be at an advanced stage of generalization in that the possessive classifiers are used for beneficiary marking in conjunction with syntactically intransitive verbs (i.e. no "possessum"). Note, however, that which possessive classifier is to be selected for beneficiary marking in Kusaiean still depends on the semantic or culturally salient relation that may potentially hold between the "possessor" and the "included" object nominal (i.e. the "possessum"). Thus the use of *nahtuh-* in (13), the possessive classifier for tools, pets and toys, is dictated by the relation between the "possessor" *Sepe* and the "possessum" *mitmit* — the incorporation into the verb of the latter notwithstanding. In Mokilese also, this seems to be the case to some extent. The sentence in (12), based on a syntactically intransitive verb, lacks a direct object NP or a "possessum" nominal as such. Nonetheless the use of the possessive classifier in (12), i.e. *ah-*, must have been motivated by the potential possessive relationship — or, more accurately, what the speaker believes is the possessive relationship — between the beneficiary and what the agent may be sewing for the beneficiary. This is an interesting example of what is linguistically absent but conceptually available (in the background) having a direct bearing on a grammatical choice.

3.3 Specialization

Further evidence for the grammaticalization of possessive classifiers as beneficiary markers comes from the fact that one of the multiple possessive classifiers, which are all used to express possession in a given language, is chosen and pressed into the service of encoding benefaction. To put it differently, one possessive classifier is specialized for purposes of beneficiary marking. (Whether this kind of specialization is also attested in the case of possessive classifiers used for recipient marking awaits further research.) Such is the case in Lenakel (South Vanuatu subgroup, Oceanic; West Central Tanna, Vanuatu), in which, of the five possessive classifiers, it is mainly the general one *taha-* that is allowed to encode the beneficiary role (Lynch 1978:72, 93).

(14) Lenakel
a. *uus-suaas ka r-ɨm-am-asumw taha rɨm-n*
man-small that 3SG-PST-CONT-garden PCL father-3SG:POSS
iuokɨt to nimwa taha-k
near LOC house PCL-1SG:POSS
'That boy was gardening for his father near my house.'
b. *i-ɨm-ɨlh nɨm ker le nɨki-nhamra taha-m*
1:EXC-PST-pick breadfruit one LOC LOC-bush PCL-2SG:POSS
'I picked a breadfruit for you in the bush.'

In (14a), there is no "possessum" nominal which the first *taha*-marked nominal, *rɨm-n*, could be associated with, even if *taha-* were to be interpreted as the general possessive classifier (i.e. possession) (Lynch 1978:72, 93). In fact, *taha-* is used twice in (14a), once as a beneficiary marker and then once again as a possessive classifier proper (i.e. *nimwa taha-k*). The sentence in (14b) also highlights the point that the semantics of the general possessive classifier *taha-*, when used to encode the beneficiary role, must be abstract enough — "it lacks certain specific features of meaning" (Bybee and Pagliuca 1985:63) — to be compatible with that of the nominal which would otherwise be associated with it as the possessum, e.g. the direct object NP *nɨm ker* 'a breadfruit'.

3.4 Different stages of grammaticalization

On the evidence presented so far, Kusaiean and Mokilese contrast with Lenakel. In Kusaiean and Mokilese, the possessive classifiers can only be used to encode the recipient or beneficiary role in the same limited set of environments in which they express possession. What this indicates is that in Kusaiean and Mokilese the relation between the beneficiary and direct object NPs must first be assessed in terms of the semantic or cultural relation between the referents of these two expressions as the possessor and the possessum, respectively. Otherwise, it would not be possible to know which possessive classifier is the right one to use. In Lenakel, on the other hand, this kind of assessment is obviated by the specialization of the general possessive classifier *taha-* for beneficiary marking. This in turn suggests that the possessive classifier *taha-* in Lenakel is at a more advanced stage of grammaticalization as a beneficiary marker. By virtue of its specialized nature, it is found in a much wider range of semantic contexts. This advanced stage of grammaticalization in Lenakel, as the reader may have already noted, is also manifested in word order change and generalization. First, in (14b) the sequence of the "possessive classifier" and the "possessor" (i.e. the beneficiary nominal) is separated from the "possessum" (i.e. the direct object NP) by the locative phrase, *le n̈iki-nhamra* "in the bush". Indeed Lynch (1978:72, 93) points out that, if *taha-m* is placed immediately after the direct object NP *n̈im ker* "a breadfruit" in (14b), it is more likely to be interpreted as expressing possession than benefaction. In other words, there clearly is a word order change associated with the grammaticalization of the possessive classifier as a beneficiary marker in Lenakel (cf. 3.1). Second, the beneficiary use of *taha-* is attested in the context of an intransitive verb in (14a) (Lynch 1977:21) as well as a transitive verb in (14b) (cf. 3.2). To wit, the beneficiary use of the possessive classifier *taha-* in Lenakel displays all the three hallmarks of grammaticalization, suggesting that it may be at a more advanced stage of grammaticalization than its counterparts in Kusaiean and Mokilese.

4. Concluding remarks

In this article, possessive classifiers have been characterized as being exploited for recipient or beneficiary marking in Oceanic languages, and arguments have been brought to bear to demonstrate that this is an instance of grammaticalization: a new three-participant construction has emerged from what was originally a two-participant construction. Some of the hallmarks of possessive-classifier-based recipient or beneficiary marking as an instance of grammaticalization have been discussed with regard to three different areas: (i) word order change; (ii) generalization; and (iii) specialization. Moreover, what initially triggered the change episode has been shown to be pragmatic inferencing: the possessor is construed as being in the recipient or beneficiary role because of or by virtue of his or her coming into possession of the possessed item.

Lastly, it is worth mentioning briefly that the change episode in question has important implications for grammaticalization theory, in particular the major claim that there is a correlation between grammaticalization and structural scope decrease, with the structural scope of a linguistic expression decreasing in proportion to grammaticalization (e.g. Lehmann 1995[1982]:143, Hopper and Traugott 1993:130). The development of possessive classifiers into recipient or beneficiary markers in Oceanic languages, as discussed in this article, runs counter to this claim. The change episode involves structural scope increase. Prior to the change, the possessive classifier and the possessor, together with the head or the possessum, are contained in the same NP; they make up the possessive NP. After the change, however, the "possessive classifier" and the "possessor", constituting the recipient or beneficiary nominal, are no longer part of the "possessive" NP; they now constitute a separate nominal, on a par with the "possessum" (or, more accurately, on a par with the constituent containing the direct object NP and the verb). To put it differently, they can be said to have "moved up" in the constituent structure. In Song (2005), this change, based on the structural notion of c-command (Reinhart 1981), is explicitly characterized as structural scope increase by means of Tabor and Traugott's (1998) diachronic string comparison.

Notes

* I am grateful to Shelly Harrison, John Lynch, Diane Massam, Liz Pearce and Elizabeth Traugott for answering questions about the languages or theories that they specialize in. I have benefited from discussions with Hans den Besten, Lyle Campbell, Bernard Comrie, Martin Haspelmath, Frank Lichtenberk, John Lynch, Anna Margetts and Gunter Senft. This should not be taken to imply that they necessarily agree with everything that I have said in this article. I also gratefully acknowledge an anonymous reviewer's useful comments and suggestions, which motivated me to articulate some of my points more clearly. Needless to say, I alone bear full responsibility for claims and conclusions made here. Lastly, I am grateful to Anna Siewierska and Willem Hollmann for giving me the opportunity to present a shorter version of this article in the theme session on ditransitive constructions at the *Association for Linguistic Typology 6th Biennial Meeting* (Padang, Indonesia, 21 July 2005). Abbreviations used in glosses: ASP: Aspect; COMP: Complementizer; CONSTR: Construct suffix; CONT: Continuative; DET: Determiner; EXC: Exclusive; LOC: Locative; OBJ: Object; PCL: Possessive Classifier; POSS: Possessive; PST: Past; SBJ: Subject; SG: Singular.

1. The number of possessive classifiers varies from language to language. Most Oceanic languages are said to have at least a two-way contrast in their possessive classifier system (i.e. two possessive classifiers), but those in the Micronesian subgroup (with the exception of Gilbertese, which lacks possessive classifiers) are atypical in that they possess a very large number of possessive classifiers ranging in number between fifteen and twenty (and possibly more), and indeed few languages outside Micronesian are known to have more than four possessive classifiers (Lichtenberk 1983:154–156; Harrison 1988:64; Song 1997).

2. An anonymous reviewer asks: "Why is the recipient expressed [as a possessive suffix] in (6) but as a [*sic*] ordinary pronoun in (5)?" The reason is that in (6) a possessive classifier is used, albeit as a beneficiary marker. That is, possessive classifiers, without possessive or construct suffixes, cannot stand on their own. In (5), on the other hand, the recipient marking is carried out by the directional verbal suffix *-oang*, which calls for the use of an independent personal pronoun. The reviewer also questions whether (6) really means "I looked for him (in order) to give him his money", with *nah-Ø mwani-he* as the theme and the recipient nominal omitted because of its existence (i.e. *ih* 'him') in the immediately preceding matrix clause. In view of the evidence produced here and (6) being one of Harrison's (1976:133) prime examples of the beneficiary use of possessive classifiers, it seems injudicious to accept the reviewer's speculative meaning instead of Harrison's. Moreover, the reviewer wonders whether the relevant clause in (6) being a subordinate clause (as opposed to a main clause in (5)) has any significance. It has none. The sentence in (6) happens to be the only relevant example documented in Harrison's (1976) grammar of Mokilese. Due to a lack of detailed data, unfortunately, the use of the possessive classifier in conjunction with the directional suffix *-oang* cannot be explored here any further. While this awaits further research, it has no bearing on the main topic of the present article.

3. The notion of "reception" is borrowed from Kittilä (2005:273), who defines it as: "[the] result of an event [in which] a (concrete) entity enters a recipient's sphere of control or domain of possession".

4. This cannot be an example of entailment, as can be seen in (i).

(i) The man bought the woman's rice; he didn't buy it for her, but for himself.

Entailment is not cancellable or defeasible like this. Thus the meaning of reception can be only pragmatically inferenced or generated.

5. It is important to bear in mind that, even in languages with highly grammaticalized possessive-classifier-based recipient/beneficiary marking, it is not necessarily the case that possessive classifiers no longer carry out their original function of expressing possession. They certainly do so. In point of fact, this kind of polysemous situation is commonly observed in instances of grammaticalization. Thus, when a formative undergoes grammaticalization, the new meaning(s) and function(s) that it has acquired tend(s) to co-exist — at least in intermediate stages — with its original meaning and function. (This is captured in Hopper's 1991:22 "Principle of Persistence".) For instance, Bybee and Pagliuca (1986) discuss a number of semantic distinctions (or meanings) of the auxiliary verb *will* in Present Day English: future (or prediction) meaning and other modal meanings (e.g. willingness and intention). The future meaning developed historically out of the modal use of *will*: the modal meanings were already found in Old English, whereas the future meaning was established only in the Middle English period (Bybee and Pagliuca 1986). These meanings all co-exist in Present Day English *will*. But, of course, grammaticalization has

morphosyntactic consequences (i.e. the fossilization of pragmatic or discourse strategies in the morphosyntactic structure, as discussed in 2.1).

6. Thus the alternative word order of (i) is (Harrison 1976:133):

(i) *ngoah* *insingeh-di* *nih-mw* *kijinlikkoauoaw*
1SG:SBJ write-ASP PCL-2SG:POSS letter

7. In Oceanic languages, the omission of the possessum is attested also when its nature or identity is regarded as unimportant (e.g. see Palmer 1999:141 for such examples in Kokota).

8. The anonymous reviewer argues that the sentence in (12) has to be ditransitive by the semantic definition adopted in this article. This, however, is an unfortunate confusion between semantic meaning and conceptual/situational meaning. In (12), there are only two semantic roles, namely the agent and the beneficiary, whereas in terms of conceptual/situational roles there can be entities other than the agent and the beneficiary, e.g. the patient (i.e. what is being sewn) and even the onlooker (i.e. the speaker). Thus (12) is not ditransitive but intransitive by the same semantic definition.

9. The reviewer claims that the present article has produced no evidence that the literal translation of (13) is not either "I am knife-sharpening Sepe's" (i.e. with *nahtuh-l Sepe* as a direct object NP) or "I am his-knife-sharpening Sepe" (i.e. with *mitmit nahtuh-l* as an incorporated constituent and *Sepe* as a direct object NP). This claim, however, is incorrect. As explained in the text, *twetwe* is not a transitive verb, but *twem* is. Thus *nahtuh-l Sepe* cannot be a direct object NP syntactically; the "incorporating" verb *twetwe* cannot take a direct object NP. Also, *mitmit nahtuh-l* cannot be a constituent, because once again as explained in the text, *mitmit* forms a constituent with the "incorporating" verb *twetwe*, not with *nahtuh-l*. For instance, directional and aspect suffixes take *twetwe mitmit* as their host, not just *twetwe*. Thus if such suffixes occur, they should come in between *mitmit* and *nahtuh-l*, demonstrating that *mitmit nahtuh-l* is not a constituent. Moreover, *Sepe* cannot be a direct object NP, once again, because *twetwe* cannot take a direct object NP.

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On the encoding of transitivity-related features on the indirect object

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The present article examines the effects of transitivity on the encoding of indirect object. The examined features comprise affectedness, aspect and animacy. In addition, differences between what will be labelled as neutral vs. purposeful transfer will be discussed. The article shows that effects of transitivity are not confined to direct objects only, but transitivity has consequences for indirect object coding too. In addition, the article also shows that there are good reasons for coding the examined features on the indirect object. The most important of these reasons is represented by the fact that features of the referents of the indirect object are responsible for coding the relevant features. For example, an event of transfer is conceived of as completed, when the Recipient has received the transferred entity.

1. Introduction[1]

As is received wisdom in linguistics, features of semantic transitivity — most notably the affectedness of the patient — influence the form of the direct object (defined simply as the non-subject argument of a monotransitive clause). An illustrative example is found in (1):

(1) Finnish (Finno-Ugric, Uralic)
a. *puutarhuri rikko-i maljako-n*
gardener.NOM break-3SG.PAST vase-ACC
'A gardener broke a vase'
b. *puutarhuri ajattel-i kukka-a*
gardener.NOM think-3SG.PAST flower-PART
'A gardener was thinking about the flower'
c. *muurari rakens-i talo-n*
bricklayer.NOM build-3SG.PAST house-ACC
'A brick layer built a house'

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d. *muurari* *rakens-i* *talo-a*
bricklayer.NOM build-3SG.PAST house-PART
'A brick layer was building a house (not finishing it)' (personal knowledge)

The direct object occurs in the accusative in (1a) and (1c), while in (1b) and (1d) the direct object bears partitive coding. This variation has a clear semantic basis. (1a) and (1c) denote highly transitive events instigated by a volitionally acting agent and resulting in a dramatic and a salient change-of-state in the patient (in (1c) the event creates the referent of the direct object). (1b), in turn, denotes an experiencer event, while in (1d) the described event is not successfully completed. In other words, the events in (1b) and (1d) do not involve an affected patient, for which reason the direct object occurs in the partitive instead of the accusative.

Variation in object marking, as in (1), constitutes the topic of dozens of articles and books in linguistics (see e.g. Hopper & Thompson 1980, Tsunoda 1985, Rice 1987, Comrie & Polinsky (eds.) 1993, Rousseau 1998, Kittilä 2002, and Naess 2003 among others). Perhaps the most seminal of these studies is represented by Hopper and Thompson (1980), where it is shown that transitivity (including different aspects of object marking) is best regarded as a multilayered notion comprising such facets as affectedness, agency, aspect and individuation (see Hopper and Thompson 1980: 252). These facets of transitivity are relevant to the examples in (1), as discussed above. This article is also concerned with the expression of transitivity, however, in contrast to the studies noted above (and also numerous others), it focuses on the expression of (semantic) transitivity on the indirect object.[2] Semantic transitivity is here understood similarly to Hopper and Thompson as a bundle of (semantically defined) features which may have formal consequences for the coding of events. The sole difference with respect to typical studies of transitivity is thus found in the fact that the present article only considers the effects of transitivity on the encoding of indirect objects. Two examples of the phenomenon under scrutiny are provided in (2) and (3):

(2) Wolaitta (Omotic, Afro-Asiatic)
a. *ʔastamareé* *maťaápaa* *maťaáfa* *keettá* *yedd-iisi*
teacher.M.NOM book.M.ACC book house.ABS send-3M.SG.PERF
'The teacher sent the book to a library'
b. *ʔastamareé* *maťaápaa* *ba* *biir-úwa* *yedd-iisi*
teacher.M.NOM book.M.ACC 3LOG office-M.ACC send-3M.SG.PERF
'The teacher sent the book to his office' (Examples courtesy of Azeb Amha)

(3) Tsez (Tsezic, Daghestanian)
a. *ʕal-ā* *kidb-er* *surat* *teλ-si*
Ali-ERG girl-LAT picture give-PAST.WIT
'Ali gave a picture to the girl (for good)'
b. *ʕal-ā* *kidb-eqo-r* *surat* *teλ-si*
Ali-ERG girl-POSS-LAT picture give-PAST.WIT
'Ali gave a picture to the girl (as a loan)' (Comrie 2000: 363)

In Wolaitta, as shown in (2), indefinite inanimate Goals occur in the zero-marked absolutive case, while definite inanimate Goals (other than place names) bear accusative marking. This variation is thus conditioned by individuation (feature J of Hopper and Thompson). In Tsez, the encoding of the Recipient varies depending on whether the denoted transfer is permanent or temporary. The lative encodes permanent transfer, while the possessive-lative case implies that the Theme enters the Recipient's sphere of control only temporarily. This is very close to the differences between successfully and less than successfully completed events and hence aspect (feature C of Hopper and Thompson). The event in (3a) can also be said to be more resultative in nature, since the transfer is conceived of as irrevocable.

This article pursues two goals. First, by studying the expression of transitivity from a different perspective, I hope to be able to show that semantic transitivity affects the argument marking in a more thorough fashion than can be assumed from studies of traditional transitivity. Second, the article will show that it is only natural that the features of transitivity under examination are expressed by modifying the form of the indirect object. The most important reason for this lies in the features shared by canonical patients and (animate) goals of transfer. The article thus hopefully contributes to our understanding of transitivity, since, as far as I know, similar cases have not been studied from a cross-linguistic perspective to date. It is rather the case that the occurrence of such cases has been excluded in the previous studies, as indicated below (see Blansitt 1988: 181):

> No language suspends overt marking of dative or spatial functions because the referent is non-specific or indefinite.
>
> No language signals completive or incompletive aspect by the form of its dative, allative or locative marking.

Both of these proposed universals are falsified by the data in (2) and (3), and, as will be shown, similar cases are attested in other languages too.

A few methodological notes are in order before we proceed to the investigation itself. First, this article discusses cases in which the changes in the form of the indirect object can be explained by a transitivity feature. The exact formal nature of the change is not relevant. As a result, both (2) and (3) are relevant, even though only

in (2) is the connection to formal transitivity evident. Second, only those cases are considered in which the semantic role borne by the indirect object is maintained. This is the case in both (2) and (3), in which the indirect object consistently bears the role of Recipient/Goal irrespective of the animacy of its referent, or the aspect of the clause. On the other hand, the generally recognized, cross-linguistically frequent differences between the encoding of Recipients and Beneficiaries are not relevant to this article, because the attested formal differences can be explained by the semantic roles borne by the arguments. Third, changes which follow from the lexical semantics of verbs are also disregarded. This is to avoid the effects of idiosyncratic features of verbs on the research. For example, the verbs 'give' and 'send' both have a Recipient as a part of their lexical semantics, but the encoding of these verbs may vary. The formal treatment given to 'give' is especially anomalous cross-linguistically (see Kittilä 2006). Put together, this means that the features of semantic transitivity under scrutiny are responsible for the changes attested in the examined cases.

The organization of the article is as follows. Section 2 examines the coding of certain transitivity features (affectedness, aspect, animacy and neutral vs. purposeful transfer) on the indirect object from a rather formal point-of-view. The motivation for the marking is discussed in Section 3. Section 4 summarizes the most important findings of the article.

2. The encoding of transitivity on the indirect object

2.1 Preliminaries

In this section, the coding of transitivity features on the indirect object will be examined. The relevant features comprise affectedness, aspect, animacy and the differences between what will be labelled neutral vs. purposeful transfer. This section is primarily formal in nature, the underlying motivation of the coding constituting the topic of Section 3.

2.2 Affectedness

Affectedness is without a doubt one of the central features of transitivity (see e.g. Tsunoda 1985: 393) This is reflected, for example, in the fact that the basic transitive construction of any language is defined with respect to events involving highly affected patients rather than clauses denoting experiences (see also [1]). The impact of affectedness is not confined to direct objects only, but the form of the indirect object may also be determined by the degree of affectedness of the referent of the indirect object. Consider:

(4) Alamblak (Sepik-Ramu)
   a. *yima-r kahpa-m nanho met-t-n*
   person-3SG.M oil-3PL my woman-3SG.F-S.SET
   hëta-më-r-m
   put.REC.PAST-3SG.M-3PL
   'A man put oil on my wife' (implication: the oil did not affect her)
   b. *yima-r nanho met-t kahpa-m hëta-më-r-t*
   person-3SG.M my woman-3SG.F oil-3PL put-REC.PAST-3SG.M-3SG.F
   'A man put oil on my wife' (implication: the oil did affect her) (Bruce 1984: 238)

(5) Macedonian (Slavic, Indo-European)
   a. *ani pes by od něho kůrku chleba nezval*
   not even dog.NOM would from him.GEN crust.ACC bread not took
   'Not even a dog would take a crust of bread from him'
   b. *ani pes by mu kůrku chleba nezval*
   not even dog.NOM would him.DAT crust.ACC bread not took
   'Not even a dog would take away his crust of bread' (Janda 1998: 258)

In Alamblak, the Goal surfaces as an adjunct whenever its referent is not affected by the profiled event in any dramatic fashion, as in (4a). On the other hand, the Goal takes the form of a direct object if the event has a more significant effect on the Goal, as in (4b). The examples in (5) demonstrate how the form of the Source varies according to affectedness. The examples denote the same (hypothetical) transfer of bread from man to dog, but the conveyed messages are radically different (see Janda 1998: 258). (5a) describes the transfer in neutral terms. In (5b), on the other hand, the Source is regarded as being dramatically affected by the event in question. The source directly experiences the loss, and it has a salient effect on him. The variation in (4) and (5) is very close to the typical spray/load alternation, such as *the farmer loaded the cart with hay* vs. *the farmer loaded hay onto the cart*, where the former implies a higher degree of affectedness of the cart. Cases similar to (4) and (5) have been reported for a number of other languages including Afrikaans (de Stadler 1996: 265ff), Yankunytjatjara (Goddard 1983: 32), Kayardild (Evans 1995: 334, 339), Yimas (Foley 1991: 309f), Dutch (Janssen 1998: 281), and Zulu (Taylor 1998: 76f).

2.3 Aspect (completedness of events)

Aspect constitutes another central facet of linguistic transitivity. Completed events rank higher for transitivity than non-completed ones, for example, in having a salient result. This section is concerned with languages which encode aspect

(understood as different degrees of event completedness) by modifying the form of the indirect object. In so doing, it provides clear counterexamples to Blansitt's universal (Blansitt 1988: 181, see above). The notion of aspect comprises two facets in this subsection. First, I will consider canonical instances of aspect, in which (non)completedness of events determines the marking of indirect objects. In addition, I will also examine the effects of permanence of transfer on indirect objects. In these cases, the event has been successfully completed (i.e. it is not imperfective), but the two instances of the same event differ according to the degree of resultativity. Permanent transfer is conceived of as more resultative in nature than temporary transfer, such as lending.

Examples of languages in which the completedness of events (i.e. whether the Goal has been reached or not) determines the marking of indirect objects are given in (6) and (7):

(6) Wolaitta (Omotic, Afro-Asiatic)
   a. *ʔastamareé mat'aápaa mišireé-yyo yedd-iisi*
   teacher.M.NOM book.DEF.M.ACC woman.DEF.F-DAT send-3M.SG.PERF
   'The teacher sent the book to the woman'
   b. *ʔastamareé mat'aápaa mišireé-kko yedd-iisi*
   teacher.M.NOM book.DEF.M.ACC woman.DEF.F-DIR send-3.MSG:PERF
   'The teacher sent the book in the direction of the woman'
   (examples courtesy of Azeb Amha)

(7) Warlpiri (Pama-Nyungan, Australian)
   a. *ya-nu-rna-rla walypali-ki*
   go-PAST-1SS-3DAT European-DAT
   'I went to the European' (destination reached)
   b. *ya-ru-rna walypali-kirra*
   go-PAST-1SS European-ALL
   'I went towards the European' (destination not reached) (Simpson 1991: 325)

In Wolaitta, the use of the dative implies that the transferred entity has reached its destination, i.e. the denoted transfer has been successfully completed. The directive case, in turn, is used when the event is still ongoing, i.e. not completed. In Warlpiri, the variation is between reached and non-reached Goals of (intransitive) motion. The dative codes reached Goals (completed events), while the allative is used for non-reached Goals (non-completed events). Similar variation is also attested e.g. in Warao (Romero-Figeroa 1997: 46), Aranda (Wilkins 1989: 192) and Paamese (Crowley 1982: 197). A similar principle is at work also in English, as the free translations of (6) and (7) show.

The other facet of aspect, as the label is used in this article, is represented by the permanence of transfer (semantically these differences are close to the 'give' vs. 'loan' distinction of, for instance, English). Examples are found in (8) and (9):

(8) Sochiapan Chinantec (Oto-Manguean)
   a. *cuéh^{32} tsú^{2} pé^{1} qu~~i~~e^{3} tsa^{3}háu^{2}*
   give.FUT.3 3 Peter money tomorrow
   'S/he will give Peter money tomorrow'
   b. *cué^{32} tsú^{2} qu~~i~~e^{3} ñi^{1}con^{2} pé^{1} tsa^{3}háu^{2}*
   give.FUT.3 3 money to Peter tomorrow
   'S/he will give money to Peter tomorrow' (Foris 1998: 212)

(9) Harar Oromo (Cushitic, Afro-Asiatic)
   a. *xennáa náa-f xanne*
   gift me-DAT gave
   'He gave me a gift'
   b. *xennáa ná-tt xanne*
   gift me-LOC gave
   'He gave me a gift' (Owens 1985: 111, 113)

In (8a) and (9a), the denoted transfer is seen as irrevocable, while (8b) and (9b) describe temporary transfer. In contrast to (6b) and (7b), the transfer is successfully completed in (8b) and (9b) as well, which means that the transfer has reached its destination. However, (8b) and (9b) lack a permanent result, since the possession of the Theme does not change. (8a) and (9a), on the other hand, denote events with a definite result, because the Theme is transferred to the Recipient's domain of possession. The events denoted by (8a) and (9a) are thus more resultative in nature. Variation similar to that in (8) and (9) has been reported also for Wolaitta (Azeb Amha, p.c.), Indonesian (I Wayan Arka, p.c.), Chipewayan (Rice 1998: 97) and Afrikaans (de Stadler 1996: 276).

2.4 Animacy (individuation)

Animacy is another important facet of transitivity in that in many languages only animate (human) direct objects may occur, for example, in the accusative. Affected objects also bear this coding (see Naess 2004). Animacy affects the coding of Goals in a variety of ways, too, as shown in (10)–(12) (a more detailed examination of this is found in Kittilä: submitted):

(10) Korku (Munda, Austro-Asiatic)
   a. *raja ra:ma-ke sita-ke ji-khe-nec*
   king.NOM Ram-OBJ Sita-OBJ give-PAST-PERS
   'The king gave Sita to Ram'

b. *iñj ini-koro-ken mya kama:y-Ten Di-ga:w-en*
I this-man-OBJ one work-ABL that-village-DAT/LOC
kul-khe-nej
send-PAST-PERS
'I sent this man for work to that village' (Nagaraja 1999: 46, 97)

(11) Finnish (Finno-Ugric, Uralic)
a. *lähetti lähett-i lähettime-n poja-lle*
messenger.NOM send-3SG.PAST transmitter-ACC boy-ALL
'The messenger sent a/the transmitter to the boy'
b. *lähetti lähett-i lähettime-n lähetystö-ön*
messenger.NOM send-3SG.PAST transmitter-ACC embassy-ILL
'The messenger sent a/the transmitter to the embassy' (personal knowledge)

(12) Fongbe (Gbe, Niger-Congo)
a. *kɔkú sɔ àsɔn ɔ ná Àsíbá*
Koku take crab DEF give Asiba
'Koku gave the crab to Asiba'
b. *kɔku sɔ àkwɛ ná kùtɔnû*
Koku take money give Cotonou
'Koku gave money to Cotonou (a place name)'
c. *kɔkú ná Àsíbá àsɔn*
Koku give Asiba crab
'Koku gave Asiba crab'
d. **kɔku ná kùtɔnû àkwɛ*
Koku give Cotonou money
(Koku gave Cotonou money) (Lefebvre & Brousseau 2002: 445f, 448f, 422)

In Korku, animate (human) Goals take the dative case, while inanimate Goals appear in the locative. In Finnish, the variation is between allative (animate Goals) and illative (inanimate Goals) cases. In contrast to Korku, Goals can never surface as direct objects (in the accusative) in Finnish. Fongbe differs from Korku and Finnish in that the variation between animate and inanimate Goals is only optional. Both animate and inanimate Goals may be accommodated as a part of a serial verb construction, as in (12a) and (12b). On the other hand, only animate Goals permit dative shift (the omission of *ná*), which promotes the Goal to direct object status.

2.5 Neutral transfer vs. purposeful transfer

The transfer in events like 'the performance artist gave a book to the phonetician' can be either neutral or it may have a specific purpose. In this article, the transfer is

regarded as neutral if the agent merely transfers an entity to the Recipient's sphere of control with no indication of what happens after that. The focus lies on the physical transfer of that entity from agent to Recipient. On the other hand, the transfer may also serve a specific purpose. As for the event noted above, this can, for example, mean that a book has been transferred to the phonetician for educational purposes such as acquiring a new language. The transfer itself may be exactly the same, but the two readings can be distinguished based on what happens after the transfer has occurred and whether this is deemed relevant (see also LaPolla & Huang 2003: 87 for a similar note on Qiang). Examples of languages in which this difference is relevant formally are found in (13) and (14):

(13) Kayardild (Pama-Nyungan, Australian)
a. *dathin-a makurrarr-a bukabarnji-n-d wuu-ja jardarrka-y*
that-NOM wallaby-NOM stink-*n*-NOM give-IMP crow-LOC
'That wallaby is stinking, give it to the crows'
b. *maku dun-maru-tha wuu-ja nguku-wuru*
woman.NOM spouse-VD-ACT give-ACT water-PROP
'A woman gives water to her spouse' (Evans 1995: 335f)

(14) Khmer (Mon-Khmer)
a. *ʔo:pùk tèɲ siəvphɣu ʔaoy khɲom*
father buy book 'give' 1SG
'Father bought a book for me'
b. *khɲom tèɲ siəvphɣu nìh sɔmrap ko:n-pros*
1SG buy book DEM 'use' son
'I buy this book for my son (in order that he will use it)' (Bisang 1992: 418, 424ff)

(13a) and (14a) denote neutral transfer, while (13b) and (14b) describe events of transfer with a specific purpose. In other words, the Recipient is expected to do something with the transferred entity in (13a) and (14a), while this feature is backgrounded in (13b) and (14b). Formally, this difference is mirrored differently in Kayardild and Khmer. In Kayardild, it is the case marking of the Recipient that mirrors this difference: the (general) locative case is used for neutral transfer, while purposeful transfer is coded by the dative (Evans 1995: 334 labels the latter as 'giving with an immediate benefit for the recipient'). In Khmer, it is the serial verbs used for accommodating indirect objects that encode this difference. The verb changes from 'give' to 'use', which very nicely captures the semantic nature of the variation; the former verb is used for neutral transfer, while the latter verb is used for purposeful transfer.

Some readers may object to my discussing the difference between neutral and purposeful transfer in connection with the expression of *transitivity* on the

indirect object. This can, however, be regarded as justified, because the differences examined in (13) and (14) are rather directly related to affectedness, and they also have features in common with definiteness. First, Recipients that use the transferred entity for a specific purpose are more affected by an event of transfer than Recipients that simply accept the transfer without any further consequences. For example, the change in the Recipient's state is more dramatic in (14b), in which the Recipient may educate himself by reading the transferred book. In (14a), in turn, the only change in the state of the Recipient is the entering of an entry into his/her sphere of control. Second, the differences between neutral and purposeful transfer are also rather closely related to individuation. The Theme of purposeful transfer is probably more definite than the Theme of a neutral transfer. This is also manifest in (14), as the free translations of the examples imply. What is relevant to the purposes of this article is that this difference is realized by modifying the coding of the indirect object.

3. The rationale

3.1 Preliminaries

In the previous section, it was shown that such features of semantic transitivity as affectedness, aspect and individuation (animacy) have formal consequences for the coding of indirect objects in a number of structurally and genetically diverse languages. The purpose of the present section is to discuss the motivation behind these cases. I will demonstrate that there are good reasons for expressing these features on the indirect object rather than the direct object (Theme) of clauses which denote events of transfer. The features are discussed below in the order in which they were examined in Section 2.

3.2 Affectedness

As shown in (4) and (5), the degree of affectedness associated with the Recipient determines the marking of indirect objects in a number of languages. For example, in Alamblak the indirect object surfaces as a direct object or as an adjunct depending on whether its referent is seen as being directly affected by the denoted event. The formal variation is thus very close to that attested for highly vs. less affected direct objects. The question that we need to answer is why these changes are manifested on the indirect object and not on the direct object.

The marking of affectedness on the indirect object is understandable in light of the features shared by Patients and Recipients (animate Goals). First, animate

Goals and Patients can be regarded as the primary targets of events. In other words, the intention of the agent is to modify the state of the patient in transitive events and the state of the Recipient in transfer events. From this it follows that they also register the effects of events in the most salient way, which makes animate Goals the most affected participants of transfer events. Second, events of transfer affect the Theme in a rather consistent manner: only the location of the Theme changes. On the other hand, the Goal of a transfer event may be affected in a variety of ways depending on whether the denoted transfer has a direct effect on the Goal or whether the Recipient is going to use the transferred entity for a specific purpose. Third, animate Goals are, similarly to patients also the participant most responsible for the overall nature and affectedness of transfer events. Consequently, cases such as (4) and (5) also conform to the universal tendency to code the most affected participant of an event as a direct object (see e.g. Dixon 1994: 8). Given these facts the coding of affectedness on the indirect object of clauses denoting transfer events appears very natural.

3.3 Aspect

The expression of aspect on the indirect object can be explained very much in the same way as the coding of affectedness. The Recipient/Goal constitutes the endpoint of a transfer event. The event ceases to proceed when the transferred entity reaches the Goal. In other words, an event of transfer is regarded as being successfully completed when the Theme has reached the Goal. The Goal is thus the participant most relevant to the completedness of transfer events. In a similar vein, a transitive event has been successfully completed when the patient has been affected in the expected way. As a consequence, it is easy to see why the aspect of transfer events is expressed on the indirect object.

In Section 2.3, I also examined cases in which the permanence of transfer is expressed by modifying the form of the indirect object. Because aspect and permanence of transfer are closely related it does not come as a surprise that permanence is also coded on the indirect object in a number of languages (in Wolaitta both are coded by the same means, Azeb Amha, p.c.). As with aspect, the Goal is primarily responsible for the permanent vs. temporary nature of a transfer event. In other words, an event of transfer is conceived of as permanent whenever the Recipient does not return the bestowed entity. The contribution of the Theme to this is minimal. Moreover, the differences between permanent and temporary transfer correspond to the differences between instances of transfer which modify the possessive relations (permanent transfer) and those in which no changes in the possession relations are implied (temporary transfer). This is a feature characteristic of the transfer of entities, so that it is only natural that differences in permanence

are coded on the indirect object. The relation to the transitivity of two-participant events is also manifest, because the effects are more drastic in nature, if an event affects the patient in a permanent fashion.

3.4 Animacy (individuation)

As shown in Section 2.4., animacy (or rather humanness vs. non-humanness) makes a contribution to the formal coding of Goals in a number of languages. Animacy differs from the two features discussed thus far in this section in that it is not a general feature of the denoted event, but rather a feature of the participants of the denoted events. In other words, the (in)animacy of the Goal does not depend on other features of the overall event in any way. As a result, we should expect the (in)animacy of the Goal to be expressed on the indirect object, because this constitutes the most iconic way of expressing this difference.

The question that remains to be answered is why animacy should influence the coding of indirect objects to begin with. One of the central factors in this regard is probably represented by the intimate relation obtaining between animacy and affectedness. As was noted in Section 3.2, animate Goals (Recipients) are usually more affected by events of transfer than inanimate Goals. This follows largely from the fact that only animate Goals can use the transferred thing for a specific purpose, which is closely related to affectedness in the case of Goals. Animate Goals also have other features in common with patients, which makes it natural that animate Goals should receive the formal treatment of direct objects (which encode highly affected patients), while inanimate Goals are treated differently. This results in differential formal treatment accorded to Goals depending on the animacy of their referents.

3.5 Neutral vs. purposeful transfer

Neutral and purposeful instances of transfer are distinguished primarily on the basis of what happens after the denoted transfer has been successfully completed. An instance of transfer is regarded as neutral if the focus lies on the transfer itself without any implications about what happens after the transfer has occurred. On the other hand, the transfer is in the background and the focus lies on the resulting state whenever the transfer event serves a specific purpose. As such, the denoted transfer may be the same, but it is viewed from different perspectives, which has formal consequences for the coding of the event in question.

As noted above, neutral and purposeful transfer are distinguished on the basis of which aspect of the transfer is focused on. Another difference, closely related to the difference in focus, concerns whether the denoted transfer implies active

participation of the Recipient or not. Neutral transfer does not imply any active involvement in the denoted event by a Recipient (apart from accepting the transfer), while an event of transfer usually has a specific purpose only if the Recipient uses the transferred entity for the intended purpose. In other words, features related to the Recipient primarily determine whether an instance of transfer is regarded as purposeful or not. As a result, the most natural way of coding this difference is to modify the marking of the Recipient. Moreover, as was noted in Section 2.5, neutrality vs. purposefulness of transfer is closely related to affectedness, which makes it understandable that the difference is coded by modifying the case marking of arguments, i.e. in the same way as many transitivity alternations are marked. What is also noteworthy here is that examples such as (13) and (14) show that being an animate Recipient does not suffice for an indirect object to be coded in a certain way: the purpose of transfer also needs to be considered in some languages.

4. Final words

The present article has shown that a number of canonical transitivity features, such as affectedness, aspect and animacy, determine the marking of indirect objects in a number of languages. In so doing, the article has falsified the two universals proposed by Blansitt (1988: 181, repeated here for convenience):

> No language suspends overt marking of dative or spatial functions because the referent is non-specific or indefinite.
>
> No language signals completive or incompletive aspect by the form of its dative, allative or locative marking.

The first universal is falsified by languages such as Wolaitta (see (2)), while Tsez (see ex. (3)) and Warlpiri (see (7)) contradict the second proposed universal. To summarize, the present article has shown that transitivity affects the marking of arguments in a more thorough fashion than assumed thus far.

In Section 3, I discussed the underlying reasons for coding the transitivity features under scrutiny by modifying the form of the indirect object rather than the direct object, as would be usual for transitivity. I hope that the discussion in Section 3 has shown that the expression of transitivity on the indirect object follows primarily from the fact that the referents of the indirect object constitute the participant most relevant to the coded feature. For example, an event of transfer is seen as successfully completed when the transferred entity reaches the Recipient's sphere of control (or domain of possession). As a result, it is only natural that this feature is coded by modifying the form of the indirect object. In a similar

vein, affectedness is expressed on the direct object in many languages. What is also noteworthy here are the features shared by especially Recipients (animate Goals) and patients. Recipients and patients can both be regarded as the primary targets of events which register the effects of events in the most direct fashion. Consequently, it is not unduly surprising that they are accorded a similar formal treatment in a number of languages.

Abbreviations

ABL	Ablative	M	Masculine
ABS	Absolutive	NOM	Nominative
ACC	Accusative	OBJ	Object
ACT	Active	PART	Partitive
ALL	Allative	PAST	Past tense
DAT	Dative	PAST.WIT	Witnessed past
DEF	Definite	PERF	Perfective aspect
DEM	Demonstrative	PERS	Person marker
ERG	Ergative case	PL	Plural
F	Feminine	POSS-LAT	Possessive-lative
FUT	Future tense	PROP	Proprietive
GEN	Genitive	REC.PAST	Recent past
ILL	Illative	SG	Singular
IMP	Imperative	S.SET	Subject set
LAT	Lative	SS	Same subject
LOC	Locative	VD	Verbal dative
LOG	Logophoric pronoun		

Notes

1. The Academy of Finland (grant number 105771) has provided financial support for the present study. I would also like to express my gratitude to an anonymous referee for his/her comments on an earlier version of the present article.

2. The notion of indirect object is understood in a broad sense in this article. The label comprises all other arguments than the subject and the direct object. Semantically, the indirect object can thus denote goals, recipients, sources, beneficiaries, and maleficiaries (but not agents or patients of typical transitive events). Formally it may take the form of an adjunct or it may surface as a core argument and bear accusative/dative or absolutive (zero) marking.

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BOOK REVIEW

Stephan Kepser and Marga Reis (eds.) *Linguistic evidence: Empirical, theoretical, and computational perspectives.* (Studies in Generative Grammar, 85.) Berlin and New York: Mouton de Gruyter 2005. viii + 582 pp. (ISBN-13: 978-3-11-018312-2)

Reviewed by Gerard Steen (Vrije Universiteit Amsterdam)

Linguistic Evidence is an edited volume that is based on a conference held in Tübingen, Germany, in early 2004 under the same title. It contains a wide range of linguistic studies covering various methods, areas of research, and topics. This is presented as a reflection of the recent increase in methodological debate in linguistics, with special attention to the theoretical framework of generative grammar. There are frequent references to Schütze's (1996) influential book on introspection in linguistics, and to the special issues on data and evidence in linguistics of *Lingua* (Vol. 115, Number 11, 2005) and *Studies in Language* (Vol. 28, Number 3, 2004). The editors also note that "It is one of the main aims of this volume to overcome the corpus data versus introspective data opposition and to argue for a view that values and employs different types of linguistic evidence each in their own right" (p.3). From the perspective of functional linguistics, this volume seems mainly inspired, therefore, by the need for a revaluation of the position of introspection as the crucial source of evidence for the study of grammar as competence.

The editors signal that their book is highly diverse. They see this as a sign of "the fundamental importance issues of linguistic evidence have for all fields of linguistics". But this does not offer much help to the reader who wishes to find some order in the materials in order to assess the coherence of the discussion. In particular, what are the relations between the various articles as contributions to the field of methodology: do they support or contradict each other? Do they convey one message? This is the question that I will attempt to answer, however tentatively, in this brief review.

The reader aiming to find some methodological order in the contents of the volume will have to go by the titles of the chapters and see what they have to offer. A first impression suggests that most of the chapters can be grouped by method of data collection. There seem to be three main foci, with attention to introspective methods, observational methods used in corpus research, and methods of manipulation used in experimental research. Some chapters combine data collected by more than one of these methods, and some focus on meta-methodological issues. These qualifications provide an initial ordering of the field.

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Most of the chapters seem to be related to each other by identical or different methods of data collection (introspection, observation, and manipulation), but the companion issue which consequently arises is with what methods and techniques these data, once collected, have been analyzed. Methods of data analysis can display considerable variation, tying in with, for instance, the difference between generative versus functional concepts, the role of linguistic tests, and the use of statistical analysis of language data as well as nonverbal, behavioral data from informants and experimental participants. For the critical evaluation of linguistic evidence, it is just as important to examine methods of data analysis as methods of data collection, and the question arises as to how this issue is handled in the papers.

A first group of chapters is explicitly concerned with introspection. It begins with Adli's contribution on grammaticality judgments. She focuses on the problematic sides of the gradedness and consistency of grammaticality judgments in a case study of the French *que* → *qui* rule, and suggests that the traditional linguistic analysis of the phenomenon by means of introspection can be validated by additional data collection by experimental manipulation, and by more refined data analysis with graded grammatical concepts. The experimental task was for a group of 78 native speakers of French to rate the degree of grammaticality of a set of target sentences on a continuous, graphic scale in comparison with one reference sentence. Distinct constructions turned out to trigger distinct grammaticality judgments that were statistically reliable.

Schmid, Bader and Bayer also collected acceptability judgments, on what they call coherence constructions in German. Their measuring instrument was a five-point scale (1 = "makes complete sense, is completely easy to understand", 5 = "makes no sense, is very difficult to understand"), which had to be filled out for 130 target sentences. They, too, found experimental support for the distinction between the various grammatical categories distinguished by introspection. One question which is raised by their task, however, is whether acceptability and comprehensibility are adequate operationalizations of grammaticality.

Introspection can be validated by experimental data of at least two kinds. One group of data consists of informant judgments about grammaticality and acceptability, and reflects language users' own linguistic knowledge as well as their views of what is culturally acceptable. By contrast, data may also be based on participant behavior, which indirectly suggests something about their notions of grammaticality and acceptability. This type of data requires a different type of analysis as evidence for a theoretical position than linguistic judgments.

Carlson and Sussman collected experimental data to test their introspection-based analysis of the separate category of seemingly indefinite definites, as in *go to the store* and *read the newspaper*. They asked participants to listen to sentences involving regular or indefinite definites such as *Lydia will read the book / the newspaper*, while the participants were simultaneously looking at a picture containing a girl on the point of selecting something to read from two plus one books (or two plus one newspapers). Participants were then asked to decide which item in the picture was the referent of the regular or indefinite definite. The data of the study consisted of the choices made by the participants, as well as a record of their eye movements. The analysis provided empirical validation of a grammatical distinction which originates from syntactic and semantic analysis by linguists.

Sauerland, Anderssen and Yatsushiro used yes-no questions to collect data on the interpretation of various semantic types of plural in order to validate their proposed distinctions. They collected data in two different studies from children and from adults. For the children, they simply analyzed the answers to the questions, but for the adults, they also looked at the response times in connection with the correct or incorrect value of the answer. The findings could be interpreted as offering support for the authors' "weak theory of the plural".

The interpretation of reflexives and pronouns in picture noun phrases such as *Joe's picture of him* versus *Joe's picture of himself* is studied by Runner, Sussman and Tanenhaus. They also examined the interpretation of sentences like *Lucie liked the picture of herself, and Lili did, too.* Again eye movements and disambiguation choices were collected and analyzed to relate language users' behavior to the linguistic structures in the experimental materials. The analysis provided a clearer and more coherent picture of the phenomenon than was available on the basis of introspection.

In all of these cases, experimental data are collected in addition to what is available from introspection, in order to validate a prior analysis of linguistic structure. The analysis of such experimental data often does not seem to be fundamentally problematic, because of the prior and goal-directed design of the experimental language materials and the forced classification of participants' responses into predetermined categories of variables. However, the interpretation of experimental findings as evidence for one or another theoretical position may be more controversial. Thus, de Velle collects experimental data which are analyzed to throw light on aspectual coercion, as in the difference between *The student borrowed the book for a week* (no iteration) versus *The athlete won the competition for two years* (iteration). But the data in this case are meant to support an alternative analysis of the phenomenon of aspectual coercion rather than a competing analysis which itself was also based on experimental data.

Another complication in appreciating the value of data collection by manipulation is that it may involve the distinction between the study of language structure versus language processing. A number of studies in this volume are clearly meant to focus on language processing, crossing the boundary between linguistics and psycholinguistics. The relevance of this distinction lies, of course, in the fact that introspection may be much more adequate for the study of language structure

than for the study of its (largely unconscious) processing. Introspection and manipulation, in other words, have different positions as methods in different areas of language research.

One example of a contribution on processing is the experimental study of children's understanding processes of weak epistemic items, presented by Doitchinov. Data were collected from 18 six-year-olds, 28 eight-year-olds, and 10 adults, who had to select a particular picture representing a situation from a set of alternatives in order to indicate their comprehension of a modalized linguistic description of that situation. The comprehension process of negative polarity items is examined by Drenhaus, Frisch and Saddy by collecting ERP data. The studies discussed so far collected their data by manipulation in a way which was relatively easily accessible and depended on pen-and-paper procedures only; the ERP study by Drenhaus et al., however, illustrates the possibilities for obtaining data by specialized laboratory techniques that are simply not available to all linguists. This also holds for the lexical decision task employed in the study of distributional properties of lexis and their effects on lexical processing, by Tabak, Schreuder, and Baayen. Such studies are not only methodologically removed from the study of grammatical structure by their on-line behavioral nature, but also by the technical sophistication of the equipment required for tapping the relevant cognitive processes. The integration of such diverse methodologies and areas of study within one coherent picture of the study of 'language' is not without its problems.

We have gradually moved from a consideration of data collected by manipulation in order to validate introspection regarding grammar to manipulation as an inevitable method for the study of language processing. When we turn to diachronic research, data collection by introspection or by manipulation does not really seem to be a viable option, as is also noted by Speyer. In his study on the decline of topicalisation in English, he comments that diachronic linguistics is inevitably observational in its method of data collection, dependent as it is on what records from the past have survived. That such data still presuppose theory for their analysis is a comment which only needs to be added for those readers who believe that all corpus linguistics is void of theory. Theory is or should be the starting point of any linguistic study, and the concern with selecting and evaluating different methods for doing the empirical research is equally legitimate and even mandatory for all of these studies.

Diachronic studies based on the observation of various kinds of corpora are represented by just two contributions. Axel uses corpus data to discuss null subjects and verb placement in Old High German. And Cyrino and Lopes look at language change in Brazilian Portuguese on the basis of a number of comedies and light plays. They focus on the role of animacy in the increase of null object constructions over the last five centuries. Their study then makes a connection with the role of animacy in the acquisition, use and extension of such constructions by children between the ages of two and three, the data coming from the spontaneous speech production by two children.

The analysis of the data is presented as unproblematic in both studies. No reliability figures of inter-analyst agreement are published — a typical feature of most linguistic data analysis. This is coming under pressure from corpus-linguistic and social-scientific language analysis, but this trend has not had much effect on the studies of the present collection. The study by Ehrlich, for instance, on the acquisition of epistemic modal verbs by one two-year-old child, also simply presents a table displaying the distribution of finite modal verbs and full verbs in distinct grammatical positions, with no report of the degree of noise, ambiguity, and error in the data, or the agreement between independent analysts for at least modest samples of the analysis.

Another fundamental methodological question about corpora has to do with the make-up of a corpus. Size and sampling and quality of the materials are crucial issues here, which are themes that will have repercussions on any procedure for data collection in future linguistics. They are addressed in this volume in one specific form, by Fellbaum, who asks whether the World Wide Web can be used as a corpus. Her case study of constraints on Benefactive alternation suggests that it can, provided it is used intelligently.

Observation of corpus data is at its best for studies of alternation, or the distribution of particular grammatical patterns. Heylen presents a quantitative corpus study of German word order variation, and adds that it is impossible to do this type of study reliably without corpus work. A similar interest in quantification and statistical analysis is exhibited by Higgins, in his chapter on synonymy and word similarity. He shows that statistics can reflect semantics because it can detect similar words on the basis of the discovery of the same neighboring content words, as in Latent Semantic Analysis. That corpus evidence is not just quantitative and statistically based is shown by Lüdeling and Evert's study of the qualitative and quantitative aspects of the morphological productivity of German *–itis*, to indicate undesirable medical (*Appendizitis*) and nonmedical (*Vielzuvielitis*) conditions. The two categories require qualitatively different analyses, but their productivity can be studied by similar quantitative means. This leads on to the link between corpus analysis and the computational modeling of grammars, as in the study by Baldwin and his colleagues. They discuss the benefits of running a broad-coverage precision grammar over the British National Corpus for the computational study of English grammar.

So far we have looked at studies which aimed to take linguistics further than introspection, either by collecting data by means of manipulation in experimental research or by means of observation in corpus work. There are a number of studies

which aim to present converging evidence from both methods. Thus speaker intuitions are combined with frequencies from corpora in the studies by Featherstone on syntax, by Aizawa Kato and Mioto on wh-questions, and by Kempen and Harbusch on word order variability in the midfield of German clauses. And experiments on speaker behavior are combined with corpus analysis by Hohenberger and Waleschkowski to study production errors. Experiments are combined with other experiments, by Steiner, to study the syntax of Definite Phrase coordination in order to decide between three competing models. In each of these studies, introspection is not presented as a method of data collection, but is typically seen as part of theory formation which requires testing by observation or manipulation.

There are finally two contributions which are pitched at a metamethodological level, reflecting on aspects of one or more of the methodologies which we have seen in action above. One chapter presents thoughts about what we are asking speakers to do when they participate in informant research. It is by Carson Schütze, author of the above-mentioned volume on introspection, and discusses a number of interesting cases where doubts may be cast on the ability of the informants to carry out their assigned tasks. Another issue is whether the tasks are actually adequately designed to make the informants do what the linguist is interested in studying. These are general problems for any empirical study involving informants, and it is a salutary note to draw attention to these methodological issues which require more training and expertise than is sometimes appreciated.

The volume ends with a similarly fundamental reflection, by Weiss. He raises the question of how we can use language data from the past to draw conclusions about the cognitive abilities of the speakers. After all, we cannot place them in experimental situations where we can manipulate their behavior to test the consequences of our analyses. The question arises as to how solid our conclusions about diachronic issues in the study of language are if they can only be based on observational evidence, in comparison with synchronic linguistics.

These are apt reflections, at the end of a volume which has indeed presented a rich picture of the role of linguistic evidence in the contemporary, especially generative, study of language. The overall impression of this book is that it does send out one message: introspection is indeed getting relativized, while observation (especially of use in corpora) and manipulation (especially of language processing) are gaining ground. These are hopeful tendencies for functional linguists. At the same time, though, such tendencies also require more attention to the reliability of the analysis of the data collected by observation and manipulation, which is a general issue in many linguistic studies. The increased interest in methodology that lies behind the present collection, however, will probably induce greater awareness of the importance of this issue before long.

Reference

Schütze, C. (1996). *The empirical base of linguistics: Grammaticality judgments and linguistic methodology*. Chicago: University of Chicago Press.