Frans Plank

The selective elaboration of nominal or pronominal inflection

1. Variable extents and domains of inflection

Languages with inflection may differ in HOW MUCH of it they have and WHERE they have whatever they have of it.

Some inflecting languages have few inflectional categories, possibly only person and number, while others have many, possibly including case, state, possession, gender or class, animacy, topicality, switch reference, definiteness, specificity, politeness or formality, distance, location, direction or orientation, comparison, tense, aspect, mood, evidentiality, negation, diathesis, inversion, valency, finiteness, or a few others. While some of these inflectional categories are invariably realized by only a few terms in all languages which share them, others vary considerably. Thus, while switch reference, definiteness, or inversion rarely get beyond the minimum of two terms (same subject, different subject, with different subject sometimes differentiated further; definite, indefinite, with definite sometimes differentiated further; direct, inverse), case ranges from two terms to about two dozen (with case systems arguably expanding along a rather limited number of dimensions).[1] After categories and terms, the exponents expressing them are a third parameter for quantitative variation: a given term or term bundle (say, nominative plural) may be expressed by only a single exponent in one language and by several synonymous ones in another; and the exponents of two or more terms or term bundles (say, nominative plural and genitive singular) may be distinct in one language and homonymous in another.[2]

Some languages have inflection almost everywhere: on verbs, auxiliaries, nouns, pronouns, articles, demonstratives, quantifiers, adjectives, adverbs, and even on adpositions and conjunctions, or also on units other than words. Others practise moderation and limit inflection, for example, to verbal as opposed to nominal words, to heads as opposed to dependents or the other way round, to words as opposed to phrases, to words at the margin of phrases, especially their end, as opposed to phrase-internal words, or to special constituents whose sole purpose is to collect all inflections of a clause.

In many ways cross-linguistic variation in the extents and domains of inflection is systematic rather than random: among the thousands of choices which languages take in these respects a good deal are contingent on others.[3] Continuing the search for

generalizations in this area, what this chapter[4] explores are INTERDEPENDENCIES between inflectional categories as to the extents of their ELABORATION relative to their DOMAINS. In particular, we will consider number, person, and distance (spatial and related deixis) and compare nouns and pronouns as to how richly or poorly they inflect for these categories. A so far unappreciated pattern which emerges is that in addition to domain-neutral languages there are languages which favour the elaboration either of only pronominal or, less commonly, of only nominal inflection.

2. Interdependency in categorial elaboration across domains

Logically the elaboration of one inflectional category is independent of that of any other, within the same domain or across domains. Taking number and person as examples, it is conceivable (i) that neither category distinguishes more than the minimal number of terms, viz. two numbers (most likely singular and plural[5]) and three persons (speaker, addressee, non-speech-act participant, with non-singulars including referents lower on the hierarchy of speech-act roles);[6] (ii) that both categories distinguish more than the minimal number of terms, with number perhaps realized by singular, dual, trial, paucal, and multal (and perhaps associative and collective, if these are counted as numbers), and with person adding a contrast of inclusive and exclusive to 1st and perhaps even 2nd person non-singular; (iii) that only number or (iv) only person distinguishes more than the bare minimum of terms. It is an empirical question whether all four logical possibilities are attested in the languages which inflect for the relevant categories; the absence or relative infrequency of one or more of them would suggest interdependency between the categories. Such interdependency could take two forms: the elaboration (or non-elaboration) of one category could go hand in hand with that of another (possibilities (i) and (ii)), or it could be inversely proportional to that of another ((iii) and (iv)).

It has variously been claimed – among others by Royen (1929: 549), Capell (1965), and Klimov (1977) – that categories whose domains are different phrase types, in particular nominal and verbal phrases, will not be equally elaborate but will either be equally inelaborate or flourish alternatively. Accordingly, numerous terms for case, number, gender, and perhaps further nominal categories should not be found in languages rich in terms for tense, aspect, mood, diathesis, and perhaps further verbal categories, nor vice versa.

For categories whose joint domain is the noun phrase, on the other hand, the elaboration of some categories has been claimed to encourage, rather than to discourage, that of some others.

Thus, Wilhelm Wundt (1904: 427–448) maintained that if there are more than two numbers, with singular and plural accompanied by a dual and perhaps trial, there will tend to be a contrast of inclusive and exclusive in the paradigm of personal

pronouns as well as more distance distinctions than that between proximal and distal with demonstratives and local adverbs, and vice versa. Wundt was primarily thinking of pronominal inflection, but, aiming at a holistic typology of "concrete" and "abstract" languages, he extended the correlation also to nominal number (as well as to adverbial cases of nouns, among many other parameters). In the same vein, Wilhelm Schmidt (1926) saw the presence of a dual and perhaps a trial, irrespective of their pronominal or nominal domain, as largely coinciding with that of the inclusive-exclusive contrast of 1st person pronouns; but he admitted that a dual was unaccompanied by inclusive-exclusive in his northern *Primärsprachenkreis*. The correlation Schmidt envisaged, thus, was not biconditional: inclusive-exclusive appeared to imply dual, but not vice versa.[7] To Henri Frei (1944: 127), surveying demonstrative systems, the correlation between the elaboration of distance with demonstratives and nominal number in general seemed "assez net, malgré des exceptions", and he also, rather implausibly, hinted at a further correlation with numeral classifiers.

The evidence for such claims has at best been impressionistic. Their fate accordingly has been either not to be taken note of or to be dismissed as far-flung or fantastic, sprung from long obsolete preconceptions about concreteness and abstractness in language and thinking. Although they are claims about how languages can differ, they could seem reminiscent of the ravings of a Jacob Grimm who would not see any real space for variation in categorial elaboration, and for whom all grammatical categories – genders, numbers, persons, declensions, grades of comparison, tenses, diatheses, basic vowels, and what not – were always triadic, or aimed to be.[8]

First impressions are often wide of the mark, but not always. In the case at hand, more systematic comparisons across sizeable language samples do show some interdependency, if only of a probabilistic kind, between the extents to which the noun-phrase categories of number, person, and distance are elaborated. Contrary to earlier assumptions, however, the mutual influences here can be discouraging as well as encouraging. And what matters crucially are the domains of inflection.

As probes into reality I will draw on the samples of Forchheimer (1953), as adapted by Ingram (1978), and Perkins (1980), consisting of 69 and 50 languages respectively,[9] and above all on the sample of 205 languages listed in the Appendix to this chapter. Forchheimer (1953) and Ingram (1978) were seeking cross-linguistic generalizations about the inflection of personal pronouns, especially for number. Perkins's (1980) interest was in deixis, and some further inflectional categories such as number and gender, and in the possibility of correlating inflectional complexity with cultural complexity. The focus of our own database (called DuDa) is on the dual and its forms and uses, but some further inflectional categories as well as some syntactic patterns are also taken into account in order to determine whether dual variables co-vary with other variables. Having a dual, in the sense of any grammaticalized form or combination of forms for reference to two,[10] was the criterion for inclusion in this sample. Actually, no strong genetic biases ensue from this cri-

terion, since there are only few higher-level families which were ruled out owing to their current or historical lack of a dual: Northeast and Northwest Caucasian, extinct Hurro-Urartean, Altaic other than Tungusic, Sinitic, Cushitic and Omotic within Afroasiatic, some North-American Indian families including Salish, and isolates such as Basque, Burushaski, and Korean and Japanese. Families with attested duals not represented in the current DuDa sample include Mande, Kartvelian, Tungusic, Dravidian, Algonquian, Oto-Manguean, as well as pidgins and creoles.[11]

Despite all kinds of imperfections these three samples should be reasonably adequate as a basis from which to draw conclusions about interdependencies between the inflectional categories at issue.

3. Number and person

Neither dual nor inclusive-exclusive are typically present in minimal number and person inflection.[12] Considering them independently, such enrichments are not exceedingly rare, though.

In the Forchheimer-Ingram sample the languages which have a dual with personal pronouns and those which lack one are about equally numerous (35 and 34, respectively). Perkins (1980: 169–170) gives figures for the dual only for bound pronouns: of 35 languages with bound pronouns, eight inflect them for dual and 27 do not. Presumably, if information were available for the inflection of nouns, and for the Perkins sample also of independent pronouns, the proportion of languages with dual to those without would increase noticeably. According to a recent census (Schellinger 1995a), at least one third, but possibly about half, of the languages of the world are confirmed possessors of duals, in one domain or another.

As to inclusive and exclusive, 37 languages in the Forchheimer-Ingram sample have this contrast and 32 lack it. The proportion is somewhat lower in the Perkins sample: here fifteen languages distinguish inclusive and exclusive (for 1st person) in independent personal pronouns and ten do so in bound pronouns, whereas 32 and 25 languages respectively do not.

Turning now to interrelations between these elaborations of number and person inflection, Perkins's (1980: 169–170) data for bound pronouns suggest that if there is no dual there will very likely be no inclusive-exclusive contrast either, and vice versa; see Table 1 for the figures. Further, the proportion of dual languages to languages without dual is higher for languages which distinguish inclusive-exclusive (4 : 6, 40 % : 60 %) than for languages which do not (4 : 21, 16 % : 84 %). The proportion of languages with inclusive-exclusive to those without is likewise much higher for languages with dual (4 : 4, 50 % : 50 %) than for those without (6 : 21, 22.2 % : 77.8 %). From what Perkins (1980: 103, 119) summarily concludes about the correlation of cultural complexity with the presence of inclusive-exclusive on the one hand and

Table 1. Dual and inclusive-exclusive in bound pronouns; sample of Perkins (1980).
Note: In all tables percentages are given in parentheses; those calculated vertically are in roman type and those calculated horizontally are in italic.

INCLUSIVE-EXCLUSIVE	DUAL					
	+		−		total	
+	4	(50.0)	6	(22.2)	10	(28.6)
	(40.0)		*(60.0)*			
−	4	(50.0)	21	(77.8)	25	(71.4)
	(16.0)		*(84.0)*			
total	8		27		35	
	(22.9)		*(77.1)*			

Table 2. Dual and inclusive-exclusive in independent personal pronouns; sample of Forchheimer (1953) and Ingram (1978).

INCLUSIVE-EXCLUSIVE	DUAL					
	+		−		total	
+	26	(74.3)	11	(32.4)	37	(53.6)
	(70.3)		*(29.7)*			
−	9	(25.7)	23	(67.6)	32	(46.4)
	(28.1)		*(71.9)*			
total	35		34		69	
	(50.7)		*(49.3)*			

of dual in independent pronouns on the other, it can be inferred that the results for independent pronouns would be similar to those in Table 1.

The data of Forchheimer (1953) and Ingram (1978) for independent personal pronouns, summarized in Table 2, point in the same direction. Here one need not even resort to comparing proportions in languages with and without the respective number and person terms in order to see that their elaborations are mutually conducive. What Table 2 suggests is that if personal pronouns distinguish a dual they will very likely, in 74.3 % of the languages in the sample, also distinguish inclusive and exclusive (of 1st person); and if they distinguish inclusive and exclusive they will very likely, in 70.3 % of the languages sampled, also distinguish a dual.

In the DuDa sample of 205 languages, all of which have a dual in personal pronouns (independent and/or bound), nouns, or elsewhere, 122 (59.5 %) distinguish inclusive and exclusive in personal pronouns (independent and/or bound), and 83 (40.5 %) do not (Table 3) – which is a result intermediate between those of Perkins and Forchheimer-Ingram.

Table 3. Dual in different domains and inclusive-exclusive; DuDa sample.

INCLUSIVE-EXCLUSIVE	DUAL by domains				
	nominal and pronominal	only pronominal	only nominal	only verbal	total
+	39 (51.3)	78 (71.6)	1 (9.1)	4 (44.4)	122 (59.5)
	(32.0)	*(63.9)*	*(0.8)*	*(3.3)*	
–	37 (48.7)	31 (28.4)	10 (90.9)	5 (55.6)	83 (40.5)
	(44.6)	*(37.3)*	*(12.0)*	*(6.0)*	
total	76	109	11	9	205
	(37.1)	*(53.2)*	*(5.4)*	*(4.4)*	

What the breakdown of these last figures in Table 3 reveals is that the dependence of person elaboration on that of number is even clearer when nominal and pronominal domains of the dual are kept apart. Of the 109 languages which have the dual only in pronouns,[13] 78 (71.6 %) distinguish inclusive and exclusive, a contrast only relevant to personal pronouns, and 31 (28.4 %) do not; and these percentages resemble those for the Forchheimer-Ingram sample rather closely, where nominal inflection has been disregarded. Having a dual only with nouns, on the other hand, DIScourages the distinction of inclusive and exclusive in personal pronouns: as many as ten of the pertinent eleven languages (90.9 %) do not make this distinction. While there are, thus, good statistical implications if the dual is limited either to pronouns or to nouns – if only pronouns have a dual, they will very likely also have inclusive-exclusive; if only nouns have a dual, personal pronouns are very likely to lack inclusive-exclusive – little follows from the indiscriminate use of a dual with both pronouns and nouns. Among such languages (76 in the 205-sample) the inclusive-exclusive contrast is about as frequently present (39 times) as it is absent (37 times) – which may still be slightly more than can be said for languages without dual, to judge from the Forchheimer-Ingram and Perkins samples.[14]

From the nature of our own data it is impossible to determine whether inclusive-exclusive implies anything about duals. Nonetheless, among dual languages which do have inclusive-exclusive, the likeliest domains of the dual are, in this order, the purely pronominal one (63.9 %), the nominal plus pronominal one (32.0 %), and, trailing far behind, the purely verbal (3.3 %) and the purely nominal ones (0.8 %). Among dual languages which lack inclusive-exclusive, the dual is most likely to be found with both nouns and pronouns (44.6 %), followed by the purely pronominal domain (37.3 %) and the purely nominal one (12.0 %), which does much better here.

24 languages in the 205-sample elaborate number even further by also inflecting for trial. Trials are only found with personal pronouns and not with nouns,[15] and it is in line with the previous results that the presence of a trial encourages the inclusive-exclusive distinction in pronouns even more strongly: nineteen trial languages (79.2 %) have inclusive-exclusive and only five (20.8 %) lack it, whereas the proportion is 103 : 78 (56.9 % : 43.1 %) for trial-less languages which have a dual in some domain, and 66 : 30 (68.7 % : 31.3 %) for trial-less languages with a purely pronominal dual.

Eleven languages in the 205-sample have inflectional singulative, an elaboration of number peculiar to nouns. Among these, six distinguish inclusive-exclusive in pronouns and five do not, reversing the minimal preponderance obtained for dual languages in general and thus lending further (though in itself minimal) support to the hypothesis that number elaboration limited to nouns discourages person elaboration in pronouns.

No such support derives from those languages in the dual sample which further differentiate a paucal from a multal, which is mostly done only with nouns. In this subset of twelve confirmed (plus several doubtful) cases, the pronominal distinction of inclusive and exclusive predominates massively (11 : 1, with a better balance among the doubtfuls), far more so than in the set of dual languages as a whole.

4. Number and distance

Demonstrative pronouns are akin to personal pronouns insofar as they may do what 3rd person personal pronouns do, viz. phorically or deictically refer to (by then) definite referents other than speech-act participants; and often no separate personal pronouns are available for these purposes to begin with. The cardinal paradigmatic category of demonstratives, apart from number and perhaps gender and case, is spatial deixis and notions metaphorically derived from it, and this too is often transparently related to deictic distinctions of speech-act roles (or "persons") fundamental to paradigms of personal pronouns. The range of variation in the deictic elaboration of demonstrative paradigms, however, is much wider than that in personal pronoun paradigms. And there do not seem to be great differences in this respect depending on whether demonstratives are free or bound, independent or adnominal, nominal, or adverbial. (Spatial deixis is of course also at home in domains other than demonstrative pronouns, although only rarely in genuine noun inflection; but these will be ignored here.)

Some languages have been claimed, not uncontroversially, to forgo spatial deictic distinctions altogether, allowing themselves only a single, deictically neutral demonstrative. Binary and ternary demonstrative systems differentiate the relative proximity of referents to the deictic centre (usually the speaker) and/or locate them

in relation to the speaker, the addressee, or others not participating in the speech event (i.e., 3rd persons). More elaborate demonstrative systems involve parameters such as present/absent, visible/invisible, above/below, in front/behind, left/right, north/south/east/west, inside/outside, sitting/standing/moving (away from/towards); they rarely distinguish distance as such beyond the three terms of proximal, medial, and distal (such as far-away and not-so-far-away distal). Attributions of binary, ternary, or richer demonstrative systems to particular languages have sometimes also been controversial, owing to often massive diachronic and dialectal variation. Another reason for uncertainty is the frequent availability of a deictically neutral demonstrative in addition especially to a proximal and a distal one, which makes it difficult to decide whether a system is binary or ternary.

To judge from the wide-ranging surveys of demonstratives by Frei (1944), Anderson & Keenan (1985), and Diessel (1999), ternary systems seem somewhat more popular than binary ones, which in turn possibly outrank quaternary and all richer systems lumped together, although perhaps only slightly. Charitably interpreted in terms of notions of cultural complexity like those used by Perkins (1980) and Schellinger (1995b), Frei's hypothesis of an inverse correlation between degrees of civilization and of spatial deictic elaboration is not, *en gros*, implausible.[16]

For almost 20 % percent of the languages in the DuDa sample reliable information about spatial and related deictic distinctions in demonstratives, here summarily referred to as distance, is missing. It is conceivable, though unlikely, that distributions of distance degrees over dual domains in this substantial residue are such as to upset the overall pattern; therefore, in order not to preclude any eventualities, percentages have been calculated separately for the entire sample (Table 4) and for only those languages where information on distance is available (Table 4′).

It seems safe to conclude that among languages which have a dual binary and ternary distance are about equally frequent, with more elaborate demonstrative systems being about half as frequent as either. This is a distribution which, presumably, is not radically different from that likely to be found with languages in general, regardless of whether or not they have a dual. On the assumption that a dual and elaborate deictic systems individually correlate negatively with cultural complexity, as shown by Schellinger (1995b) and Perkins (1980), one might perhaps have expected a more marked predominance of ternary, quaternary, and richer demonstratives in a sample of dual languages; possibly, quaternary-plus demonstratives indeed are more frequent than is their overall average.

It is again if the domains of dual inflection are differentiated that a more conspicuous pattern emerges, as seen in Tables 4 and 4′. If the dual is limited to personal pronouns, ternary distance is almost twice as frequent as binary distance (38.5 % : 22.0 % in Table 4, 49.4 % : 28.2 % in Table 4′), whereas it is the other way round if the dual is limited to nouns (63.6 % binary : 27.3 % ternary). Or, looked at from the angle of distance in languages with a dual (horizontal percentages in

Table 4. Dual in different domains and distance in demonstratives; DuDa sample.

DISTANCE degrees	DUAL by domains				
	nominal and pronominal	only pronominal	only nominal	only verbal	total
I	0	3 (2.8) *(100.0)*	0	0	3 (1.5)
II	28 (36.8) *(45.2)*	24 (22.0) *(38.7)*	7 (63.6) *(11.3)*	3 (33.3) *(4.8)*	62 (30.2)
III	20 (26.3) *(29.8)*	42 (38.5) *(62.7)*	3 (27.3) *(4.5)*	2 (22.2) *(3.0)*	67 (32.7)
IV+	18 (23.7) *(47.4)*	16 (14.7) *(42.1)*	1 (9.1) *(2.6)*	3 (33.3) *(7.9)*	38 (18.5)
?	10 (13.2) *(28.6)*	24 (22.0) *(68.6)*	0	1 (11.1) *(2.9)*	35 (17.1)
total	76 *(37.1)*	109 *(53.2)*	11 *(5.4)*	9 *(4.4)*	205

Table 4'. Dual in different domains and distance in demonstratives; DuDa sample, with those languages omitted where reliable information on distance degrees is missing.

DISTANCE degrees	DUAL by domains				
	nominal and pronominal	only pronominal	only nominal	only verbal	total
I	0	3 (3.5) *(100.0)*	0	0	3 (1.8)
II	28 (42.4) *(45.2)*	24 (28.2) *(38.7)*	7 (63.6) *(11.3)*	3 (37.5) *(4.8)*	62 (36.5)
III	20 (30.3) *(29.8)*	42 (49.4) *(62.7)*	3 (27.3) *(4.5)*	2 (25.0) *(3.0)*	67 (39.4)
IV+	18 (27.3) *(47.4)*	16 (18.8) *(42.1)*	1 (9.1) *(2.6)*	3 (37.5) *(7.9)*	38 (22.3)
total	66 *(38.8)*	85 *(50.0)*	11 *(6.5)*	8 *(4.7)*	170

Tables 4/4'): while it is overall far more likely that the domain of the dual is confined to pronouns than to nouns (53.2/50.0 %: 5.4/6.5 %), this likelihood is even more strongly in favour of the exclusively pronominal domain if distance is ternary

than if it is binary (62.7 % : 4.5 %, as opposed to 38.7 % : 11.3 %). Quaternary and richer distinctions of distance too are more common in the company of exclusively pronominal (14.7/18.8 %) than of exclusively nominal duals (9.1 %). If nouns as well as pronouns have a dual, the distribution of binary, ternary, and richer distance is more balanced (36.8/42.4 % : 26.3/30.3 % : 23.7/27.3 %).

The elaboration of number only in personal pronouns is, thus, conducive to the elaboration of distance in demonstrative pronouns (and vice versa), while the elaboration of number only in nouns tends to inhibit that of distance in demonstratives. On the slender evidence available, the richer demonstrative systems appear to be relatively most popular where rich number distinction is the sole responsibility of verbal inflection. What does not quite fit into the pattern of Tables 4/4′ is that the least elaborate demonstrative systems, viz. the single-member ones (as purportedly found in Bongu, Nengone, and North-East Aoban), should be concentrated in languages distinguishing a dual in personal pronouns but not in nouns.

The presence of a trial, always confined to personal pronouns, does not increase the likelihood of distance distinctions in demonstratives being more than two-way. Of the 24 trial languages in the 205-sample, one has no distance contrast, seven (29.2 %) have binary distance, seven (29.2 %) have ternary distance, four (16.7 %) have more than ternary distance, and for five information is lacking. These are about the same percentages as for the 181 languages with a dual but no trial: 1.1 % unary, 29.8 % binary, 33.7 % ternary, 18.2 % quaternary or richer, 17.1 % no information.

The distinction of a paucal from a multal, although it is more common with nouns than with pronouns, does not curb distance elaboration: among the at least twelve relevant languages in the DuDa sample, ternary and quaternary-plus distance are about equally frequent as binary distance.

Of the eleven languages with a singulative, a number exclusive to nouns, as many as six have ternary distance, but only one has binary distance (and another one quaternary-plus), which runs counter to the tendency of the inflectional elaboration of nouns impeding that of pronouns.

If distance elaboration in demonstrative pronouns is interdependent with number elaboration in nouns or personal pronouns, what about number in demonstratives itself? There is considerable evidence that independent demonstratives are likely to inflect for number as such (see Diessel 1999: 25–28, 171–173), and that adnominal demonstratives are equally keen to agree in number with their head nouns (Plank 1994). What is less certain (and this is currently also a gap in DuDa) is how likely the number inflection of demonstratives is to include that for dual, and whether this is influenced by limitations of the dual to personal pronouns or nouns. The indications are that there are no such interdependencies. Among the eleven languages with an exclusively nominal dual, demonstratives inflecting for dual are a minority: they do in Awa, Gadsup, Eastern Libyan Arabic, and Anatolian Arabic, but they don't in Önge, Hopi, Modern Irish, Maltese, Biblical Hebrew, and probably Biblical Aramaic

and Akkadian. It should be borne in mind here that the majority of these languages in fact limit their dual to semantic subclasses of nouns (which often include that of natural pairs, or also the complementary class); and unless this subclass includes animates (which it does only rarely) it is actually implausible for the dual to extend also to demonstratives: demonstratives proper seem to be most frequently used with animate reference.[17] Among the 109 languages with a dual confined to personal pronouns, duals on demonstratives seem more frequent, though only marginally so. An impediment here is that about half of these languages limit their pronominal dual to the 1st and/or 2nd person; but it would be the 3rd person which forms a natural class with demonstratives.

Thus, it seems essentially only by virtue of the category of distance that demonstrative pronouns are interdependent with personal pronouns in inflectional elaboration. On the side of personal pronouns, another category which could conceivably co-vary with distance in demonstratives and number and person in personal pronouns themselves is formality or politeness; but relevant evidence has yet to be collected. Within the limits of the present study, evidence is already in concerning distance and person, as seen in the next section.

5. Person and distance

For languages with a dual the elaborations of the two pronominal categories of person and distance tend to reinforce each other, as is to be expected after the previous results and as is seen in Tables 5/5′ and 6/6′.

If personal pronouns distinguish inclusive and exclusive forms, in all DuDa languages altogether, demonstrative pronouns are somewhat likelier to have ternary than binary distance (38.5 % : 27.0 % in Table 5, 46.1 % : 32.3 % in Table 5′), whereas binary prevails over ternary distance (34.9/42.6 % : 24.1/29.4 %) if the inclusive-exclusive contrast is lacking. Considering only those 119 languages of the DuDa sample which limit the dual to personal pronouns, given in Tables 6 and 6′, those with an inclusive-exclusive contrast now show an even higher ratio of ternary to binary distance (42.2 % : 19.3 %, or, ignoring those languages with no reliable information on distance, 52.2 % : 23.9 %) than all dual languages altogether, while those among them without inclusive-exclusive show about the same slight reverse predominance of binary over ternary distance (30.6/40.7 % : 27.8/37.0 %). Of the eleven languages which limit the dual to nouns, only one (Awa) distinguishes inclusive and exclusive, and it also misbehaves by indulging in demonstrative distinction (quaternary-plus). What slightly mars the overall correlation of person and distance elaborations are the relatively higher frequencies of four or more distance degrees among languages without inclusive-exclusive (22.9/27.9 %, as compared to 15.6/18.6 % with inclusive-exclusive in all duals, 16.7/22.2 % : 15.7/19.4 % in pronominal-only du-

Table 5. Inclusive-exclusive and distance in demonstratives, in dual languages regardless of the domain of the dual; DuDa sample.

DISTANCE degrees	INCLUSIVE-EXCLUSIVE					
	+		−		total	
I	3	(2.5)	0		3	(1.5)
	(100.0)					
II	33	(27.0)	29	(34.9)	62	(30.2)
	(53.2)		*(46.8)*			
III	47	(38.5)	20	(24.1)	67	(32.7)
	(70.1)		*(29.9)*			
IV+	19	(15.6)	19	(22.9)	38	(18.5)
	(50.0)		*(50.0)*			
?	20	(16.4)	15	(18.1)	35	(17.1)
	(57.1)		*(42.9)*			
total	122		83		205	
	(59.5)		*(40.5)*			

Table 5'. Inclusive-exclusive and distance in demonstratives, in dual languages regardless of the domain of the dual; DuDa sample, with languages omitted where reliable information on distance degrees is missing.

DISTANCE degrees	INCLUSIVE-EXCLUSIVE					
	+		−		total	
I	3	(2.9)	0		3	(1.8)
	(100.0)					
II	33	(32.3)	29	(42.6)	62	(36.5)
	(53.2)		*(46.8)*			
III	47	(46.1)	20	(29.4)	67	(39.4)
	(70.1)		*(29.9)*			
IV+	19	(18.6)	19	(27.9)	38	(22.3)
	(50.0)		*(50.0)*			
total	102		68		170	
	(60.0)		*(40.0)*			

als). Also, undifferentiated distance is in the DuDa sample confined to languages with inclusive-exclusive.

Looked at from the angle of distance, languages with inclusive-exclusive outnumber those without more clearly if they have ternary distance (70.1 % : 29.9 %)

Table 6. Inclusive-exclusive and distance in demonstratives, in languages limiting the dual to personal pronouns; DuDa sample.

DISTANCE degrees	INCLUSIVE-EXCLUSIVE					
	+		−		total	
I	3	(3.6)	0		3	(2.5)
	(100.0)					
II	16	(19.3)	11	(30.6)	27	(22.7)
	(59.3)		*(40.7)*			
III	35	(42.2)	10	(27.8)	45	(37.8)
	(77.8)		*(22.2)*			
IV+	13	(15.7)	6	(16.7)	19	(16.0)
	(68.4)		*(31.6)*			
?	16	(19.3)	9	(25.0)	25	(21.0)
	(64.0)		*(36.0)*			
total	83		36		119	
	(69.7)		*(30.3)*			

Table 6'. Inclusive-exclusive and distance in demonstratives, in languages limiting the dual to personal pronouns; DuDa sample, with languages omitted where reliable information on distance degrees is missing.

DISTANCE degrees	INCLUSIVE-EXCLUSIVE					
	+		−		total	
I	3	(4.5)	0		3	(3.2)
	(100.0)					
II	16	(23.9)	11	(40.7)	27	(28.7)
	(59.3)		*(40.7)*			
III	35	(52.2)	10	(37.0)	45	(47.9)
	(77.7)		*(22.2)*			
IV+	13	(19.4)	6	(22.2)	19	(20.2)
	(68.4)		*(31.6)*			
total	67		27		94	
	(71.3)		*(28.7)*			

than if they have binary distance (53.2 % : 46.8 %); and in the subset of languages which limit the dual to personal pronouns these differences are even bigger (ternary: 77.8 % : 22.2 %, binary: 59.3 % : 40.7 %). This trend is again reversed by languages with undifferentiated distance, all three of which have an inclusive-exclusive con-

trast. In languages with more than three-way distance, inclusive-exclusive contrasts are rather less frequent (50.0 %) across the entire dual sample; however, among those quaternary-plus distance languages which limit the dual to personal pronouns, they are about as frequent (68.4 %) as might be expected on the assumption that the likelihood of person elaboration increases steadily the more degrees of distance are being distinguished.

6. Pronominal and nominal languages

To summarize, there is evidence, rather than only flights of fancy, to suggest that the extents are interdependent to which the inflectional categories of number, person, and distance are elaborated. In two respects these interdependencies are less global than has sometimes been conjectured.

First, they are not equally valid for all terms of these categories. Among number terms it is apparently the dual which is most conducive to person and distance elaboration; and for distance it is the difference between binary and ternary systems which correlates best with number and person elaboration.

Second and most importantly, such interdependencies are relative to domains of inflection. The elaboration of number in both personal pronouns and nouns presumably does not massively increase the likelihood of person distinguishing inclusive and exclusive and of distance being ternary. Elaborating number only in personal pronouns, on the other hand, does favour inclusive-exclusive in personal pronouns and ternary distance in demonstrative pronouns, while the elaboration of number only in nouns significantly discourages the distinction of such terms in pronominal inflection. Being both pronominal categories, person and distance (especially if ternary) tend to be elaborated in unison.

These interdependencies are all mere tendencies; none are categorical. They are therefore unlikely to be explicable by hard and fast principles of grammar. Still, there is an overarching theme of universal grammar which one might have hoped to be able to turn to in order to make sense especially of differences between domains. As often observed, there is a general preference for pronominal rather than nominal inflection: if nouns inflect, pronouns and especially personal ones will inflect too.[18] This asymmetry may have functional reasons or also diachronic ones, with pronouns often serving as the analogical or grammaticalized sources of noun inflection (see below). Whatever its reasons, while this generalization seems largely valid for all relevant inflectional CATEGORIES, some TERMS of some categories may, however, show opposite possibilities or indeed predilections. Thus, local cases, unlike grammatical and some other adverbial cases, would generally seem to favour nouns (especially ones denoting localities) over personal pronouns.[19] And, as seen above, the

dual number sometimes favours nouns too,[20] even though it generally favours personal pronouns, being limited to them to the exclusion of nouns in 119 languages in our 205-sample, with only eleven languages limiting it to nouns.

In the light of this general inflectional privilege of pronouns, it is languages which, more unusually, elaborate the inflection of nouns at the expense of that of pronouns that command special attention.

The unorthodox preference for nominal inflection could of course be an idiosyncrasy of a few random languages which do not share anything else, structurally or otherwise, thus defying any general explanation.

However, there are indications that this peculiarity tends to run in families. Of the eleven relevant languages in the DuDa sample no less than six are Semitic (Akkadian, Biblical Hebrew, Biblical Aramaic, Eastern Libyan Arabic, Anatolian Arabic, Maltese) and two are from the Papuan Kainantu family (Gadsup, Awa). However, the remaining three languages (Modern Irish, Önge, Hopi) are unrelated to these as well as among each other, which precludes an exclusively genetic account of the preference for nominal inflection as a somewhat unusual shared heritage.[21] But then, even if the incidence of an unusual phenomenon could be circumscribed genetically, there would still be a crucial question waiting to be answered: How come generations of learners have been continuing to acquire something so unusual, rather than to restructure their grammars along more conventional lines, as has happened elsewhere in the families concerned?

To the extent that exclusively nominal duals and what comes with them show areal concentrations, being primarily found in North Africa and the Near East and in the Eastern Highlands of New Guinea, these follow from the genetic affiliations of the languages concerned (Semitic, Kainantu). As with the dual in general, when history matters, it is in terms of inheritance (and increasing cultural complexity) rather than borrowing. There do not seem to be linguistic neighbourhoods where duals would perforce wax or wane once languages with whatever categorial endowments have moved there. Being in contact with a language with or without a dual (of one kind or another) is an insignificant factor by comparison to being genetically derived from a language with or without dual (and to being the language of a community of a certain level of cultural complexity).[22]

Apart from certain genetic (and cultural) predispositions, it is only structural correlates which are left as possible pointers to an explanation of the preference for elaborating nominal inflection more than that of pronouns. Four such correlates emerge from DuDa, the first three to do with the domains, uses, and forms of the dual itself.[23]

First, as briefly alluded to above, limiting the dual to nouns to the exclusion of personal pronouns greatly favours its further limitation to subsets of nouns, and in particular to that of natural pairs or also that of standard units for counting and measuring (Tables 7 and 8). Limiting the dual to personal pronouns likewise favours its

Table 7. Use of the dual with all or only some nouns, in those languages where it is used with nouns; DuDa sample.

DUAL with nouns	DUAL by domains					
	nominal and pronominal		only nominal		total	
all	52	(68.4)	5	(45.5)	57	(65.5)
	(91.2)		*(8.8)*			
some	20	(26.3)	6	(54.5)	26	(29.9)
	(76.9)		*(23.1)*			
?	4	(5.3)	0		4	(4.6)
	(100.0)					
total	76		11		87	
	(87.4)		*(12.6)*			

Table 8. Use of the dual with subsets of nouns, in those languages where it is not used with all nouns; DuDa sample. (It is possible for single languages to limit the dual to more than one subset of nouns.)

DUAL with nouns	DUAL by domains					
	nominal and pronominal		only nominal		total	
animates	16	(66.7)	2	(22.2)	18	(54.5)
	(88.9)		*(11.1)*			
pairs	6	(25.0)	4	(44.4)	10	(30.3)
	(60.0)		*(40.0)*			
non-pairs	2	(8.3)	0		2	(6.1)
	(100.0)					
measures	0		3	(33.3)	3	(9.1)
	(100.0)					
total	24		9		33	
	(72.7)		*(27.3)*			

further limitation to 1st and/or 2nd person, although this remains a minority pattern (Table 9). Second, when reference is being made to two the use of a dual with words possessing one may be obligatory or only optional, with plural, paucal, a number-neutral basic form, or even singular as alternatives. If the dual is limited to personal pronouns, the likelihood is great that it will be used obligatorily, whereas exclusively nominal duals are almost as frequently optional as obligatory (Table 10). Third,

Table 9. Use of the dual with all or only some personal pronouns, in those languages where it is used with pronouns; DuDa sample.

DUAL with nouns	DUAL by domains					
	nominal and pronominal		only nominal		total	
all	68	(89.5)	68	(62.4)	136	(73.5)
	(50.0)		*(50.0)*			
some	8	(10.5)	41	(37.6)	49	(26.5)
	(16.3)		*(83.7)*			
total	76		109		185	
	(41.1)		*(58.9)*			

Table 10. Obligatory or optional use of dual depending on domain; DuDa sample.

DUAL use	DUAL by domains				
	nominal and pronominal	only pronominal	only nominal	only verbal	total
obligatory	22 (28.6)	66 (61.1)	5 (45.4)	5 (55.6)	98(47.8)
	(22.4)	*(67.3)*	*(5.1)*	*(5.1)*	
optional	32 (41.5)	11 (10.2)	4 (36.4)	2 (22.2)	49(23.9)
	(65.3)	*(22.4)*	*(8.2)*	*(4.1)*	
?	23 (29.9)	31 (28.7)	2 (18.2)	2 (22.2)	58(28.3)
	(39.7)	*(53.4)*	*(3.4)*	*(3.4)*	
total	77	108	11	9	205
	(37.6)	*(52.7)*	*(5.4)*	*(4.4)*	

while the general tendency is for actual dual and plural exponents to be formally independent of each other, there are instances of exponents of dual being based on those for plural as well as the other way round. However, plural forms based on dual forms are only found with personal pronouns (most frequently if languages lack a nominal dual) but not with nouns; and dual forms based on plural forms are not found with nouns either in languages which lack a pronominal dual (Table 11). On all three counts, languages with a pronoun-only dual do not differ greatly from languages whose dual is in both domains, which confirms that it is languages with noun-only duals that are special.[24]

There is a fourth structural correlate which on the face of it is rather enigmatic: basic word order in clauses. Yet it may hold the most important clue to what is

Table 11. Formal relationship between dual and plural marking of nouns and independent personal pronouns, relative to domain limitations; DuDa sample. (Languages are counted multiply if different pronouns or forms of pronouns behave differently with respect to the criterion at issue. Bound personal pronouns show a similar pattern as independent ones.)

DUAL and PLURAL forms	of nouns	of nouns if there is no pronominal dual	of pronouns	of pronouns if there is no nominal dual
independent	77 (91.7)	11 (100)	127 (65.8)	65 (58.0)
DU based on PL	7 (8.3)	0 (0)	33 (17.1)	20 (17.9)
PL based on DU	0 (0.0)	0 (0)	33 (17.1)	27 (24.1)
total	84	11	193	112

behind the elaboration of the inflection of nouns rather than pronouns – or perhaps rather the under-elaboration of pronominal inflection relative to that of nouns.

As all large-scale word-order surveys suggest,[25] the most common basic order of S(ubject), O(bject), and V(erb) is SOV, favoured by well over 40 % of the languages of the world, followed by SVO (around 30 %),[26] and with VSO some way behind in third position (around 10 %). On the evidence of DuDa, which also includes information about basic word order (allowing for single languages to have more than one basic order or also free order, although this distinction is sometimes difficult to draw in practice), dual languages as such are not a particularly nonconformist lot. As shown in the right-hand column of Table 12, the ranking of basic word orders among dual languages is about the same as that among languages in general, with SVO perhaps somewhat disfavoured. The subset of languages which have both pronominal and nominal duals is not strikingly different either. Once more, what does make a real difference is whether the dual is limited to either personal pronouns or nouns. If its domain is exclusively pronominal, SVO is almost level with SOV (32.5 % : 37.6 %), with VSO (9.4 %) far behind and with VOS (5.1 %) doing relatively well for an otherwise extremely marginal order. If the dual is exclusively nominal, on the other hand, SOV is as predominant as ever (46.1 %), but VSO now comes second best at not such a great distance (30.8 %), and SVO is conspicuously infrequent (23.1 %).

Obviously, absolute numbers are small for the nouns-only group, and percentages can change correspondingly fast. For instance, replacing a single VSO language in the DuDa sample by an SVO one (say, Biblical Hebrew by Israeli Hebrew) would reverse the VSO-SVO ranking. Still, the unusually good showing of VSO relative to SVO, by comparison with languages of any other dual domains, is unlikely to be an artefact of sampling and small numbers. Among nouns-only languages, there are

Table 12. Dual in different domains and basic word order; DuDa sample, with single languages showing up more than once when they have more than one basic word order.

BASIC WORD ORDER	DUAL by domains				
	nominal and pronominal	only pronominal	only nominal	only verbal	total
SOV	39 (48.1) *(41.1)*	44 (37.6) *(46.3)*	6 (46.1) *(6.3)*	6 (50.0) *(6.3)*	95 (42.6)
SVO	16 (19.7) *(26.2)*	38 (32.5) *(62.3)*	3 (23.1) *(4.9)*	4 (33.3) *(6.6)*	61 (27.3)
VSO	5 (6.2) *(23.8)*	11 (9.4) *(52.4)*	4 (30.8) *(19.0)*	1 (8.3) *(4.8)*	21 (9.4)
VOS	1 (1.2) *(14.3)*	6 (5.1) *(85.7)*	0	0	7 (3.1)
OVS	1 (1.2) *(20.0)*	3 (2.6) *(60.0)*	0	1 (8.3) *(20.0)*	5 (2.2)
OSV	1 (1.2) *(33.3)*	2 (1.7) *(66.6)*	0	0	3 (1.3)
free	9 (11.1) *(75.0)*	3 (2.6) *(25.0)*	0	0	12 (5.4)
?	9 (11.1) *(47.4)*	10 (8.5) *(52.6)*	0	0	19 (8.5)
total	81 *(36.3)*	117 *(52.5)*	13 *(5.8)*	12 *(5.4)*	223

not so many SVO candidates that could have made it into the DuDa sample instead of their VSO relatives. And for this minority group, basic word orders, of which all three major ones are actually instantiated, are not neatly distributed along genetic lines either: SOV is found in Semitic (Akkadian, Biblical Aramaic), Kainantu (Awa, Gadsup), as well as in Önge and Hopi; VSO is mostly found in Semitic (Biblical Aramaic, Biblical Hebrew, Eastern Libyan Arabic), but also in Modern Irish; and only SVO is only found in one family, Semitic (Eastern Libyan Arabic, Anatolian Arabic, Maltese).

By comparison with languages with nominal and pronominal duals, free word order is underrepresented with both limitations of duals (11.1 % vs. 2.6 % pronouns-only and even nil nouns-only).[27] Permitting themselves alternative basic orders, if not complete freedom, is somewhat more common among pronouns-only languages in DuDa: there are five such languages with co-existing SVO and VSO (SVO being universally a most popular partner of basic VSO[28]), and one each with SVO/VOS, SVO/SOV, SOV/VOS, VSO/VOS; nouns-and-pronouns languages com-

bine SOV/SVO five times and SOV/OSV once; there are two nouns-only languages with co-existing VSO/SOV (Biblical Aramaic) and VSO/SVO (Eastern Libyan Arabic); and two verbs-only languages with co-existing SOV/SVO/OVS and SOV/OSV.

The connection, however tenuous, with the preference or dispreference for VSO relative to SVO as basic word order adds typological substance to the distinction between languages which preferably elaborate only nominal or only pronominal inflection. Basic word order is after all assumed to be tied up with much else. Perhaps, among the direct correlates of basic word orders, there are ones that throw light on the mystery of the link with domain limitations of the dual and its own inflectional correlates.

Several studies (including Steele 1978, Bybee 1985, Hawkins & Gilligan 1988, Nichols 1992, Siewierska & Bakker 1996) have suggested correlations between basic word order and (affixally or clitically) bound verbal morphology. Among much that is controversial, what seems beyond doubt is, first, that verbal agreement or cross-reference licenses free or at least flexible word order of core arguments: for obvious functional reasons (Avoid relational ambiguity but do so economically!), free/flexible word order strongly implies verbal agreement/cross-reference marking of at least the subject but very likely also of object(s). Second, of word order types not classified as free, verb-mediality (especially SVO, but also OVS) most strongly discourages verbal agreement/cross-reference, and verb-initiality (especially VSO) encourages it most strongly, with verb-finality (most commonly SOV) somewhat undecided.[29] A functional motivation that has been suggested (by Nichols 1992: 108–109) for the link between verb-initiality and verbal marking is that the relational frame of a clause is best established right at its beginning – and this is what agreement/cross-reference marking on (initial) verbs does; when the verb comes last or also second, relations are better clarified earlier, by rigid order or case marking on NPs themselves.[30]

One of the correlates of elaborate verbal agreement/cross-reference, which typically identifies arguments in terms of speech-act role (person), number, distance or other deictic qualities, gender/class, and/or grammatical relation, in turn is that these arguments themselves tend to be omissible if they do not add content to the bound verbal marking – i.e., if they are personal (or also demonstrative) pronouns. Thus, simplifying greatly, free basic word order and verb-initiality are licensed by verbal agreement/cross-reference, which also licenses or indeed encourages pro-drop.

Determining whether a language is pro-drop is notoriously difficult because the omissibility of independent pronouns is not a question of all or nothing: they may or may not be omissible in a given language depending on all kinds of morphological, syntactic, and pragmatic circumstances; when they are in principle omissible in given circumstances, they may be omitted or retained with varying degrees of frequency rather than categorically; and personal pronouns of different kinds (e.g., 1st and 2nd person vs. 3rd; expletive vs. full; definite vs. indefinite) may differ in their

dropping propensities. On the understanding, however vague and gross, that a language counts as resolutely pro-drop if the normal expression of basic, not strongly context-bound declarative main clauses with finite verbs is lacking independent definite subject pronouns for all three persons, whose addition would add special emphasis, the cross-linguistic evidence would indeed seem to justify making this link: resolute pro-drop needs to be licensed by verbal agreement/cross-reference marking, but although it is encouraged it is not enforced by it.[31]

Now, if the chances are that independent pronouns will not be used a great deal to begin with, why go to the trouble of providing such low-frequency words with elaborate inflection? On the above reasoning, then, languages with verbal agreement/cross-reference, and concomitantly with free or verb-initial basic order and resolute pro-drop, are the ones that can most easily afford not to have elaborate pronoun inflection, although they might still indulge, in acknowledgment of the general inflectional privilege of pronouns. To the extent that demonstratives perform functions similar to those of (3rd person) personal pronouns, they ought to show similar dropping behaviour; but it remains to be seen whether distance (in-)elaboration indeed also correlates with (in-)frequency of use.

The supporting evidence that we can cite at least for personal pronouns is that of the 205 languages in the DuDa sample, twenty have VSO as the basic order or as one basic order, and as many as four of them (20 %) limit the dual to nouns – which is a lot by comparison with all 205 DuDa languages, of which only 5.4 % have a purely nominal dual. Indulging languages are still a majority even among the VSO subset, though: twelve (60 %) have purely pronominal and four (20 %) pronominal and nominal duals – as compared to 53.2 % and 37.1 %, respectively, for all dual languages.

And, not wasting their number inflections on words rarely used, all of the four VSO languages in the 205-sample with a purely nominal dual (Biblical Aramaic, Biblical Hebrew, Eastern Libyan Arabic, Modern Irish[32]), are resolutely pro-drop. So are all the nominal-dual-only languages with other basic orders, including SVO (Maltese, Anatolian Arabic, Eastern Libyan Arabic: all relatively recent converts to SVO from earlier VSO).

It should be noted that the argument invoking pro-drop is simply that ANY inflections of independent pronouns would be underemployed; it is not that verbal agreement/cross-reference marking would render the SAME inflectional distinctions on independent pronouns superfluous. In actual fact, at least duals are far more frequently distinguished on independent pronouns than on bound (i.e., cross-referencing) pronouns or in (non-pronominal) verb agreement.[33] Of the 204 languages in DuDa which have independent personal pronouns, 185 (90.1 %) inflect these for dual, while of the 144 languages with bound personal pronouns, only 68 (47.2 %) have a dual for them; only Western Desert has a dual for bound but not for independent pronouns. Of the 135 languages where verbs agree in number with subject

and/or object, with the agreement markers being of a non-pronominal nature about half of the time, only 83 (61.5 %) have dual agreement.

It is, thus, one option for languages with inflection, instead of letting independent pronouns exercise their prerogatives in all matters inflectional, to afford a nominal dual but not to elaborate pronominal number and person (and distance) beyond the minimum, on condition that such pronominal inflection would be underemployed owing to pro-drop. Although functional motives have been mentioned for some links in this chain of interdependencies, the rationale of this pro-nominal, or anti-pronominal, option is probably at heart diachronic.

In barest outline, an overall long-term diachronic scenario would have inflectional elaboration begin with independent personal (and probably demonstrative) pronouns. Either by analogy or by pronouns being actually added to nouns, the same inflections would then be extended to nouns. Within limits, especially those of "minor" numbers, nouns themselves, or at least subsets of them, would also be able to independently procure themselves inflections by grammaticalizing suitable words (such as numerals, quantifiers, or collective nouns). In the right syntactic circumstances independent pronouns would eventually get grammaticalized as verbal cross-reference and agreement markers, licensing the dropping of independent pronouns. Utilized as agreement/cross-reference markers, inflections would be prone to neutralization and eventual obliteration. With such bound verbal marking falling into decay, sufficiently expressive inflection would be re-innovated on independent pronouns (of whatever provenance: newly grammaticalized from nouns, reactivated relics, or borrowed); and so on.

A dual in nominal inflection but inelaborate pronominal inflection (no dual, no inclusive-exclusive, binary distance) would be what could be expected of languages caught at that stage of this scenario where older-generation pronouns-turned-bound-morphology are looking forward to be complemented by a new generation of elaborately inflected independent pronouns, and nouns hold on to a dual and perhaps other minor numbers.

7. *Ach, Europa ...: Verkehrte Welt*

In comparison to the world of (dual) languages at large Europe is anomalous, especially if circumscribed as generously as in EUROTYP. Singling out the parameters which were claimed to be interdependent in the previous sections, Table 13 provides profiles for all European languages currently boasting a dual, and some extinct ones representing (sub-)families where a dual has been lost. Of these languages, nine were in the 205-sample on which the claims had been based that nominal and pronominal inflection can be elaborated selectively, getting the western quarter of Eurasia a reasonably fair hearing: Maltese (Afroasiatic), Ancient Greek, Slovene, Upper Sorbian,

Lithuanian, Gothic, Old English, Modern Irish (all Indo-European), and Northern Saami (Uralic[34]).

Perhaps the most striking generalization to emerge is that not only are both a dual and an inclusive-exclusive distinction rather unpopular in Greater Europe, but they in fact mutually exclude each other, regardless of dual domains.

The only European (or EUROTYP) languages where an inclusive-exclusive distinction is attested are located in the Caucasus: Abkhaz (Northwest Caucasian), Chechen, Ingush, Bats (North-Central Caucasian), Avar, the Andic group, about half of the Lezgic group (Northeast Caucasian), and Svan (South Caucasian). Occasional rumours to the contrary and with the single exception of the Khevsurian dialect of Georgian, Caucasian families have no dual in pronouns or anywhere else, and never had one, so far as one can tell. Reassuringly, they tend to have ternary or richer distance distinctions with demonstratives; and not disconcertingly either, basic word order is SOV or sometimes also SVO. With some exceptions (in Northeast and North-Central Caucasian), verbs inflect for person, or class, or person and class, or person and number, or number and class, or person and number and class.

The languages with a dual are listed in Table 13, arranged by dual domains: none has inclusive-exclusive; and ironically, those with an exclusively nominal dual fairly consistently come with ternary distance while those with an exclusively pronominal dual favour binary distance. Reassuringly, SVO does only moderately well and verb-initiality finds no favour at all among pronominal-dual languages, while verb-initiality outranks SVO and indeed SOV among nominal-dual languages. Verbs agree without exception, as a rule for person and number (sometimes including for dual), while pro-drop is somewhat erratic.

Radical though the differences are between our world findings (Sections 3–6) and our European findings (Section 7), they arguably give only little cause for typological concern. Typology is about structural affinities between logically unrelated traits. Therefore, on the assumption that genetic and/or areal homogeneity does not guarantee structural homogeneity – in other words, that genetically or areally related languages can nonetheless differ on any single variable permitted by universal grammar to vary – a collection of languages with a genetic or areal bias does not a priori disqualify as a reasonable typological sample: it may happen to encompass all the structural variation that is to be found under the sun. Still, concerning the structural traits at issue here, there are good reasons for typologists interested in determining whether they show or do not show co-variation to stake their money on the world rather than Europe.

First, European duals hail from only four families, and are indeed confined to subgroups of them: Uralic (Saami and Samoyedic), Indo-European (Celtic, Germanic, Baltic, Slavonic, Hellenic), Afroasiatic (Semitic), and South Caucasian. In genetic terms, whatever they are worth, this is hardly a representative sample; potentially, frequency results on this basis could easily be overturned by casting one's net wider.

language	domains of dual	subdomain limitations of dual	dual use	dual and plural form	incl-excl in independent pronouns	distance in demon-stratives	basic word order	verb agreement/ cross-reference	pro-drop
Northern Saami	P V-agr	– anim	opt	indep	–i/e	IV+	SVO/SOV	+agr	+pd
Southern Saami	P V-agr	– –	opt	indep	–i/e	IV	SOV	+agr	+pd
†Gothic	P V-agr	12 12	opt	indep	–i/e	II	SOV	+agr	+pd
‡Old Icelandic	P	12	opt	indep	–i/e	II	SOV	+agr	–pd
‡Old English	P	12	opt	indep	–i/e	II	SOV/SVO	+agr	–pd
(†)North Frisian	P	12/–	?	indep	–i/e	III	SOV/V2	+agr	±pd
(†)Kashubian	P	1	obl?	indep	–i/e	II	SVO/SOV	+agr	–pd
Nenets	PN V-agr	– – –	opt	indep	–i/e	III	SOV	+agr	+pd
‡Ancient Greek	PN V-agr	– non-pairs 23	opt	indep	–i/e	II	SOV/SVO	+agr	+pd
Lithuanian	PN V-agr	– – –	opt	indep, du<pl	–i/e	III	SVO	+agr	+pd
‡Old Russian	PN V-agr	– – –	opt	indep	–i/e	II	SVO	+agr	+pd
Slovene	PN V-agr	– – –	obl	indep	–i/e	III	SVO	+agr	+pd
Upper Sorbian	PN V-agr	– –/non-pairs –	obl, obl/opt	indep	–i/e	II	SOV/SVO	+agr	+pd
Lower Sorbian	PN V-agr	– – –	obl, obl	indep	–i/e	II	SOV/SVO	+agr	+pd

language	domains of dual	subdomain limitations of dual	dual use	dual and plural form	incl-excl in independent pronouns	distance in demonstratives	basic word order	verb agreement/ cross-reference	pro-drop
Georgian (Khevsurian dialect)	PN	3 –	obl?	indep	–i/e	III	SOV/SVO	+agr	+pd
Breton	N	pairs	obl	indep	–i/e	III	VSO/V2	(+agr)	(+pd)
(†)Manx	N (?)	?	obl	indep	–i/e	III	VSO	(+agr)	(+pd)
(‡)Modern Irish	N	fem	obl	indep?	–i/e	III	VSO	(+agr)	(+pd)
Scottish Gaelic	N	fem	obl	indep?	–i/e	III	VSO	(+agr)	(+pd)
Maltese	N	measures	opt	indep	–i/e	II	SVO	+agr	+pd

Legend

domains:	P personal pronouns, N nouns, PN personal pronouns and nouns, V-agr verb agreement
subdomains:	– unlimited within domain; 1, 2, 3 1st, 2nd, 3rd person; (natural) pairs, nouns other than natural pairs, animates, measure terms, feminines
use:	obligatory, optional
forms:	independent, dual based on plural (du<pl), plural based on dual (pl>du)
inclusive-exclusive:	+i/e, –i/e
distance:	0, I, II, III, IV+
basic word order:	SOV, SVO, V2 (Verb-Second), VSO, free
verb agreement or cross-reference:	+agr, –agr
pro-drop:	+pd, –pd, ±pd (different for 1st and 2nd person)
/	dialectal variation (e.g., 12/– 'limited to 1 and 2/unlimited')
†	(probably) extinct language
‡	contemporary descendant (probably) without a dual

Moreover, duals appear to be historically quite stable.[35] Thus, the relatively long time span between their innovation and loss is bound to increase the STRUCTURAL homogeneity found in any sample biased in favour of a few families whose ancestor innovated or did not innovate a dual.

Second, European inclusive-exclusive distinctions all hail from one area: the Caucasus. In general, Europe is an area, or an ensemble of sub-areas, rife with diffusion. While the dual appears to be relatively immune to areal influences, inclusive-exclusive is a prized borrowing, and thus historically potentially rather unstable: its worldwide distribution accordingly makes more areal than genetic sense. If a worldwide and areally reasonably balanced sample nonetheless points to STRUCTURAL affinities of inclusive-exclusive, a single area will not turn the tables.

Third, Europe is relative homogeneous in those respects of cultural complexity which demonstrably correlate with the elaboration of inflectional categories such as number, person, and distance. Should there be STRUCTURAL affinities of these categories, they can only be discerned if a sample is culturally better stratified – as that of the 205 DuDa languages appears to be.

If the interdependencies in the elaboration of categories fall out as stages in the long-term development of pronominal and nominal inflection and their syntactic correlates as sketched above, the view over EUROTYP Europe is genetically, areally, and culturally too limited to afford a full panorama of how structural affinities reassert themselves in the transmission and reorganization of grammars as cultures evolve and communities are in contact.

Appendix: The sample of languages with a dual (n=205)

The genetic classification is eclectic, and sometimes not even strictly genetic; † marks extinct languages, and ‡ marks languages having lost their dual at a later stage.

KHOISAN (2)
- CENTRAL
  - Koranna
  - Nama

NIGER-KORDOFANIAN (6)
- BENUE-CONGO
  - Babungo/Ngo
  - Kikuyu
  - Kirundi
  - Luganda
- KORDOFANIAN
  - Moro
  - Tiro

NILO-SAHARAN (3)
- CHARI-NILE
  - Nyimang
  - Acholi
  - Kunama

AFROASIATIC (11)
- EGYPTIAN
  - †Ancient Egyptian
- CHADIC
  - Margi
  - Mofu-Gudur

- Ron
- SEMITIC
  - †Akkadian
  - ‡Biblical Aramaic
  - Biblical Hebrew
  - †Ugaritic
  - Anatolian Arabic (Daragözü)
  - Eastern Libyan Arabic
  - Maltese
- INDO-EUROPEAN (8)
  - INDO-IRANIAN
    - ‡Sanskrit
  - HELLENIC
    - ‡Ancient Greek
  - GERMANIC
    - †Gothic
    - ‡Old English
  - CELTIC
    - Modern Irish
  - BALTIC
    - Lithuanian
  - SLAVIC
    - Slovene
    - Upper Sorbian
- URALIC (5)
  - FINNIC
    - Northern Saami (Ruija)
  - UGRIC
    - Vogul/Mansi
  - SAMOYEDIC
    - Enets/Yenisei Samoyed
    - Tavgy/Nganasan
    - Selkup/Ostyak Samoyed
- CHUKCHI-KAMCHATKAN (2)
  - KORYAK-ALYUTOR
    - Kerek
    - Koryak
- SINO-TIBETAN (5)
  - TIBETIC
    - Lower Kanauri
    - Limbu
  - BURMIC
    - Ao
    - Chingpaw
    - Lahu
- KAM-TAI (1)
    - Lu
- MIAO-YAO (1)
    - Miao
- AUSTROASIATIC (6)
  - MON-KHMER
    - Sedang
  - MUNDA
    - Santali
    - Mundari
    - Juang
    - Kharia
    - Remo
- AUSTRONESIAN (47)
  - MALAYO-POLYNESIAN: WESTERN
    - Yapese
    - Casiguran Dumagat
    - Agta
    - Pangasinan
    - Palawano
    - Maranao
    - Western Bukidnon Manobo
    - Bolaang Mongondow
    - Sangir
    - Muna
    - Kelabit
    - Melanau
    - Enggano
  - MALAYO-POLYNESIAN: CENTRAL-EASTERN
    - Larike
    - Manam
    - Kaliai-Kove
    - Yabem
    - Kilivila
    - Tigak
    - West Nakanai
    - Loniu
    - Sie
    - Lenakel
    - Cemuhi/Touho
    - Ajie/Houailou
    - Iaai
    - Nengone

- Mokilese
- Ponapean
- Arosi
- Kwaio
- North-East Aoban
- Lonwolwol
- Southeast Ambrym
- Port-Sandwich
- North Efate
- Fijian
- Rotuman
- Niuean
- Tongan
- Tokelauan
- West Futuna-Aniwa
- Tikopia
- Luangiua
- Kapingamarangi
- Maori
- Hawaiian

ANDAMANESE (1)
- Önge

"PAPUAN" (34)
- NORTHERN HALMAHERA
  - West Mákian
- BIRD'S HEAD
  - Tehit
- KUTUBUAN
  - Fasu
- YAREBAN
  - Yareba
- MAILUAN
  - Magi
- KOIARIAN
  - Mountain Koiari
- BINANDEREAN
  - Korafe
  - Guhu-Samane
- KAINANTU
  - Auyana
  - Usarufa Auyana
  - Awa
  - Tairora
  - Gadsup
- GOROKAN
  - Fore
  - Hua Kamano
  - Gende
- CHIMBU
  - Chimbu
- ENGAN
  - Kewa
- MADANG
  - Amele
  - Bongu
  - Siroi
- TORRICELLI
  - Alubän Mountain Arapesh
  - Mountain Arapesh
- RAM
  - Autuw
- NDU
  - Abelam
  - Boiken
  - Manambu
  - Ngala
- KALAM
  - Kobon
- HUON
  - Kâte
- BOUGAINVILLE
  - Konua
- NEW BRITAIN
  - Baining
  - Taulil
- YELE-SOLOMONS
  - Yele

AUSTRALIAN (38)
- PAMA-NYUNGAN
  - Ritharngu
  - Dhuwal
  - Wik-Munkan
  - †Gog-Nar
  - Gugadj
  - Gugu-Yalanji
  - Guugu Yimidhirr
  - Anguthimri
  - Ngawun

- Yidiny
- Nyawaygi
- Gumbaynggir
- Ngiyambaa
- Baagandji
- Pitta-Pitta
- Diyari
- Kalkatungu
- Alyawarra
- Walmatjari
- Djaru
- Yinyjibarnrdi
- Wadjeri
- Western Desert
- Warlpiri
- Ngadjunmaja

TANGKIC
- Yukulta

GUNWINYGUAN
- Gunwinggu
- Ngalakan
- †Ngandi

MARAN
- †Warndarang

DALY
- Ngangikurrunggurr/Tyemeri
- Malak-Malak
- Tyeraity
- †Pungupungu
- Maramanandji
- Marithiel

WORORAN
- Ungarinjin

UNCLASSIFIED
- Mangarayi

ESKIMO-ALEUT (2)
- Aleut
- Naukan Yupik

NA-DENE (1)

ATHAPASKAN-EYAK
- Beaver

MACRO-SIOUAN (1)
- Lakhota

HOKAN (3)
- Southeastern Pomo
- †Chumash
- Washo

PENUTIAN (4)
- Mountain Maidu
- Wintu
- †Valley Yokuts
- Zuni

UTO-AZTECAN (5)
- Panamint Shoshoni
- Ute
- Northern Paiute
- Hopi
- Tübatulabal

YUKIAN (1)
- Wappo

GE-PANO-CARIB (12)

MACRO-CARIB
- Yagua
- Ocaina
- Murui Witoto
- Galibi/Carib
- Apalai
- Macushi
- Hixkaryana
- Makiritare/Ye'cuana

MACRO-PANOAN
- Kadiweu
- Tacana

MACRO-GE-BORORO
- Xavante
- Canela-Kraho

ANDEAN-EQUATORIAL (5)

ANDEAN
- Auca
- Yamana/Yahgan

EQUATORIAL
- Purupurú
- Guahibo
- Trumai

ISOLATES (1)
- Nivkh/Gilyak

Notes

1. Or precisely 53, if you are so gullible as to believe the stories sometimes told about Tabasaran (Comrie & Polinsky 1998, cf. also Kibrik, in this volume). See Plank (1986) for a survey of variation in the size of case paradigms, and how it is constrained in terms of the agglutination/flexion typology.
2. On patterns of inflectional synonymy and homonymy as embedded in morphological typology see, among others, Plank (1986, 1991, 1999).
3. Languages relatively rich in inflection are portrayed in Kibrik's and Moravcsik's chapters in this volume, and Moravcsik's emphasis is on how such abundance squares with general constraints on inflectional systems.
4. Its source is *EUROTYP Working Paper* VII/2 of May 1990, maturing over the years and benefiting from questions and suggestions upon numerous oral presentations. Detailed comments from Georg Bossong and Bernard Comrie helped in the final revisions.
5. Or, far less likely and always limited to certain words, singular and dual; or also unit (with reference to one or two) and augmented.
6. Or indeed only two persons, if pronouns for 3rd person are demonstratives rather than personal pronouns proper and are therefore discounted, or if 2nd and 3rd remain systematically undistinguished.
7. Actually, the relevant map (No. XI), drawn on Schmidt's instructions, did show several areas with inclusive-exclusive but without dual: notably northern and central East Asia and parts of central and eastern North America. Also, there were several dual areas without inclusive-exclusive outside the territory of the northern *Primärsprachenkreis*: the Arabic peninsula, north-western India, parts of Australia, and all of southern South America.
8. See H. Schmidt (1992: 15–17). An early critic of such mystical triadism was Sallwürk (1868), who argued that all grammatical categories are originally (and most naturally) dyadic, but permit of gradual multiplication of terms by "determination" of basic terms (thus, with a plural "determined" as 'plurality limited to two', a dual is born from a plural). Determinations of different categories seemed to Sallwürk not only logically but also empirically independent of each other. This is indeed the question.
9. Ingram actually claims the sample is 71 languages strong, but only 67 are listed in his appendix, and two further person systems are unattributed.
10. This is glossing over all kinds of difficulties in recognizing "true" duals. Clearly, a few fossilized forms on some nouns do not count, neither do (for present purposes) certain binary conjunctions, disjunctions, complementizers, or interrogatives ('both-and', 'either-or', 'whether-or', 'which-of-two'). More problematic are 1st person inclusive pronouns which can be regarded as referentially duals (which is what has usually been done here) but also as "unit" forms in unit-augmented paradigms. Further, when combinations with the numeral 'two' or a quantifier 'both' or a quantity noun such as 'couple' are only incipiently grammaticalized, it is sometimes hard to draw a line beyond which they are to count as duals.
11. This is only an interim sample for a comprehensive study of the dual in preparation. Further languages will eventually be added to the database (especially American Indian

ones, so far underrepresented) and some languages from lower-level families currently overrepresented (e.g., Ndu and Kainantu; also, Alubän Mountain Arapesh and Mountain Arapesh appear to be one and the same language or indeed dialect) will be omitted, unless there is relevant structural diversity within the family concerned. Also, information on several languages in the current database, as extracted from reference grammars and specialist studies on number (see Schellinger 1996 and our dual monograph in preparation for full bibliographic documentation), is still incomplete. However, we do not expect our results to change drastically upon further improvements of the database: overall, they have remained remarkably stable ever since the DuDa sample grew beyond some 100 languages.

I am grateful to Thomas Dettling, Willi Geuder, Kateřina Hladká, Stefanie von Mende, and especially Wolfgang Schellinger for valuable assistance in collecting, storing, and processing data for DuDa.

12. However, there are languages where at least some classes of words inflect for dual but not for plural. See Plank (1986) for a preliminary survey of the domains of dual marking, updating Humboldt (1830) and in turn updated in Plank (1996), on the more systematic evidence of DuDa.
13. In Tables 3–6, "only pronominal", "only nominal", and "nominal and pronominal" do not exclude that a language in addition has a verbal dual; but only a very few languages actually have one. Verbal duals, as defined here, are pure number markers, rather than cumulative person and number markers, and are not controlled by agreement or cross-reference. Verbal agreement/cross-reference duals per se are not included in the current calculations; they imply pronominal duals, or indeed are bound pronouns, in which case they are counted as such.
14. In Map No. XI of the atlas accompanying Schmidt (1926), the areal distribution of the dual is indeed differentiated by domains, but there is disappointingly little overlap of the right kind. In particular, there are extensive areas with a purely pronominal dual which do not overlap with inclusive-exclusive areas; and the inclusive-exclusive areas are not markedly more hospitable to purely pronominal duals than to pronominal-plus-nominal ones, if they have any duals at all. At least the only home of the purely nominal dual on Schmidt's map, ranging from the Nile valley to Mesopotamia, is off-limits to inclusive-exclusive.
15. Conceivably, such richer number distinction on nouns could be effectuated by means of pronouns inflecting for trial added to them ('book-they.TRIAL').
16. Perkins seems to have been unaware of Frei (1944), still one of the most thorough surveys of spatial deictics.
17. As opposed to demonstratives-cum-classifiers, which are of course less choosy.
18. When, in the same vein, verb inflection is held to be universally preferred over nominal inflection, this is derivative of the pronominal preference insofar as verb inflection (for agreement or cross-reference) is normally grammaticalized from pronouns.
19. This accounts for the Caucasus, an area that is exceptional insofar as languages of all families prefer nominal to pronominal inflection: much of this nominal inflection is of a local nature (see further Kibrik, in this volume).
20. See further Plank (1996), and also Corbett (1996) for "minor" numbers in general.

21. Irish might in fact also be claimed for the majority family here, on the strength of the oft-alleged profound prehistorical influences of Semitic upon Celtic. But then the nominal dual of Modern Irish is rather precarious anyhow: it consists in the dative singular (distinct from nominative singular only for certain feminine declensions) being used when a noun combines with the numeral 'two', with an agreeing attributive adjective being plural, though. A further language, genetically certainly unrelated to any of the others, could have been included in this minority group on the grounds of a lack of a dual on independent personal pronouns while nouns impeccably have one: Western Desert (Pintupi dialect) of the Pama-Nyungan family within Australian. However, Western Desert has a dual on bound personal pronouns, reversing the general preference for independent pronouns to be inflectionally more elaborate than bound ones. Therefore, Western Desert is here always classified as having both a nominal and a pronominal dual. And it does part company with the nouns-only group on two characteristic counts: it distinguishes inclusive-exclusive, and distance is ternary.
22. This is a summary of what has been shown in greater detail in Plank & Schellinger (1998). To some extent this agrees with the finding of Nichols (1992: 123) that pronouns and pronominal categories tend to be consevative in families. Only the inclusive-exclusive opposition is (macro-)areally distributed according to Nichols; unlike Nichols, we also find inclusive-exclusive correlating with structural traits, though.
23. See Plank (1996) for details on these variables.
24. Actually, the percentages for obligatory and optional use of the dual in Table 10 are similar for "only nominal" and "nominal and pronominal". However, in languages under the latter rubric nouns and pronouns may behave differently, with pronouns tending towards obligatory and nouns towards optional uses of their duals.
25. For discussion see Tomlin (1986: 18–22), whose own sample of 1063 languages is the most extensive to date (and even includes a celebrated American Indian forgery: Taensa). Matthew Dryer's vastly superior database appears to confirm these trends, as can be inferred from many of Dryer's publications based on it. However, Dryer (e.g., 1989) also makes the important point that calculating percentages of individual languages, no matter how numerous, can be misleading if the outcome is strongly influenced by genetic groupings with numerous members. Especially the relatively good showing of SVO can, thus, to some extent be attributed to the large Bantoid and Oceanic genera. Nonetheless, when counting in terms of genera, at a time depth of about 3,500 to 4,000 years, SVO is still second at around 26 % according to Dryer (1989).
26. This category usually subsumes Verb-Second languages, despite their similarity in many respects to OV languages.
27. And many languages here counted as "free" have elsewhere occasionally been classified as "basically" (though not rigidly) SOV or SVO. Conversely, however, some of our (not-so-rigid) SOV languages, especially from Australia, have elsewhere been classified as "free".
28. As is amply shown in many contributions to Downing & Noonan (1995).
29. Conflicting with the received wisdom, Foster & Hofling (1987) find such verbal marking equally well represented in all major types, including SVO.
30. As Siewierska & Bakker (1996: 136–139) point out, this leaves the relatively high inci-

dence of verbal agreement/cross-reference in verb-final languages unexplained. Not so convincingly, they suggest that what needs to be functionally explained is not that verbs agree but that they don't.

31. If different but equally basic clause or verb types with and without agreement/cross-reference marking co-exist in a single language (as they do in modern Celtic and Semitic), then the expectation would be that pros drop or do not drop accordingly. See, e.g., Kenstowicz (1989) and McCloskey & Hale (1984) for relevant discussion. The claim by Jaeggli & Safir (1989: 29–31) that pro-drop implies verbal paradigms which are "morphologically uniform", insofar as either all inflectional forms have overt exponents (as in Italian) or there are none to begin with (as in Chinese; English verbal inflection is non-uniform: non-zero for 3rd person singular, zero otherwise), is too liberal: non-inflected verbs may license the dropping of pronouns of 3rd person, but not normally of 1st and 2nd.
32. In Irish analytic verb forms are gaining ground on synthetic ones, and pro-drop is correspondingly receding. But so is the (purely nominal) dual, without a form of its own and with only some feminine nominal declensions having a dative singular distinct from nominative available for this purpose.
33. Inclusive-exclusive seems about equally at home with independent and bound pronouns.
34. Provided Uralic is a valid family and Saami is part of it.
35. In fact, given that it should not take more than three generations to grammaticalize a category, at least incipiently, and three more to abandon it again (as has been suggested for the dual of Attic Greek by Wackernagel (1950: 79) and for that of Icelandic by Guðmundsson (1972: Chapter 4)), the life cycles of duals are often remarkably long, being re-learnt by generation after generation. Their innovation probably takes the least time – so little that it is not often caught by observers with a temporally limited view.

References

Anderson, Stephen R. & Edward L. Keenan
1985 "Deixis", in Timothy Shopen (ed.), *Language typology and syntactic description.* Cambridge: Cambridge University Press, vol. 3, 259–308.

Borg, Albert J. & Frans Plank (eds.)
1996 *The Maltese noun phrase meets typology.* (*Rivista di Linguistica* 8–1.) Torino: Rosenberg & Sellier.

Bybee, Joan L.
1985 *Morphology: A study of the relation between meaning and form.* Amsterdam: Benjamins.

Capell, Arthur
1965 "A typology of concept domination", *Lingua* 15: 451–462.

Comrie, Bernard & Maria Polinsky
1998 "The great Daghestanian case hoax", in: Anna Siewierska & Jae Jung Song (eds.), *Case, typology and grammar: In honor of Barry J. Blake.* Amsterdam: Benjamins, 95–114.

Corbett, Greville G.
1996 "Minor numbers", in: Borg & Plank (eds.), 123–140.

Diessel, Holger
1999 *Demonstratives: Form, function, and grammaticalization.* Amsterdam: Benjamins.

Downing, Pamela & Michael Noonan (eds.)
1995 *Word order in discourse*. Amsterdam: Benjamins.

Dryer, Matthew S.
1989 "Large linguistic areas and language sampling", *Studies in Language* 13: 257–292.

Forchheimer, Paul
1953 *The category of person in language*. Berlin: De Gruyter.

Foster, Joseph F. & Charles A. Hofling
1987 "Word order, case, and agreement", *Linguistics* 25: 475–499.

Frei, Henri
1944 "Systèmes de déictiques", *Acta Linguistica* 4: 111–129.

Greenberg, Joseph H., Charles A. Ferguson, & Edith A. Moravcsik (eds.)
1978 *Universals of human language*. 4 volumes. Stanford: Stanford University Press.

Guðmundsson, Helgi
1972 *The pronominal dual in Icelandic*. (University of Iceland, Publications in Linguistics, 2.) Reykjavík: Institute of Nordic Linguistics.

Hawkins, John A. & Gary Gilligan
1988 "Prefixing and suffixing universals in relation to basic word order", *Lingua* 74: 219–259.

Humboldt, Wilhelm von
1830 "Über den Dualis", *Abhandlungen der historisch-philologischen Klasse der Königlichen Akademie der Wissenschaften zu Berlin aus dem Jahre* 1827, 161–187. Reprinted in *Wilhelm von Humboldts Gesammelte Schriften*, ed. by the Königlich Preussische Akademie der Wissenschaften, vol. 6, 4–30. Berlin: Behr, 1907.

Ingram, David
1978 "Typology and universals of personal pronouns", in: Greenberg, Ferguson, & Moravcsik (eds.), vol. 3, 213–247.

Jaeggli, Osvaldo & Kenneth J. Safir
1989 "The null subject parameter and parametric theory", in: Jaeggli & Safir (eds.), 1–44.

Jaeggli, Osvaldo & Kenneth J. Safir (eds.)
1989 *The null subject parameter*. Dordrecht: Kluwer.

Kenstowicz, Michael
1989 "The null subject parameter in Modern Arabic dialects", in: Jaeggli & Safir (eds.), 263–275.

Kibrik, Aleksandr E.
2002 "Nominal inflection galore: Daghestanian, with side glances at Europe and the world", in this volume.

Klimov, Georgij A.
1977 *Tipologija jazykov aktivnogo stroja*. Moskva: Nauka.

McCloskey, James & Kenneth Hale
1984 "On the syntax of person-number inflection in Modern Irish", *Natural Language and Linguistic Theory* 1: 442–487.

Moravcsik, Edith
2002 "Inflectional morphology in the Hungarian noun phrase: A typological assessment", in this volume.

Nichols, Johanna
1992 *Linguistic diversity in space and time*. Chicago: University of Chicago Press.

Perkins, Revere D.
1980 *The evolution of culture and grammar*. Ph.D. dissertation, State University of New York at Buffalo. (Published as: *Deixis, grammar, and culture*. Amsterdam: Benjamins, 1992.)

Plank, Frans
1986 "Paradigm size, morphological typology, and universal economy", *Folia Linguistica* 20: 29–48.
1989 "On Humboldt on the dual", in: Roberta Corrigan, Fred Eckman, & Michael Noonan (eds.), *Linguistic categorization*. Amsterdam: Benjamins, 293–333.
1991 "Rasmus Rask's dilemma", in: Frans Plank (ed.), *Paradigms: The economy of inflection*. Berlin: Mouton de Gruyter, 161–196.
1994 "What agrees with what in what, generally speaking?", in: *Agreement gender number genitive & (EUROTYP Working Papers VII/23)*, 39-58.
1996 "Domains of the dual, in Maltese and in general", in: Borg & Plank (eds.), 123–140.
1999 "Split morphology: How agglutination and flexion mix", *Linguistic Typology* 3: 279–340.

Plank, Frans & Wolfgang Schellinger
1998 "Die Geographie des Duals – belanglos?", paper at the Annual Meeting of the Deutsche Gesellschaft für Sprachwissenschaft, Halle an der Saale.

Royen, Gerlach
1929 *Die nominalen Klassifikations-Systeme in den Sprachen der Erde: Historisch-kritische Studie, mit besonderer Berücksichtigung des Indogermanischen*. Wien: Anthropos.

Sallwürk, Ernst v.
1868 "Ueber die Zwei- und Dreizahl der grammatischen Formen: Sprachwissenschaftliche Abhandlung", *Höhere Bürgerschule zu Hechingen, Jahresbericht für das Schuljahr* 1867–68, 3–14.

Schellinger, Wolfgang
1995a "The dual: Its distribution across the world's languages." Unpublished, Universität Konstanz.
1995b *Dual und Kulturstufen*. M.A. thesis, Universität Konstanz.
1996 "The dual: A bibliography." Unpublished, Universität Konstanz.

Schmidt, Hartmut
1992 "Sprachauffassung und Lebensmetaphorik im Umkreis von Friedrich Schlegel, Jacob Grimm und Alexander von Humboldt: Eine Kontaktzone von Naturphilosophie, Geowissenschaften und Linguistik", in: Bernd Naumann, Frans Plank, & Gottfried Hofbauer (eds.), *Language and earth: Elective affinities between the emerging sciences of linguistics and geology*. Amsterdam: Benjamins, 1–27.

Schmidt, P. Wilhelm
1926 *Die Sprachfamilien und Sprachenkreise der Erde*. With an *Atlas von 14 Karten*. Heidelberg: Winter.

Siewierska, Anna & Dik Bakker
1996 "The distribution of subject and object agreement and word order type", *Studies in Language* 20: 115–161.

Steele, Susan
1978 "Word order variation: A typological survey", in: Greenberg, Ferguson, & Moravcsik (eds.), vol. 4, 585–623.

Tomlin, Russell S.
1986 *Basic word order: Functional principles*. London: Croom Helm.

Wackernagel, Jacob
1950 *Vorlesungen über Syntax. Vol. 1*. Basel: Birkhäuser.

Wundt, Wilhelm
1904 *Völkerpsychologie. Eine Untersuchung der Entwicklungsgesetze von Sprache, Mythus und Sitte. Erster Band: Die Sprache. Zweiter Teil*. 2nd edition. Leipzig: Engelmann.