

Suppletion is Local: Evidence from Hiaki
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Abstract:

Bobaljik (2012) proposes a stringent locality constraint on the conditioning of suppletion: the insertion of suppletive vocabulary items can be sensitive to features within the same maximal projection, but not across a maximal projection boundary. Among heads (X^0 nodes), this condition restricts suppletion to synthetic formations and excludes suppletion in analogous analytic formations. A large survey of suppletion in comparative and superlative formation revealed numerous examples of root suppletion triggered by the comparative affix, while no examples of a pattern in which root suppletion is triggered by a free-standing comparative adverb were found, entirely consistent with the locality condition on suppletion.

Hiaki provides examples of apparent conditioning of suppletion in phrasal constructions, which seem to constitute *prima facie* counter-examples. The number of a subject DP can trigger suppletion of the verb in a certain class of intransitive verbs. We show that these apparent counterexamples do not in fact contradict Bobaljik's 2012 generalization, as the verbs in question can be shown by language-internal diagnostics to be unaccusative; suppletion, then, is in fact triggered by an element within the maximal projection of the suppletive verb. The analysis supports the position in Kratzer 1996, Marantz, 1997, Harley 2011, that internal arguments are base-generated as sisters to their selecting verb, rather than in a separate functional projection. Only in this configuration do the number suppletion facts form a single generalization with the facts from comparative suppletion. The Hiaki suppletion examples make the additional, and important, point, that the locality condition in (1) is not tantamount to a distinction between word-internal and word-external triggers of suppletion, but is rather a condition of structural locality, supporting the central tenet of Distributed Morphology (Halle and Marantz 1993) that morphological structure is, in a fundamental way, syntactic.

1 Introduction

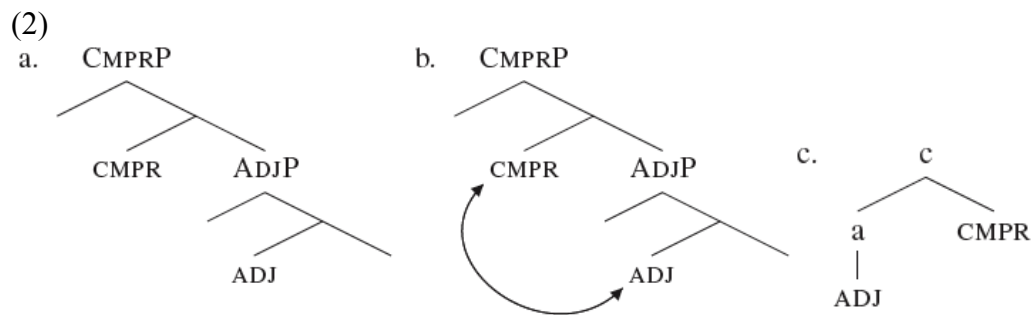
Bobaljik (2012) proposes a stringent locality constraint on the conditioning of suppletion: the insertion of suppletive vocabulary items can be sensitive to features within the same maximal projection, but not across a maximal projection boundary, as in (1).¹

¹ This paper grew out of discussions at *Exploring the Interfaces (1)*, McGill, May 2012. We thank the organizers for inviting us to contribute, and the participants for discussion of the issues addressed here. For additional feedback, we thank audiences at U Mass, Amherst, and at the *LAGB* 2013 meeting, and especially Heather Newell for her detailed comments on a draft. We would also like to thank Maria and Santos Leyva for the Hiaki data, Jason Haugen for drawing our attention to Hale, Jeanne and Pranka (1991), Steve Marlett for pointing out the Seri data, and Jason Haugen and Mercedes Tubino Blanco for past discussion of the Hiaki data. Bobaljik's work on suppletion was funded in part by the NSF (BCS-0616339). Harley's work on Hiaki was also funded in part by the NSF (BCS-0843898). Abbreviations used are: ACC Accusative, ADJ Adjective, AG Agent, AOR Aorist, APPL Applicative, ATTR Attributive, BEN Benefactive, CMPR Comparative, DAT Dative, INFL Inflection, INTR Intransitive, N.SUBJ Non-Subject, NOM Nominative, OBJ Object, OF Object Focus, PL Plural, PRED Predicate, PRF Perfective, PRV Preverb, SG Singular, SUBJ Subject, TR Transitive.

- (1) Locality:
 β may condition α in (a), not (b):

- a. $\alpha \dots]_{X^0} \dots \beta$
 b. $*\alpha \dots]_{XP} \dots \beta$

Where α and β are syntactic heads, this condition restricts suppletion to synthetic formations and excludes suppletion in analogous analytic formations. The effects of this condition are seen where a given feature may be expressed analytically or synthetically, either across languages or within a single language. Bobaljik 2012 presents a large survey of suppletion in comparative constructions, which fit this description: the comparative degree head may be a free-standing element (*more intelligent*) or may affix to the adjective (*smart-er*). We assume both analytic and synthetic comparatives share a common underlying structure (2a); the synthetic (affixal) comparative being derived from this structure as shown in (2b) yielding the complex X^0 in (2c):²



Consistent with (1), numerous examples of the pattern in (3a) are attested, in which the root is suppletive when the comparative is synthetic. This is permitted, since the CMPR head and the ADJ root are within the same X^0 in (2c).³ On the other hand, in a periphrastic construction where the CMPR head and ADJ root are not within the same word, the AdjP intervenes, and suppletion is not permitted. Confirming this, the hypothetical pattern in (3b), in which root suppletion is triggered by a free-standing comparative adverb, is unattested.⁴

² We take no stand here on whether the synthetic construction in (2b) is derived via head movement, or some other operation such as lowering or post-syntactic merger (see, Embick and Noyer 2001, Embick and Marantz 2008, among others for discussion).

³ In the majority of cases, suppletion affects the root only, with the comparative affix clearly retained (e.g., *-er* in *bett-er*). There are also cases such as *bad ~ worse* in which the comparative affix is not visible; these are treated as cases of (3a), and not (3b), since the comparative adverb is missing—for present concerns, it does not matter whether cases such as *worse* are analyzed with a null affix (*worse-Ø*) or as portmanteaus. French *bon ~ meilleur* ‘good ~ better’ and other cases of ‘Poser-blocking’ fall together with English *bad ~ worse*, inasmuch as the alternation is not triggered by a free-standing comparative adverb. For discussion of these cases, see Bobaljik 2012, especially chapter 3, and references therein.

⁴ Note that double comparatives such as (*more*) *better*, are well-attested in a variety of languages (though often prescriptively frowned upon), in which a morphological comparative is reinforced by an optional, and redundant, occurrence of the free-

- (3) a. X ~ Y-er good ~ bett-er
 b. *X ~ more Y *good ~ more bett

The effects of (1) are particularly clear in the many cases where a single lexeme enters variously into synthetic and analytic combinations with the same feature. In these cases, the root will be suppletive in the synthetic construction, but non-suppletive in the analytic one. For example, in Modern Greek, many adjectives alternate freely between analytic (adverb *pjo* ‘more’) and synthetic (suffix *-ter-os*) comparatives. One such adjective is *kak-ós* ‘bad’ which has a suppletive root *cheiró-*. As (4) illustrates, suppletion is restricted to the synthetic expression of comparison:

- (4) a. kak-ós cheiró-ter-os
 ‘bad-INFL’ ‘bad-CMPR-INFL’ = ‘worse’
 b. kak-ós pjo kak-ós
 ‘bad-INFL’ more ‘bad-INFL’ = ‘worse’

The same point can be made with reference to the *go-went* alternation in English. The verb *go* undergoes suppletion for the past tense (5) but only when the past tense is expressed as an affix on the verb; in analytic expressions of the past (with *did*), the default verbal root *go* surfaces (6):

- (5) a. Leo **goes** swimming on Sundays.
 b. Leo **wen-t** swimming on Sundays.
 (6) a. Did Leo **go** swimming on Sundays?
 b. *Did Leo **wen(t)** swimming on Sundays?

In sum, there is a large range of data supporting the locality condition in (1), drawing a sharp divide between synthetic constructions, in which a feature within a complex word may condition suppletion of the root of that word, and analytic constructions, in which a feature expressed in an independent phrase may not trigger suppletion across a phrasal boundary. It is thus tempting, but we will argue fundamentally misleading, to think of (1) as drawing a division between word-internal and word-external relations, with only the former counting as local enough for suppletion. This is not exactly what (1) enforces. We will approach the issue by examining a case that looks like a counter-example to (1) and using these to probe the details of locality more precisely.

standing comparative adverb. This reinforcement is independent of suppletion, since forms such as (*more*) *taller* are also attested in the same languages. See, e.g., Corver 2005, Kytö and Romaine 1997, Matushansky 2013.

Hiaki provides examples of apparent conditioning of suppletion in phrasal constructions, which seem to constitute prima facie counter-examples to the interpretation of (1) as making a word-internal versus word-external cut. The number of a subject DP can trigger suppletion in a certain class of intransitive verbs.

- (7) a. Aapo vuite.
 3SG run.SG
 ‘S/he is running.’
- b. Vempo tenne
 3PL run.PL
 ‘They are running.’

On the assumption that this pattern is true subject-verb agreement, where an external argument in the specifier of a functional projection (TP, AgrSP, VoiceP) conditions the suppletion of a verb in the head of that projection, this would be a potential counterexample to Bobaljik’s generalization in (1) above, as a case where a phrasal boundary intervenes between the target and trigger of suppletion (see below for further explication).

In this paper, we review Harley, Tubino Blanco, and Haugen’s (2009, forthcoming) argument that all suppletive, number-conditioned verbs in Hiaki are conditioned by the number of their internal, not external argument, and conclude that that Hiaki suppletion cases do not pose a problem for the generalization in (1) above. Subject-conditioned suppletion in Hiaki occurs only with unaccusative verbs, and the immediately local, sisterhood relation between the target and the trigger of suppletion prior to phrasal movement in fact satisfies Bobaljik’s proposed locality constraint.

2. Hiaki suppletive verbs

Hiaki, like many Uto-Aztecan languages (and others beyond, see section 3), has a significant class of highly frequent suppletive verbs, in which the suppletion is triggered by the number of one of the verb’s arguments. (See e.g. Dedrick and Casad 1999 for a description of the Hiaki facts, and the Langacker 1977 for Uto-Aztecan generally).

As noted above, with intransitive suppletive verbs, such as *weye-kaate* ‘go by walking,’ the suppletion-triggering argument is the subject of the verb:

- | | | | | |
|-----|----|---------------------|----|------------------------|
| (8) | a. | Aapo weye | b. | Vempo kate |
| | | 3SG walk.SG | | 3PL walk.PL |
| | | ‘S/he is walking.’ | | ‘They are walking.’ |

With transitive suppletive verbs like *me'a~sua* 'kill', however, the suppletion-triggering argument is the object—the number of the subject makes no difference:

- (9) a. Aapo/Vempo uka koowi-ta me'a-k
 3SG/3PL the.SG pig-ACC.SG **kill.SG-PRF**
 'He/They killed the pig.'
- b. Aapo/Vempo ume kowi-m sua-k
 3SG/3PL the.PL pig-PL **kill.PL-PRF**
 'He/They killed the pigs.'

Below is a list of the suppletive intransitive and suppletive transitive verbs of Hiaki in the grammar of Harley's consultants.⁵ Note that the specific verbs which supplete can vary across speakers even of the same dialect. As would be expected, all are quite frequent verbs, with the most salient -- 'go', 'die', 'walk', 'kill', 'arrive' -- showing the same suppletion patterns for all or nearly all speakers.

(10) Intransitive

Sg. Subj.	Pl. Subj.
<i>weye</i>	<i>kaate</i> 'go, walk'
<i>vuite</i>	<i>tenne</i> 'run'
<i>weama</i>	<i>rehte</i> 'walk around, wander'
<i>kivake</i>	<i>kiimu</i> 'enter'
<i>yepsa</i>	<i>yaha</i> 'arrive'
<i>siime</i>	<i>saka</i> 'go, leave' (present tense)
<i>weche</i>	<i>watte</i> 'fall down'
<i>muuke</i>	<i>koko</i> 'die'
<i>kikte</i>	<i>hapte</i> 'stand up'
<i>yeesa</i>	<i>hooye</i> 'sit down' (present tense)
<i>vo'ote</i>	<i>to'ote</i> 'lying down' (present tense)
<i>yehte</i>	<i>hooote</i> 'get up'

⁵ Many thanks to Maria Florez Leyva and Santos Leyva for judgements and discussion. We note in passing, in line with previous descriptions of these facts, that speakers describe the number-governed suppletion as obligatory, paradigmatic alternations. Some authors in the typological literature have wondered whether that these alternations may simply involve semantically specialized verbs, and not grammatical suppletion, drawing an analogy to pairs in English such as *kill/murder* vs. *massacre*, with the latter ostensibly restricted to plural objects. As near as we can tell, these are qualitatively different kettles of fish, inasmuch as English *massacre* freely extends metaphorically to combine with singular objects, with frequent attestations (especially from sporting and political commentary) of examples such as (i). Hiaki plural verb forms cannot be used in parallel fashion.

(i) I like Romney well enough but Obama massacred him tonight. [Google. November 2012]

Transitive

Sg. Obj.	Pl. Obj.
<i>kecha</i>	<i>ha'abwa</i> 'stand (something) up'
<i>yecha</i>	<i>hoa</i> 'put down, place'
<i>kivacha</i>	<i>kiima</i> 'bring in'
<i>me'a</i>	<i>sua</i> 'kill'

Since the suppletion-triggering argument of the transitive verbs is always an object, the transitive verbs do not constitute potential counterexamples to Bobaljik's (2012) generalization. Let us see why.

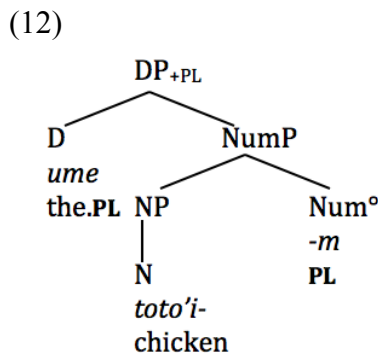
2.1 Suppletion and structure

In Hiaki, nominal number propagates throughout the nominal projection, marked on the noun, often on the adjective, and always on any determiner or demonstrative which accompanies the nominal:

- (11) a. uu toto'i
 the.NOM.SG chicken
 'the chicken'

- b. ume toto'i-m
 the.PL chicken-PL
 'the chickens'

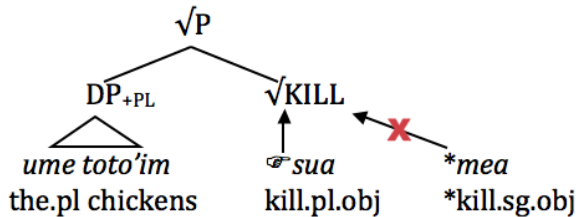
We can conclude that the number features appear via concord agreement in the D head of DP, and are copied into the label of the phrasal DP projection.



Let us assume, with Kratzer (1996), Marantz (1997), Harley (2011), that selected objects are base-generated as sisters to their selecting root. In the case of transitive suppletive verbs, then, a plural object DP is base-generated as a sister to the verb root. If the root of the selecting verb is a

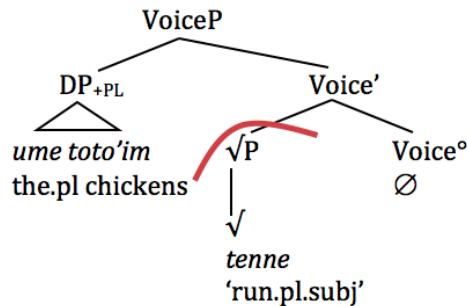
supplementing one, the two forms of the root will compete for insertion. The trigger for suppletion is within the projection of the X° of the suppletting head itself—indeed, is maximally local to it—so the object of a transitive verb can condition suppletion of the root without challenging Bobaljik’s generalization, as shown in the tree below:

(13)



What about the suppletting intransitive verbs? It has repeatedly been argued (Kratzer 1996, Marantz 1997, Harley and Stone 2012, a.o.) that external arguments are not base-generated within the projection of the root. If the intransitive suppletting verbs of Hiaki are unergative, with true external arguments, they would constitute a counterexample to Bobaljik’s generalization, as the trigger of suppletion would be separated from its target, the root of the verb, by at least one phrasal projection:

(14)



The situation would only be exacerbated if one assumes that subject agreement, reflecting a relation between the specifier and head of a functional projection, only becomes relevant higher in the tree, in, e.g. TP or AgrSP.⁶

On the other hand, if such intransitive verbs can be shown to be unaccusative, with derived subjects which are base-generated as internal arguments, rather than external ones, the underlying structure of such sentences would involve a configuration like that in (13) above, where the trigger of suppletion is base-generated as the sister of the target, and the generalization would remain secure.

⁶ See section 2.2 below for refinements and a speculation as to why head movement (of the root to Voice) cannot render the external argument local to the root.

Harley, Tubino Blanco and Haugen (2009, to appear) present an argument in support of this very conclusion, namely that all number-sensitive suppletive intransitive verbs in Hiaki are in fact unaccusative. Their argument rests on the behavior of the applicative suffix, *-ria*.

The Hiaki applicative is sensitive to the agency of the subject of the verb it attaches to. Although it can attach to both intransitive and transitive agentive verbs, as in (15a, b), it cannot attach to unaccusative intransitive verbs (15c):

- (15) a. U'u maaso uusi-m yi'i-ria-k
 The deer.dancer children-PL dance-APPL-PRF
 "The deer dancer danced for the children."
- b. Inepo Hose-ta pueta-ta eta-ria-k
 1SG Jose-ACC door-ACC close-APPL-PRF
 "I closed the door for Jose."
- c. *Uu tasa Maria-ta hamte-ria-k
 The cup Maria-ACC break.INTR-APPL-PRF
 "The cup broke for/on Maria."

Harley, Tubino-Blanco and Haugen (2009, to appear) argue that the illformedness of (15c) results from a selectional clash between the applicative head and the non-agentive v° head which is present in unaccusative structures. They then show that the applicative morpheme is incompatible with intransitive suppletive verbs:

- (16) * Santos Maria-ta San Xavierle-u weye-ria
 Santos Maria-ACC San Xavier-to go.SG-APPL
 "Santos is going/walking to San Xavier for Maria."

They rule out several alternative explanations for the ungrammaticality of (16) above. It is not simply that 'walking to San Xavier' is semantically or pragmatically infelicitous in a benefactive context, as a periphrastic benefactive adjunct PP can express the intended meaning of (17) just fine:

- (17) Santos Maria-ta vetchi'ivo San Xavierle-u weye
 Santos Maria-ACC for San Xavier-to go
 "Santos is going/walking to San Xavier for Maria."
 (e.g. carrying out a vow she had made for a pilgrimage)

Further, it is not the case that there is some morphological conflict between suppletive verbs and applicative suffixation, as *transitive* suppletive verbs can have the applicative suffixed to them perfectly well:

- (18) Santos Jose-ta koowi-ta/koowi-m mea/sua-ria-k.
 Santos Jose-ACC pig-ACC/pig-PL kill.SG/kill.PL-APPL-PRF
 “Santos killed a pig/pigs for Jose.”

They conclude that the illformedness of (18) above can only be attributed to the non-agentive nature of the intransitive verb *weye*, ‘go, walk’—i.e., to its unaccusative status. They further confirm that this pattern is general to all the suppletive intransitive verbs of the language, and conclude that intransitive suppletive verbs are unaccusative. This indicates that the argumental triggers for the suppletive forms are base-generated in object position in both transitive and intransitive forms.

This conclusion is bolstered by the observation that these verbs are all glossed as having either clearly unaccusative semantic content (‘die’, ‘arrive’) or the semantic content of motion/stance verbs (‘run’, etc.). Such verbs pass tests for unaccusativity in many languages despite having somewhat agentive semantics in some contexts (see, among others, Levin and Rappaport-Hovav). However, we emphasize, as a moral of the Hiaki case presented above, that a rough-and-ready consideration of the semantic content of verbs as revealed by their English glosses, is inadequate to determine unaccusativity. Language-particular syntactic or morphological tests, such as the interaction between intransitive suppletive verbs and the applicative affix documented above, are needed to confirm the unaccusative status of any given set of intransitive verbs.

For example, in a paper discussing data from the related Uto-Aztecan languages Hopi and Tohono O’odham (Papago), as well as the Athapaskan language Navajo, Hale, Jeanne and Pranka (1991:264) advance the unaccusative hypothesis as a possibility concerning the status of the intransitive suppletive verbs of those languages, but dismiss it as follows: “We consider it somewhat problematic that the single-argument suppletive verbs in Hopi, for example, exhibits a semantic range which is somewhat broader than that of the class of canonical unaccusatives.” The list of suppletive intransitives they provide includes verbs glossed as ‘cry’, ‘laugh’, ‘dance’ and ‘climb’. No doubt the status of *cry* and *laugh* as canonically unergative verbs in English may appear *prima facie* problematic, but on the other hand, the relationship of these verbs to psychological states, a semantic domain strongly correlated with unaccusative diagnostics crosslinguistically, could be adduced in support of the notion that these verbs could be unaccusative in Hopi despite the status of their English translation equivalents. Similarly, the verbs glossed as ‘dance’ and ‘climb’ are clearly motion predicates, which could be taken as support for the possibility that they might be unaccusative, but are also typically agentive, semantically, in that they are normally carried out under the volitional control of their subject arguments. Without in-depth (morpho)syntactic diagnostics of the kind we have deployed for

Hiaki, above, the unaccusative or unergative status of these verbs in Hopi cannot be determined. See below for further discussion of cases outside Uto-Aztecan.

We conclude, then, that the Hiaki intransitive suppletive verbs are unaccusative, and hence do not constitute a counterexample to the key generalization under consideration here, which holds that the target and trigger of suppletion cannot be separated by a phrasal boundary.⁷

2.2 Locality refined

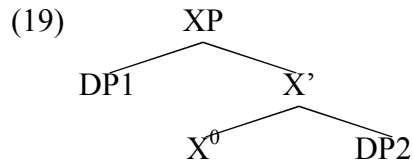
We have argued that the internal/external argument asymmetry in participant-number-governed verbal suppletion is explained as a consequence of the more general locality condition on suppletion, given in (1). Internal arguments are sister to the (verbal) root, while external arguments are too remote, separated from the root by a maximal projection (at least $\sqrt{P/VP}$, if not others as well). As given thus far, our theory leaks to some extent—there are at least two ways in which the locality condition might be circumvented, but which do not seem to arise. We will plug those leaks here, offering a tightening of (1). Specifically, we tentatively propose (1') in place of (1), where it is not a maximal projection (XP) that blocks suppletion, but any phrasal (i.e., non X^0) projection that intervenes.⁸

- (1') Locality:
 β may condition α in (a), not (b):
- a. $\alpha \dots]_X^0 \dots \beta$
 b. $*\alpha \dots]_X^n \dots \beta$, where $n > 0$.

This proposal has no consequences within a complex X^0 , and thus no consequences for the cases considered in Bobaljik (2012). There are consequences, though, for two other configurations. In particular, (1') but not (1), renders specifiers non-local to their head, in the relevant sense. Thus, in (19), under the formulation of locality in (1), both DP1 and DP2 are local to the head X and may thus govern suppletion, while under the narrower formulation in (1'), only DP2, and not DP1, is local.

⁷ It is worth noting that a few Hiaki verbs show suppletion and/or irregularity in the perfect aspect, and a very small number (three, in Harley's consultants' speech) show irregularity or suppletion for both argument number and aspect. One such verb is *yeesa*, 'sit'. Its singular present form is *yeesa*, while its singular perfect form is *katek*, with suppletive root *kate-* and perfective *-k*. In the plural, its present form is *hooye*, and its past *hooka*, made up of the plural root *hoo* with the irregular perfective suffix *-ka*. Here, it seems that there may be a locality effect in play: number suppletion (the use of the *hoo-* plural root) preempts use of the aspectually conditioned suppletive root (the perfect root *kate-*). Such cases may be revealing for understanding how locality constrains the interaction of multiple suppletion triggers, but we will leave detailed investigation for future work. See Chung (2007-diss, 2009) for discussion of competing suppletion triggers in Korean, and Radkevich (2010) for discussion of locality effects in TMA suppletion more generally.

⁸ This change would be superfluous in theories such as Kayne (1994) in which specifiers are adjuncts, sister to XP. We include the discussion so that we need not take a stand on this contentious point.

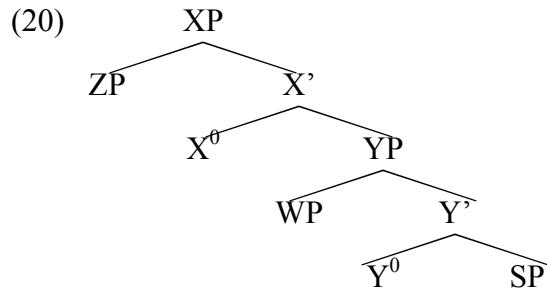


Empirically, this may be relevant if a root may take two arguments, for example in ‘small tree’ theories where the external argument is in Spec,VP, or where a root may select two internal arguments, as in (non-applied) ditransitives. The more restrictive locality formulation in (1’), but not that in (1), holds that only the lower of two internal arguments may condition suppletion. Allowing for some variation in thematic hierarchies (see, e.g., the ‘alternative projection’ treatment of dative shift in Harley 2002), this appears to be correct—though both recipient-governed and theme-governed suppletion exist, we have found no examples of single predicates which are sensitive to both internal arguments (see the brief discussion of ditransitives at the end of the next section).

Excluding specifiers from the locality domain of the root also renders moot the possibility that head movement may extend locality domains. Hypothetically, if the root were to undergo head movement to Voice⁰ in (14), then—in its derived position—the root would no longer be separated from the external argument by a maximal projection. If not plugged, this could be construed as a loophole that threatens to unravel our account of internal-external argument asymmetries, at least where head movement is involved. Replacing (1) with (1’) closes this loophole; head movement may have domain-extending effects elsewhere in the morphosyntax (Gallego, Den Dikken, Bobaljik and Wurmbrand 2013), but will have no effect on suppletion where the trigger is outside the complex head.

The tree in (20) summarizes. Among phrasal triggers, only SP may condition suppletion of Y⁰. That WP and ZP are too remote (whether or not head movement occurs) corresponds to the internal- versus external-argument asymmetry in participant-number suppletion discussed in this section. The synthetic versus analytic distinction discussed in section 1 is unaffected by the change from (1) to (1’); X⁰ is too remote to govern suppletion on Y⁰ in (20), but if some process (head movement, lowering, merger) creates a complex head, then they will be sufficiently local for suppletion to be possible.⁹

⁹ As Heather Newell observes, a given root will have only one complement, but may undergo (successive cyclic) head movement (or lowering) thereby becoming local to a range of functional heads. For example, a verb root may combine into a complex X⁰ with tense, aspect and mood elements, showing suppletive interactions with any of these (see Veselinova 2006), but will still have only a single complement. In a sense, this provides more opportunities for head-driven suppletion (of the type in (4)-(5)) than for argument-driven suppletion. See also the discussion of Hiaki cases of ‘doubly-conditioned’ suppletion in fn. 7 above.



3. Beyond Hiaki

We suggest that the discussion above establishes the initial plausibility of our main contention, namely, that participant-governed suppletion of the verb root is limited to the verb's internal argument, i.e., its sister, consistent with (1), and that this in turn lends further credence to the validity of (1) itself as a principle of UG.

At this time, we are not in a position to investigate in similar detail all languages with verbal suppletion governed by participants. We offer here, though, a superficial examination of a number of surveys of the phenomenon which suggest, in the first place, that our account may indeed be on the right track (or at least, not obviously wrong), pointing out what we would take to be the next domains to be investigated.

Our central hypothesis is that number-conditioned suppletion will be governed only by internal arguments of transitive verbs, i.e. by objects, not subjects, of transitive verbs, and the subjects of (some) intransitive verbs. At first blush, this resembles an 'ergative/absolutive' alignment. And indeed, many authors surveying suppletive marking of verbal number have noted that, such marking, when conditioned by a participant (i.e., as opposed to marking event number / pluractionality) does follow such an 'absolutive' alignment, marking plurality of the object of a transitive and the subject of an intransitive (see Bybee 1985, Corbett 2000: 252-253, and especially Durie 1986; and in the context of individual languages: Comrie 1982, Hale, Jeanne and Pranka 1991, Shibatani 1990). To the extent that (for the suppletive cases in particular) the intransitives that undergo number-governed alternations are unaccusatives, this distribution would provide striking suggestive support that the approach we have sketched is on the right track. The key question, of course, is whether the facts support the strong claim that all instances of participant number-governed suppletion are governed by underlyingly (VP)-internal arguments, as opposed to merely a trend in this direction.

Veselinova (2003) provides an in-depth typological survey of suppletion phenomena in verbs, studying 193 languages exhibiting verbal suppletion. She shows that number-conditioned suppletion occurs in about 20% of the world's language genera, and notes that the variety of semantic content exhibited by such verbs is somewhat broader than that exhibited by verbs whose suppletion is conditioned by TAM inflection.

She provides a 'lexical type table', listing and semantically categorizing the distinct glosses of all the verbs exhibiting number-conditioned suppletion in her survey. Her collection of distinct glosses is sorted into six categories or 'lexemic groups', listed in the table below. Each

gloss is followed in brackets by the number of languages in her sample which showed number-sensitive suppletion in a verb so glossed. Some of Veselinova’s lexemic groups include both transitive and intransitive verbs; we identify the intransitive glosses via underlining in those categories. Inspecting the intransitive glosses provided in the table, there is a clear relationship between the glosses of number-conditioned suppletive intransitive verbs and the semantic fields associated with unaccusativity: motion, position, stativity and involuntary predicates like those to do with death or dying.

Motion (intr)	Motion (tr)	Position	Die/Injure	Stative	Other
go (14)	put (5)	<u>sit</u> (13)	<u>die</u> (11)	<u>sleep</u> (6)	eat (3)
fall (7)	throw (5)	<u>lie</u> (12)	kill (9)	<u>big</u> (3)	belong.to (1)
come (4)	take (3)	<u>stand</u> (8)	<u>break</u> (2)	<u>small</u> (2)	bet (1)
run (4)	give (2)	hold (1)	hit (2)	<u>be.at</u> (1)	come.out.in.quality
arrive (3)	pull.out (2)	carry (1)	beat (1)	<u>be lost</u> (1)	(1)
enter (3)	drive.out (1)	<u>exist</u> (1)	bite.off (1)	<u>exist</u> (1)	make.netbag (1)
start (3)	get (1)	<u>dwell</u> (1)	cut (1)	<u>long</u> (1)	make.noise (1)
get.up (2)	grasp (1)	store (1)	<u>die.of.old.age</u>	<u>short</u> (1)	not.like (1)
return (2)	pick.up (1)		<u>.or.hunger</u> (1)		say (1)
rise (2)	release (1)		injure (1)		
walk (2)	remove (1)				
fall.in.water (1)	take.out (1)				
fly (1)					
go.about (1)					
go.around.somethin					
g.out.of.sight (1)					
jump (1)					
move (1)					
stampede (1)					
swim (1)					
visit (1)					
walk (1)					

Table 1: Semantic categories of glosses of suppletive verbs conditioned by number cross-linguistically from Veselinova (2003)

The cross-linguistic semantic picture, then, at a first glance, does not present any clear counterevidence for the hypothesis advanced in this paper, namely that intransitive number-conditioned suppletion must involve unaccusative verbs. However, as noted above, each of these cases, as for the Hiaki case, would need to be investigated in some detail to support or disconfirm the unaccusative status of the relevant intransitive verbs in that language.

Despite the overall semantic pattern apparent in Veselinova’s tables, Corbett claims that agentive intransitives may in some languages trigger verbal number alternations, a state of affairs that might undermine our conclusion, if these agentive intransitives involve external arguments.

As it happens, Corbett’s illustrative example (originally from Comrie 1982), is from Huichol, an Uto-Aztecan language related to Hiaki, Hopi and Tohono O’odham (Papago), mentioned above. Comrie states that the objects of transitive verbs control verbal number alternations (as we would expect), but that for intransitive verbs, the sole argument controls verbal number “irrespective of the extent to which this has agent or patient properties” (Comrie 1982:112).

Now (assuming suppletion is involved), we do not have the resources to investigate the Huichol cases in detail, but we have just argued above, drawing on Harley, Tubino-Blanco and Haugen (2009, 2012), that (apparent) agentivity in the Uto-Aztecan language Hiaki is not a reliable indicator of internal vs. external argumenthood for intransitive subjects. We will thus tentatively assume (though of course, this remains to be shown) that the analysis of Hiaki will extend to its cousin Huichol; similarly for the Hopi cases referenced above.

A second category of cases that require further investigation involve a few cases of *transitive* suppletive verbs where suppletion is apparently conditioned by the subject. Such cases are not frequently mentioned in the literature, but two have been brought to our attention. The first is Seri, a language isolate in northern Mexico (Stephen Martlett, p.c.), and the second is Hiw, and Oceanic language of the Torres Islands (Françoise 2012, brought to our attention by Sebastian Fedden, p.c.).¹⁰ The list of subject-number-conditioned suppletive transitive verb roots in Seri given in Marlett (2009:622) is $\sqrt{aa}zi\sim\sqrt{oo}n$, ‘carry’, $\sqrt{á}catx\sim\sqrt{aa}lajc$, ‘release’, $\sqrt{Cactim}\sim\sqrt{Can}loj$, ‘use, touch’, $\sqrt{aco}zot\sim\sqrt{acon}ec$, ‘give’, and $\sqrt{yaa}i\sim\sqrt{vo}ziit$, ‘go.to’; this set of data constitutes the most serious challenge that we know of to the hypothesis advanced here and requires careful further investigation. In Hiw, according to François’s description, the majority of suppletive verbs (of which there are many) conform to the typological norm, but the transitive subject appears to govern suppletion in verbs meaning ‘bring, carry’ $tevog\sim v\bar{e}n\bar{n}og$ and ‘leave behind’ $t\bar{e}rog\sim v\bar{e}n\bar{r}og$. As Fedden points out (p.c.), these verbs are clearly bi-morphemic, with the first element being the suppletive verb ‘go’ $t\bar{o}\sim v\bar{e}n$ (compare also ‘fetch’ $t\bar{o}r\bar{o}n\sim v\bar{e}n\bar{r}\bar{o}n$), suggesting that a syntactic decomposition may render these unexceptional.¹¹

An additional range of data mentioned by Corbett, and discussed in Comrie (2003), involves cases, attested in quite a number of families from across the globe, in which the verb meaning ‘give’ shows apparent suppletion for the person (or, more rarely, person and number) of its recipient argument. For example, in Kolyma Yukaghir, has $tad\bar{i}$ - ‘give to 3rd person’ but kej - ‘give to 1/2 person’ (Maslova 2002:353). As Comrie discusses, some patterns which appear to be recipient suppletion have more plausible alternative explanations; in Amele, for example, Comrie argues that what appears to be recipient-governed suppletion for ‘give’ is actually

¹⁰ Corbett also references Shibatani’s (1990:50-55) description of Ainu in this regard, since Shibatani notes that “plural verb forms ... co-occur with plural subjects (of both intransitive and transitive clauses) and objects” (p.53). However, Ainu shows both affixal and suppletive marking of plurality, and the examples Shibatani gives to illustrate plural verbs with (plural) transitive subjects involve only affixal marking. Moreover, the (affixal) verbal plural in Ainu marks event plurality or nominal (participant) plurality, hence it is not clear from the material available to us that Ainu is a genuine counter-example. The discussion of Hopi agreement in Hale, Jeanne and Pranka (1991) also makes this very key differentiation between affixal and suppletive plural agreement.

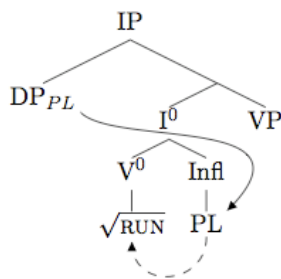
¹¹ The Hiw facts are even more complex, in that, for example, the verb ‘go’ suppletives differently under different meanings, and some suppletive elements stand in many:many relationships with one another, rather than constituting neatly suppletive pairs.

regular indirect object agreement, but with the quirk that the verb has an invariable zero root. Other examples involve deictic or directional markers, rather than changes to the verb root. Yet there do appear to be a number of cases of genuine verbal suppletion for recipient person and number in Comrie’s survey. Within the framework of assumptions developed here, this pattern of suppletion would require us to assume that in some cases it is the recipient, and not the theme, that is the sister of the ditransitive verb, a conclusion that would enter us into the waters of a venerable debate (see, just for example, Larson (1988), Pesetsky (1995), Baker (1996), Harley (2002), Bruening (2010a), Ormazabal and Romero (2012), among many others), which we will leave for a future project.

4. Suppletion and agreement

Before closing, one final remark is in order. Throughout this short paper, we have treated participant-number governed suppletion of the verb root as just that: governed by the participant DP. One could imagine an alternative account, in which the number alternation is a manifestation of agreement. Under this view, the argument DP would enter into an agreement relation (for example, mediated by a null agreement affix) such that the number feature of the DP is copied into the verb word. One could treat suppletion as triggered not by the number feature of the participant DP itself, but rather indirectly, by the number feature that has been copied onto the verb via agreement. There would be no locality issue, since the copied feature is, by hypothesis, within the same complex X° as the verb root. (21) illustrates, with the solid arrow indicating agreement/copying and the dashed arrow the triggering of suppletion.

- (21) Vempo tenne-Ø
 3.PL run.PL-PL



An immediate reason to be suspicious of this account is that there is no evidence for such an affix position in Hiaki. Verbs that do not undergo suppletive alternations do not show a number agreement affix, for example, that just happens to be null when the verb is suppletive. Indeed, there is no agreement morphology at all on Hiaki verbs. So positing such an affix would have no independent motivation or support, within Hiaki.

There is also cross-linguistic evidence for avoiding an account treating suppletion as a form of number-agreement more generally. In distinguishing suppletion from agreement, we

follow a venerable tradition (see Corbett 200:253-254, Hale, Jeanne and Pranka (1991) and especially Durie (1986) who traces the view back to Boas (1911)). As these authors note, participant-governed number suppletion is frequently independent of the agreement system of a language, and thus the number-governed alternations cannot be reduced straightforwardly to agreement. This point is made especially forcefully for suppletion by Durie, who notes that “in every observed case of stem suppletion for number it is the number of the principally affected argument [i.e., object or intransitive subject] for which the verb suppletes” (1986:356-7).

Thus, languages may have suppletion of the Hiaki type regardless of the type of agreement (if any) they otherwise display. Hiaki shows number suppletion in the absence of any other agreement.¹² Huichol shows number suppletion with the apparent absolutive alignment, while its regular agreement morphology distinguishes subjects and objects (a nominative-accusative alignment)—Comrie’s examples, cited by Corbett, are given in (22):

- (22) a. Wan Maria maa-ti me-neci-**mieni**.
 Juan Maria and-SUBJ 3.PL.SUBJ-1.SG.OBJ-kill.SG
 ‘Juan and Maria are killing me.’
- b. Nee Wan Maria maa-me ne-wa-**qiini**.
 1.SG Juan Maria and-N.SUBJ 1.SG.SUBJ-3.PL.OBJ-kill.PL
 ‘I am killing Juan and Maria.’

Hale, Jeanne and Pranka (1991:266) give parallel examples for Hopi, which exhibits affixal subject agreement as well as number-conditioned suppletion.

Moreover, under Comrie’s description, and of central relevance for our main thesis, suppletion in Huichol is governed by the underlying position of the argument, where agreement cares about derived positions. Comrie illustrates with a form of applicative construction that promotes a benefactive argument to direct object status. In this example, the promoted object triggers morphological object agreement on the verb, but it is the underlying theme that governs the form of the verb root. This is exactly as it should be if a promoted benefactive is syntactically an object, but such promotion does not supplant the theme’s thematic position as (first) sister to the verb (cf. the literature on benefactive applicatives in Bantu, e.g., Baker 1988, Bresnan and Moshi 1990, Marantz 1993).¹³

- (23) a. Nee waakana ne-mec-**umi?ii-ri** eeki.
 1.SG chicken 1.SG.SUBJ-2.SG.OBJ-kill.SG-BEN you
 ‘I killed you(SG) the chicken.’

¹² Similarly Niuean shows both suppletion and reduplication to mark the number of internal arguments on some verbs (including two transitive verbs with apparent internal argument subjects) but shows no other agreement (Seiter 1980).

¹³ A similar pattern is illustrated by the applicative of a transitive suppletive Hiaki verb in (18) above, where the introduced applied object does not affect the suppletive behavior of the verb. Hiaki does not exhibit the independent object agreement of Huichol, however.

- b. Nee waakana-ari ne-mec-**uqɪʔii**-ri eekɪ.
 1.SG chicken 1.SG.SUBJ-2.SG.OBJ-kill.PL-BEN you
 ‘I killed you(SG) the chickens.’

Similarly, in Kolyma Yukagir, where it is the recipient that governs verbal suppletion (as noted above), inflection is governed by the subject, and the direct object (theme), but not the recipient. The following example illustrates: the verb root has the suppletive form required by a first person recipient, with the inflectional morphology being specific to a 3sg subject with the direct object in focus (Maslova 2002:353):

- (24) met-in er-če n’ēr-ek **kej-ŋile.**
 I-DAT [bad-ATTR] clothing-PRED give.1/2-OF:3SG
 ‘They gave me bad clothing.’

Durie presents a range of other examples in which suppletive number marking departs from the patterns of agreement. We offer one final one by way of illustration here. In Georgian, nominal phrases with a numeral have a singular noun and govern singular agreement on the verb; but the same expressions serve as triggers for plural suppletion on the verb root when they are in an appropriate configuration. (25), from Aronson 1989, illustrates; the stem *da-sxd-* is ‘sit’ for a plural subject, as opposed to *da-ǰd* ‘sit’ [singular]):

- (25) Čem-i sam-i megobar-i še-mo-vid-a
 my-AG three-AG friend.SG- NOM PRV-PRV-enter-AOR-3SG
 da da-**sxd**-a.
 and PRV-sit.PL-AOR.3.SG
 ‘My three friends entered and sat down.’

Thus, there seems to be ample reason to eschew a treatment of verbal suppletion for participant number as a form of agreement, and instead to pursue an account in terms of suppletion—a more direct relationship between the verb and its internal argument. We note in passing that, independent of our concerns in this paper, this general point is relevant (as noted by Durie 1986) to general theoretical questions about the nature of agreement and the range of possible alignment systems. Thus, for example, the Niuean facts mentioned in fn. 7 have figured in discussions of possible agreement alignments (Legate 2008), but are erroneously included in that discussion if number-governed stem alternations are an independent phenomenon, as the relevant literature (and Seiter 1980) maintains (see Bobaljik 2008). Similarly, if verbal number were treated as agreement morphology, languages like Hiaki would constitute a systematic class of exceptions to an otherwise robust universal, where languages with ergative-absolutive case marking may show nominative-accusative (i.e., subject-object) agreement alignment, but the

reverse does not obtain: no language shows nominative-accusative case marking, but an ergative-absolutive agreement alignment (Dixon 1994, Croft 1990, Bobaljik 2008), outside of these verbal number patterns.

The preponderance of evidence thus points to participant-number-governed suppletion as being a phenomenon distinct from agreement. Given that state of affairs, the locality condition in (1) or (1') explains why the ability to trigger such suppletion is restricted to internal arguments, namely, the sister of the root. Missing in the account, though, is an explanation of why an agreement mechanism can't be used to smuggle the number features of an argument into the complex X° verb-word, as in (21). Although this appears never to happen, nothing in the theory thus far excludes such a derivation. We leave this as an unresolved issue, noting, though that there are various directions to explore: (i) within the general framework adopted here, Embick (2010), Bobaljik (2012), and Moskal (2013) propose additional locality conditions beyond (1), restricting interactions within a complex X° —perhaps agreement features are too remote from the Root, even within an articulated X° derived as in (21); (ii) Marantz (1991) and Bobaljik (2008) have argued that agreement (feature-copying) is a late morphological operation, and not a syntactic one—conceivably the copying of features in (21) occurs too late in a cyclic, bottom-up derivation to affect vocabulary insertion at the root; or (iii) unlike number features on a DP, agreement features on the inflected verb are uninterpretable—perhaps only interpretable features may serve as triggers for suppletion. It is not obvious that any of these approaches will work (suppletion for person and number with the verb *be* poses a *prima facie* challenge), but by not pursuing them in detail, we have not convinced ourselves that they will not work. We leave these for now as tentative speculations, noting that without a specific proposal, it is an unresolved issue why derivations of the type in (21), which sneak the agreement features of a remote expression into a complex X° in order to govern root suppletion, apparently don't occur.

5. Conclusion

The central hypothesis under consideration here is that root suppletion is subject to stringent locality constraints on the relationship between its trigger and target. In the comparative cases investigated in Bobaljik (2012), no maximal phrasal projection intervenes between a suppletive trigger and the target, and an apparently hard-and-fast distinction exists between relatively common suppletion in synthetic comparatives and non-existent suppletion in analytic comparatives. Here, we begin an investigation of other classes of phenomena where strict locality between the trigger and target of suppletion could be questioned. We are able to conclude with confidence that number-conditioned verb suppletion in Hiaki does not pose a counterexample to Bobaljik's (2012) locality constraint, as the interaction of intransitive suppletive verbs with the applicative construction in Hiaki confirms that such verbs are unaccusative in character, despite a few of them having some *prima facie* agentive characteristics, encyclopedically speaking.

While in-depth investigation of many cases is still required to fully confirm the hypothesis, a quick review of the available literature surveying number-conditioned suppletion phenomena provides considerable impressionistic support for our approach. First, the general ubiquity of ergative patterning in number-conditioned suppletion, even in languages with otherwise independent nominative-accusative agreement marking, suggests that the trigger for such suppletion must be an internal argument, rather than an external argument, when the verb is transitive (a few Seri verbs representing the single exception we know of). Second, for intransitive suppletive verbs, the collection and classification of glosses provided by Veselinova (2003) confirms that they typically exhibit unaccusative semantic properties, with just a few exceptions. The moral of the investigation of Hiaki above, however, is that for such exceptions, rigorous morphosyntactic testing is needed to confirm or disconfirm the unaccusative hypothesis; an impressionistic review of glosses cannot provide the requisite certainty about their syntactic properties. So far, in cases where such testing has been carried out, the strictly local suppletion hypothesis is confirmed.

Our narrow conclusion, then, is that the number-suppletion facts are, together with the comparative suppletion facts, indicative of a general locality condition on suppletion, as in (1). To the extent this is correct, it supports a model of grammatical architecture in which syntax and morphology are fundamentally part of the same, structural module. Faced only with the comparative facts, one could conceivably entertain a theory in which there is a strict separation between morphology and syntax, with suppletion a property of ‘morphological units’ of some sort. We have argued here, in essence, that such a view is incorrect—in number suppletion in Hiaki and beyond, it is phrasal syntactic structure (not word-internal structure) over which the relevant locality condition must evidently be stated. Our results thus support the general architecture of a syntactic theory of (some aspects of) morphology, such as Distributed Morphology, in which no pride of place is afforded to that most elusive of theoretical constructs—the ‘morphological word’.

References

- Aronson, Howard. 1989. *Georgian: A reading grammar*. Slavica, Columbus OH.
- Baker, Mark. 1988. Theta Theory and the Syntax of Applicative Constructions in Chichewa. *Natural Language and Linguistic Theory* 6, 353-389..
- Baker, Mark. 1996. On the Structural Position of Themes and Goals. In J. Rooryck and L. Zaring (eds.) *Phrase Structure and the Lexicon*, Kluwer, Dordrecht, pp.7-34.
- Bobaljik, Jonathan. 2008. Where’s Phi? Agreement as a Post-Syntactic Operation. In Daniel Harbour, David Adger, and Susana Béjar, eds. *Phi-Theory: Phi features across interfaces and modules*, Oxford University Press, 295-328.
- Bobaljik, Jonathan. 2012. *Universals in Comparative Morphology: Suppletion, superlatives, and the structure of words*. MIT Press.
- Bresnan, Joan and Lioba Moshi. 1990. Object asymmetries in comparative Bantu syntax. *Linguistic Inquiry* 21:147-185.

- Bruening, Benjamin. 2001. QR Obeys superiority: Frozen scope and ACD. *Linguistic Inquiry* 32: 233-273.
- Bybee, Joan L. 1985. *Morphology: A Study of the Relation between Meaning and Form*. Amsterdam: John Benjamins.
- Chung, Inkie. 2007. *Ecology of PF: A study of Korean phonology and morphology in a derivational approach*. Ph.D. Dissertation, University of Connecticut.
- Chung, Inkie. 2009. Suppletive verbal morphology in Korean and the mechanism of vocabulary insertion. *Lingua* 45: 533–567.
- Comrie, Bernard. 1982. Grammatical relations in Huichol. In *Studies in transitivity, syntax and semantics* 15, Hopper, Paul J. and Sandra A. Thompson (eds.), Academic Press, 95-115.
- Comrie, Bernard. 2003. Recipient person suppletion in the verb “give”. In: Wise, Mary Ruth and Headland, Thomas N. and Brend, Ruth M. (eds.) *Language and Life: Essays in Memory of Kenneth L. Pike*. Dallas: SIL International and the University of Texas at Arlington, 265-281.
- Corbett, Greville G. 2000. *Number*, Cambridge University Press, Cambridge.
- Corver, Norbert. 2005. Double Comparatives and the Comparative Criterion. *Revue Linguistique de Vincennes* 34, 165-190.
- Croft, William. 1990. *Typology and Universals*, Cambridge University Press, Cambridge.
- Dedrick, John M. and Eugene H. Casad. 1999. *Sonora Yaqui language structures*. Tucson: University of Arizona Press.
- Dixon, Robert M. W. 1994. *Ergativity*, Cambridge University Press, Cambridge, UK.
- Durie, Mark. 1986. The grammaticization of Number as a Verbal Category, In *Proceedings of the twelfth Annual Meeting of the Berkeley Linguistics Society*, Vassiliki Nikiforidou, Mary VanClay and Niepokuj, Mary and Feder, Deborah (eds.), Berkeley Linguistics Society Publications, 355-370
- Embick, David. and Alec Marantz. 2008. Architecture and blocking. *Linguistic Inquiry* 39-1:1-51
- Embick, David, and Rolf Noyer. 2001. Movement operations after syntax. *Linguistic Inquiry* 32:555-595.
- Hale, Kenneth L, LaVerne M. Jeanne and Paul Pranka. 1991. On Suppletion, Selection, and Agreement. In C. Georgopoulos and R. Ishihara eds., *Essays in Honor of S.-Y. Kuroda*, Dordrecht: Kluwer, 255-270.
- Halle, Morris and Alec Marantz. 1993. Distributed Morphology and the pieces of inflection. In *The view from Building 20: Essays in Linguistics in honor of Sylvain Bromberger*, Ken Hale and Samuel Jay Keyser, eds., Cambridge: MIT Press, 111–176.
- Harley, Heidi. 2002. “Possession and the Double Object Construction.” *Yearbook of Linguistic Variation* 2: 29–68
- Harley, Heidi. 2011. On the Identity of Roots. Paper presented at the Approaches to the Lexicon workshop (Roots III), June 13, 2011, Hebrew University of Jerusalem, Israel. To appear in *Theoretical Linguistics*.

- Harley, Heidi, Mercedes Tubino-Blanco and Jason Haugen. 2009. Applicative constructions and suppletive verbs in Hiaki (Yaqui).” In L. Lanz, A Franklin, J Hoecker, E Gentry Brunner, M Morrison, and C Pace, editors, *Rice Working Papers in Linguistics Volume 1*, 42-51.
- Harley, Heidi, Mercedes Tubino-Blanco and Jason Haugen. To appear. Locality conditions on suppletive verbs in Hiaki. Proceedings of the *Workshop on Locality and Directionality at the Morphosyntax-Phonology Interface*, ed. by Stephanie Shih and Vera Griбанова. Stanford University, October 12-15, 2012. Stanford: CSLI.
- Harley, H and M. Stone. To appear. The ‘No Agent Idioms’ hypothesis. In R. Folli, C. Sevdali and R. Truswell, eds., *On Linguistic Interfaces II*. Oxford: OUP.
- Kratzer, Angelika. 1996. Severing the external argument from its verb. *Phrase Structure and the Lexicon*. J. Rooryck and L. Zaring. Dordrecht, Kluwer: 109-137.
- Kytö, Merja and Suzanne Romaine. 1997. Competing forms of adjective comparison in Modern English: what could be *more quicker, easier* and *more effective*? In *To Explain the Present: Studies in the Changing English Language in Honour of Matti Rissanen*, T. Nevalainen and L. Kahlas-Tarkka, eds., Helsinki: Societe Neophilologique, 329–352.
- Langacker, Ronald W. 1977. An overview of Uto-Aztecan grammar. In *Studies in Uto-Aztecan grammar: Volume I*, Dallas, TX: SIL/University of Texas at Arlington.
- Larson, Richard K. 1988. On the Double Object Construction. *Linguistic Inquiry* 19: 335–391
- Legate, Julie Anne. 2008. Morphological and abstract Case. *Linguistic Inquiry* 39:55–101.
- Levin, Beth and Malka Rappaport Hovav. 1995. *Unaccusativity: At the syntax lexical-semantics interface*. Cambridge, MA: MIT Press.
- Marantz, Alec. 1991. Case and Licensing. In G. Westphal, B. Ao, and H.-R. Chae, eds., *Proceedings of ESCOL*, Cornell Linguistics Club, 234-253.
- Marantz, Alec. 1993. Implications of Asymmetries in Double Object Constructions. In Sam A. Mchombo, ed., *Theoretical Aspects of Bantu Grammar* 1. CSLI Publications, Stanford, CA, 113-151.
- Marantz, Alec. 1997. No Escape from Syntax: Don’t Try Morphological Analysis in the Privacy of Your Own Lexicon. In *Proceedings of the 21st Penn Linguistics Colloquium*, vol. 4, Alexis Dimitriadis, Laura Siegel, Clarissa Surek-Clark, and Alexander Williams, eds., Philadelphia: U Penn Working Papers in Linguistics, 201–225.
- Marlett, Stephen A. (2009) A Grammar of Seri. Ms. U North Dakota.
http://www.und.nodak.edu/instruct/smarlett/Stephen_Marlett/GrammarDraft.html
- Maslova Elena. 2002. *A Grammar of Kolyma Yukaghir*. Mouton Grammar Library, 27. Berlin, New York: Mouton de Gruyter
- Matushansky, Ora. 2013. More or better: on the derivation of synthetic comparatives and superlatives in English. In Matushansky, Ora, and Alec Marantz (eds.) *Distributed Morphology Today: Morphemes for Morris Halle*. Cambridge, Massachusetts: MIT press, 59-78.
- Moskal, Beata. 2013. A case study in nominal suppletion. Ms. University of Connecticut.
- Ormazabal, Javier, and Juan Romero. 2012. PPs without Disguises: Reply to Bruening. *Linguistic Inquiry* 43:455–474.
- Pesetsky, David. 1995. *Zero Syntax: Experiencers and Cascades*. Cambridge: MIT Press.

- Radkevich, Nina. 2010. *On Location: The structure of case and adpositions*. Ph.D. Dissertation, University of Connecticut.
- Seiter, William. 1980. *Studies in Niuean Syntax*, Garland Press, New York.
- Shibatani, Masayoshi. 1990. *The Languages of Japan*. Cambridge: Cambridge University Press.
- Veselinova, Ljuba. 2006. *Typology of Suppletion in Verb Paradigms*. Amsterdam: John Benjamins Publishing Company.