Noun classification in !Xoon*

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0 Introduction

The !Xoon language cluster[1] presents a covert gender system which is unique in Africa and worldwide for a couple of typologically unusual features: (a) genders outnumber agreement classes, (b) agreement is triggered by linear adjacency, rather than syntactic configuration, (c) verbal cross-reference is rather of the object than of the subject. Regarding the semantic basis of the assignment system, conflicting views prevail. While Traill (1994: 20) maintains that "with few exceptions, these classes do not have any semantic integrity", Honken (forthcoming: 11) finds that "gender assignment rules in !Xoon appear to be based on a complex interaction of phonetic, morphological and semantic criteria". Güldemann 2000 and forthcoming a, on the basis of a sample of about 320 nouns taken at random from Traill's dictionary (1994), concludes that while the assignment of a noun to a certain gender is often not recoverable from its form and/or its meaning, certain assignment criteria, such as kinship, alienability and part/whole relationship, could be identified. This contribution intends to improve current analyses (Traill 1974a, 1985, 1994, Güldemann 2000, Honken forthcoming) of the !Xoon noun class system on the morpho(tono)logical and the semantic level by including data from a deviant Western variety which contrasts with the Eastern varieties described by Traill (1985, 1994), opening up a low-level comparative perspective on noun class dynamics in Tuu.

1 Agreement classes, number, and gender

1.1 Agreement classes: morphosyntactic aspects

Western and Eastern varieties of !Xoon / Taa share a system of five nominal agreement classes which index gender and number (table 1). These classes are defined by a set of segmental agreement markers, mostly concordial vowels, numbered 1 through 5 following Traill's conventions.

(1) Common !Xoon noun classes (segmental markers plus tone pattern a or b)

Class label	Segmental class marker	East !Xoon segmental + tone classes	West !Xoon segmental + tone classes
1	*i*	1a	1a
2	*an [ã]*	2a, 2b	2a, 2b

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[1] The !Xoon cluster forms the Taa branch of the Tuu family (formerly known as Southern Khoisan) and roughly falls into two distinct units: the East Taa varieties in Botswana, partly described by Traill (1974a, 1974b, 1985, 1994), Heinz (1994) and analysed by Güldemann (2000, forthcoming a, b), and the West Taa varieties of which the West !Xoon variety in Namibia is presently under investigation by a DoBeS research team (Boden 2005, Güldemann & Kießling 2005, Naumann 2006). For details regarding linguistic affiliation and geographical location see Traill 1994b and http://www.mpi.nl/DOBES/projects/taa/languages. The spelling of the name !Xoon, deviating from the current IPA-oriented transcriptions !Xóõ found in former publications, adheres to the principles of the guidelines of Khoisan orthographies in suppressing diacritics as much as possible, see also next footnote.

3	*e*	3a, 3b	-, 3b
4	*u*	4a	4a
5	*n*	5a	-

These concords appear obligatorily in several syntactic targets such as transitive verbs, certain adjectives, deictics, relative markers, genitive markers, the copula, and a multi-purpose-object marker. This is illustrated by different direct objects in the clause frame 'I see (one) big X' for West !Xoon (2, 4). Thus in (2a) the direct object *n‡àhrè*[2] 'sheep' triggers class 3 concord which is manifest in the low toned *e* enclitic on the preceding verb and non-low toned *e* on the following adjective and numeral. As soon as the direct object is replaced by its plural *n‡àhnn* which is class 2b, concord changes to become low toned *an* on the verb and non-low toned *an* on the adjective in (2b).

(2) West !Xoon: concordial agreement on verb, attributive adjective and numeral[3]

Gender 3/2b: *n‡àhrè* 'sheep', *n‡àhnn* (pl)

(a) *ń sɪ́ n|ā-**è** n‡àhrè !xā-**ē** ǂ'ū-**ē***
1S IPF see-3 sheep.S.3 big.S-3 one-3
'I see one big sheep.'

(b) *ń sɪ́ n|ā-**àn** n‡àhnn !xām-**ān***
1S IPF see-2b sheep.P.2b big.P-2b
'I see big sheep.'Apart from the five classes defined by segmental agreement markers, there are tonal phenomena which seem to be associated with the noun classes. Concordial markers display a tonal opposition of high vs. low which has a paradigmatic and a syntagmatic dimension. Paradigmatically, the tonal contrast in West !Xoon establishes two distinct subclasses (table 3): 2a with a low-toned postnominal agreement marker vs. 2b which has it non-low. Class 1 and class 4 postnominal agreement markers are always low, while class 3 is always non-low.

(3) West !Xoon: concordial suffixes in post-nominal modifiers

	Class marker	Attributive adjective *!xā* 'big' (sg), *!xām* (pl)
1	*ì*	*hùúngúrí́ !xā-**ì*** 'a big chicken'
2a	*àn [ã̀]*	*n‡àqnà !xā-**àn*** 'a big pot'
2b	*ān [ã̄]*	*ǂxáńyá́ !xā-**ān*** 'a big book'
3	*ē*	*taà́ !xā-**ē*** 'a big person'
4	*ù*	*tuú !xāb-**ù*** 'big people'

[2] Transcription follows the orthographic conventions proposed for San languages outlined in Güldemann 1998. The major deviation from IPA is the representation of secondary modifications of vowels by consonant symbols immediately following their vowel carriers: *n* for nasalization, *h* for breathiness, *q* for pharyngealisation, *'* for glottalisation (based on Dickens' proposal 1991) and *hq* for epiglottalisation / sphinteric quality. A dental nasal in coda position is represented by *nn* in distinction from simple *n* which indicates nasalisation in the preceding vowel.

[3] Abbreviations: DIM diminutive, EX East !Xoon, H high tone, IPF imperfective, L low tone, M mid tone, MPO multi-purpose-object marker, P plural, REL relative, S singular, WX West !Xoon.

Syntagmatically, the tonal contrast distinguishes pre-nominal from post-nominal concords of the same class (table 4). Thus, in all classes the tones in the pre-nominal agreement targets, i.e. on the verb, are a neat mirror-image of the tones in the post-nominal markers: L pre-nominal markers correspond to non-L post-nominal markers in the same class and the other way round.

(4) West !Xoon: tonal mirror-image of pre- and postnominal concordial markers

	Pre-nominal class markers	Post-nominal class markers	Verb *n|ā* 'see' Attributive adjective *!xā* 'big' (sg), *!xām* (pl) Numeral ǂ*'ū* 'one'
1	*ı́*	*ì*	*ń sı́ n|ā-**ı́*** *sıǂ́x'ūi !xā-**ì*** ǂ*'ū-**ı́*** 'I see one big snake'
2a	*án [ã́]*	*àn [ã̀]*	*ń sı́ n|ā-**án*** *sıǂ́x'ōrē !xām-**àn*** 'I see big snakes' *ń sı́ n|ā-**án*** *nǂàqnà !xā-**àn*** ǂ*'ū-**àn*** 'I see one big pot' *ń sı́ n|ā-**án*** *nǂàqnàsı́kē !xām-**àn*** 'I see big pots'
2b	*àn [ã̀]*	*ān [ã̄]*	*ń sı́ n|ā-**àn*** *nǂàhnn !xām-**ān*** 'I see big sheep'
3	*è*	*ē*	*ń sı́ n|ā-**è*** *nǂàhrè !xā-**ē*** ǂ*'ū-**ē*** 'I see one big sheep' *ń sı́ n|ā-**è*** *ʘqàqē !xā-**ē*** ǂ*'ū-**ē*** 'I see one big child'
4	*ı́*	*ù*	*ń sı́ n|ā-**ı́*** *ʘqɔ̀ɔ̄qnū !xāb-**ù*** 'I see big children'

For East !Xoon, Traill 1985 and 1994 distinguishes the same five noun classes defined by segmental concords. In addition he recognizes two nominal tone classes which trigger – independent of the lexical tone pattern and independent of the segmentally defined concordial classes – certain tonal figures in dependent targets: class I marked by a level mid tone agreement pattern in postnominal modifiers (corresponding to tone class b above) vs. class II is marked by a falling contour tone (corresponding to tone class a above). In contrast to Traill's analysis, the point of the present analysis is that two features, segmental *and* tonal, are treated in a unitary way as exponents of a single morphosyntactic category, i.e. noun class. The major argument in favour of this is the distributional restriction of tone classes in relation to the segmentally defined ones. If the tone classes were really independent, they should be found to be evenly distributed over the other five classes, i.e. there should be two tonally defined subclasses in every single of the five segmentally defined ones, with a total of ten classes altogether. However, going through Traill's 1994 dictionary (5) reveals that the tone contrast is limited to classes 2 and 3, while in classes 1, 4 and 5 only tone class a occurs.[4]

(5) East !Xoon (Traill 1994): correlation of segmental and tonal class markers

	segmental class marker	tonal class marker: a = terminal L tone = falling tone II (Traill 1994) b = terminal non-L tone = level mid tone I (Traill 1994)	
1	*i*	a: 194 (15%)	[b: 3 (0,2%)]
2	*an [ã]*	a: 348 (28%)	b: 135 (11%)

[4] Strictly speaking, in a total of 1265 East !Xoon non-compound nouns drawn from Traill 1994, there are only three instances of 1b and 4b, respectively – which might be discarded as probable typos.

3	*e*	a: 207 (16%)	b: 173 (14%)
4	*u*	a: 200 (16%)	[b: 3 (0,2%)]
5	*n*	a: 2 (0,2%)	[b: -]

Restrictions such as these stand out even more clearly in West !Xoon, where the tone opposition only operates in class 2 and not in class 3.

(6) West !Xoon: correlation of segmental and tonal class markers (total: 523 nouns)

	segmental class marker	tonal class marker: a = terminal L tone = falling tone II (Traill 1994) b = terminal non-L tone = level mid tone I (Traill 1994)	
1	*i*	a: 148 (28%)	[b: -]
2	*an [ã]*	a: 204 (39%)	b: 83 (16%)
3	*e*	[a: -]	b: 78 (15%)
4	*u*	a: 10 (2%)	[b: -]
5	*n*	[a: -]	[b: -]

Table (7) brings together these findings in a single display, the first number representing the attestation in West !Xoon, the number in brackets the attestation in East !Xoon.

(7) Noun class distribution in West (WX) and East !Xoon (EX)

	a = terminal L tone = falling tone II (Traill 1994)	b = terminal non-L tone = level mid tone I (Traill 1994)
1: *i*	28% (15%)	- (0,2%)
2: *an [ã]*	39% (28%)	16% (11%)
3: *e*	- (**16%**)	15% (14%)
4: *u*	2% (**16%**)	- (0,2%)
5: *n*	- (0,2%)	- (-)

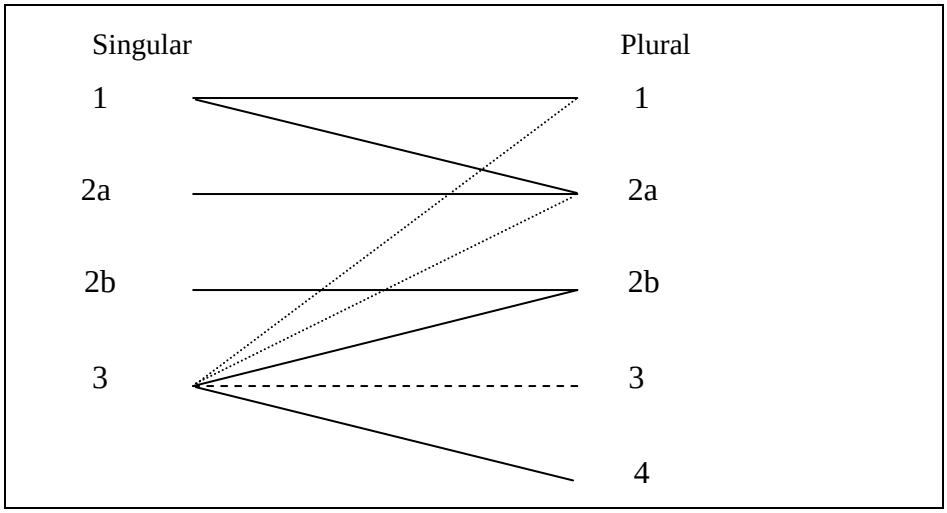
Comparing the distribution of noun classes in East and West !Xoon in table (7), two major differences emerge: (a) East !Xoon has an additional and substantial class 3a, characterised by vowel concord *e* plus falling contour tone pattern (= terminal L), which is totally absent in West !Xoon; (b) Class 4a is much stronger in East !Xoon. Both of these phenomena correspond to the fact that classes 1a and 2a are considerably stronger in West !Xoon than in East.

1.2 Genders

From the mapping of these classes over the two number categories, there emerges a gender system with so far six, probably seven productive genders[5] in West !Xoon (8), their frequency given in table (9).

[5] Inquorate genders such as 3/1 and 3/2a and single genders have not been counted.

(8) Agreement classes and genders in West !Xoon



(9) West !Xoon: attestation of genders (total: 340 nouns; rows = singular class, columns = plural class)

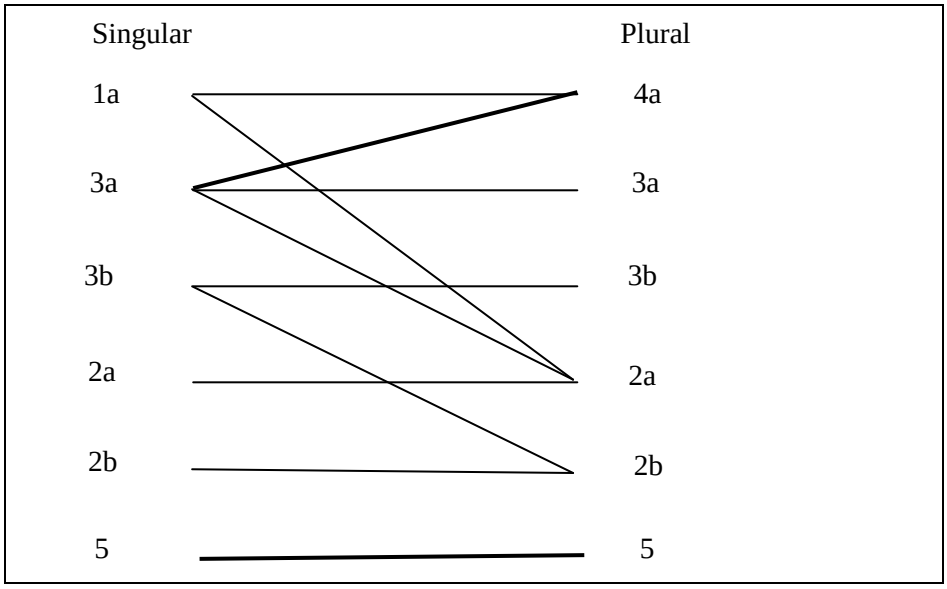
	single gender only	1a	2a	2b	3b	4a
1a	**26 (8%)**	4	**109 (32%)**	-	-	-
2a	2	-	**92 (27%)**	-	-	-
2b	**6 (2%)**	-	-	**27 (8%)**	-	-
3b	**12 (4%)**	1	2	**50 (15%)**	[?]	**9 (3%)**
4a	-	-	-	-	-	-

The following observations could be made: four out of five agreement classes are number-insensitive, i.e. they partake in the singular as well as in the plural, the only clear exception being class 4 which occurs in the plural only. There is considerable "convergence" regarding number, i.e. several classes map on one class in the other number. Thus, classes 1 and 2a of the singular map on 2a in the plural, and, the other way round, classes 1 and 2a of the plural map on class 1 in the singular. This kind of number convergence in both directions leads to a "crossed" system (Heine 1982, Corbett 1991) where the majority of agreement classes take part in more than one gender, i.e. all except class 4. Even more remarkably typologically, genders outnumber classes: five classes make up six, probably seven genders, while it is more common to find the opposite cross-linguistically. Finally, if gender 3/3 were to be confirmed by more nouns, agreement classes in the plural would outnumber those in the singular, presenting another instance in southern Africa of a violation of Greenberg's (1966) universal 37 "A language never has more gender categories in non-singular numbers than in the singular."

East !Xoon presents a system of at least nine genders (10, 11) which is even more crossed than the West system.[6]

[6] East !Xoon has an inquorate class 5 with only two lexical items. It corresponds to class 5 in West !Xoon which contains not a single lexical item, referring to abstract non-lexical triggers such as entire propositions, possibly a "unique neutral agreement form for non-prototypical controllers" in terms of Corbett (1991: 214-6). Bold lines mark the two genders, 3a/4a and 5/5, which comprise the inter-sententially relevant gender system.

(10) Agreement classes and genders in East !Xoon (Traill 1994, Güldemann 2000: 24)



(11) East !Xoon: attestation of genders (total: 946 nouns); rows = singular class, columns = plural class [7]

	single gender only	1a	2a	2b	3a	3b	4a	5a
1a	16 (2%)	5	**13 (1%)**	-	2	-	**162 (17%)**	-
2a	33 (3%)	1	**257 (27%)**	4	5	-	8	-
2b	13 (1%)	-	9	**45 (5%)**	-	1	1	-
3a	43 (5%)	-	**18 (2%)**	2	**112 (12%)**	-	**22 (2%)**	-
3b	20 (2%)	-	7	**60 (6%)**	4	**77 (8%)**	3	-
4a	1	-	-	-	-	-	-	-
5a	-	-	1	-	-	-	-	1

The comparison of West !Xoon and East !Xoon reveals some differences which call for a (historical) explanation: genders 1/4a and 3a/3a of East !Xoon are totally absent in West !Xoon. The absence of gender 3b/3b in West !Xoon, however, is a gap, due to a special semantic phenomenon, to be explained below.

Another interesting observation relates to the tone concord classes a and b in both West !Xoon and East !Xoon: it shows that nouns only very rarely change their tonal concord class across the number categories. Or put in another way: within a gender, tonal concords only very rarely, if ever, change, i.e. both singular and plural of a noun trigger almost always either tonal concord according to pattern a or both according to pattern b. Cases of gender-internal tone class disharmony are extremely rare. The tone class of a noun is remarkably stable across the number categories.[8]

[7] Disregarding single genders and all genders below a margin of 10 (i.e. 1%) is cut out, a total of nine genders is left: 1a/2a, 1a/4a, 2a/2a, 2b/2b, 3a/2a, 3a/3a, 3a/4a, 3b/2b, 3b/3b.

[8] The East !Xoon exceptions to this don't seem to be beyond the suspicion of being typos. West !Xoon, however, clearly comes up with three lexical items which systematically violate this restriction, establishing inquorate genders which cut across the tone classes. Two of them, *sıǀàqànn* 'woman' (pl. *sıǀàqàn*) and *sıǁx'ā̀e* 'man' (pl. *sıǁx'àan*), establish a semantically defined inquorate gender 3b/2a, the other one, *nǁàhe* 'house' (pl. *nǁâin*), being isolated as 3b/1a. All these restrictions might seem to speak in favour of Traill's view of the independence of tone agreement

2 Gender assignment

The assignment of a noun to a certain gender is often not directly recoverable, neither from its meaning nor its form. This could be seen in (12) where (a) presents three sets of nouns with nearly the same form, in particular with the same vowel in the second mora, but assigned to different genders. And (b) presents three sets of nouns belonging to the same semantic domain, including a case of synonymy, but assigned to different genders.

(12) Gender assignment is basically independent from formal and semantic criteria

(a) Similar form (= same coda), different gender

|hùn [$|^{!h}\tilde{u}$] 'Boer' (1/2a), *‖hùn* [$\|^{!h}\tilde{u}$] 'giraffe' (3/2b), *nǂùn* [*n*$\ddot{\text{ǂ}}\tilde{u}$] 'foot' (2a/2a)

ʔmʘài [*ʔmʘài*] 'tree, wood' (1/2a), *ʘx'ài* [*ʘx'ài*] 'cheek' (3/2b)

gǂúan [*gǂúã*] 'egg' (2b/2b), *|qhúan* [$|q^{h}$*úã*] 'hair' (2a/2a)

(b) Similar meaning (= same semantic domain), different gender

nǂàhrè [*n*ǂ̈*rè*] 'sheep' (3/2b), *márí* [*márɪ́*] 'goat' (2a/2a)

sɪ́ǂx'ûi [*sɪ́ǂx'ûi*] 'puffadder' (1/2a), *kú!áqi* [*kú!q́i*] 'python' (2b/2b)

ǂ*'ùhrì* [ǂ*'*̈*ùrì*] 'dust' (1/1), *tshàrà* [ts^{h}*àrà*] 'dust' (3/3)

2.1 Semantic assignment criteria

In spite of this basic dissociation of gender from formal and semantic criteria, some tendencies of gender assignment could be observed, semantic as well as formal. Table (13) presents a comparison of West and East !Xoon genders and their semantic cores.[9]

(13) Comparative semantics of East and West !Xoon gender content

Genders	West !Xoon (total count includes 325 simplex nouns)	East !Xoon (total count includes 946 simplex nouns)
1a	**mass nouns and substances** (26) (< EX 3a), **personal names** (< EX 3a)	**mass nouns and substances** (16)
1a/2a	**miscellaneous** (109): **animals**, **trees**, **topographic / landscape terms**, **loanwords**, **artefacts** (< EX 1a/4a), parts of plants, parts of animals, time, insects, birds, humans	**miscellaneous** (13): animals, plants
1a/4a	-	**miscellaneous** (162): **artefacts & tools** (functionalised body parts /

classes from segmentally marked noun classes: However, if they were totally independent from each other, one should expect a considerable amount of shift from one tone class to the other across the two number categories and within the genders; but this is not the case. Still, the counter argument also stands: under the assumption of maximal independence of tone agreement classes from segmentally marked noun classes, it seems strange that some combinations are only very marginally represented or do not occur at all, e.g. 1b and 4b.

[9] The total number of attestations is given in brackets, prominent semantic cores are highlighted by bold. Asterisked semantic cores represent non-simplex nouns which derive from compounding. West !Xoon inquorate genders are 2a (2: toponyms), 2b (6: stuff, e.g. food, gum, faeces, garbage, poison, raisin), 1/1 (4), 3/1 (1: house), 3/2a (2: woman, man). East !Xoon inquorate genders are 1a/2a (13); 3a/2a (18); 2a (33); 2b (13); 3b (20).

		products) (> WX 1a/2a), miscellaneous animals and plants, plants, mammals, birds, insects, reptiles & amphibian, body parts, body outgrowths, disease, substances, climate & atmosphere, environment, container, humans
2a/2a	**parts** which belong to a larger unit cognitively (92): **body parts** (41), ***lexicalised compounds** (< EX 3a), ***diminutives**, ***deverbal nominalisations** with *–sà* (< *sà'àn* 'face, surface'), ethnonyms, insects and spiders, worms, snakes and fish, birds, fire and fire-related items, mammals, artefacts	**parts** which belong to a larger unit cognitively (257): **properly possessed body parts** (168), **excretions associated with body parts** (10), **parts of plants** (6), **spatial relations** (8) (< body parts), **offspring** (2), ***diminutives**, i.e. compounds with *ʘàa* (2a/2a) 'young of animal or human', ***deverbal nominalisations** with *-sà* (< *sàʔã̀* 'face, surface'), ***lexicalised compounds** (e.g. artefacts, inanimates, some plants), miscellaneous animals[10] and plants
2b/2b	**miscellaneous** (27): animals, plants, hunting equipment, other artefacts, ethnonyms, offspring of plant and non-mammals, body parts, round-shaped items, food, poison	**miscellaneous** (45): **ethnonyms** of Khoisan groups, **birds, plants**, body parts, offspring of plant and non-mammals, mammals, insects, holes, containers, environment
3a	-	**miscellaneous** (43): **place names**: names of pans (> WX 2a), **personal names** (> WX 1a), time sections of the day (4), nouns of quality relating to odour (3), nouns of quality (relating to temperature and feeling), **amorphous entities without inherent shape** such as liquids, body fluids and excretions and conglomerations (22) (> WX: 1a)
3a/3a	-	**miscellaneous** (112): lexicalised compounds (animals, some plants), loanwords[11], mammals, reptiles, insects, birds, plants, fruits, environment, climate, liquids / body fluids, disease, body parts, humans, substance, artefacts
3a/4a	-	**kinship terms** (22) (> WX 3b/4a)
3b/2b	**miscellaneous** (50): **plants**, parts of plants, **big birds**,	**miscellaneous animals and plants** (60): mammals, insects and spiders, birds, reptiles,

[10] Hypothesis: salient parts of which are used for special purposes, e.g. 'South African hedgehog' whose kidney fat, heart and bile are powerful medicine against illness (Traill 1994: 59).

[11] There are numerous exceptions, e.g. goat (1a/4a), police (2a/2a), arrowshaft (3b/2b), borehole (2b/3a), Afrikaner (2b/2b), trousers (3b/4a), reservoir (2b/2b), tin (2b/2b), bridle, bit and reins (2a/2a), dam (2b/2b), whey (3b), canvas (1a/4a).

	artifacts, mammals, reptiles, insects, body parts, body related items, inanimate nature, ethnonyms	plants, body parts, containers, holes, seasons, artifacts, environment, climate
3b/3b	**alienated body parts**	**miscellaneous** (77): **alienated body parts**, non-Khoisan ethnonyms, mammals, snakes, birds, insects, plants
3b	**mass/non-count nouns** (12)	**mass/non-count nouns** (18)
3b/4a	**humans / kinship terms** (9) (< EX 3a/4a)	**humans / kinship terms** (3)
5a/2a	-	**inanimate** (1)

The neatest gender semantically is 3/4 (EX 3a/4a, WX 3b/4a) which contains nouns for human referents only, mostly kinship terms. The fact that in East !Xoon all personal names are assigned to the single gender 3a lends additional support to the interpretation of class 3a as a class for human referents. Two developments in West !Xoon undermine this assignment criterion: the transfer of personal names from class 3a to West !Xoon class 1a, and the fact that nouns referring to social roles such as 'man' and 'woman' are assigned to 3b/2a exceptionally.

The central idea of gender 2a/2a is the part-whole relation, i.e. it contains nouns that refer to functionally distinct parts which belong to a larger unit cognitively, mostly body parts, but also parts of plants such as 'leaf' and 'root'. Moreover, gender 2a/2a also accommodates diminutives[12] such as 'little house' and 'piece of paper' (14) and lexicalised compounds such as 'cloud' (15).[13]

(14) West !Xoon: concordial agreement of 2a/2a for diminutives

(a) *nǁàhè-mà* (2a/2a) 'little house' vis-à-vis *nǁàhè* (3/1) 'house'

nǁàhè-mà	ǂ*'ū-àn*	*nǁàhè*	ǂ*'ū-ē*
house.3-DIM.2a	one-2a	house.3	one-3
'one little house'		'one house'	

(b) *!xáⁿyá-mà* (2a/2a) 'piece of paper' vis-à-vis *!xáⁿyá* (2b/2b) 'book'

!xáⁿyá-mà	ǂ*'ū-àn*	*!xáⁿyá*	ǂ*'ū-ān*
book.2b-DIM.2a	one-2a	book.2b	one-2b
'one piece of paper'	'one book'		

[12] Historically, these diminutives might turn out to originate in compounds, with the diminutive marker itself representing an eroded version of *ʘàa* 'child' (pl. *ʘ'ân̂i*) which is attested in East !Xoon. Some West !Xoon nouns look like lexicalised diminutives, e.g. *tàhmà* (2a/2a) 'Herero', *sàmà* (2a/2a) 'genet cat', *gǂɔ́máⁿì* (2a/2a) 'Southern San'.

[13] It might be surprising to find a compound such as West !Xoon *!x'ōē nǁàhè* 'cloud' in gender 2a/2a. Literally it means 'rain house' and is composed of *!x'ōē* (3) 'rain' and *nǁàhè* (3/1) 'house', both components belonging to class 3, as could be seen in the concords in (15a and b). Yet, as soon as they are combined in the compound (15c), the post-nominal concords of class 2a on the numeral indicate that the compound as a whole has been re-assigned to gender 2a/2a. Actually the situation is more complex, since cataphoric concord still reflects class 3 agreement with 'rain'. This type of "janus-headed" agreement is a regular pattern of !Xoon compounds: pre-nominal, i.e. cataphoric concord, is governed by adjacency, while post-nominal concord follows class 2a (Güldemann & Kießling 2005).

(15) West !Xoon: concordial agreement of 2a/2a for lexicalised compounds

(a) Gender 3t for *!x'ōe* 'rain'

ǹ *sɪ́* *n|ā-è* *!x'ōe* *tē* *ǁárɪ́* *kê*
1S IPF see-3 rain REL:3 much REL:3
'I see much rain.'

(b) Gender 3/1 for *nǁàhè* 'house' (pl. *nǁâin*)

ǹ *sɪ́* *n|ā-è* *nǁàhè* *ǂ'ō-ē*
1S IPF see-3 house one-3
'I see one house.'

ǹ *sɪ́* *n|ā-ɪ́* *nǁâin* *tɪ́* *ǁárɪ́* *kì*
1S IPF see-1 houses REL:1 much REL:1
'I see many houses.'

(c) Gender 2a/2a for *!x'ōē nǁàhè* 'cloud' (pl. *!x'ōē nǁâin*)

ǹ *sɪ́* *n|ā-è* *!x'ōe* *nǁàhè* *ǂ'ō-àn*
1S IPF see-3 rain house one-2a
'I see one cloud.'

ǹ *sɪ́* *n|ā-è* *!x'ōe* *nǁâin* *ká* *ǁárɪ́* *kà*
1S IPF see-3 rain houses REL:2a much REL:2a
'I see many clouds.'

Non-count nouns are assigned to various classes, but there seem to be preferences. For instance, nouns referring to substances such as ash, blood, meat, milk, salt, snuff, sugar, tea predominate in class 1a; nouns related to meteorological phenomena such as rain, smoke and light cluster in class 3b; and nouns relating to products such as food and poison are assigned to class 2b. Most of the rest of the assignment criteria remain obscure semantically, but some become clearer as soon as the derivational properties of classes are examined more closely.

2.1.1 The grammaticalisation of possession vs. alienation

A central semantic axis in nominal classification is the idea of the part-whole-relationship and – as its mirror-image – the alienation from an organic whole. Thus, most nouns which refer to body parts are assigned to gender 2a/2a when viewed in their typical functional context as parts of the organic whole possessed by an animate possessor (second column of 16). However, as soon as they are viewed as alienated, e.g. in a context of cutting up a killed animal, the same body part nouns are shifted to gender 3b/3b (third column of 16).

(16) Possession and alienation of body part nouns[14] in East !Xoon (Traill 1994)

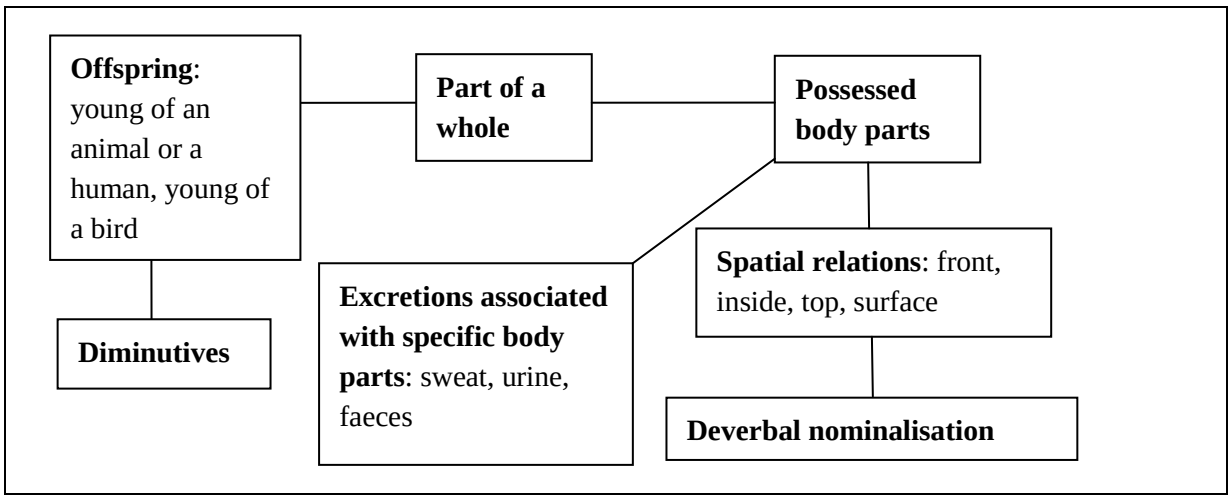
Gloss	Possessed (2a/2a)	Alienated (3b/3b)

[14] Another instance of this process, not strictly relating to a physical body part, but in all other respects exactly displaying the opposition of possession vs. alienation is *n!áan* (2a/2a) 'spirit, humour of living being' which derives the alienated form *n!áan-sé* (3b/3b) 'soul, spirit of someone recently dead'.

‘heart’	*ǀq’àann*	*ǀq’ān̄n*
‘head, skull’	*nǀàann*	*nǀān̄n*
‘buttocks’	*!ùqè*	*!ū̄qē̄*
‘lower leg’	*ǀqhàann*	*ǀqhān̄n*

Gender 2a/2a also incorporates the offspring concept which is manifest in two lexical items, namely East !Xoon *tàhq’àn* (2a/2a) ‘young of a bird’ and *ʘàa* (2a/2a) ‘young of an animal or a human’ (plus extension to form diminutives).[15] Figure (17) presents a tentative sketch of the internal semantic network of gender 2a/2a, cast in the mould of a prototype approach. The central idea or prototype is the part-whole concept. This is instantiated in two ways: in the offspring concept and in the concept of properly possessed body parts. The offspring concept is further extended to encompass diminutives, built on the noun *ʘàa* ‘young of an animal or a human’ by activating the semantic component of ‘small size’ and making use of the metonymical equation “young age = small size”. On the other hand, some body part nouns are grammaticalised by metaphoric extension for spatial relations, e.g. *sà’àn* ‘face’ is generalized for the meaning ‘surface of’, and is even further extended beyond the spatial domain for deriving abstract concepts such as instantiations of actions, e.g in nouns of action or goals / object of action (‘food’). Another metonymic link extends from body parts to encompass specific excretions closely associated with some of them. Thus, gender 2a/2a could be seen to be progressively inherited by the daughter concepts in the course of successive semantic extensions of single lexical items such as ‘young of an animal or a human’ or groups of lexical items such as body parts relevant for general spatial orientation. By virtue of these extensions, gender 2a/2a could be said to represent the sum of all semantic concepts related by metaphorical and metonymic links in a complex network such as (17).[16]

(17) Tentative semantic network of gender 2a/2a in !Xoon



[15] Three items which are assigned to gender 2b/2b in spite of their reference to instances of “offsprings” seem to contradict this: EX/WX *g‡úan* (2b/2b) ‘egg’, EX/WX *sâ’àn* ‘seed’ and WX *nǁán* (2b/2b) ‘Grewia flava fruit(s)’, derived from WX *nǁá* (3/2b) ‘Grewia flava plant’. In these cases, though, the criterion of globular shape might determine the assignment to gender 2b/2b.

[16] On the cognitive level, it seems as if the allocation of lexicalised compounds such as West !Xoon *!x’ōē nǁàhè* ‘cloud’ to gender 2a/2a could be justified by an extension of the part-whole principle: categorization is achieved by reference to another concept from which the new concept is derived as part. Thus, it might be argued that the cognitive construal of a concept such as ‘cloud’ by reference to ‘rain’ and ‘house’ classifies a cloud as part of a higher-ranking concept of ‘rain’, thereby motivating its allocation to gender 2a/2a.

Apart from the notions of possession vs. alienation (or association vs. dissociation) characteristic of gender 2a/2a vs. 3b/3b, there are further instances of derivation which point to other semantic notions underlying gender assignment (18): gender 3a manifesting a core concept of liquids and gender 1a/4a with a core concept of product or artefact.

(18) Derivational function genders in East !Xoon

Possessed body part (2a/2a)	Alienated body part (3b/3b)	Liquid (3a)	Product (1a/4a)
g‡qhèen 'breast'	*g‡qhēen* 'breast'	*g‡qhèen* 'milk'	-
n!âqm 'blood'	*n!âqm* 'blood'	*n!àaq* 'blood'	-
!qhâan 'juice, sap'	-	*!qhàa* 'water'	-
g|qhùan [g|qhûan] 'hair, feather'	-	-	*g|qhúu* 'tuft, tail hairs, flywhisk'

The concept 'blood' could obviously be viewed under three different perspectives, all of them lexicalised: either as a possessed body part when in gender 2a/2a, or as a dissociated body part when in gender 3b/3b, or as some liquid stuff when in gender 3a. The concept 'water' as a liquid is encoded in gender 3a; but when it is viewed as a secretion of a plant (i.e. in association with another entity in a functional context), it is in the body-part-gender 2a/2a. The concept 'milk' is derived from the body part noun 'female breast' by transfer to the liquid gender 3a. Finally, 'hair' could be viewed as a body part in gender 2a/2a, deriving a product 'flywhisk' (made from hair) which is in gender 1a/4a. These assumptions are confirmed by another observation: some terms for plants are neither assigned to gender 2 nor to 3, but to gender 1a/4a. The shared feature of these plants seems to be that they are predominantly used for other purposes than mere consumption as food or medicine. Instead, they provide a basic material which is manufactured to produce certain tools and artefacts. Thus, the polysemous noun *|xāi* (1a/4a) refers to the plant *Sanseivieria aethiopica* or 'bowstring hemp' and at the same time it also refers to the 'cord produced from the fibre' and to the 'snare made from the cord' (and by further extension: to any chain or string). The salient use of the plant to produce certain items or tools motivates its allocation to gender 1a/4a. A similar case might be argued for the term *|nūhūn |'úun* (1a/4a) which designates a 'species of sedge (Kyllinga alba)'; its allocation to gender 1a/4a seems to be motivated by its use as a stopper for ostrich eggshell water containers.[17]

[17] There are pairs of lexical items assigned to different genders, although they seem to share exactly the same meaning, such as *ǁòa-ǁòa-sè* (3a/3a) vs. *ǁxōna* (2a/2a) 'red-billed francolin (Francolinus adspersus)'; *gǁāhqān* (2b/2b) vs. *gǁāhqān* (2a/2a) vs. *gǁkx'àli* (1a/4a) 'cloth, rags, tatters'; *ǁqáqbá* (3b/2b) vs. *ǁáqbá* (3a/3a) 'straight thorn, Devil's thorn, Tribulus terrestris'. In these cases it seems as if the gender difference has no semantic equivalent whatsoever, suggesting an absence of semantic motivation of gender assignment and supporting the skeptics who might argue against a semantic base of the gender system. However, synonyms such as these have to be handled with care, since there might be slight semantic nuances, not recognized so far, which motivate the difference in gender assignment. Thus, the two lexical items, *'!nòhqò* (1a/4a) and *gǁà'àn* (2a/2a) share the same meaning 'lone male springbok or hartebeest', but are assigned to different genders. However, it seems as if *gǁà'àn* highlights more specific physical characteristics such as "the shape of the horns which diverge outwards and then inwards in the middle" (Traill 1994: 107) – which suggests that assignment to gender 2a/2a is motivated here by the body part orientation of the term. Also, animals with special body parts which have special uses seem to be transferred to gender 2a/2a (in accordance with the body part gender), e.g. *|xàan nàa* 'South African hedgehog (Erinaceus frontalis)' whose kidney fat, heart and bile are a powerful medicine against illness (Traill 1994: 59).

2.2 Formal assignment criteria

There is a tendency for nouns to terminate in their concordial vowel, as observed by Traill (1974a, 1985: 11-15, 1994: 20) and Honken (forthcoming). This raises the suspicion that these noun endings actually represent an older layer of class suffixes or enclitics which either got fossilised or which, on the contrary, represent a development of incipient "noun classes" which arise presently through grammaticalisation and fusion of deictic elements along the lines of Greenberg's (1978) renowned scenario. In West !Xoon (19) class 1 which demands vowel *i* as its concord, nearly half of all nouns (66/150) also end in *i*. A similar correlation of terminal vowel and agreement class holds for class 3 where roughly half of all nouns (38/81) end in *e*, and of class 4 nouns nearly all (11/12) end in *u*. There are numerous counterexamples: nouns that terminate in *i* (20a), *e* (20b) and *u* (20c) even though they do not belong to class 1, 3 and 4, respectively.

(19) West !Xoon: final vowel as a fossilised class marker?

Class 1: *i*	Class 3: *e*	Class 4: *u*
sɪ́ǂx'ûi 'puffadder' (1/2a)	*nǂàhrè* 'sheep' (3/2b)	*tûu* 'people' (3/4)
'mʘài 'tree, wood' (1/2a)	*dzòhè* 'aardvark' (3/2b)	*ʘqōqnú* 'children (alienable)' (3/4)
ǁ*'āì* 'place, location' (1/2a)	ǁ*'āe* 'time' (3/2b)	*àqrū* 'fathers' (3/4)
ʘaî 'meat' (1/1)	*sɪ́ǁx'āe* 'man' (3/2a)	*qárú* 'mothers' (3/4)
ǂ*'ùhrì* 'dust' (1/1)	*qōyè* 'ostrich' (3/2b)	*ʘx'ōrù* 'sisters' (3/4)

(20) Terminal vowels in nouns not indicative of noun class

(a) Terminal *i* in other classes than 1:

ʘx'ài 'cheek' (3/2b)
márɪ́ 'goat' (2a/2a)
kú!áqɪ́ 'python' (2b/2b)

(b) Terminal *e* in other classes than 3:

'nǀàhbè 'bow' (1/2a)
ǂ*x'ōe* 'beer' (1)
ǂ*ōe* 'mouth; opening' (2b/2b)

(c) Terminal *u* in other classes than 4:

!àhqrù 'hunger' (1)
nǁáu 'suricate' (1/2a)
ǂ*xórú* 'vein' (2a/2a)

It seems as if terminal vowels do go back to suffixed class markers. This is not only clear from the mere statistical evidence, but also from cross-dialectal comparison of nominal cognates which have shifted from one class to another and where this shift is reflected in a change of the terminal vowel. West !Xoon seems to have eliminated noun class 3a in favor of 1a or 2a (with the possible motivation of further restricting the tone agreement to class 2). In some cases, this shift is reflected in a change of the terminal vowel of the noun (21). For instance, East !Xoon *'mʘàyè* 'tree' of gender 3a/2a has been transferred to

gender 1a/2a in West !Xoon which is reflected in a replacement of the terminal vowel *e* of class 3 by the terminal vowel *i* of class1 resulting in the West !Xoon form *'mʘáyì* (1/2a).[18]

(21) Shift in agreement class reflected by a change of the terminal vowel

Gloss	West !Xoon	East !Xoon
'tree'	*'mʘáyì* (1/2a)	*'mʘàyè* (3a/2a)
'horn'	*ǁāan* (2a/2a)	*ǁāen* (3a/3a)
'milk'	*g‡àhìn* (1)	*g‡qhèen* (3a)
'millipede'	*sín*ǁ*òq'rì* (1/2a)	*ǁnúqlé* (3b/2b)

The West !Xoon drift of nouns from class 3a to 1a or 2a could also account for a West !Xoon non-harmonic noun final vowel *e* in class 1 corresponding to an East !Xoon cognate with harmonic terminal *e* in class 3. In these cases, West !Xoon non-harmonic terminal *e* in example (22) is a relic which has not been readjusted by change to *i* in accordance with the new assignment to noun class 1 as in (21), reflecting a former assignment of these nouns to class 3 still attested in East !Xoon.

(22)West !Xoon terminal *e* in class 1 as relic of a former assignment to class 3

Gloss	West !Xoon	East !Xoon
'bow'	*'n*|*àhbè* (1/2a)	|^{h}*ābē* (3b/2a)
'wind'	‡*qhòe* (1)	‡*qhùe* (3a)
'cucumber (sp.)'	*mʘâqè* (1/2a?)	*mʘâqè* (3b/2b)
'beer'	‡*x'ōe* (1)	?
'women's rear leather apron'	*g!ābè* (1/4)	?

In other cases, it looks as if West !Xoon retains an earlier state. Thus, comparative evidence points to the retention of the nominal class suffix *e* in West !Xoon *ʘqàq-ē* (3/4) 'child' which seems to have been progressively assimilated in the East !Xoon cognate *ʘqâqa* (3b/4a).

Quite frequently, noun plurals with human referents are formed by compounding with *tûu* (4a) 'people' in second position (Güldemann 2005: 6; Güldemann forthcoming a). This is still transparent in East !Xoon. In West !Xoon, however, progressive assimilation and fusion reduces this noun to a plural suffix *-rū* or *–ū* (23), thereby obscuring its lexical origin and the motivation of the allocation of the compounds to class 4a, marking a transition from lexical determination of noun class assignment in East !Xoon to purely morphological determination in West !Xoon. This raises the suspicion that other nouns terminating in *–u* even in East !Xoon might represent an older layer of fusion of the noun 'people' where the origin cannot be recovered from transparent contemporary compounding. The ultimate origin of these compounds might be seen in a productive process of forming associative plurals on the basis of proper names and kinship terms (and even pronominals) by suffixing *tûu* (4a) 'people', e.g. West !Xoon *Tom-tuu* 'Tom's lot, Tom's gang, Tom and company', also evident in the Afrikaans equivalent 'Tom hulle'.

[18] Another example of readjustment to class 1 is West !Xoon *nǁâin* (1) 'houses' vs. East !Xoon *nǁàa* (3a), but here the link is obscured by two other factors: the unexplained nasalisation in West !Xoon, and the fact that class 3 marker *e* in East !Xoon has been assimilated to the root vowel *a*.

(23)West !Xoon plural suffix *–rū* corresponds to East !Xoon *-tû* < plural noun *tûu* (4a) ‘people’

Singular	West !Xoon plural	East !Xoon plural
àqà (3a/4a) ‘father’	*àqà-rū*	*àqà-tû*
qáe (3a/4a) ‘mother’	*qá-rú*	*qáe-tû*
⊙àa (3a/4a) ‘child (inal.)’	*⊙ōo-rù*	*⊙àa-tû*
⊙qàqe (3a/4a) ‘child (al.)’	*⊙qòqo-nù, ⊙qòqo-rù*	*⊙qâqa-nî*
’|nàn (3a/4a) ‘spouse’	*’n|án-ú, ’n|á-rú*	*’|nàn-tû*

Further evidence for the morphological status of terminal vowels is provided by the observation that vowel suffixes *-é* (3b) and *-à* (2a) are used to derive nouns from verbs (24), the most revealing example being the two alternatives for the resultative nouns ‘blister’, both derived from the verb ‘scorch’, the one terminating in *–e* assigned to class 3b and the one terminating in *–a* assigned to class 2a in perfect harmony with the concordial vowels of these classes.

(24) East !Xoon: deverbal derivation by noun class specific vowel suffixes

verb	derived noun
qáin ‘be beautiful’	*qáyé* (3a) ‘beauty’
kx’ái ‘laugh’	*kx’áyé* (3b) ‘laughter’
kx’āa ‘cry’	*kx’āan* (2a) ‘crying’
ǂ*qhó’bu* ‘scorch (of living skin)’	ǂ*qhó’bu-sé* (3b/3b), ǂ*qhó’bu-sà* (2a/2a) ‘blister’

The derivation of alienated body part nouns from properly possessed ones does not simply induce a trans-position from gender 2a/2a to 3b/3b. The shift from agreement tone class a to b is also reflected in a tone change in the noun itself. Thus, the properly possessed nouns of gender 2a/2a reflect a level low or falling tone pattern, whereas their alienated counterparts in gender 3b/3b display a level mid tone pattern (25). However, this tone change only works in nouns with underlying LL or HL tone pattern in the possessed form. A mid or high tone pattern of the possessed form does not change in the alienated form (26).

(25) Possession and alienation of body part nouns in East !Xoon (Traill 1994) with tone change as a reflex of suffixed *H for class 3b

Gloss	Possessed (2a/2a)	Alienated (3b/3b)
‘eye’	*!’ûin*	*!’ūin*
‘heart’	*|q’ànn*	*|q’ānn*
‘head, skull’	*n|ànn*	*n|ānn*
‘breast’	*gǂqhèen*	*gǂqhēen*
‘ear’	*nǂùhàn*	*nǂūhān*
‘chin’	*dzànì*	*dzānī*

(26) Possession and alienation of body part nouns in East !Xoon (Traill 1994) without a tone change (neutralisation of 3b *H with terminal lexical H)

Gloss	Possessed (2a/2a)	Alienated (3b/3b)

‘back muscle’	*ǀxūmā*	*ǀxūmā*
‘throat’	*ʼǀnúqm*	*ʼǀnúqm*
‘mane’	*!álı́*	*!álı́*
‘hamstring (biceps femoris)’	*!kxʼáu*	*!kxʼáu*

This kind of tonal behaviour suggests that derivation of 3b alienated forms includes the suffixation of a floating H tone as a class marker which merges with terminal high tones in the basic lexical forms without leaving a trace, but raising terminal lexical low tones to mid, as formalised in (27). The floating H might be analysed as a tonal relic of a prior class marker **-é* which could be identified with the contemporary postnominal concord of class 3b *–é*.

(27) Tonal effects with 3b *H suffixation (internal reconstruction: 3b *-é?)

Basic tone pattern	Output tone pattern of possessed form (2a/2a)	Output tone pattern of alienated form (3b/3b)
LL	L	M (< LL-*H)
HL	HL	M (< HL-*H)
LH	M	M (< LH-*H)
HH	H	H (< HH-*H)

3 Conclusion

Noun assignment to genders in !Xoon is to a considerable extent determined by semantic criteria: gender 3/4 is for humans, 2a/2a is based on the part-of-a-whole idea, whereas 3b/3b is for parts alienated from their proper contexts, and 1a/4a contains, among others, items dissociated from their original context to be further processed into artefacts and tools or by metonymic extension referring to these tools and end-products. It is also possible to internally reconstruct vestiges of what seem to have been noun class suffixes once used for derivational purposes (28). Not surprisingly, these suffixes come very close in form to the post-nominal concords.

(28) Internal reconstruction of noun class suffixes in !Xoon (based on Traill 1994: 20)

Classes	Postnominal concords	Nominal class suffixes
1a	*ì*	**-ì [-li]*
2a	*àn [ã̀]*	**-ã, *-n, *-m*
2b	*án [ã́]*	**-ã́, *-n, *-m*
3a	*è*	**-e [-le, -lo, -ye, -be]*
3b	*é*	**-e, *-́ [-le, -ye, -be, -de]*
4a	*ù*	**-ù, *-tû*

Secondary processes of noun class syncretism and reassignment partly obscure some of these motivations in West !Xoon, resulting for example in nouns terminating in *e* reflecting former membership to class 3, which have become re-allocated to class 1, though, for semantic reasons. Cognitive motivations of these reassignments remain to be uncovered word by word.

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