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Implications of Itelmen agreement asymmetries

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1. Introduction¹

The inflected verb in the Chukotko-Kamchatkan languages of Russia's Bering Sea coast (Itelmen [also called "Kamchadal"], Koryak, Alutor, Kerek and Chukchi) shows agreement simultaneously with both subject and one object (or oblique). This agreement is expressed by a combination of prefix and suffix as illustrated for intransitive (1) and transitive (2) verbs from Itelmen:²

- | | | | | |
|-----|----|--|----|---|
| (1) | a. | kma t-k'oŋ-kičen
I 1SGS/A-come-1SGS
'I came/arrived' [S3:13] | b. | q-k'oŋ-xč
2S/A(IRR)-come-2SGS
'(You) come !' [S3:20] |
| (2) | a. | kma t'-əlčqu-[γ]in
I 1SGS/A-see-2SGO
'I saw you' [S1:71] | b. | q-əlčqu-βum kma
2S/A(IRR)-see-1SGO me
'(You) look at me!' [S1:75] |
| | c. | n-əlčqu-[γ]in
3PLS/A-see-2SGO
'They saw you' [S1:77] | d. | n-əlčqu-z-um
3PLS/A-see-PRES-1SGO
'They see me' [S1:77] |

In this paper, I develop and extend the analysis in Bobaljik & Wurmbrand 1997, presenting evidence that the prefix is the "primary exponent" (in the sense of Carstairs 1987) of subject agreement while the suffix is the primary exponent of object agreement. Apparent instances of subject agreement in the suffixes arise from a process akin to allomorphy. In essence, the claim is that the suffixes *agree* with the object, but show allomorphy for ('sensitivity to') features of the subject.

The argument is in part based on an asymmetry between the two positions—while the correct choice of suffix is in certain well-defined instances dependant on features canonically expressed by the prefix, the choice of prefix is never sensitive to properties of the suffix (i.e., object). This asymmetry reflects, I believe, a systematic asymmetry in the language—sensitivity to agreement features is uniquely *outwards*. That is, the form of a given morpheme may be conditioned by agreement features expressed further out, but not by agreement features expressed further in. This paper thus continues a line of investigation set out by, e.g., Carstairs 1987 and Noyer 1997, an attempt to find systematicity and order in the maze of intricate interdependencies and cooccurrence restrictions in inflectional morphology.

The paper is organized as follows. Section 2 summarizes the arguments from Bobaljik & Wurmbrand 1997 that the agreement prefix is subject-oriented while the suffix is object-oriented, and that the apparent subject agreement in the suffixes is essentially allomorphy. In Section 3 I investigate the asymmetric nature of this allomorphy like sensitivity and present the generalizations which suggest that allomorphy conditioned by agreement features is uniquely outwards-sensitive. Section 4 sketches an account of how this might follow from a theory in which morphology is *realizational*, and in which the process of providing a syntactic terminal node with a phonological matrix is akin to a rewrite rule, much along the lines envisioned in Chomsky's (1965) *Aspects* model.

2. Itelmen agreement in a nutshell

As (1)-(2) illustrate, the choice of prefix is determined by the person and number of the subject (and mood), while the features reflected in the suffix position are those of the object of transitive verbs, but of the subject of intransitive verbs. This curious situation, which occurs in all of the Chukotko-Kamchatkan languages, has been described as a unique type of ergative split by e.g., Comrie 1981:247, Spencer 1996:1—nominative-(accusative) prefixes co-occurring with (ergative)-absolutive suffixes. [Note that in Itelmen, direct arguments—subject and object—do not bear any case marking. This contrasts with the other C-K languages which have an ergative-absolutive case system.]

Bobaljik & Wurmbrand 1997 argue that this “split” in Itelmen is epiphenomenal and that the entire agreement system is fundamentally aligned in terms of subject versus object, with subject agreement in the suffix being secondary. The prefixes are indeed clearly subject-oriented and do not (with one exception) distinguish between transitive and intransitive subjects (e.g., $t \leftrightarrow [1.SG.SUBJ (realis)]$). This is the canonical NOMINATIVE grouping. However, the suffixes show a much more complex pattern. For one thing, the suffix may agree with an indirect (DATIVE) object and fail to agree with the ABSOLUTIVE (Volodin 1984, Bobaljik & Wurmbrand 1997). More tellingly, Volodin & Vakhtin 1986 observe that despite the apparent alignment of the suffix position along ABSOLUTIVE lines (grouping together intransitive subject and transitive object, to the exclusion of transitive subjects), there are no truly ABSOLUTIVE suffixes. For instance, the suffix corresponding to a [1.SG.INTRANS.SUBJ. =“S”] is *-kičen*, while that corresponding to a [1.SG.OBJ =“O”] is *-βum*. The unity of transitive and intransitive subject prefixes, and the lack of a corresponding unity of intransitive subject and object suffixes, is quite general as can be seen from the relatively full paradigm in (3).³

(3)

ITELMEN AGREEMENT (CLASS I)			
person-number	A	S	O
1sg. REAL IRREAL	t- m-	t- -kičen m- -kičen	-βum
2sg. R I	q-	-č q- -xč	-yin
3sg. R I	xən-	-n xən- -n	[see below]
1pl. R I	nt- mən-	nt- -kičeʔn mən- -kičeʔn	-βuʔm
2pl. R I	-sx q- -sx	-sx q- -sx	-sxn
3pl. R I	n- xən-	-ʔn xən- -ʔn	[see below]

Note that for 1st and 2nd person objects, the features of the object alone control the agreement suffix. With 3rd person direct objects, the situation is more complex in that only the object number is expressed (e.g., by the glottalization of “n”, or a glottalized “n”—written ʔn—the regular plural throughout the language); the form of the suffix is conditioned also by the features of the subject.

(4)

ITELMEN AGREEMENT: 3 PERSON DO		
SUBJECT	DIRECT OBJECT	
	3sg	3pl
1sg, pl IMPERSONAL	-čen	-čeʔn
2sg REAL IRREAL	-(i)n -x(č)	-(i)?n -(x)i?n
2pl	-sx	-sxi?n
3sg, pl	-nen	-neʔn

Bobaljik & Wurmbrand 1997 observe that the correct generalization to be made here is this: the agreement suffix in Itelmen is determined by the person and number features of the object when it has such features. When the object does not have the appropriate features, then the features of the subject are coopted. This gives rise to the apparent double expression of subject agreement in intransitive verbs as in (1); the prefix is true subject agreement, but the suffix reflects the person and number features of the subject only due to the fact that there is no object to contribute these features. Independent evidence for an analysis along these lines comes from the forms in (4). On the not unfamiliar assumption that 3rd "person" objects lack person features, but have number (cf. Benveniste 1956, Forchheimer 1953, Ritter 1995, Noyer 1997), we see these as evidencing a split: the number features of the suffix are contributed by the object, while the person features reflect those of the subject.⁴

3. Hierarchy and The Implications of Class.

3.1 Inwards and Outwards Sensitivity

An important aspect of the account sketched above is that it displays an asymmetry. The choice of suffix depends in certain instances (intransitives and transitive clauses with 3rd person direct objects) on features expressed by the prefix (i.e., subject person and number), but the choice of prefix never depends on features expressed by the suffix (i.e., object person and number).⁵

As discussed in detail by Carstairs 1987 we may speak of dependencies in morphology as being either *outwards* or *inwards*. Outwards sensitivity, for example, is the case in which the shape of a particular morpheme (e.g., choice of allomorph) depends on properties expressed by a morpheme more peripheral in the word. A straightforward example is vowel change (ablaut) in the verb stem, conditioned by agreement features (agreement being more peripheral than the stem), as in German. As illustrated in (5), certain "strong" verbs undergo a vowel change in the present tense, conditioned by 2nd or 3rd person singular subject agreement. That this change is sensitive to morphosyntactic features (as opposed to simple phonology) is shown by the fact that of two identical suffixes (3rd singular and 2nd plural) only one triggers the vowel change.

(5)	<i>geben</i> 'give':	<u>SINGULAR</u>	<u>PLURAL</u>
	1 person	ich geb-e	wir geb-en
	2 person	du gib-st	ihr geb-t
	3 person	er,sie gib-t	sie geb-en

Turkish provides a clear case of inwards sensitivity between two affixes, as can be seen in (6).

(6) Turkish (Carstairs 1987:156):	<i>gel-</i>	'to come'		
Aorist Simple:	1sg.	<i>gel-ir-im</i>	1pl.	<i>gel-ir-iz</i>
Past Simple:	1sg.	<i>gel-di-m</i>	1pl.	<i>gel-di-k</i>

The inflected Turkish verb consists of a root, followed first by a tense marker (*-ir-* in the Aorist and *-di-* in the Past) and, more peripherally, an agreement morpheme. The 1st person singular suffix is *-(i)m* with allomorphy conditioned solely by phonology. However, the 1st person plural agreement suffix shows two allomorphs, *-iz* and *-k*, the choice among which is determined by the tense.

The Itelmen case involves interaction between a prefix and a suffix and thus it is not a priori clear whether this sensitivity is inwards or outwards. However, by looking further into Itelmen morphology, it is possible to construct an (indirect) argument that contextual allomorphy conditioned by agreement features is uniquely outwards. The argument comes from an examination of the allomorphy for the marker of the second conjugation class.

3.2 Class in Itelmen

Transitive verbs in Itelmen fall into one of two conjugation classes. Class I (by far the largest) is unmarked, while Class II is marked in all forms by a suffix which typically precedes the agreement (and non-finite) morphemes, and follow tense and aspect suffixes. Though there is some inter- and intra- speaker variation concerning class membership, Volodin 1976:205 lists 16 verbs as belonging to Class II.⁶ Pairs of Class I and Class II verbs are given in (7)-(8). In each pair, the (b) example shows a Class II morpheme (boldfaced) between the present tense morpheme (s/z) and the agreement suffixes.

- | | | | | |
|-----|----|---|---|---------|
| (7) | a. | <i>t'-əŋkzu-s-čəʔn</i>
1SG-help-PRES-I>3PL
'I'm helping the mice.' | (<i>ʔelʔku-ʔnʔ-aʔn</i>)
(mouse-PEJOR-PL) | [KL:17] |
| | b. | <i>t-tʔ-s-ki-čəʔn</i>
1SG-bring-PRES-II-1>3PL
'I'm bringing tasty rotten (mouse) heads' | (...č'eβuzlaχ-aʔn <i>ktʔl-eʔn</i>)
(... tasty-PL rotten.heads-PL) | [KL:25] |
| (8) | a. | <i>əlčqu-z-in</i>
See-PRES-2SG>3SG
'Do you see our house?' | (<i>məzin kist</i>)?
our house | [KL:16] |
| | b. | <i>tʔ-s-čŋ-in</i>
Bring-PRES-II-2SG>3SG
'What are you bringing?' | (<i>əŋqa</i>)?
what | [KL:25] |

Of immediate relevance is the shape of the Class II morpheme which is different in the two (b) examples. Indeed, there are a range of Class II allomorphs, given with the contexts for their occurrence in (9).

(9) **Class Markers:** **Caveat:** some variation

	<u>/environment</u>
-k	[non finite] (including participles)
-čij	[3SG>3]
(-čij-	[2sg>3.realis])
-čy ^w ə(i)	[3PL>3] [2SG>3.REALIS] [2SG>3PL.IRR]
-ik ⁷	[2PL>3SG] [2SG>3SG.IRR]
-xk	[1.OBJ] [2SG.OBJ] [2PL>3PL]
-ki	[2pl.OBJ] [3.IO] [1>3] [Ø >3]

It is clear that the choice of allomorph for the Class II marker is determined largely by agreement features (person and number) of both the subject and object. Importantly, like the sensitivity considered in the previous section, this allomorphy is asymmetrical. Quite generally, the Class marking does not influence the choice of agreement suffix or prefix, as can be seen in (7)-(8); other than the phonologically conditioned voicing alternation, the inflectional morphemes underlined in each (a) example are the same as in the corresponding (b) examples. The choice of Class suffix depends on features expressed by the agreement suffix (i.e., object person and number) and prefix (i.e., subject person and number), but the choice of prefix and object agreement suffix (almost) never depends on the feature expressed by the Class suffix (i.e., Class II).⁸

Directing our attention to the two suffixes (class and agreement) we see that we may provide a partial answer to the question posed at the beginning of this section: allomorphy of the Class II morpheme is conditioned by features of the more peripheral object agreement suffix. This sensitivity is asymmetrical (thus "pure" in Carstairs' terms) and clearly outwards. At this point, we may assume that sensitivity conditioned by agreement features obeys a unique direction of sensitivity, in this case outwards. Since (both) the object agreement suffix (and the class suffix) are conditioned (asymmetrically) by agreement features of the prefix (as discussed in section 2), we would conclude that the prefix is more peripheral in the word than either of these two. This line of reasoning leads to the hierarchical structure in (10), with the properties as indicated.

(10)

[A- [[[STEM] -C] -B]]		
POSITION	Exponent of:	Allomorphy for:
A Pref-	SUBJ-AGR	— (MOOD)
B -Suf.Agr	OBJ-AGR	SUBJ-AGR
C -Suf.Class	CLASS (II)	SUBJ-AGR; OBJ-AGR

On the assumption that all allomorphy for these features is outwards-sensitive, only the hierarchical structure indicated actually explains the array of attested and unattested dependencies in the right-hand column of (10). The most embedded suffix, Class II, shows allomorphy conditioned by features of the agreement prefix and suffix, both of which are further out. The next most peripheral affix is the suffixal object agreement. This suffix shows allomorphy conditioned by features of the prefix (which is further out) but not for class (which is further in).

Finally, the most peripheral of the affixes considered here is the subject agreement prefix which shows no allomorphy for agreement or class features expressed elsewhere (though it does show portmanteau-like allomorphy for mood).

Note that the crucial assumption is not directly warranted by the data originally considered. In the one case of allomorphy for which the direction of sensitivity was demonstrable, the sensitivity was seen to be outwards (the dependence of class II on object agreement). The argument above hinges on extending this observation to the case in which the directionality is not directly observable (i.e., the relation between prefix and suffix). Importantly, though, it is not clear that any conceivable alternative would fare equally well in predicting exactly the range of dependencies indicated in the right-most column of (10). For example, a flat structure—or, equivalently, the assumption that sensitivity for syntactic features may be either inwards or outwards, as in Halle & Marantz 1993—would admit the attested sensitivities, but it would leave as accidental the range of non-attested dependencies. Thus, there would be no account of why the prefix does not depend on person-number of the object or on conjugation class. The importance of the assumption that all allomorphy considered thus far is uniquely outwards-sensitive (and thereby the justification of this assumption) is that it explains not only what dependencies do occur but also what dependencies do not. In the following section, I will sketch an account of what this particular assumption may follow from.

4. Inwards and Outwards Sensitivities⁹

In the previous section it was shown that a succinct account of the range of dependencies attested (and unattested) among the inflectional morphemes of Itelmen relied on the assumption that all allomorphy conditioned by agreement features is outwards-sensitive. If various problems, put aside here, can be overcome, this should be an interesting generalization in and of itself. However, we should also wonder why allomorphy in Itelmen might work this way. In the remainder of this paper, I will propose that allomorphy conditioned by agreement features is outwards-sensitive in Itelmen because it is always outwards-sensitive and show how this may follow from the theory of Distributed Morphology (Halle & Marantz 1993). I will then turn very briefly to a consideration of how this may be reconciled with the results of Carstairs 1987 whose Peripherality Constraint (p.193) dictates that no allomorphy for features such as agreement should be outwards.

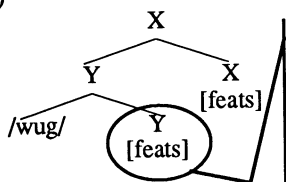
The key, I propose, lies in the distinction between morpho-syntactic features (i.e., those features relevant to the syntactic computation) and morpho-phonological features (those relevant only post-syntactically). I will argue here that allomorphy conditioned by morpho-syntactic features must be outwards-sensitive, while that conditioned by morpho-phonological features must be inwards-sensitive. The latter claim is explicit in Halle & Marantz 1993, while the former will follow from treating vocabulary insertion (i.e. lexical insertion) as a post-syntactic operation that replaces a syntactic terminal node (a bundle of syntactic features) with a phonological entity (essentially the position taken in Chomsky 1965, chapter 2 and in Halle 1992).

noted above, this sensitivity for conjugation class is not restricted to adjacent environments, e.g., the present tense marker intervenes in (7)-(8).

Agreement features are, on the other hand, presumably present in the syntax (i.e., at least to the extent that agreement is determined by syntactic configurations). In this way, they should be "visible" for the determination of contextual allomorphy prior to vocabulary insertion. That is, allomorphy at a given node may "see" syntactic features further out. If the characterization of the Itelmen data given above is correct, we do indeed see outwards-sensitivity of exactly this sort in Itelmen. What is missing at this point, though, is an account of why such sensitivity to syntactic features is *always* outwards.

As characterized by Halle & Marantz (1993) vocabulary insertion consists of providing the phonological matrix and diacritics to a terminal node post-syntactically. By implication (and explicitly for Noyer 1997:*lxii*), the syntactic features persist into the phonology. However, an alternative suggests itself (and is made explicit in Halle 1992, Trommer 1999). Namely, vocabulary insertion could be cast as the replacement of the syntactic entity (a terminal node) with a phonological entity (a "vocabulary item"). On this latter view, syntactic features would be deleted by the process of vocabulary insertion. One implication of this seemingly innocuous change in the theory is that it predicts exactly the state of affairs argued above to exist in Itelmen. If syntactic features no longer persist after they have been replaced by phonological matrices, it follows that sensitivity to syntactic features may only be to those positions which have not yet been subject to vocabulary insertion. Again, assuming that vocabulary insertion is root-outwards (as above), in any given structure it is only those syntactic features which are more peripheral which will be able to act as the context for allomorphy. This is illustrated schematically in the following:

(12)



Next point of insertion may be sensitive both inwards and outwards BUT

Outwards:	only for morpho-syntactic features.
Inwards:	only for specific vocab items (= phonology and diacritics)

This schema represents an intermediate stage in a derivation. The syntax has concatenated a series of terminal nodes, creating a complex word consisting solely of (bundles of) syntactic features. Vocabulary insertion (as in (11)) has begun at the most central node, and has replaced the syntactic features with an appropriate phonological matrix (in this case /wug/). The next point of insertion is the node Y. Allomorphy at this point may be conditioned by all and only those features which are present in the representation at this stage. In addition to the syntactic features at Y itself, the only syntactic features which may thus condition allomorphy are those which are more peripheral, i.e., at X. The syntactic features which had been present at the root have been replaced (cf. (11)). Conversely, phonological features (including arbitrary diacritics such as conjugation class) are present only at the root and have yet to be determined further out. This model thus predicts the directions of sensitivities attested in Itelmen.

Thus the schema in (12) directly captures the properties of the Class Marker in Itelmen. The shape of this morpheme (its presence or absence) is conditioned by

an arbitrary diacritic of the verb stem (inwards: the stem has already been inserted), and simultaneously by syntactic features of the subject and object agreement affixes (outwards: the features are there, but not the actual items).

Once again, the important property of the present view is not that it predicts what kinds of allomorphy may be found in language but that it also predicts what may not be found. For Itelmen, laying aside certain complications (see the endnotes and references there), the picture appears to be broadly correct. What remains to be seen is how this will fare cross-linguistically. Preliminary results, though, lead to optimism (see Bobaljik 1999) with one major caveat, which I address immediately.

4.2 The Peripherality Constraint

Carstairs 1987, in investigating the kinds of sensitivities explored here, proposed the Peripherality Constraint (p. 193).

- (13) The realisation of a [morphosyntactic] property P may be sensitive inwards, i.e., to a property realised more centrally in the word-form (that is, closer in linear sequence to the root), but not outwards to an individual property realised more peripherally (further from the root).

This is obviously directly at odds with the results of this paper. Importantly, though, the examples which Carstairs adduces to support this claim (including the Turkish example (6), above) involve sensitivity between adjacent morphemes. I suggest that this involves an additional complication, namely, that adjacent morphemes may interact with each other independent of the inwards-outwards distinction. The generalization proposed above (the opposite of Carstairs's Peripherality Constraint) holds of non-adjacent morphemes.

That adjacency may be a sufficient condition for providing a context for allomorphy is suggested by work on Greek (Bader 1997) and by German data reported (in a somewhat different context) in Wurmbrand 1999. The key observations for German are these: first, in addition to the outwards sensitivity noted in (5), there is an inwards-sensitivity in which the choice of form for 1st and 3rd person singular agreement suffix depends on what the verb is next to. The two agreement paradigms are given in (14).

- (14) German: Two verbal agreement patterns (Wurmbrand 1999)

	Pattern 1		Pattern 2	
	Singular	Plural	Singular	Plural
1 st person	-(ə)	-(ə)n	∅	-(ə)n
2 nd person	-st	-t	-st	-t
3 rd person	-t	-(ə)n	∅	-(ə)n

In the present tense, Pattern 1 forms occur next to a main verb [with the exception of *wissen* 'to know'] and Pattern 2 forms occur with modals. Thus, in the present tense (which is unmarked for tense) the verb stem and the agreement suffixes show mutual conditioning.

The second observation for German is that in the past tense (in which a—possibly null—tense suffix intervenes between the verb stem and the agreement suffix), both of these dependencies disappear. While vowels may

change for tense, there are no vowel changes like those in (5) conditioned by agreement features across an intervening tense morpheme. Similarly, the distinction between agreement allomorphs for main and modal verbs in (14) is neutralized (in favour of Pattern 2) in the past tense. In German, then, adjacency is an important factor in conditioning the environment for allomorphy.

Importantly, the Itelmen case cannot be reduced to adjacency. The class marker, in addition to being sensitive to the verb stem's conjugation class diacritic, is sensitive to features of both the prefix and suffix. The only way that it might be (hierarchically) adjacent to both would be if it were between them. However, in that case, the suffix would not be adjacent to the prefix and should thus not be sensitive to the latter's properties, contrary to fact. Alternatively, a flat (or ternary branching) structure would allow all three affixes to be hierarchically adjacent (if not linearly so), but as we have seen above, such a structure would deprive us of an account of the asymmetrical nature of the relationships among morphemes investigated here.

Clearly, there are issues to address and further examples to consider. In this sense, the above paper serves as the impetus to a research programme, one which continues in Bobaljik 1999 and which I hope will continue further as more relevant data becomes available.

5. Conclusion

The present paper has been preliminary in many ways and somewhat speculative in nature. What I hope to have shown in the above discussion is the following. By assuming the treatment of Itelmen inflection proposed in Bobaljik & Wurmbrand (1997), an asymmetric relationship emerges between the agreement prefixes and suffixes in that the suffixes are sensitive to properties of the prefixes, while the prefixes are insensitive to properties of the suffixes. This relationship, I have argued, is a part of a systematic set of asymmetries in Itelmen inflection in which allomorphy may be conditioned by syntactic features (e.g. agreement) expressed more peripherally in the word, but not by syntactic features which are closer to the root. In the final section, I offered an admittedly dense sketch of how this generalization might in fact follow from a particular theory of morphology. In so doing, I hope to have contributed a small step towards demystifying the complexities of interactions and dependencies among inflectional morphemes, and to have shown that there is perhaps some sense of order where there appeared to be none.

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² Of three major dialects of Itelmen attested in the eighteenth century, only the Western variety survives, spoken currently by fewer than 50 people on the central Okhotsk coast of the Kamchatka peninsula. Examples in this paper are from the Sedanka (Northern) sub-dialect, and were collected

during field work in 1993-4 and 1996. More detailed treatment of some of the material presented here is to be found in Bobaljik & Wurmbbrand 1997 and Bobaljik 1999. The only monograph length grammar of Itelmen is Volodin 1976.

³ A small number of transitive verbs take "class 2" conjugation, which involves an additional morpheme typically occurring before the agreement suffixes in this table. This is the focus of section 3, below. There are two ways in which the data in the table deviates from the general characterization of the morphology given in the text. First, the suffix *-sx* occurs with all [2pl] subjects—the only instance of true suffixal agreement with a transitive subject. Note, though, that *-sx* occurs peripheral to the other suffixal agreement morphology, e.g., *q-iϕli-xk-um-sx* [2.SUBJ-BRING-CLASS2-1SG.OBJ-2.PL.SUBJ] and is strange within Itelmen morphology in other ways as well. Second, the prefix for a [3PL] subject varies for transitivity (*n-∅*). See note 5. This contrasts sharply with the situation in Chukchi, Alutor and Koryak, as discussed in Bobaljik 1999.

⁴ This analysis in terms of sharing or copying of features was first introduced for this data in Bobaljik & Wurmbbrand 1997. Since then, a number of similar cases have been identified in a range of languages, see, e.g., Hale & Fernández on K'ichee' and Basque and Bobaljik 1999 for others.

⁵ The third person plural indicative prefix alternates between *n-* (transitive) and *∅* (intransitive) but even this is not sensitive to the features of the object, but only to the presence or absence of an object.

⁶ There is no apparent syntactic, semantic or phonological coherence to this list; it is simply an arbitrary diacritic. The verbs Volodin lists are: *sxzu-k-es* 'to carry (s.o., s.th.) on one's back', *ənxla-k-es* 'to carry, convey by vehicle [include. horse]', *iϕli-k-es* 'to bring', *k'zi-k-es* 'to grab (s.o.) by the nape of the neck', *ənk-k-es* 'to catch', *əiʔe-k-es* 'to get (s.o., s.th.) from below, beneath the water', *tzil-k-es* 'to catch up to, overtake', *čke-k-es* 'to find', *čaba-k-es* 'to meet', *χaq til-k-es* 'to recognize, know (s.o.)', *geze-k-es* 'to welcome, treat (s.o.)', *čel-k-es* 'to choose, elect (s.o.)', *la-k-es* 'to give out (s.o.)', betray; to tell (s.th.)', *txit-k-es* 'to remember', *i'k'ne-k-es* 'to press down on, squeeze', and *əmpika-k-es* 'to hit with all one's strength'.

⁷ *-ik* alone among the Class II allomorphs surfaces to the right of the agreement suffixes. Note though that it occurs only with 2nd person subjects, which add a range of complications to the pattern described here. See Bobaljik & Wurmbbrand 1997: 417ff for some discussion, and Bobaljik 1998:§2.2.1 for a comparison to Chukchi.

⁸ The apparent exceptions have once again to do with 2nd person subject, in this case, 2nd person subjects acting on 3rd person objects in the irrealis mood. When the object is 3PL, the forms are Class I: q-VERB-*xiʔn* vs. Class II: q-VERB-*čy^w-iʔn*. The lack of an /x/ in Class II may have a phonological explanation. With 2SG subject acting on 3SG object (irrealis) the forms are Class I: q-VERB-*x* vs. Class II: q-VERB-*xčik*. The *č-∅* alternation is mysterious (though the *-xč* form surfaces also with intransitives 2SG subj, irrealis); this form also involves the anomalous peripheral Class II suffix mentioned in note 7.

⁹ This section is somewhat of a postscript in that in the oral presentation of this paper in February, I had offered no account of why the sensitivity discussed here must be uniquely outwards. Having limited the discussion to Itelmen, I had simply offered as a conjecture the claim that all sensitivity to syntactic features was outwards-sensitive. This is immediately falsified of course by the kinds of examples discussed by Carstairs 1987 (including the Turkish example above) but when one focuses the investigation on non-adjacent morphemes the generalization appears to hold. See section 4.2 for discussion. One remaining counter-example is the "Subject Marking Anomaly" described by Weber 1989:97 from Huallaga (Huánuco) Quechua, brought to my attention by Erin Dorgan. See Bobaljik 1999 for discussion and accounts of other apparent counter-examples.

¹⁰ A succinct overview of this framework, with references and links, is available at <http://www.ling.upenn.edu/~moyer/dm/>.

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