How to agree in gender when you've got the wrong number:
Low numerals in German(ic)

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I.   There are all sorts of constraints on what can agree with what in what under what circumstances; *The Universals Archive* (at http://ling.uni-konstanz.de/pages/ proj/sprachbau.htm) documents many universals on targets, controllers, categories, and domains of agreement on record.[1] It sometimes happens, of course, and not only with agreement, that constraints believed solidly established are contradicted by new evidence, showing diversity in the architecture of grammars to be more capricious than seekers of unity had been prepared to concede. Naturally, agreement patterns previously unheard of are especially prone to turn up in less well studied languages; visit *Das grammatische Raritätenkabinett* (at http://ling.uni-konstanz.de/pages/proj/ raritaetenkabinett.htm) for a selection of such "exotic" agreements. But unusual vistas can open up on familiar ground, too.

Agreement in noun phrases containing numerals, low or high, simple or complex, in Indo-European is perhaps one of the most notorious challenges for agreement theories. Agreement in gender in Germanic, fairly run-of-the-mill where such a category is put to such usage, has figured prominently in theoretical discussions in most notational frameworks. Still, there is a pattern of agreement in gender and number with certain numerals as targets in at least one member of easily the best studied subbranch of that familiar family within Indo-European whose theoretical implications appear to have gone unnoticed.

II.   Frequently, though by no means universally, when languages inflect for both gender and number, gender distinctions are limited to the singular, as presumably the unmarked number, licensing greater exuberance of its partner category.[2] Everywhere in Germanic, whether the genders being distinguished are masculine, feminine, and neuter, or common/uter and neuter, or person and non-person, there is a tendency towards such asymmetry relative to number wherever

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[1] Incorporating Plank (1991, 1994), among many other conventionally published sources.

[2] In addition to genders being equally distributed over numbers, it is even possible for more genders to be distinguished in non-singulars than in singular (with confident claims to the contrary debunked in Plank & Schellinger 1997).

these two categories (in association with two others, case and, for adjectives, "weak/strong") matter for inflection and agreement.

In the older Germanic languages and continuingly so in Icelandic and Faroese, words which inflect for gender without being inherently specified for a particular gender do have gender distinctions in their plurals. However, distinctions of gender are more frequently neutralized in the plural subparts than in the singular subparts of the inflectional paradigms of adjectives, various kinds of determiners, and various kinds of 3rd person pronouns (including the 3rd person personal pronoun only in Old High German, which elsewhere does not distinguish gender in the plural). Words which are inherently specified for gender, i.e., nouns, come in several inflection classes which are intricately related to gender classes in those Germanic languages which have such a dual classification of nouns: overall, the selection among alternative exponents of case and number is more dependent on gender class membership in the singular than in the plural.

Now, since late Middle High German times, gender in German has become even more radically asymmetric than elsewhere in Germanic. To the extent that there were any to begin with, old gender distinctions in the plural of gender-agreeing words in modifier and determiner functions and of anaphoric 3rd person pronouns, like those illustrated in (1) for nominatives, were levelled out, owing to the abandonment of the distinctively neuter suffix *-iu* in the nominative-accusative (with genitive and dative lacking gender-distinctive exponents anyhow):

(1)

MASC	FEM	NEUT	
blind-e	*blind-e*	*blind-iu / blind-e*	'blind' (strong declension)
d-ie	*d-ie*	*d-iu*	'the, those'
d-is-e	*d-is-e*	*d-is-iu*	'these'
s-ie/s-î/s-i	*s-ie/s-î/s-i*	*s-iu*	'they'

With any formal contrasts gone for potential target words of gender agreement and gender anaphora, the relevant rules of grammar would surely have been ill-advised to continue to match genders in plural as well as singular.

The controllers of gender agreement and anaphora selection in post-Middle High German continue to be lexically specified for a gender (disregarding occasional variability of gender): the gender class membership of nouns continues to matter for agreement and anaphora targets when noun phrases happen to be singular. Gender class membership in fact continues also to matter for the inflection of nouns themseleves, in association with their inflection class membership.

Comparing it to Old and Middle High German in this respect, however, the dependence of the selection (or also non-selection) of case-number alternants specifically on gender has considerably diminished for the plural in Modern High German, being increasingly regulated in terms of inflection classes alone (cf. Wurzel 1984: Chapters 3 and 4). In fact, the only remaining instances of a selection among exponent alternants in the plural by gender, within or across inflection classes, are negative ones: feminine nouns do not take *-er* or *-Ø* in the nominative-accusative plural. (As of old, *-er* had been even more strictly limited to neuters alone.) Looking at it the other way round, encountering plural nouns in subject or direct object function, only those in *-er* overtly reveal something about their gender: they won't be feminine, and they therefore would not control feminine agreements when in a singular noun phrase instead.

Thus, in the plural, gender distinction is totally irrelevant for target words and of rather marginal and inconspicuous relevance for controller words. This has (mis-) led some to analyse the plural as itself a gender in German.

III.   Gender being an inherent category of nouns in German, as elsewhere in Germanic, it is plausible to assume that modifiers and determiners agreeing in gender within the noun phrase are getting it from nouns, whatever the actual mechanism of such spreading. As to possible patterns of gender distinctions of agreement controllers (nouns) and agreement targets (adjectives, articles, pronouns, etc.) not exactly matching each other, the general assumption seems to be that targets are likelier to neutralize than controllers. Finding NO FORMAL CONTRAST WHATSOEVER on ANY word of the word class of potential controllers co-varying with contrasts on targets to begin with, however, nor ANY corresponding formal or distributional difference ANYWHERE ELSE either, one would probably be inclined to recognize covert categories for these controller words, governing an overt categorial distinction on target words; but such government patterns would not be considered to be instances of agreement.

Against this backdrop of familiar assumptions, asymmetric gender systems like those of Modern High German now raise a question for the theory of agreement.

Words from the word class of nouns — and perhaps, depending on one's paradigmatic analysis, also 3rd person personal pronouns — come lexically specified for some gender; their membership in one gender class or another shows primarily in the formal co-variation they determine on various word classes of determiners and modifiers, and to some extent also in the selection of case-number exponents for themselves from the various inflection classes available. But all of this gender-controlling business is only ever relevant for the singular, and in the plural

inflection of nouns themselves it only matters for ruling out the nominative-accusative alternant -*er* for feminines.

The theoretical question, then, is whether this could be otherwise. In particular: Could lexical gender distinctions limited to the singular of controller words be relevant for agreement when these controller words are realized by a plural word form — by ANY plural word form, that is, rather than only by those whose nominative-accusative suffix *-er* reveals them as being non-feminine?

Although I am not aware of actually having seen this question seriously raised, the answer one is tempted to give is "of course not".

IV. One reason for being so confident here probably is the expectation that there just won't be a chance of singular controller genders ever becoming relevant in the plural: target word classes won't make more gender distinctions than controller word classes.

While this is generally true for Germanic and probably also elsewhere where asymmetric systems prevail, since adjectives, demonstratives, articles and other determiner words have equally asymmetric gender paradigms as nouns and 3rd person pronouns, as a matter of unexpected fact there are between one and four gender-agreeing words which used to be exceptional in Germanic: the numerals 'two', 'three', and 'four', and the dual quantifier 'both' when inflectionally patterned on 'two' or vice versa (as in Old English).

As shown for the nominative forms of these items for major representatives of Germanic which have such contrasts, they distinguish three genders, or at least two (with feminine sometimes coinciding with neuter):

(2)	MASC	FEM	NEUT	
Gothic	*twai*	*twōs*	*twa*	'two'
	*þreis	**þreis*	*þrija*	'three'
Old Norse	*tveir*	*tvǽr*	*tvau*	'two'
	þrīr	*þriār*	*þriū*	'three'
	fjōrer	*fjōrar*	*fjǫgor*	'four'
Old English	*twēgen*	*twā*	*twā / tū*	'two'
	bēgen	*bā*	*bā / bū*	'both'
	þrīe	*þrēo*	*þrēo*	'three'
Old Saxon	*twēne*	*twā / twō*	*twē*	'two'

	thria	*threa*	*thriu*	'three'
Old High German	*zwēne*	*zwā / zwō*	*zwei*	'two'
	drī	*drīo*	*driu*	'three'
early Modern				
High German	*zween*	*zwo*	*zwei*	'two'

Germanic had inherited gender-distinctive dual forms for 'two' from Indo-European, but replaced many of them analogically by plural forms of the pronominal and strong adjectival declension; and the old plural inflections of 'three' and 'four' were to some extent refashioned, too. Remarkably, these morphological innovations and reanalyses in the inflection of low numerals in Germanic, some of which are difficult to reconstruct with certainty,[3] respected oppositions of gender even when there was very little support for gender in plural subparadigms elsewhere. Also quite remarkably, in German, *zw(V)-* 'two' would end up with a unique paradigm, with no other word sharing an alternation *-en-*, *-o-*, *-ei-* for expressing gender, in conjunction with the inflectional case-number-gender endings proper; by comparison, the inflectional paradigm of *dri-* 'three' was less idiosyncratic, essentially coinciding with that of pronouns and strong adjectives.

Most Germanic languages subsequently either abandoned gender for these low numerals, or indeed altogether (like, essentially, English), or they retained their genders, but also kept at least some gender distinctions in plurals elsewhere (like notably Icelandic). Only German would, for a while, maintain gender for 'two' or also 'three' while otherwise abandoning or marginalizing gender distinctions in plurals. Indeed, all sorts of morphological innovations were tried out in order to strengthen the gender contrast for 'two' also in the genitive and dative forms (cf. Paul 1917: 185-187). The following considerations will focus on this stage of Modern High German, where gender asymmetry relative to number is almost complete.

The nouns which these low numerals are in construction with are, as a rule, plural. Within noun phrases, words in modifier and determiner functions distinguishing gender are subject to gender agreement with nouns. There is no problem for adjectives or determiner words when a noun phrase is plural, as these target word classes distinguish gender in the plural as little as the agreement controllers themselves do. But for 'two' and possibly 'three' (and 'four' and 'both' elsewhere in Germanic), coming in three gender forms, some information about gender is

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[3] For somewhat different reconstructions of the sources of relevant gender-distinctiveforms compare, among other standrad handbooks, Prokosch (1939: 286-287) and Krahe (1948: 85-87).

needed from the controller words to make the right choice. With the noun phases and the actual NOUN FORMS they contain in the plural, syntactic representations as such do not really provide that information; only the LEXICAL REPRESENTATIONS OF NOUNS do, with gender being relevant for their uses in the singular, concerning agreement as well as essentially their own inflection. And it is in fact these which determine the gender agreement of these low numerals. These agreement targets in plural noun phrases are masculine when the accompanying noun is masculine IN THE SINGULAR, feminine when the when the accompanying noun is feminine IN THE SINGULAR, neuter when the accompanying noun is neuter IN THE SINGULAR or also when there is a conflict of genders (with neuter as the general resolution gender in earlier Germanic). To illustrate:

(3) *da geh-en*   *zw-een*   *Männ-er*

there go-3PL   two-PL.MASC   man$_{MASC}$-PL

...   *zw-o*   *Frau-en*

two-PL.FEM   woman$_{FEM}$-PL

...   *zw-ei*   *Weib-er*

two.PL-NEUT   female$_{NEUT}$-PL

...   *zw-ei*   Ø

two-PL.NEUT [any mixture of genders of antecedents]

Lamented by Jacob Grimm (1856), who would nostalgically collect attestations of "correct" agreements like (3) to hold up as examples to sloppy writers such as Goethe and Schiller, the system was beginning to fall into disarray in the 17th century, with the alternants of the numeral used increasingly arbitrarily. Eventually the old neuter form would prevail, and the old feminine lingered on especially in bureaucratese, anxious to distinguish low numbers rather than genders (with *zwo* more dissimilar from *drei* 'three' than *zwei*).

Dialects, however, proved more pertinacious, especially in the deep South, sometimes holding on to gender-based distributions of the alternants of 'two' and even 'three' until now. Among the dialects sampled in Keller (1979), they seem best entrenched in Swiss German (and here especially in Züritüütsch (4)), Upper Austrian Bavarian (*zwen*, *zwo*, *zwoa* 'two' MASC, FEM, NEUT), and Luxemburgish (*zwee*, *zwou*, *zwéi* 'two' MASC, FEM, NEUT).

(4)   MASC   FEM   NEUT

NOM/ACC	*zwee*	*zwoo*	*zwäi*	'two'
DATIVE	*zeene(n)*	*zwoone(n)*	*zwäine(n)*	
NOM/ACC	*drei*	*drei*	*drüü*	'three'
DATIVE	*dreine(n)*	*dreine(n)*	*drüüine(n)*	

When such systems weaken in dialects, it is again the neuter forms which take over.

V. Though not implausible under the circumstances, given that an agreement target of a syntactic rule of gender agreement needs to be in SOME gender, agreement determined by the lexical representation rather than the actual syntactic form of a controller word would seem unusual. But having been around for more than a millennium in Germanic, and for several centuries in their most drastic form in Modern High German and Upper German dialects, such patterns surely are no fluke, either; and agreement theories have to be designed so as to be able to take care of them.

Possibly, however, though it is hard to know for sure, such lexically-driven gender agreement of low numerals or also relevant other targets is a German(ic) nonesuch. (Which does not detract from its theoretical significance.) In his pan-European survey, Hurford (2002: 590-591) notes a stronger tendency for numerals to distinguish and to agree in gender the lower they are. While this might seem to reflect the general tendency for lower (non-round) numerals to be inflectionally more active than higher ones, it is arguably a crucial factor here whether gender is a relevant category in the plural elsewhere in the languages concerned in the first place. Among the languages in Hurford's survey which have gender-distinctive low numerals agreeing with their nouns, gender is a relevant category in the plural, though usually in some asymmetric manner, in Welsh, Icelandic, Bulgarian, Albanian, and Modern Greek; it is not in Züritüütsch — with the German(ic) pattern thus in the clear minority at least in Europe.

Gender is not relevant in the plural in Russian either, a language also in Hurford's sample, but agreement rules in noun phrases with numerals are notoriously more complicated than in other human languages. When the noun phrase is in a direct case, there is no problem for 'two', the only low numeral (other than 'one') to inflect for gender (*dva* MASC/NEUT, *dve* FEM), to obtain its gender: like 'three' and 'four', 'two' assigns genitive singular to its noun — and in the singular, nouns come in three genders, which matters for more straightforward agreement as well

as for their own inflection.[4] When noun phrases with 'two' (and 'three' and 'four') are in an oblique case, the low numerals (and any adjectives) agree with their noun in gender, number, and case: but then, *dva/dve* does not distinguish genders in any of its oblique case forms in the first place, thereby evading the problem its counterpart has in German. The quantifier 'both', however, behaving essentially like 'two' for purposes of agreement, squarely faces this very problem, distinguishing masculine/neuter and feminine not only in the nominative (*oba* MASC/NEUT, *obe* FEM), but also in the oblique cases (*oboix*, *obeix* MASC/NEUT, FEM GENITIVE, etc.): in the standard written language at least (masculine/neuter forms tend to be generalized in spoken Russian), appeal needs to be made, not to the actually occurring plural form of the noun co-occurring with 'both', but to its lexical specification in order to obtain the right gender for this particular agreement target.[5]

The closest other analogue of the German lexically-driven agreement pattern I am aware of (and its areal proximity surely is completely coincidental) are possessive adjectives in Upper Sorbian, the most nominal instantiation of this species within Slavonic, crucially retaining some agreement-triggering behaviour of nouns (see Corbett 1995). Possessive adjectives agree with their head nouns in gender, number, and case, in an adjectival manner; but when they are themselves accompanied by potentially agreeing words such as possessive pronouns or adjectives, these agree with the possessive adjective in gender as provided by the noun underlying the possessive adjective, and in case and number as if this agreement controller, attribute to a head noun, were genitive singular:

(5)   *moj-eho*   *muž-ow-a*   *sotr-a*

     my-GEN.SG.<u>MASC</u> husband$_{MASC}$-ADJCT-NOM.SG.FEM   sister$_{FEM}$-NOM.SG

     'my husband's sister'

When a noun is turned into an adjective, albeit a fairly nominal one, its lexical specification for gender (underlined in the example) should become syntactically irrelevant, just like gender of nouns in German when put in the plural — and yet it remains available for purposes of agreement, too.

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[4] Accompanying adjectives are in the nominative plural or genitive plural, with the gender of the (singular) head noun a factor in the choice between them.

[5] This parallel was pointed out to me by Grev Corbett, to whom I'm much indebted also for other comments on an earlier version of this paper.

In the case of possessive adjectives as agreement controllers in Upper Sorbian, the relationship between the word form that is present syntactically and the one supplying the gender that is needed for gender-agreeing words is more on the derivational side, though with a strong inflectional admixture. In the case of nouns in early Modern High German (and elsewhere in Germanic), that relationship is more on the inflectional side, though again pluralization shares at least some traits with derivation.

VI. In conclusion, to infer from such patterns what one hesitates to call a CONSTRAINT on agreement: anything in the lexical representation of a word is potentially available as an agreement category, whether or not it is realized in the actual inflected or derived form of that word controlling agreement in particular syntactic constructions.

Or, so as not to be TOO lenient: anything about gender. Another obvious lexical categorization of nouns that might be utilized for agreement, if anything goes, is that in terms of inflection classes. But inflection class membership is universally considered irrelevant for agreement — and perhaps rightly so.[6]

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[6] Even this truth, however, assuming it is no mere tautology, is not entirely above controversy (as observed by Plank 2002).

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