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Agreement in grammar and discourse: A research overview

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Abstract: Agreement is among the most widely-researched issues in theoretical linguistics. In this introduction, we critically review some of the key issues, focussing on typological approaches to agreement, the role of agreement in establishing and maintaining reference, and the emergence of agreement diachronically. We point to the interplay of semantic, pragmatic and syntactic factors in shaping the way agreement systems function, and emphasize the need for more usage-based research in understanding the impact of extra-syntactic factors. We also argue for greater attention to lesser-researched languages, particularly those where features other than person are central in agreement relations. Finally, we offer a short synopsis of the contributions to this issue.

Keywords: agreement, gender, person, indexing, grammaticalization, referentiality

1 Introduction

The term *agreement* has a long and checkered history in the language sciences (see Cysouw 2011 for an overview), reflected in the divergent uses of the term in current linguistics. Despite the notorious differences in definitions, probably all researchers would concur that agreement involves some kind of non-local replication of grammatical features: The features of one word, the controller, are replicated through grammatical formatives associated with another word, the target, within a certain syntactically definable domain. With regard to the features relevant for agreement, most of the typological literature has focused on person (Cysouw 2003; Siewierska 2004), but agreement may also involve gender, number, case, and definiteness. The two major agreement domains are the noun phrase (or DP), and the clause. Although the controller/target metaphor implies a fairly mechanical, mono-directional syntactic process of feature replication, agreement relations are frequently sensitive to pragmatic and semantic features, such as topicality or animacy

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of the controller, resulting in systems of considerable complexity (see e.g., Woolford 1999; on languages of Africa, Fedden et al. 2013; for Alor-Pantor languages, or Schwenter 2006; on Portuguese). In this introduction we touch on some of the key issues in current research, with a particular focus on typological and diachronic approaches, before offering a synopsis of the contributions in Section 6 below.

While typological approaches have gone a long way towards identifying the major parameters in the analysis of agreement (see next section), there is still a dearth of research focusing on agreement systems in usage. Generally, this line of research remains the purview of discourse and conversation analysis, where it is couched in terms of strategies of textual coherence (see e.g., Giacolone Ramat and Andorno 2006; Cornish 2009). This line of research is firmly linked to semantic, cognitive and pragmatic approaches to referentiality and anaphora, and though empirical in orientation, draws largely on data from a small number of familiar languages. Empirically-based and typologically informed studies on the deployment of agreement systems in lesser-known languages remain under-represented (but see Meyerhoff 2000a; Meyerhoff 2000b; for a corpus-based approach to the emergence of agreement). Given that many aspects of agreement very clearly transgress the narrower syntactic realm, we need to confront agreement in discourse, and across a typologically diverse sample of languages, in order to gain a deeper understanding of the phenomena. The present collection contributes to this aim by showcasing a series of studies of agreement systems in typologically diverse languages, with a primarily corpus-based approach.

Although a categorical distinction is often drawn between pronominal (or anaphoric) agreement and syntactic agreement (e.g., Bresnan and Mchombo 1987), when dealing with discourse data across typologically diverse languages, including the kinds of conditioned agreement just mentioned, such a terminological distinction is difficult to maintain. We therefore adopt Haspelmath's (2013) more neutral term "indexing", that avoids pre-judging different kinds of controller/target relationship. In this introduction, we refer to various target forms as *index*, regardless of their degree of obligatoriness, or their morphological status (affix versus clitic), and likewise irrespective of whether the controller is overtly expressed in the relevant domain or not. The more substantive issues behind the terminology are taken up in the next section.

2 Typologies of agreement

In much of linguistic theory, agreement (or *feature checking* in the Minimalist Program) continues to be conceived primarily as a formal syntactic operation, and even in the typologically-informed "canonical" framework of Corbett (2006), the reference point of "canonical agreement" involves a local syntactic relation between a controller and a referentially redundant, inflectional target. From the definition of agreement as co-variation of features, it is, in principle, not clear if the co-variation has a direction (either from controller to target or perhaps vice versa) or if we should assume the simultaneous consistent spread of information over various items. The first approach can be called "copying": One item, normally the controller, passes or copies its features on to another item, normally the agreement target. The second approach can be labeled "unification": The items that participate in the agreement relation, i.e., controller and target(s), bear only partial information that is merged when it is compatible. This means that features are shared and not copied or moved. For the present purposes, this distinction is not crucial, and for expositional purposes we adopt a directional metaphor, though we see obvious advantages in a distributional or unificational approach (see below).

As Corbett (2006) and many others note, agreement is obviously related to the discourse-level phenomenon of anaphora, which involves a pronominal element likewise replicating features of its antecedent. For example, the pronouns in (1) obligatorily express gender and number of their antecedent:

(1) *Martha*$_i$ *enjoys playing chess with her*$_i$ *brother when she*$_i$ *visits home*.

However, anaphoric relationships are not so readily reducible to the target/controller scheme. First, the target/controller scheme assumes a syntactically definable domain within which it holds, but such a domain is difficult to define for anaphora, except negatively in terms of Binding Principles. Secondly, anaphora often involves looser kinds of feature replication,[1] for example the split antecedence illustrated by the pronoun *they* in (2). It does not actually agree in number with any single NP antecedent, but is instead only interpretable through inference over the entire preceding clause:

(2) *Martha*$_i$ *enjoys playing chess with her*$_i$ *brother*$_j$ *[when they*$_{i+j}$ *are at home]*.

Even more striking are examples such as (3), a fragment of a film dialogue. The reduced form of the pronoun *(th)'em* has no antecedent at all, and is in fact the sole carrier of information otherwise unavailable in the discourse (the existence of more than one letter):

1 We ignore here certain additional complications, such as "lazy anaphora" (Huang 2000: 7).

(3) Woman: "*Why didn't you write to me?*"
Man: "*I did ..., started to, but I always tore'**em** up*"
(Cornish 2006: 631)

It is evident that a strict division between the different kinds of reference effected in (1)–(3) is not straightforward, hence maintaining a division between agreement and anaphora will be difficult even within a single language. In fact, it is undeniable that in terms of the categories involved, the crosslinguistic distribution of the relevant forms and their diachronic developments (Bogomolova, this issue; Schnell, this issue), there are pervasive parallels and overlaps between anaphora and agreement, leading to a multiplicity of hybrid forms and mixed systems. These complications have motivated some scholars to reject the controller/target (or "grammatical-dependency", Croft 2013) paradigm as the model for agreement, instead suggesting that both anaphoric pronouns and bound agreement markers be considered potentially referential devices, which are deployed according to conditions of pragmatic appropriateness (see Lehmann (1982) for a typologically informed account of the connection between anaphora and agreement, Siewierska and Bakker (2005) for implementing a continuum approach in Functional Grammar, and Croft (2013) for a "cognitive-discourse analysis").

However, a majority do attempt to maintain a distinction between the antecedent/pronoun relation illustrated in (1), and the more tightly grammaticalized agreement relations illustrated by the subject/predicate agreement on the verbs in (1), i.e., *enjoy-s*, *visit-s*. A number of attempts at typologizing agreement systems are available, probably the most finely-grained being Corbett's (2006: 8–27) canonical approach. The canonical approach defines a typological space for agreement, via 20 criteria, and three "General Principles". The criteria permit different values, one of which is considered the canonical one, while the others imply divergence from the canonical type. By way of illustration, consider the Russian examples in (4a), (4b) and (5a), (5b) from Brown and Chumakina (2013: 2):

(4) a. *on* *pisal*
3SG.M write.PST[SG.M]
'He was writing.'
b. *on-a* *pisal-a*
3SG-F write.PST-SG.F
'She was writing.'

(5) a. *ja* *pisal*
1SG write.PST[SG.M]
'I was writing.' (the speaker is male)

b. *ja* *pisal-a*
1SG write.PST-SG.F
'I was writing.' (the speaker is female)

Examples (4) and (5) both illustrate the same paradigm of gender agreement suffixes on the verb (the target), which is controlled by the subject. However, while in (4a) and (4b) the controller overtly inflects for the same categories as the target, in (5a) and (5b) the controller does not overtly inflect for gender, yet the target nevertheless continues to agree with it. On the canonical approach to agreement, Examples (5a) and (5b) are "less canonical" instances of agreement than (4a) und (4b) according to the following criterion: "Controller has overt expression of agreement features > controller has covert expression of agreement features" (Corbett 2006: 11).

Typically, the ability for co-occurrence with a controller is considered a key diagnostic for distinguishing different types of agreement. In Siewierska's (2004) influential three-way typology of person agreement, this criterion is afforded a central role. Thus "pronominal" agreement is a grammatical person marker that is in complementary distribution with a coreferential NP controller within the same clause; "ambiguous agreement" involves a person marker that may or may not occur in the presence of a controller, while "syntactic agreement" (or "pure agreement" in Siewierska and Bakker 2005) involves the obligatory presence of both target and controller (Siewierska 2004: 124–125). Furthermore, the three types are considered to represent stages in a grammaticalization cline, running from pronominal to syntactic agreement. This typology has been questioned, in particular on the grounds that the "pure" or "syntactic" agreement type, illustrated by English third person singular index *-s*, is typologically only marginally attested, with most languages of the world belonging to Siewierska's "ambiguous" type (Haspelmath 2013). Siewierska's approach is ultimately inspired by Bresnan and Mchombo (1987), which assumes a categorical distinction based on the presence or absence of a coreferential NP (see critique in Haspelmath 2013). On our view, this approach is conceptually problematic, because it conflates distinct parameters, namely the obligatoriness of the person marker (a language-specific question of the exponence of inflectional morphology), and a language-specific tolerance of null referential subjects (see Section 3 below for discussion). These two parameters are logically independent, and need to be kept apart. Scholars working in the Minimalist Program, e.g., Fuß (2005) or De Cat (2005), on the other hand, have taken the property of obligatoriness of the index as the necessary and sufficient property of agreement, thus situating agreement squarely in the realm of inflection, while relegating the issue of co-occurrence to the status of corollary diagnostic (see Haig this issue and Schnell this issue, for a related approach, though not contextualized within the MP).

Another classificatory parameter is based on form properties of indices, where a distinction between free pronoun, weak or clitic pronoun, and affix is generally drawn (see Siewierska 2004). Again, this is obviously problematic, though for reasons not directly connected to the agreement issue. A persistent and unresolved issue is the distinction between affixal and clitic indices (see Haspelmath 2013); where a commitment can be avoided, we refer simply to *bound forms*, indicating a lack of syntactic mobility that characterizes both affixes and (many) clitics. The more interesting question is how differences in form correlate with factors such as obligatoriness of the indices. The default assumption is that a reduced or bound (clitic or affixal) form would correlate with obligatoriness. However, these parameters do not always align in the expected manner. For example, in Central Kurdish (Iranian, North Iraq, past transitive clauses only), subjects are obligatorily indexed, but the relevant markers are mobile clitics, not verbal affixes (Haig this issue). Conversely, number agreement with non-human subjects is optional in Persian, although the relevant index is a verbal affix rather than a clitic (Lotfi 2006). Form is thus not necessarily a good predictor of grammatical status.[2] In sum, there are good reasons to distinguish different dimensions of agreement, and to consider each independently of the others (which does not of course preclude the existence of significant clusters). In this respect, we find the canonical approach of Corbett (2006) to be preferable to more holistic typologies of the kind set up in Siewierska (2004).

3 The referentiality of the indexing form

An issue that is repeatedly raised in connection with indexing is the (non-) referentiality of the indexing form, and indeed for some authors this is the primary criterion for distinguishing agreement from various kinds of anaphora. In Examples (1)–(3) above we considered the possibilities for a free pronoun to effect reference independently of a controller. For bound indices, similar issues arise. Consider a simple example:

2 Functional accounts of the emergence of agreement, like Ariel's Accessibility Theory (Ariel 2000), also correlate formal boundedness and reduction with differences in referential status (in their terminology: degree of accessibility). This means that variation in form is apparently exploited for discourse-structural purposes, quite unlike the entirely mechanic-automatic use of bound person forms in agreement (Stefan Schnell p.c.).

(6)	*Der*	*Arzt*	*sprich-t*	*Italienisch*	[German]
	DEF.M.SG	doctor	speak.PRS-3SG	Italian	
	'The doctor speaks Italian.'				

In (6) the verb carries a third person index, reflecting the person and number of the subject. For most authors, this index itself is not referential, and the clearest evidence for that claim lies in its co-occurrence with the co-referential subject NP *der Arzt* 'the doctor'. In Standard German, an independent indicative clause like (6) requires the presence of an overt subject NP,[3] further underscoring the apparent informational redundancy of the suffixal index on the verb. In Italian, on the other hand, the translationally equivalent sentence could lack an overt subject NP, as in (7a) and (7b):

(7)	a.	*Il*	*medico*	*parl-a*	*italiano*	[Italian]
		DEF.M.SG	doctor	speak.PRS-3SG	Italian	
	b.	*ø*	*parl-a*	*italiano*		
		ø	speak.PRS-3SG	Italian		

According to Bresnan and Mchombo's (1987) analysis, the third singular indices on the verbs in (7a) and (7b) would count as two distinct kinds of indexing: The first is true agreement (controller is present), while the second is considered "anaphoric", or "pronominal". This approach is adopted in Falk's (2006: 55) version of LFG, in Role and Reference Grammar (Van Valin 2005: 18), and also underlies Siewierska (2004) typology of person agreement.

However, this analysis has been questioned (Barlow 1992; Croft 2001; Croft 2013; Mithun 2003; Haspelmath 2013; Kibrik 2011). The assumption that the index in (7b) cannot be referential is predicated on theory-internal principles of uniqueness of referential expression (the Theta Criterion of GB, or the Uniqueness Condition of LFG): Each verbal argument must be represented once, and only once, in syntax. Therefore if a clause contains a lexical NP, its representation is exhausted and any further indices are, by definition, not referential. As Haspelmath (2013) points out, this approach is problematic in a number of respects, most obviously with regard to the syntactic status of an overt subject such as *il medico* in (7b). If the verbal index is interpreted as the verbal argument, then the lexical NP must be analyzed as "appositional", or in some sense clause-external. While for some languages, this may be a reasonable position, for languages such as Italian the evidence is far from obvious. It is particularly

3 Ignoring certain fixed expressions, certain types of ellipsis in spoken dialogues, or written exchanges with low levels of formality.

problematic when the NP in question is focal rather than topical (e.g., an interrogative pronoun, or indefinite NP), hence not freely omissible. The discussion of this point is closely related to Jelinek's (1984) analysis of head-marking languages, but as the empirical base of Jelinek's claims has been disputed (Austin and Bresnan 1996), and indeed the extent to which "head-marking language" constitutes a discrete typological category is questionable, this line of argument has become increasingly difficult to maintain.

The criterion of "degree of referentiality" is used by Corbett (2006: 103) for distinguishing bound anaphoric pronouns from inflectional, obligatory agreement markers. The argument is basically that if a bound marker is indifferent to referential status (e.g., it may index referential, generic, or negated controllers), it is best considered agreement, rather than pronominal. Evans (1999) takes this line of argument to challenge the claim that the bound indices of so-called polysynthetic languages are pronominal in nature, demonstrating that in Bininj Gun-wok (a polysynthetic language of Australia), affixal person markers may yield generic and non-referential interpretations which would be inappropriate for free pronouns. However, Mithun (2003) presents data from Yup'ik (Eskimo-Aleut) and Navajo (Athabascan) which demonstrate the potential referentiality of bound indices in these languages. Mithun's data provide a telling illustration of the mismatch between form and function. In the languages under consideration, the indices are bound, obligatory affixes, yet apparently signal referential categories such as definiteness, thus cannot be considered informationally redundant inflection.

The either-or approach to referentiality imposed by formal theories of grammar such as LFG is not the only approach. For example, on the cognitive approach to reference of Relevance Theory (e.g., Wilson and Sperber 2004), speakers derive the reference of linguistic utterances via inference from different cues, which may be distributed across the utterance (or inferred from the context); reference is thus not a quality that can be ascribed to individual morphemes. An agreement marker may, or may not, contribute to reference, depending on contextual factors. For example, the third singular verbal suffix in the Italian example (7b) certainly helps identify the intended referent as third person singular, but it contributes no information on, for example, the referent's gender, and, depending on the context, it may fail to establish reference at all. In fact (7b) is only felicitous when the preceding context has already narrowed down the potential reference of the subject, for example by ruling out the probability of first or second person reference. But to assign the quality of reference to such indices per se is an oversimplification, just as it is to deny any referential potential to the third singular verb indexing in (6); see discussion on Mithun (2003) above, and more generally Corbett (2006: 143–175) and Acuña-Fariña (2012) for cases of semantics overriding syntax in agreement systems.

A further issue with referentiality is the status of first and second person forms; it is difficult to see under what conditions they should be considered non-referential in the same manner that third person forms are sometimes claimed to be (see Croft (2013) for discussion). Finally, we note that a distributed approach to referentiality is better placed to cope with multiple targets, that is, when features of the controller are reflected on multiple targets rather than only one (e.g., gender agreement in Nakh-Daghestanian, e.g., Harris 2009; Bond et al. 2016). In those contexts where the controller is not locally present, we would need to decide which of the available targets is to be considered "referential", and which is not.

4 Function of agreement

Researchers disagree as to what the functional motivation for agreement might be. Occasionally one can find comments stating that agreement, especially alliterative agreement, is redundant, which, however, does not necessarily equate with being meaningless. Corbett (2006: 274–275) provides an overview about suggested functions of agreement and lists "providing redundancy" as one of them. Through agreement morphemes features are replicated, and thus grammatical information is repeated. This, in turn, can help to facilitate understanding on part of the hearer (Langacker 2008: 187–189). It is most of all agreement within the domain of the noun phrase that is characterized as redundant (e.g., Matasovic 2014). Corbett notes that redundancy strongly depends on the amount and informativeness of agreement morphology. Languages vary dramatically from having "exuberant" agreement as in Bantu languages or Nakh-Daghestanian languages (Harris 2009; Forker this issue; Bogomolova this issue; Nichols this issue) to extremely reduced agreement systems such as English.

A second function that has been suggested is the marking of constituency and the indication of grammatical relationships such that items can be identified as belonging to the same constituent. In other words, agreement signals that certain nominals are arguments of the predicates with which they occur in the same clause, and it marks modifiers as belonging to the same head. This, in turn, has been suggested to allow for greater flexibility in constituent order for languages that have agreement (e.g., Siewierska (1998) reports weak correlations between agreement and word order flexibility). Within the generative framework, this function has been discussed under the label of the "Rich Agreement Hypothesis" (e.g., Koeneman and Zeijlstra 2014 for a recent account).

The third function that Corbett (2006) mentions is probably the most widely assumed and most frequently discussed function, namely the identification and reference tracking function. Agreement is assumed to help keep track of referents in clauses and within a larger discourse. For instance, Barlow (1999) considers that the main function of agreement is the linking of referents in discourse that are re-identified or tracked by agreement morphemes. It is mainly person agreement that is claimed to serve a referential function (e.g., Lehmann 1982; Lehmann 1988; Siewierska and Bakker 2005: 232; Evans 2008: 404), especially when agreement is seen as a continuum that includes anaphoric pronouns. One direction of the debate examines switch-reference marking systems that typically signal by means of verbal morphology in dependent clauses whether the following main clause shares or does not share the subject with the dependent clause (see, e.g., Haiman and Munro 1983: ix; Watkins 1993; Stirling 1993; Van Gijn 2012; Galucio 2014: 383–387). But also gender agreement, even in those cases where gender is not semantically transparent, has repeatedly been argued to facilitate the identification of referents (Corbett 1991; Dahl 2004: 200–202; Seifart 2004: 239–241; Contini-Morava and Kilarski 2013: 279–286; Trudgill 2011: 157–159 points out some problems). The discussion of the referential function of agreement also includes variation in agreement that leads to diverging readings of one and the same NP and can indicate a change in the perspective on the referent or expand on its characterization (Barlow 1999: 194; Corbett 2006: 275; Contini-Morava and Kilarski 2013: 287–291).

5 The diachrony of agreement

In the extent to which they exhibit agreement phenomena, the world's languages range from complete absence (e.g., Mandarin) to systems involving multiple features indexed on multiple targets (e.g., Nakh-Daghestanian, Nichols, this issue). Given the non-universality of agreement, it is reasonable to ask why and how agreement systems arise where they do. For the category of person, ever since Givón (1976) the diachronic dimension has remained a major focus, both within typologically-oriented research (Siewierska 1999; Siewierska 2004) as well as formal approaches to syntax (Fuß 2005; Van Gelderen 2011). Siewierska's (2004: 251) typology of person agreement mirrors an assumed grammaticalization process, "on-going in all languages in all times," which assumes that free pronouns gradually lose their prosodic independence, eventually fusing with a verbal head and becoming agreement affixes. While the validity of this account is almost universally accepted (Fuß 2005: 4), there is a notable absence of unequivocal case studies to back it up. Partly this is due to the paucity of data across the required time frame for most languages, though the reasons may lie deeper (see Schnell and Barth, Submitted, for a data-driven approach, and Haig, this issue, for object agreement). Similarly, there is no consensus for motivations for the assumed changes (see next section).

Finally we point to the general lack of reference to languages lacking bound person indexing entirely, both in their current and historical stages (if attested, or reconstructable), such as Chinese. It seems reasonable to conclude from such languages that the grammaticalization of person agreement is not a universal, but rather another example of family (or areal) biases (Bickel 2013) in historical processes. Any account of the grammaticalization of person agreement framed entirely in terms of purportedly universal factors (functionally-oriented, or otherwise) fails to account for the fact that some languages (or language families) are evidently more prone to developing bound person indexing than others.

With the above caveat in mind, we now consider two of the most widely-discussed functional accounts for the development of bound person indexing: Givón's (1976) detached-NP topic account, and Ariel's (2000) Accessibility Theory (AT). Givón basically assumes a process of de-pragmatization: a first stage involves pragmatically marked clauses with a detached topic NP, which then become over-used, lose their pragmatic markedness and are interpreted as pragmatically neutral. The original detached topic NP is reanalyzed as a subject, and the original resumptive pronoun as an agreement marker (*Sally, she came* > *Sally she-came*, cf. Siewierska 2004: 263–264; Fuß 2005: 6–9; Corbett 2006: 265–270 for critical discussion). One obvious problem with Givón's account is that it applies to the grammaticalization of third person agreement, but not to first and second person agreement. Yet there is ample evidence that it is first and second person that pioneer the grammaticalization pathway, while third person lags behind; this distribution is not predicted by the dislocated NP account. What does appear to be valid, however, is the postulated link between topicality and agreement.

An alternative approach is Accessibility Theory (Ariel 2000), which specifically addresses the special role of first and second person. On Ariel's account, first and second person are maximally accessible (their reference is continuously available to speaker and addressee), therefore most susceptible to reduction in form, and hence grammaticalization. However, careful investigation of corpus data from the Oceanic language Vera'a, shows that the frequency distribution of first and second pronouns does not actually match the predictions of Accessibility Theory (Schnell, this issue). Bickel et al. (2015) draw on a cross-linguistic data-base of agreement morphology to test the claim that crosslinguistically, zero is the preferred form for third person in agreement paradigms. While evidence for universal principles of paradigm organization is not found, a weak effect related to the frequency of zero pronouns in the third person is, thus providing some support for grammaticalization-based accounts of the emergence of person agreement.

Within generative approaches to diachronic syntax, motivations are generally conceived of in terms of system-internal motivations, and shaped by constraints on syntactic structure such as Economy Conditions (Van Gelderen 2011). Fuß (2005) considers structural prerequisites for the emergence of subject agreement. Basically, gaps in existing morphology are considered the primary triggers for grammaticalization of agreement: where existing morphology is defective in the sense that it "signals fewer distinctions than the potential new formatives" (Fuß 2005: 299), grammaticalization may occur. Unlike Givón's or Ariel's account, on this view grammaticalization is triggered by a pull rather than a push-chain motivation, rooted in presumably random changes in morphology rather than extrinsically motivated by functional factors.

Common to both the NP-detached topic account, and Accessibility Theory-based accounts is the assumption that erstwhile free pronouns must be "in the right place" in sufficient frequencies to facilitate initial grammaticalization to their respective verbal heads. However, as has been pointed out by Comrie (1980), agreement systems do not always match the syntactic linearizations from which they apparently arose. Similarly, Bogomolova (this issue) points out that although object pronouns are most frequently verb-adjacent in the Nakh-Daghestanian languages Agul and Tabasaran, it is subject pronouns that ultimately grammaticalize in Tabasaran (see also Haig, this issue, on the difference between subject and object grammaticalization). Those Nakh-Daghestanian languages like Tabasaran which have developed person agreement systems are particularly interesting for understanding the diachronics of the process, because they clearly represent diachronic innovations that are overlayed onto an older inherited system of gender agreement (e.g., Helmbrecht 1996; Schulze 2011). However, the etymological sources of the person indices vary from language to language, so there is evidently not a common grammaticalization pathway leading to person agreement in these languages. In sum, despite the broad consensus on a grammaticalization-based explanation for the emergence of person agreement, the details of the process are surprisingly poorly understood, underscoring the necessity for further empirical research on a broad range of languages (see the respective contributions to this issue by Bogomolova, Haig, and Schnell for work in this direction).

The historical roots of agreement within the NP, typically involving the feature of gender, are only poorly understood. An obvious potential source are nominal classifiers (Corbett 2006: 268–269), which in turn may derive from lexical items with fairly general meanings such as 'person'. On this account, gender systems are basically the result of a grammaticalization process beginning with semantically generalized nouns becoming (optional) classifiers, then developing into various kinds of demonstratives, determiners, and ultimately gender markers (Luraghi 2011: 451). Unlike person indexing, gender indexing often exhibits no obvious similarity to the lexical material from which (on the grammaticalization account) it apparently developed, and we must therefore assume it to be the result of a particularly long developmental process, during which the origins are obliterated (see Luraghi 2011 for discussion of the origins of Indo-European gender). Finer shifts in existing agreement systems are investigated in the contributions in Fleischer et al. (2015), with an emphasis on Indo-European. These include changes in target categories (e.g., gender agreement spreading to new targets, or retreating from earlier targets, as in the loss of gender agreement on predicative adjectives in German, Fleischer 2007), loss of features relevant for agreement (e.g., syncretism of person/number values in agreement paradigms). New types of agreement may arise more or less epiphenomenally together with other kinds of syntactic change. For example, the linking morpheme of Northern Kurdish (traditionally known as Ezafe) connects adnominal modifiers to a head noun, and it agrees in gender with its head noun. In the Bahdini dialect of Northern Kurdish, this ezafe became reanalyzed as a kind of copula, where it continued to inflect for gender, though now for the subject of the copular clause. In this manner gender agreement was introduced into copular clauses in a language that previously had no subject/predicate agreement for gender (Haig 2011: 370–372). In fact agreement crossing from the NP-domain to the clausal domain is not uncommon, while the reverse pathway, though briefly mentioned as a possibility in Corbett (2006: 268), seems to be less solidly attested; we leave this as an issue for further research.

6 Synopsis of the contributions

The three contributions by Schnell, Haig, and Bogomolova are all concerned with the mechanisms by which anaphoric pronouns may, or may not, develop into obligatory indices, but each contribution focuses on a different set of languages. Stefan Schnell's contribution "Whence subject-verb agreement? Investigating the role of topicality, accessibility and frequency in Vera'a texts" tests the usage-based accounts of the emergence of agreement against extensive discourse data from the Oceanic language Vera'a. His study suggests that neither of the two functionalist approaches (Givón 1976; Ariel 2000) provides a convincing explanation for the initial motivation for the use of overt person forms (rather than zero) and their formal reduction and cliticization. The Vera'a corpus data show a strong tendency for first and second person subjects to be realized by a pronoun; only third person subjects entertain some freedom to be zero. This general distribution disfavors a NP-detachment account for the reasons outlined above. In addition, topic-shift in first and second persons is exceedingly rare, so that the use of pronouns and topicalization do not appear to be connected in this data. While this overall pattern lends initial support for an account along the lines of Accessibility Theory (AT) (Ariel 2000), closer examination of some minimal variation between the use of pronouns and zeroes for speech-act participants leads Schnell to discard this explanation: Whereas AT suggests accessibility as the single-only driver of referential choice, even between full pronoun, clitic pronoun, and zero, no conceivable accessibility-related motivations can be identified for their use in subjects in Vera'a. Instead, relatively idiosyncratic co-occurrence patterns of subjects with other elements appear to yield a better explanation: Reduced person forms always immediately precede tense-aspect-modality-polarity (TAMP) formatives, while zero subjects are confined to specific structures in clause-combining. These findings suggest a frequency-driven account in terms of entrenchment in the spirit of Bybee and Thompson (2007 [1997]). Yet, this does not ultimately explain why first and second person subjects are not simply zero. Schnell speculates that for first and second person subjects (and probably other grammatical relations), overt forms are generally the preferred option. That is to say, rather than considerations of economy vis-à-vis high accessibility of speech-act participants, the more relevant concern may be to keep reference to speaker and addressee clearly formally distinct at all times during natural communication. On this view then, it is languages like Mandarin or Japanese that do not respect this near-universal tendency, which may perhaps be due to cultural constraints on overt reference to speaker and addressee.

Geoffrey Haig's contribution "The grammaticalization of object pronouns: Why Differential Object Indexing is an attractor state", proceeds from the observation that crosslinguistically, obligatory person indexing in the feature of person is areally and typologically widely attested for subjects, while obligatory indexing of objects (in the feature of person) is exceedingly rare. Where object indexing is found, it is generally not obligatory, but conditioned, what Iemmolo and Klumpp (2014) refer to as *Differential Object Indexing* (DOI). Conventional approaches to the grammaticalization of agreement nevertheless continue to assume a unified grammaticalization pathway from pronoun to agreement marker (e.g., Siewierska 2004; Fuß 2005; Van Gelderen 2011), hence do not predict the subject/object asymmetry that is actually attested. Haig presents evidence from 2500 years of the history of Iranian languages, where the respective pathways in the grammaticalization of subject and object pronouns can be traced with some reliability. Despite identical source material, the outcomes of the two processes are very different across Iranian, confirming the typological findings: obligatory indexing for subjects, but Differential Object Indexing for objects.

In the final sections of the paper, an explanation for the preference of Differential Object Indexing is formulated, based on crosslinguistic corpus data. It transpires that there are consistent differences in the degree of *informativeness* of the category of person when associated with subjects, and with objects. These differences do not apply to the categories of gender and number, and both are in fact regularly implicated in obligatory indexing of objects. Thus a number of quite diverse phenomena seem to be reflecting statistical patterns evident in corpora of diverse languages. The broader conclusion is that grammaticalization of pronouns is not a unified process, involving a gradual phonological erosion and concomitant increase in obligatoriness, ultimately leading to agreement, and zero. Rather, there appear to be two distinct processes involved: a superficial decrease of prosodic independence and syntactic mobility, and – for certain categories only (e.g., person of subjects) – the development of obligatory inflectional morphology (*inflectionalization*). The mechanisms driving inflectionalization are as yet only poorly understood, but it is argued that they are not just "more of the same," i.e., not merely a continuation of superficial grammaticalization.

The paper by Natalia Bogomolova "The rise of person agreement in East Lezgic: Assessing the role of frequency" investigates the role of frequency for the grammaticalization of person agreement by comparing the two closely related Lezgic languages, Tabasaran and Agul. Tabasaran has obligatory person indexing of subjects and optional person indexing of non-subjects, whereas Agul does not have any person indexing at all. The person markers transparently originate from the personal pronouns, and Agul can therefore be assumed to represent the situation prior to the development of person markers, which must have been grammaticalized from postverbal personal pronouns. Although testing the overall frequency of postverbal pronouns in Agul did lead to significant results that would support the grammaticalization hypothesis, Bogomolova finds that the verb 'say', which is among the most frequently used verbs, has a preference for postverbal subject pronouns that thus could have given rise to the development of person markers. She concludes that a specific pattern, associated with one high-frequency lexeme, may provide the model for a grammaticalization pathway that later generalized to a larger class of linguistic items.

In her contribution "Agreement with overt and null arguments in Ingush", Johanna Nichols examines gender agreement in an Ingush corpus of 5,000 words. Her study is devoted to the *complementarity hypothesis*, which states that agreement and overt arguments are in complementary distribution. In order to test this hypothesis, Nichols surveys referential density in Ingush. She does not find evidence in favor of the complementarity hypothesis, and instead even some evidence going against it. The choice of null vs. overt form is more directly influenced by factors such as type of chain, converb, or role. She therefore concludes that in contrast to person markers on verbs, gender markers are not referential. This does not exclude that they function as "referential aids" (Kibrik 2011) by narrowing the range of possible referents.

The paper by Diana Forker "Gender agreement is different" represents another take on the complementarity hypothesis by discussing data from the Nakh-Daghestanian language Lak. Counting the co-occurrence of gender agreement markers and agreement controllers does not corroborate the complementarity hypothesis, and Forker arrives at the same conclusion as Nichols, namely that gender does not seem to be used as reference-tracking device. She then compares the morphosyntax and the hypothesized functions of person and gender agreement in Lak and argues for an approach to gender agreement in terms of concord, i.e., as comparable to noun-phrase internal agreement.

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